The Regulation of Third Party Funding of Commercial Litigation

Malcolm Grant Stewart MBA, FCCA, FRSA

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Abstract

Chapter 1 introduces the topic of third party funding of litigation which is a recent phenomenon in academic circles. Few of the existing papers on commercial litigation funding are empirically based and those that are, with one exception, use surveys and interviews to collect data.

Within the legal boundaries of litigation funding, economic theory predicts that in perfectly competitive markets consumers control what is supplied, prices cover costs without excessive profits and inefficient producers are eliminated. However reality rarely conforms to prediction, and regulation may be appropriate in the public interest to overcome market failures arising from information asymmetries. The research focus is: '*How effectively are commercial third party litigation funders governed and/or regulated?*'

Chapter 2 proceeds to consider the literature on regulation, it's applicability to litigation funding and the interests of stakeholders. A major concern is the ability of a litigation funder to pay the costs of a winning defendant.

The conclusion reached in Chapter 3 is that litigation funders have too much choice in the way they report and disclose information and what they actually report and disclose is deficient in meeting the needs of investors.

In Chapter 4, using single firm event study methodology I discover that the stock exchange market does not always react as predicted to disclosure by litigation funders and consequently the market is not an adequate proxy for a regulator.

Chapter 5 extends chapter 3 on the solvency issue and also considers other stakeholder issues e.g. ethical ones which may require regulation. The conclusion reached is that a light touch independent regulator overseen by the legal services board would be appropriate.

This work narrows the literature gap for empirically based economic research and augments and extends the existing literature by examining third party funding of heterogeneous high value, low volume cases in contrast to homogenous, low value, high volume cases. It is the first work on the accounting regulation of litigation funding. This work will also assist investors, the judiciary and other stakeholders to better evaluate the risks of this new industry.

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List of Abbreviations

Abbreviation	Description
AASB	Australian Accounting Standards Board
ABI	Association of British Insurers
ABS	Alternative Business Structure
ADR	Alternative Dispute Resolution
AIM	Alternative Investment Market of the London Stock Exchange
ALF	Alternative Litigation Financing
ALFEW	Association of Litigation Funders of England and Wales
AMA	ASX Market Announcements
APB	Auditing Practices Board
APRA	Australian Prudential Regulation Authority
ASB	Accounting Standards Board
ASC	Accounting Standards Codification
ASIC	Australian Securities & Investment Commission
ASX	Australian Securities Exchange
ATE	After-The-Event
BMP	Boehmer, Musumeci and Poulsen
BNE	Bayesian Nash Equilibrium theory
BRC	Better Regulation Commission
BRTF	Better Regulation Task Force
BTE	Before-The-Event
CAP	Company Announcements Platform of the ASX
CAR	Cumulative Abnormal Return
CAT	Competition Appeal Tribunal
CER	Centro Retail Group
CF	Conceptual Framework
CFA	Conditional Fee Agreements
Charter	Charter of Fundamental Rights of the European Union [2000] OJ C364/01
CIA	Comprehensive Intervention Approach
CIN	City of London Group plc
CISE	Channel Islands Securities Exchange
CJC	Civil Justice Council
CMA	Competition and Markets Authority
CMRe	Claims Management Regulator
CMR	Constant Mean Return
CNP	Centro Properties Group
CPMA	Consumer Protection and Markets Authority
CPR	1998 Civil Procedure Rules and amendments
DBA	Damages Based Agreements
DCA	Department of Constitutional Affairs
ECHR	European Convention on Human Rights, as amended
ED	Exposure Draft
EMH	Efficient Market Hypothesis
EV	Expected Value

Abbreviation	Description
E&W	England and Wales
F	F statistic
FASB	US Financial Accounting Standards Board
FCA	Financial Conduct Authority
FPC	Financial Policy Committee
FRC	Financial Reporting Council
FRED	Financial Reporting Exposure Draft
FRSSE	Financial Reporting Standard for Smaller Entities
FSA	Financial Services Authority
FSS	A US legal partnership known at various times as Fields & Scrantom PLLC; Fields Scrantom Sullivan PLLC; Fields Sullivan PLLC
FVM	Fair Value Measurement
GAAP	Generally Accepted Accounting Procedures
GRANK	Generalized Rank Test
HCA	High Court of Australia
HFT	High Frequency Trading
HLS	Hillcrest Litigation Services Ltd
IAA	IMF ASX Announcement
IAASB	International Auditing and Assurance Standards Board
IAIS	International Association of Insurance Supervisors
IAS	International Accounting Standards
IASUK	International Standards on Auditing (UK & Ireland)
IASB	International Accounting Standards Board
ICAS	Institute of Chartered Accountants Scotland
ICAEW	Institute of Chartered Accountants England and Wales
IFAC	International Federation of Accountants
IFRIC	International Financial Reporting Interpretations Committee
IFRS	International Financial Reporting Standards (Foundation)
ILR	US Chamber Institute for Legal reform
IMF	IMF (Australia) Limited renamed Bentham IMF Limited on 28th November 2013
IMFL	IM Litigation Funding Limited
IPA	In Principle Agreement
ISA	International Standard on Auditing
ISAUK	International Standard on Auditing (UK and Ireland)
IWF	Investable Weight Factor
JAML	Guernsey company 57082 named Juridica Asset Management Limited
JCML	Guernsey company 48127 named originally as Juridica Management Limited and subsequently as Juridica Capital Management Limited
JCMLUK	English company 6529491 named Juridica Capital Management (UK) Limited
JIL	Juridica Investments Limited registered in Guernsey with company number 48126 and listed on AIM as JIL
LASPO	Legal Aid and Sentencing and Punishment of Offenders Bill/Act
LFA	Litigation Funding Agreement
LIA	Limited Intervention Approach
LLS	Litigation Lending Services Limited an Australian company with registered number ACN 129 188 825
LPP	Legal Professional Privilege

Abbreviation	Description
LSB	Legal Services Board
LSC	Legal Services Commission
MB	Maurice Blackburn - an Australian law firm
MCU	Monitoring and Compliance Unit
MM	Market Model
MoJ	Ministry of Justice
N	Number of Observations
NAIC	National Association of Insurance Commissioners
NREE	Noisy Rational Expectations Equilibrium theory
NYSE	New York Stock Exchange
NZLC	New Zealand Law Commission
OFT	Office of Fair Trading
OLS	Ordinary Least Squares
PAP	Pre-Action Protocols
PIRC	Pensions & Investments Research Consultants Ltd
PIS	Professional Investments Services Limited
PRA	Prudential Regulation Authority
R^2	Coefficient of determination
RRAC	Risk and Regulation Advisory Council
Reg FD	SEC Regulation FD (Fair Disclosure)
REIT	Real Estate Investment Trust
rmse	Root mean square error
SDT	Solicitors Disciplinary Tribunal
SEC	The US Securities and Exchange Commission
SG	Slater and Gordon - an Australian law firm listed on the ASX as SGH
SME	Small and Medium Enterprises
SORP	Statements of Standard Accounting Practice
SRA	Solicitors Regulation Authority
TPF/TPFs	Third Party Funding/Third Party Funders
TSMMT	Two State Market Model Test
UITFA	Urgent Issues Task Force Abstracts
US	United States of America
WFC	Wells Fargo & Company

Chapter 1 Introduction

The purpose of this chapter and its three sections is to introduce the reader to litigation and its financing as well as to establish the format and purpose of this research. Section one explains the importance of a functioning legal system and the methods of resolving disputes that are adopted in law. The risk and rewards of financing litigation are also discussed before considering the wider litigation funding market and narrowing the focus of this work to the funding of commercial litigation. The final topic of this section is the regulation of litigation funding against a changing litigation landscape and one which has evolved since Lord Justice Jackson's 2010 report on the subject.

Section two positions this research within the context of a government which is motivated to encourage the development of litigation funding but is also under pressure to regulate an industry which is seen in some quarters as abhorrent. The section is concluded with the aims of the research and the questions that arise as well as identifying the contribution that will be made. A short note on the collation of the data relevant to this work is provided in section three.

Chapter 2 commences with recognition that the law is a regulatory mechanism by which society imposes boundaries on entrepreneurial activity such as third party litigation funding. Within these boundaries economic theory predicts that in perfectly competitive markets consumers control what is supplied, prices cover costs without excessive profits and inefficient producers are eliminated. Unfortunately, the litigation funding market is not perfectly competitive, consumers lack information and need protection and there are fears that the legal process may be abused. The chapter proceeds to consider the literature on regulation, it's applicability to litigation funding and the interests of stakeholders. Of major concern is the ability of a litigation funder to pay the costs of a winning defendant, which can be reframed as a question regarding the solvency of the litigation funding company.

Most people would expect a primary source of information on litigation funding to be the annual reports and accounts of the litigation funding companies. Unfortunately, many of the capital funds of existing litigation funders are based off-shore in tax efficient locations with minimal public reporting requirements and the filed accounts of the on-shore management companies of these capital funds reveal next to nothing about the litigation financing activity of the entity as a whole[1]. Fortunately, there are a few publicly quoted litigation funding companies and in chapter 3 two of these entities from the UK and two from Australia provide the illustrative data for a study of the accounting regulation of litigation funding companies from the perspective of the performance seeking investor. Despite regulation, chapter 3 will show that there are different permissible accounting treatments of litigation funding contracts and the timing of reporting the accounting profits and losses arising. The conclusion reached is that litigation funders have too much choice in the way they report and disclose information and what they do report and disclose is deficient in meeting the needs of investors. In order to address these shortfalls either more accounting rules on recognition and disclosure, or formal regulatory oversight may be appropriate.

Chapter 4 is empirical and considers whether the market reacts to information made public as predicted by the efficient market hypothesis[2]. Drawing on the databank described in section 3 below and using event study methodology[3] I examine investor reaction to market announcements, as measured by changes in share price in order to determine whether the market works well or whether some form of regulatory intervention is appropriate.

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1 Harbour Litigation Funding Limited is probably the most experienced litigation funding company in the UK and has over £180 million of capital available (http://www.harbourlitigationfunding.com/ viewed 14 August 2012). The annual report and accounts for year to 30 December 2011 say nothing about the performance of litigation funding as an activity and simply reveal that the total corporate income of £828,141 came from advisory services to Harbour Advisors Cayman Limited a company in which two of the founders are shareholders.

2 According to Sewell (2011, pp 3-4), Fama (1965, p.90) was the first to define an 'efficient market' and the term 'efficient market hypothesis' is attributed to Roberts (1967).

3 Mackinlay (1997) provides a brief history which dates event studies back to at least 1933.

Finally, in chapter 5 I draw together the various threads regarding the regulation of commercial litigation funding developed during the course of this work and provide my conclusions.

1 Research Background

During a recent House of Commons debate on litigation funding it was observed that "*The man in the street needs to have access to the law or else he is disenfranchised from society*" (UK Parliament, 2011). Access to justice[4] is regarded as a basic human right[5] and is essential for the economic development of nation states (Barendrecht, 2009; Kaufmann, 2003). Without genuine access to the courts for all members of society, there is a possibility that society may become exploitative as some elements ignore the law with relative impunity in order to gain an advantage (Neuberger, 2013).

There are differing views about the meaning of 'justice'. To economists justice is a system for maximizing the wealth of society (Posner, 1973) but there are alternative theories, for example, respecting freedom of choice and promoting virtue (Sandel, 2009). Whether systems of adjudication should be evaluated solely against an efficiency standard is questionable (Gross, 1987). Access to justice needs to be more than a formal right or philosophy - there also needs to be an effective access to a legal process with 'equality of arms'[6].

Furthermore, despite the doctrine of *stare decisis*, the law is not static in common law jurisdictions. It is argued that judicially generated law is more efficient at generating

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4 Grossman and Sarat (1981) observed that merely speaking about access to justice is to acknowledge a gap between the citizens and the law.

5 The Human Rights Act 1998 gives legal effect in the UK to the fundamental rights and freedoms contained in the European Convention on Human Rights.

6 Although historically a requirement in trial-by-battle, the modern usage of the term 'equality of arms' is attributed to European Law (Bingham, 2010; Silver, 1990). The term arose in the European Court of Human Rights and refers to the principal that legal procedure must not disadvantage one party i.e. each party should have a reasonable opportunity to present his/her case under conditions that do not place him/her at a substantial disadvantage vis-à-vis his opponent. This principal extends beyond Military tribunals (e.g. *Engel v The Netherlands (No 1)* (1976) 1 EHRR 647 at para.91) to all areas of law including cases bought under competition law against commercial companies (e.g. *Imperial Chemical Industries v Commission of the European Communities. (Competition)* [1995] EU ECJ T-36/91). The principle is embodied in the overriding objective of the UK Civil Procedure Rules - "*Dealing with a case justly includes, so far as is practicable – (a) ensuring that the parties are on an equal footing*" (CPR, 2011, Part 1.1(2)(a)).

rules than legislation (Rubin, 1977), but this will lead to greater uncertainty for litigants until the rule is clarified (Fon et al., 2005).

1.1 Dispute resolution and litigation

Disputes can be resolved through a consensual procedure e.g. negotiation and mediation or by an adjudicative procedure e.g. arbitration and litigation. Moving from one type of procedure to another is common e.g. failure in negotiation results in arbitration or during the course of litigation the court orders mediation[7]. Most disputes are settled without resort to litigation and consequently litigation can be seen as a failure of resolving a dispute by other means.

The possible outcomes of justiciable disputes are wide ranging and the paths to those outcomes can be convoluted (Genn, 1999). The financial outcome of a successful claim comprise a) damages in accordance with the principle of *restitutio in integrum*[8], b) statutory interest for the period between the date of the claim and the date of the final court hearing[9], and c) recovery of a proportion[10] of legal costs[11]. Although the outcomes of agreement, adjudication and abandonment can be arrived at without the

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[7] The term 'litigation' can mean both 'the taking of legal action by a litigant' and 'the field of law that is concerned with all contentious matters' (Banham-Hall et al., 2009). Litigation' commences with the issuing of a claim form to the court. In this work, I use the term litigation in its wider meaning which includes pre-action activity before a formal claim is issued.

[8] i.e. full compensation for the losses suffered. In tort the concept is to put the claimant back in the position he would have been had the tort not taken place. There are constraints e.g. remoteness of damage and the duty to mitigate. Damages may be reduced where the claimant has contributed to the loss. Where no financial loss has been caused 'nominal damages' may be awarded. The principle is now being compromised as a result of damages having to be used to meet some costs, e.g. uplifts in conditional fees and damages based agreements.

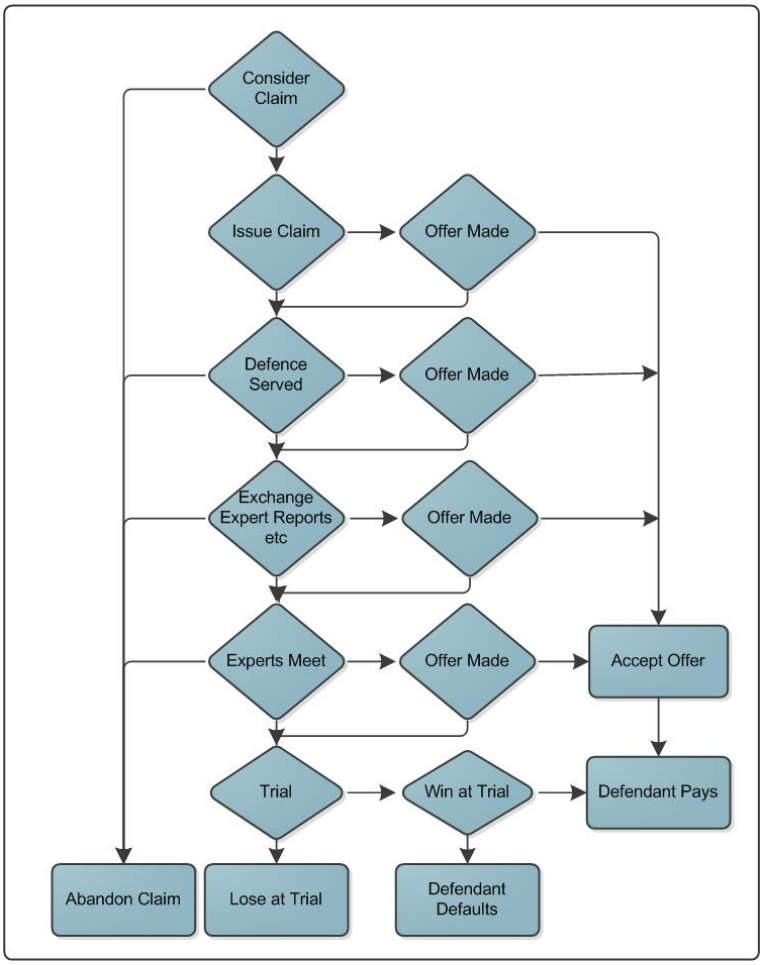
[9] Interest prior to the claim can form a head of loss within the damages computation. The statutory interest rate has been 8% simple since 1 April 1993 (prior to which it was 15%). In the current economic climate the rate looks high. The Law Commission (2004) report and the Scottish law case *Farstad Supply AS v Envirocco Limited* [2011] CSOH 153, provide a useful guide to the principles in both England and Scotland.

[10] The 'conventional wisdom' is that 60-75% of the costs incurred are recoverable but the variation can be vast (Addleshaw Goddard, 2008).

[11] The award of costs to a successful party is perceived in law as restorative justice i.e. an indemnity, not a punishment of the unsuccessful party *Clarke & Chapman v Hart* [1858] at 1457, *Cilli v Abbott* [1981] FCA70, *Latoudis v Casey* 170 CLR 534 at 543 and 567. Rowe Jr (1982) identified six rationales that justified fee shifting. The rules on cost allocation are essentially concerned with *who* should pay, not with *how much* should be paid. The costs rules are used to serve public policy (e.g. improving access to justice and improving efficiency of the justice system). See analysis by LeBel J at VI.A(2) in the Canadian Case: *British Columbia (Minister of Forests) v Okanagan Indian Band* [2003] 3 SCR 371.

involvement of lawyers, litigation[12] implies their involvement and consequently the presumption is that some form of legal consultation will follow the event that gives rise to the dispute. Caution is required in presuming that taking cases away from courts is a positive outcome, as resolution of a dispute need not mean that both parties are satisfied that the outcome is appropriate or just. As Owen Fiss (2009) observed *"All we can presume of a settlement is that it produces peace - often a very fragile and temporary peace - and although peace might be a precondition for the achievement of justice, it is not justice itself".*

Figure 1 Illustration of litigation process



[12] The court encourages litigants to resolve their differences without resorting to litigation by considering various forms of Alternative Dispute Resolution ('ADR'). Furthermore the exchange of information regarding the issues involved is required by Pre-Action Protocols ('PAP'). Dispute resolution activity by lawyers prior to issuing a claim is not technically 'litigation' but is commonly funded by 'litigation funders'.

The procedure to be followed in the English civil court system is governed by the 1998 Civil Procedure Rules and amendments ('CPR'). Litigation tends to progress according to a sequential process, a simplification of which is depicted in Figure 1.

Discussion on settlement and offers can be made at any stage and there may be other process steps e.g. interim hearings[13] to determine preliminary issues, and subsequent appeals. Although information is revealed as the process progresses, uncertainty of the outcome over time is a key issue. Litigation can be viewed as a strategic game where the decisions of one party impact the response of the counter party. The 'English rules' of litigation are that the losing party pays the costs of the winning party which gives rise to the situation whereby the manner in which costs are incurred becomes a key part of the litigation strategy (Macey-Dare, 2007).

The balance of power between the disputing parties is fundamental to the negotiating position with repeat players having a number of advantages over 'one-shot' players (Galanter, 1974). Defendants claim they are forced to settle frivolous lawsuits to avoid significant litigation costs (Bebchuk, 1988; McMillian, 2007) or to limit class action damages[14] (Alexander, 1991; Hay & Rosenberg, 2000; Silver, 2003) whereas plaintiffs argue that they are forced to settle at undervalue because defendant tactics will exhaust their limited financial resources (Fiss, 1984; 1993; Galanter, 1974; Hadfield, 2005). Settlement in such cases is not determined by the legal merits of the case but by the imbalance of bargaining power between the parties. In consequence the ideal legal process has to (1) appropriately resolve imbalances of power; (2) minimize agency costs; (3) ensure access to courts (Fiss, 1984; Moffitt, 2009).

1.2 Financing litigation

Access to Justice through the legal system is costly and can act as a barrier to those who need to protect their rights[15]. The legal process is full of risk and uncertainty

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[13] Previously called interlocutory hearings.

[14] Such settlements have been referred to as 'Blackmail settlements' by US 2nd circuit Federal Appeal Court Judge Henry J Friendly (1973 p.120). See also cases *Castano v American Tobacco Co*. 84 F.3d 734, 746 (5th Cir 1996) and in *Re. Rhone-Polenc Rorer Inc*, 51 F.3d 1293, 1298 (7th Cir. 1995).

[15] Gruodyté & Kirchner (2014) provide an analysis of the contribution of the European Charter on Human Rights to the right to legal aid.

because in making the decision to initiate a dispute it is often impossible to predict accurately when the issues will be resolved, whose arguments will succeed[16], what the costs will be and whether at the time of conclusion the losing party will be judgment proof[17]. Where predictions are made they are likely to suffer bias as a result of lawyer over-confidence (Loftus et al., 2010; Loftus & Wagenaar, 1988). Significant risk coupled with a costly dispute resolution process may deter disputants from seeking redress within a legal framework and thus weaken the deterrent effect of the law (Fiss, 1984).

In recent years, various sources of capital have emerged as a means of financing litigation and redressing imbalances of power. The most recent form to have developed is said[18] to be third party funding ('TPF') but in reality TPF's history is far older[19]. A third party funder is somebody who agrees to fund in whole or in part the provision of dispute resolution services to another person, in exchange for remuneration determined as a proportion of the settlement amount if the case is won and nothing if the case is lost. This wide definition captures many funders of litigation including close relatives, insurance companies, banks, legal aid, trade-unions etc. but in this paper and elsewhere the term is used more narrowly to refer specifically to specialist companies who have no pre-existing relationship with the disputant and whose primary business objective is the funding of other people's

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[16] A sample of 481 US lawyers were asked to specify the minimum goal in a case set down for trial. Analysis of the trial outcomes showed that overall the lawyers were overconfident in their predictions and calibration did not increase with years of experience (Goodman-Delahunty et al., 2010).

[17] Judgment proof is a phrase that refers to all persons against whom judgments for monetary recovery are of no effect e.g. as a result of insolvency, or because insufficient assets are in the jurisdiction, or because of statutory protection of certain assets.

[18] E.g. Steinitz - "*The new industry, referred to herein as 'second-wave litigation funding', is populated by institutional investors ... It was preceded, however, by approximately a decade in which smaller, less reputable firms launched litigation-lending businesses, a practice referred to as 'firstwave litigation funding*" (Steinitz, 2011, p.1278). Also "*Third-party financing, as the term is typically used, is fairly new in the United States. However, it is gaining ground in other common-law countries, most notably in Australia (whose third-party litigation finance industry has matured over two decades) and England and Wales (where the decade-old market has rapidly developed in the last three to four years)*" (McGovern et al., 2010).

[19] TPF is champerty which has a long history. A subset of commercial litigation cases funded by third parties have been considered by the courts and include *Ward v Aitken & other*s; *Re Oasis Merchandising* [1996] EWCA Civ 689 which considered a 1991 court approved TPF agreement.

litigation for profit. The core business of a litigation funder is to speculate on the uncertainty of litigation in return for a promised share of the final proceeds. Although litigation funding originated as non-recourse financing to facilitate litigation, the product offerings have become broader and more diverse as funders leverage their ability to evaluate and monetize a contingent litigation asset[20].

Litigation funds are analogous to venture capital funds in that both are forms of finance characterized by extreme uncertainty, information asymmetry, and agency costs (Steinitz, 2012) but litigation funding also shares characteristics with hedge funds. There is no universally agreed definition of a hedge fund, however a frequently used description is "*any pooled investment vehicle that is privately organised, administered by professional investment managers, and not widely available to the public*". The common characteristics between a hedge fund and a litigation fund being: (a) they are organised as private investment partnerships or offshore investment corporations; (b) pay performance fees to their managers; and (c) have an investor base comprising wealthy individuals and institutions and a relatively high minimum investment limit. Hedge funds also exhibit characteristics e.g. they use a wide variety of trading strategies involving position-taking in a range of markets; and employ an assortment of trading techniques and instruments, often including short-selling, derivatives and leverage; which are not shared (FSA, 2002, §3.1-3.2).

Daníelsson et al (2005) introduce their survey on 'should hedge funds be regulated' by saying "*When hedge funds remained niche players, their special regulatory status raised few concerns*" and the same can be said of litigation funding. Estimates used by the FSA indicate that funds under management in European hedge funds in 2005 were $250bn, a fivefold increase on 2000, and more regulatory scrutiny was appropriate because of the risks (FSA, 2005). Whilst the litigation funds under management in the UK are probably less than $1b, it is useful to consider in section

[20] An example is Burford Capital Limited who provided $15m through a full recourse corporate debt facility at a 12% capitalized interest rate plus a proportion of an award to an arbitration claim. Burford earned an $11m profit on the deal generating a 73% return and an IRR of 34% (Burford,2014a).

4.2 of chapter 2 the approaches that financial regulators adopt, as they pose a regulatory risk to every litigation funder.

The outcomes for TPFs can be spectacular – in a well-known Australian family dispute over iron ore royalties[21], IMF (Australia) Ltd[22] ('IMF') advanced A$1.9m and received revenue of A$21.1m less than three years later when the case was settled out of court (IMF, 2008a, p.16; Maiden, 2005). In contrast, IM Litigation Funding Limited ('IMFL') funded a liquidator's £90m professional negligence claim against accounting firm Moore Stephens for not detecting a substantial fraud (Tait, 2007). Proceedings had commenced in December 2006 but it was not until July 2009 that the preliminary issue[23] to have the case struck out[24] was finally resolved in the defendant's favour with a controversial[25] House of Lords 3-2 majority[26] opinion thus ending the negligence claim in its entirety. Although the claimant's solicitors were acting on a tiered fee arrangement[27], IMFL were required to meet the costs of the winning defendants in addition to the claimant's costs and disbursements. The costs of this one case for IMFL are put at £2.5m. Had the case succeeded at a final trial, and one presumes after expending more funds, IMFL stood to gain in excess of £40m (Robins, 2010, pp.6,8). Earlier in the proceedings security for costs of £700,000 had been provided but the defendant's costs would have been substantially in excess of this amount, and at the time concerns were expressed as to whether IMFL would be able to honour its obligations (Dowell, 2009; Pirozzolo, 2009). Had IMFL not fulfilled its obligations the adverse costs liability would have reverted to the claimant,

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[21] See *Wright & Anor v Wright & Anor* [2002] WASCA 319 for more particulars.

[22] IMF (Australia) Ltd announced on 29 November 2013 that it was to be renamed Bentham IMF Limited (IMF, 2013a).

[23] Had the House of Lords found for the claimant the case would have returned to the lower court for trial for proof of the normal issues of causation, damages etc.

[24] In litigation applications can be made before the main trial in order to dispose of preliminary issues e.g. should the claim be struck out as being invalid or security for costs if there is some doubt as to the ability of claimant to meet any adverse costs liabilities.

[25] See for example the judgement of the Chancellor of the High Court in *Bilta v Nazir* [2012] EWHC 2163 (Ch) that the decision does not apply in conspiracy cases.

[26] *Moore Stephens v Stone & Rolls* [2009] UKHL 39.

[27] i.e. a higher fee would have been payable had the case been won.

which illustrates that whilst litigation funding is a risk sharing mechanism it does not relieve the claimant of all risk.

The risks do not end when a case is won as both claimant and funder need to be paid. In the multimillion divorce case of Michelle (MY) and Scott Young (SY) MY claimed that SY was worth at least £400m and she was entitled to half. SY claimed he was bankrupt. The litigation was acrimonious and expensive and described[28] by Moor J in the following terms *"In many respects, this is about as bad an example of how not to litigate as any I have ever encountered"*. MY's costs amounted to over £6.4m as a result of changing lawyers and experts. Three different firms provided litigation funding totalling £4.1m over the seven year life of the dispute. The litigation funders are said to be taking action against MY for recovery of amounts owed to them because although the judge awarded MY £20m plus costs she asserts she has not received any money (Gibb, 2013; Sawer, 2015).

In summary, litigation funding has potential for generating high returns but there are also great risks involved due to the high investment and the great uncertainties over cost, income, duration and case determination. Accounting for high risk projects is always difficult especially when the payer is not in control of the costs. Litigation provides further challenges because of the potential for a large additional liability if a case is lost. Even a decision to abandon a case by accepting that sunk costs have probably been lost, may still result in further costs being payable for the counterparty's costs. Consequently, even though the prospects of success have reduced over the period of litigation, it may be rational to continue to pursue a claim with an uncertain future profit in order to avoid a certain accounting loss now[29].

1.3 Litigation funding entities

The legal form of a litigation funder generally takes one of two forms. Some funders are established as limited liability companies whose shareholders contribute the capital that is invested in litigation. Such companies may be public companies and

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[28] *Young v Young* [2013] EWHC 3637 (Fam) §3.

[29] Despite regulation, chapter three will show that there are different permissible accounting treatments of litigation funding and the timing of reporting accounting profits and losses.

quoted on a securities exchange. Notable examples being Bentham IMF Limited ('IMF') and Hillcrest Litigation Services Limited ('HLS') - both of whom have full listings on the Australian Securities Exchange ('ASX') and Burford Capital Limited ('Burford') and Juridica Investments Limited ('Juridica') which are listed on the London Stock Exchange's AIM market and incorporated in the Channel Islands. The alternative model is the private fund typically based in a tax effective off shore domain administered by an on shore management company who charge an annual fee and are paid a small percentage of the funds profit.

Litigation funders have been likened to insurance companies and whilst there are similarities such as indemnification of clients against liability and diversifying risk through portfolios there are also substantial differences in that litigation funders are less able to limit their exposure through warranties and exclusion clauses, indemnity periods and amount, limitation of coverage risks, reinsurance etc. Insurers often act for defendants[30] whereas litigation funders usually act for claimants. Furthermore, insurance companies are subject to formal regulation and supervision whereas litigation funders are not (Silver, 2014).

Litigation funders have also been likened to venture capitalists in that both focus on narrow markets and engage in high risk investments. However, the exit route for litigation funders is less obvious and litigation funders have less control over their investment than venture capitalists. Similarly, there are common features with hedge funds - who sometimes dabble in litigation funding - but litigation funders are unable to short their position in the way hedge funds do and the investment period tends to be much longer. Possibly the most important differentiating feature of litigation funding is the tri-party relationship between litigant, his lawyer and the funder which introduces additional principal and agent complexity over information sharing and litigation control (Scrantom, 2015; Steinitz, 2012).

[30] It is arguable that when insurers act for claimants under subrogation rights they are in reality primarily acting for themselves.

1.4 The litigation funding market

Garber (2010) divided the US Alternative Litigation Financing[31] industry into three segments[32] active on the plaintiff side:

1. consumer legal funding 'non-recourse civil litigation advances'[33] to individuals, usually personal-injury plaintiffs;
2. loans and lines of credit for plaintiffs' law firms; and
3. investments in commercial (business against business[34]) lawsuits.

This work is restricted to Garber's third category as commercial litigation funding is the common form of third party funding in the UK and Australia. Justice Allan in the New Zealand case of *Waterhouse v Contractors Bonding Limited*[35] classified litigation funding cases into four categories:

1. representative proceedings;
2. proceedings brought by liquidators;
3. cases involving the assignment of a cause of action to a third party; and
4. cases where a sole plaintiff is backed by a litigation funder.

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[31] Although Garber (2010) proposed the term *alternative litigation financing* and the abbreviation 'ALF' for the financing by entities other than claimants, defendants, their lawyers and defendant insurers, I prefer to avoid the ALF abbreviation as it is not in common usage outside the USA and is easily confused with the Australian company 'Australian Litigation Fund Pty Ltd' which was established in 1998 to provide litigation funding. Australian Litigation Fund Pty Ltd was renamed LCM Litigation Fund Pty Ltd in April 2008.

[32] Garber confines his focus to these three forms of litigation financing and ignores other non-traditional/ alternative forms such as assignment of legal claims in bankruptcy proceedings and pooling of resources by claimant lawyers in group actions (Anon., 1996a; 1996b).

[33] This terminology is embedded in some state legislation e.g. Ohio, R.C. 1349.55 Non-recourse civil litigation advance contracts. The purpose of these advances is usually to finance living expenses not litigation. The litigation risk to the funder will be low - less than 5% of cases are lost (Merrill, 2003) and interest rates are high possibly to the extent of the pricing be predatory as opposed to risk based (Shaltiel & Cofresi, 2004) .

[34] The term 'business' is also imprecise but includes business owners be they individuals, or other corporate entities. Shareholders are typically considered 'business claimants' as opposed to 'retail claimants' in the same way as 'retail clients' are distinguished from professional 'clients' under the EU's Markets in Financial Instruments Directive (2004/39/EC).

[35] *Waterhouse v Contractors Bonding Limited* HC Auckland CIV 2010-404-3074 [2010] NZHC 2337, [19].

The first category of funding representative proceedings[36] is more relevant to Australia than the UK due to the differences in building a representative class of claimants[37]. The second and fourth categories are the common form of litigation funding in the UK. The third category is limited in the UK due to historical restrictions on the assignment of a 'chose in action' which savour of maintenance or champerty (Chitty, 2004, §19.048-19.052).

Although TPF is present in many jurisdictions, particularly those who follow the Anglo-American form of law, there are differences as well as common practices and ethical challenges (Barker, 2012; Hodges et al., 2010b; Kalajdzic et al., 2012). Despite the UK being host to three companies[38] whose primary investment interests are in US litigation, some US scholars are anxious to categorise TPF in the US as a subject which has little to learn from the UK and Australian experience (Steinitz, 2011, note 7 & 17)[39].

The extent to which available capital is applied efficiently is determined by the economic incentives to the actors, whereas the ability to utilise available capital is a legal issue. The extent to which available capital can be utilised to fund litigation is restricted by legal, ethical and regulatory issues which change over time. How the investor's return on investment capital is measured and reported is determined by accounting rules and conventions which are also subject to change.

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[36] Representative proceedings are sometimes incorrectly referred to as class actions. In UK law there is no formal doctrine of class actions and the term is not in general use within the legal profession but it is commonly used to mean an aggregated claims procedure on behalf of claimants who are not individually identified (Mulheron, 2005a; 2005b; 2011). In UK law there are various forms of multi-party action under part 19 of the CPR. How multi-party actions are managed and the relative roles of the courts and the litigating parties have been hotly debated for years (Hodges, 2001, p.14). The form of the multi-party action has implications as regards who bears the costs of litigation.

[37] In Australia, Canada and the United States the class can be assembled on an opt-out basis (i.e. prospective claimants do not have to consent to participating in the action but can withdrew) whereas the UK is currently opt-in (i.e. prospective claimants have to make a positive action to be part of the action and share in the outcome) although the CJC recommended both methods (Morabito & Waye, 2011; Sorabji et al., 2008).

[38] Juridica Investments Ltd, Burford Capital Limited, Fulbrook Capital Ltd.

[39] See also sessions at RAND conference 21 May 2010 'Worldwide Developments in Alternative Litigation Finance: Lessons for the U.S.?'

1.5 Regulation

Government regulation is changing the litigation landscape not only with the Legal Aid Sentencing and Punishment of Offenders Bill ('LASPO') which recently passed through parliament, but also with secondary legislation. According to a recent Lord Chief Justice, civil legal aid "*has reduced to virtually non-existence*" (Judge, 2009) and it will no longer be possible for any commercial claim to be financed with civil legal aid[40]. In legalising conditional[41] and contingency fees[42] for lawyers, and encouraging legal expenses insurance[43] government has successfully transferred costs and risks from the public sector to the private sector but there have been unintended consequences.

Some commentators in the media[44] talk about a "claims compensation culture"[45],

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[40] The competition law case of *Arkin v Borchard* [2003] EWHC 2844 (Comm) was commenced using legal aid but that was later withdrawn (Singleton, 2002).

The beer cartel case of *Crehan v Courage* (later Inntrepreneur) was a representative action which was litigated all the way to the House of Lords using legal aid. The defendant was successful and claimed against the Legal Services Commission ('LSC') £888,784.54 (the claimants costs to this stage were £2.5million) in respect of costs in the Court of Appeal and a further £1,171,544.25 in respect of costs incurred in the House of Lords. (N.B. the LSC is protected from adverse costs order at first instance). At the time of the costs hearing the Lord Chancellor had limited funding for all future multi-party actions to £3 million per year but this was not relevant to the court who awarded the defendants their costs in the normal manner (*Crehan v Inntrepreneur Pub Co. Ltd & Anor* [2007] EWHC 90081 Costs).

[41] Introduced into the UK by the Conditional Fee Agreements Order 1995, SI 1995/1674 and broadened by the Conditional Fee Agreements Order 1998, SI 1998/1860, Conditional Fee Agreements ('CFA'), commonly known as 'no win, no fee' agreements, are available in all cases other than family and criminal cases. The lawyer shares with the claimant the risk of losing, by not charging a fee if the case is lost and charging an uplift on normal fees if the case is won. The claimant is still required to meet the costs of disbursements and bear the adverse costs if the case is lost. The uplift that can be charged is set by regulation and varies by jurisdiction. In the UK the CFA uplift must not exceed 100% of the normal fee whereas in Australia the upper uplift limit is 25% but it varies by state (e.g. NSW the limit is zero (Legal Profession Act 2004 (NSW) §324(1)).

[42] Contingency fees are where the lawyer's fee is calculated as a percentage of the damages and is only paid on success. In the UK such fees have until recently only been legal for non-contentious work but LASPO makes them legal for contentious work in commercial cases. As a result of the negative reaction to US litigation conducted on contingency fee basis the preferred term in the UK is Damages Based Agreements ('DBA').

[43] Legal expense insurance covers the costs of litigation (including adverse costs but not the damages) and may be Before-The-Event ('BTE') or After-The-Event ('ATE') that gives rise to the claim.

[44] E.g. "*Ridiculous compensation culture claims and pay-outs burden on tourist attractions*" (Narain, 2012) and "*David Cameron to end 'compensation culture' for whiplash*" (Mason & Millward, 2012).

[45] Origin of the phrase attributed to B Levin's article 'Addicted to Welfare' in the *Times*, 17 December 1993 (Hand, 2010, n.4).

without defining what is meant by the phrase[46] or answering the more objective questions as to whether the number of cases being brought is at an optimal level, is the legal process more efficient as a result of the changes, and whether the revised social cost of litigation is appropriate. The empirical evidence does not support the hypothesis of burgeoning litigation but that has not reduced the fear which can result in adverse social consequences (Williams, 2005). As TPF is more concerned with commercial litigation than 'ordinary' consumer claims[47], the popular press has shown relatively little interest unless celebrities are involved[48]. Nevertheless political and other concerns have been influencing the development of third party funding[49].

1.6 Jackson Review

In his review of Civil Legal Costs, Jackson LJ (2010) expressed his view that, in principle, third party funding is beneficial and should be supported, for the following reasons:

(i) TPF provides for some parties, the only means of funding litigation. Thus TPF promotes access to justice.
(ii) it is better a successful claimant to recover a substantial part of his damages than to recover nothing at all.

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[46] Morris (2007) describes the phrase 'Compensation culture' as an amorphous term used in different contexts to referring to a variety of issues including the quantum of compensation, the expansion of tort law and the propensity to initiate a claim.

[47] Kritzer (1990) described the 'bread-and-butter' work of America's civil courts as 'ordinary' i.e. modest cases such as injuries from Road Traffic Accidents ('RTA'), disputes with contractors regarding completion of work, allegations of discrimination in employment. These so called 'ordinary cases' where damages are £25,000 or less are conducted by 'ordinary lawyering'. By this standard the commercial cases on which this work is focussed are far from 'ordinary' and may be thought of as 'extraordinary' and in some cases 'mega'. Sackville J defined 'mega-litigation' in the Australian case of *Seven Network Ltd v News Ltd* [2007] FCA 1062 [2] as "*civil litigation, usually involving multiple and separately represented parties, that consumes many months of court time and generates vast quantities of documentation in paper or electronic form. An invariable characteristic of mega-litigation is that it imposes a very large burden, not only on the parties, but on the court system and, through that system, the community*".

[48] E.g. Elvis Presley's estate suing Arista Music for royalties from ringtones (Baynes; Gardner, 2011) and the dispute over £400m in the divorce of Michelle and Steve Young (Johnson; Martin, 2009).

[49] Lord Thomas of Gresford in proposing an amendment to LASPO said "*My purpose was to highlight the insidious advance of third party litigation funding. ... So far it has reached commercial litigation, with which I have no quarrel. It has also got into family law and I shall be extremely concerned if it were to get into personal injury cases*" (United Kingdom Parliament, 2012b).

(iii) the use of TPF does not impose additional financial burdens upon opposing parties.

(iv) if success fees under CFAs become irrecoverable TPF will become even more important as a means of financing litigation.

(v) TPF tends to filter out unmeritorious cases, because funders will not take on the risk of such cases. This benefits opposing parties.

Having decided that TPF was beneficial, Jackson then made recommendations having considered:

(i) Whether third party funders should be formally regulated or should subscribe to a voluntary code. He concluded that providing a satisfactory voluntary code was established and that all funders subscribe to that code, then subject to his concerns about capital adequacy requirements, he saw no need for statutory regulation at that stage as the parties who use third party funding are generally commercial or similar enterprises with access to full legal advice. There was a caveat however, that if the use of third party funding expanded, then full statutory regulation may well be required.

(ii) Measures to ensure the capital adequacy of third party funders. Jackson's initial view was that that capital adequacy was a matter of such pre-eminent importance that it should be the subject of statutory regulation and that the natural body to undertake that regulation would be the FSA. The FSA would be unable to deal with capital adequacy alone and would undertake full regulation of third party funders, the costs of which would need to be outweighed by the benefits. The FSA, was not aware of any significant risk to consumers and given the current low volume of TPF and the fact that most clients are commercial parties with access to full legal and financial advice, Jackson did not think it appropriate to recommend full regulation by the FSA at that time. In the short term he thought that capital adequacy requirements were best dealt with within the voluntary code but in the long term, the matter must be revisited. Regard had to be had to the nature of the funders entering the market, the nature of the cases and the nature of the claimants

that they are funding. If funders supported group actions brought by consumers on any scale, then that would be a ground for seriously re-considering the question of statutory regulation of third party funders by the FSA.

(iii) Liability for adverse costs. Jackson recommended that third party funders should be exposed to liability for adverse costs in respect of litigation which they fund. The extent of which should be a matter for the discretion of the judge in the individual case. The funder's potential liability should not be limited by the extent of its investment in the case.

1.7 Events in litigation funding post Jackson

Since the Jackson reports, three separate incidents highlight the limitations of the existing self-regulated litigation funding regime.

Incident 1

The first involves former ALFEW member Argentum Capital Limited (ACL) which was listed on Channel Islands Securities Exchange ('CISE'). Following an investigation by Offshore Alert[50] it was alleged that ACL was ultimately funded in the Cayman Islands by Centaur Litigation which was under the control of Brendan Terrill who was conducting a £90m Ponzi scheme (Beioley, 2014b; Marchant, 2014). The CISE delisted the company and ALFEW issued a notice stating that it had put a series of important questions to the management of Argentum about the matters reported in the press. During these enquires Argentum offered to withdraw from membership which the Board accepted (ALFEW, 2014b). ALFEW has no ability to impose any sanctions on the company and its management, other than accepting resignation from the association. Neither ALFEW nor any other institution has established an indemnity fund and consequently, when the funder collapsed as a result of the capital source being of dubious origin, investors lost their money. Despite the best endeavours of ALFEW, solvency of third party funders remains a key concern.

[50] http://www.offshorealert.com (Viewed 11 April 2015).

Incident 2

The source of capital used for litigation funding was also an issue in the second incident known as *Excalibur*[51] which was funded from the Cayman Islands and ultimately resulted in the lawyers working for free and court imposed sanctions being ineffective. The funders in this case were not members of ALFEW but the litigation did take place within the UK. If further regulation of litigation funding is to take place, then consideration needs to be given to which activities and individuals should be captured in that regulatory net. Members of ALFEW provide some transparency on the sources of capital and the structure of the funding entities, but as Mulheron (2014b, p.577) stresses, the 2014 ALFEW Code revisions "*do* ***not*** *expressly provide contractual remedies to a Litigant* ***against the Funder*** *if the Funder's Subsidiary does not maintain capital adequacy*".

Incident 3

The Financial Services and Markets Act section 59 requires individuals who carry out regulated activities and exert significant influence within the insurance and banking industries to be approved and registered. Litigation funding however is not covered in the same way. A case in point was the Axiom Legal Financing Fund ranked by BarclayHedge as 3rd best in the category of fixed income – asset backed lending funds in 2011 (Axiom Fund, 2012a). Axiom's fund manager was Tangerine Investment Manager which won Hedgeweek's award for Best Credit and Lending Fund Manager in 2011 (Axiom Fund, 2012b). In 2012, Tangerine planned to increase its funds to £450 million and trade worldwide (Vallikappen, 2012). The company was founded by Timothy Paul Schools, a solicitor who had been a director of the failed 'Life Repair Group' and appeared before the solicitors' disciplinary tribunal (SDT) on two occasions[52] as a result of their activities. Significantly the SDT found that he had "*entered into a scheme for the funding of cases which had proved not to work*". Feeder funds for Axiom were based in the Cayman Islands and in August 2012,

[51] *Excalibur Ventures LLC v Texas Keystone & Ors* [2013] EWHC 2767 (Comm); [2013] EWHC 4278 (Comm) and (Rev 2) [2014] EWHC 3436 (Comm). For further background information see Axo (2012), Beioley (2014a; 2014c), Cain (2013), Dennys (2012), GKP(2014) and Smith (2013).

[52] See SDT applications 9567-2006, and 10048-2008.

OffshoreAlert reported:

> *"The head of a Cayman Islands fund group that claims to manage $160 million, promotes its investments as "low risk" and boasts of "consistent" 12% net annual returns for investors is being prosecuted for alleged professional misconduct in the United Kingdom. British attorney Tim Schools faces 11 allegations, including that he "failed to act with integrity" and "failed to act in the best interests of his clients"."*
> (Marchant, 2012)

Schools appeared once again before the SDT and was struck off the roll (Solicitors Disciplinary Tribunal, 2014)[53]. Axiom was put into receivership on 12 February 2013.

These three incidents highlight issues that self-regulation has been unable to respond to and thus more formal regulation may now be required. Litigation funding is regulated by the courts and various courts around the world have deliberated and expressed opinions on litigation funding and the impact on investors, the funded party, counter-parties, the judicial system, and the funding companies themselves (see chapter 2 section 7).

2 Positioning the research

When legal rights are not enforced or guaranteed the outcome can be economically devastating (Cabrillo & Fitzpatrick, 2008, p.1). Government sees TPF as a means of facilitating private action to solve public problems. One example is the Office of Fair Trading ('OFT') who considers private action as an important part of an effective competition regime[54]. However, injured small and medium sized companies commencing a private action face significant barriers. This is detrimental not only to the claimants but also to the UK economy as the competition regime fails to deliver

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[53] On appeal (*Schools v Solicitors Regulation Authority* [2015] EWHC 872) the decision was upheld.

[54] On 23 May 2012 the government introduced to parliament the Enterprise and Regulatory Reform Bill 2012 which will create the Competition and Markets Authority ('CMA') and abolish both the OFT and the Competition Authority.

the productivity and competitiveness benefits that were originally contemplated. TPF is seen as an important source of funding to facilitate private action (OFT, 2007, p.5,35).

Unless the risks associated with complex litigation are understood and appropriately priced and delivered, government's aspirations may be significantly underachieved. Third party litigation funding of litigation is controversial[55], and there are calls for regulation[56] of the industry in both the UK[57] and elsewhere. TPFs are also subject to regulation in the same way as other business entities i.e. they must comply with regulations as regards accounting, health & safety, employment, competition etc. Responding to the risk and uncertainty of regulation is one of the many challenges facing litigation funders. Academic study of regulation has been conducted through a number of lenses e.g. economic (Peltzman, 1976; Posner, 1974; Stigler, 1971), political science (Levi-Faur, 2011) and discourse analysis (Black, 2002) but it is more accurate to see regulation as a field of study that operates between trans-disciplinary and inter-disciplinary conversations (Baldwin et al., 2010, p.12).

2.1 Aim of the research and the research questions

My research focus is the question:

> *How effectively are commercial third party litigation funders governed and/or regulated?*

and the subsidiary questions:-

- *What is the accounting treatment of litigation funding contracts?*
- *Do litigation funders disclose sufficient financial information to fulfil stakeholder needs?*
- *Does the market react to disclosure by litigation funders and the courts?*

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[55] e.g. Beisner et al (2009a) and Legg (2008; 2012).

[56] See Jackson (2010) Chapter 11 part 2 regarding calls for regulation from various parties. The form of regulation could be the formulation of specific rules of behaviour and the monitoring thereof, or simply supervision of TPF behaviour by an appropriate body.

[57] e.g. Parliamentary debates during the committee and report stages of LASPO (United Kingdom Parliament, 2012a; 2012b).

- *What concerns do other stakeholders in the litigation process have regarding third party funding?*
- *Are the concerns regarding litigation funding resolved by the existing regulations?*

2.2 Research contribution

Third party funding of litigation is a new phenomenon in academic circles and has prompted a number of academic conferences in recent years[58]. The existing literature on third party funding has been concerned with comparative studies of the various markets and considering the legal and ethical issues that may be involved. Hylton (2011) published a paper on '*The economics of third party financed litigation'* but few of the existing papers on commercial litigation funding are empirically based and those that are, with one exception, use surveys and interviews to collect data. The exception is Abrams and Chen (2011) who use case data provided by an Australian litigation funder. There is clearly a gap in the literature for empirically based economic research and there is an untouched gap as regards the financial regulation of litigation funding. The contribution of this research is to:

1) Augment and extend the existing literature by examining third party funding of heterogeneous high value, low volume cases as current literature tends towards homogenous, low value, high volume cases.

2) Assist investors, judiciary and other stakeholders to understand the limitations of the accounting records of litigation funding companies in order that they may be better placed to evaluate the risks of this nascent industry.

3) Assist regulators, policy makers and the judiciary to estimate the cost base of third party funders and assist them in preventing market failure. (In emerging markets one expects an increasing number of new entrants. If new entrants under-price it may lead to their demise. This is often an acceptable

[58] Erasmus (2009), ANU (2009), RAND (2009,2010), Oxford CSLS (2009,2010), Searle (2011), George Mason (2012), University Windsor (2013), and Columbia (2014) have all arranged conferences in recent years.

consequence of a free market, but the litigation funding market is effectively part of the legal system and consequently the 'fallout' from failure could be unacceptable publicly and politically).

3 Data collection

For the purposes of this work, the activity of every known third party litigation funder in the world has been monitored. Funder's websites have been visited periodically as one would expect, and in addition every available press release, market announcement and publication/ presentation of these firms has been mined for nuggets of information. Commentary in both the professional and public press has also been followed in the search for additional information. The legal cases involving litigation funders have also been followed closely and individual 'case records and notes' (example in Appendix 1) developed as a result of reading every order and judgement and in some cases exploring documents and other evidence filed with the courts. Structured, semi-structured and unstructured interviews have also been conducted with litigation funders in the UK, Australia, New Zealand, Canada and USA. The subject of litigation funding has also been discussed with numerous lawyers around the world. This unique information bank has proved useful to other academics in their own research (e.g. Barker, 2012, p.483, 488).

Chapter 2 Literature Review

1 Introduction

Regulation is costly in that it directly imposes compliance costs on firms and regulators and indirectly it has market impacts which can also be costly. Regulatory failure occurs when costs exceed benefits. However the measurement of costs and benefits can be both complex and difficult and requires an understanding of direct costs, externalities, market failures and the impact severity that would occur in an unregulated market (Oxera, 2006).

The economic theories of regulation fall into two, sometimes opposing, approaches. The first, the *public interest approach,* looks to regulation as a means of overcoming 'market failure' (i.e. where a free market fails to allocate scarce resources efficiently) whereas the second, the *private interest approach*[59], focusses on interest groups undertaking rent-seeking behaviour and the concept of regulatory capture. Both approaches have relevance to third party litigation funding and as the approaches have been extensively reviewed in the literature (e.g. Aranson, 1990; Hägg, 1997; Hantke-Domas, 2003; Hertog, 2010; Joskow, 2007; Mitchell & Munger, 1991; Viscusi, 2007) the discussion in section 2 is brief.

Litigation funding is seen as a new market mechanism for firms to dispose of litigation risk (Molot, 2009). In section 3, on the Regulation of entry, the issues of barriers to entering the market and other forms of market failure are considered further.

It is recognised that the relationship between the lawyer, litigation funder and claimant can lead to conflicts of interest and consequently, following a consultation paper, the Australian Securities & Investment Commission ('ASIC') issued a regulatory guide and warns "*While you must take responsibility for determining your own approach to*

[59] Posner identified three forms of the public interest approach which he called (a) the Marxists and the muckrakers, (b) the political scientists' formulation and (c) the 'economic theory of regulation' as proposed by George Stigler (1971) which is supported by Jordan (1972) and builds on the earlier work of Buchanan and Tullock (1962), Downs (1957a; 1957b) and Olson (1965).

managing interests that may conflict, in our view, if your arrangements are not consistent with the guidance and expectations in this guide, you are less likely to be complying with the obligation and will be exposed to a greater risk of regulatory action." (ASIC, 2012; 2013, [RG 248 22]). Regulation requires information on how people behave, how standards are fixed and measured, and effective sanctions (Shavell, 1984; 1993). Acquiring such information is costly and requires expertise. A substantial amount of the literature on regulation relates to the treatment of professions and whilst it may be debateable as to whether litigation funding is a profession[60], the managers[61] of these businesses are often professionally qualified as lawyers, accountants, bankers etc. and are obligated to their professional bodies' codes of conduct. In section 4, on the Regulation of conduct, I take a closer at how behaviour can be regulated *ex-ante* or *ex-post* and in section 5 I look at the Self-regulation of litigation funding specifically as this is the current position in the UK.

Section 6 is devoted to the regulation of solvency, as one of the major concerns of parliament, the judiciary and others is the solvency and capital adequacy of litigation funders. Daykin and Hey noted the limitations of assessing the financial strength of a general insurance company based on accounting concepts such as shareholder' surplus and underwriting and insurance profits. For the external observer even the most informative accounts had severe shortcomings. Measurement of incurred claims was difficult and making decisions on future strategy was problematic as a result of valuation issues. They were also critical that income and expenditure were recognised on an accruals basis rather than cash movement and there was considerable scope for fluctuating provisions, dependent upon the parameters employed. Assets valued at historic cost could create hidden reserves. Their proposed solution was modelling using the 'emerging costs paradigm' (Daykin & Hey, 1990, 174-9). How financial measurement is regulated impacts on definitions of solvency and consequently I also

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[60] The judge in *Arkin v Borchard Lines & Ors* (No.2) [2003] EWHC 2844 (Comm) described the funding company as a 'professional funding company' and used the term 'professional funders' to contrast with the 'pure' funders in *Hamilton v Fayed* (No2) [2002] EWCA Civ 665 where the funders were considered as benevolent and non-profit seeking.

[61] As to whether management should be a profession, see Khurana and Nohria (2008) response by Barker (2010) and ensuing debate at http://hbr.org/2010/07/the-big-idea-no-management-is-not-a-profession/ar/1.

comment on International Accounting Standards in section 6.

The law can be used to prohibit activities entirely or as a means of imposing boundaries. The use of regulation signals a toleration of the activity in question and is not an attempt to eradicate a risk but to manage it (Hutter, 2001, p.4). In the regulation of financial markets, the four basic instruments of law enforcement - civil liability, administrative sanctions, corrective taxation and criminal sanctions have been found to have decreasing cost to benefit ratios (Hellgardt, 2014). Traditionally, the funding of litigation has been regulated by the courts on a case by case basis and the third party funding of litigation has, with the passage of time, progressed from outright prohibition to toleration within limits. The extent of those limits is the subject of debate by politicians, the judiciary, the civil justice council ('CJC') and many other groups. In section 7, I review applicable law and the interests of various litigation funding stakeholders before drawing some conclusions in section 8.

2 Markets and market inefficiency

Economic theory predicts that in perfectly competitive markets, prices cover costs without excessive margin, consumers rather than producers control what is supplied, and inefficient producers are eliminated. The assumptions for a perfect market include: very many buyers and sellers so that suppliers are price takers; homogenous products/services; freedom of entry and that both buyers and sellers have perfect knowledge of the market. Very few, if any, markets fulfil these assumptions and the legal services and litigation funding markets are no exceptions as shown in Table 1.

Table 1 Comparison of markets for Legal Services and Litigation funding

	Legal Services	Litigation funding
Number of firms	Many but some geographical concentration of speciality	Few and concentrated in London
Freedom of entry	Restricted (licenced, cost of qualification, self-regulated ethics, state regulated conduct).	Unrestricted but subject to raising capital. Voluntary membership of self-regulated industry body.
Nature of product	Differentiated by family, genus, species e.g. civil and criminal; commercial and felony; etc.	Broadly similar but differentiated by pricing models and areas of speciality
Buyer knowledge	Often asymmetrical in seller's favour. Difficult to assess quality and compare costs.	Often asymmetrical in buyer's favour. Buyer is informed on contract terms, product is mostly fungible

2.1 Market inefficiency

The public interest approach assumes that inefficiencies in market equilibrium can be corrected by costless government regulation. Posner (1974) argues that this view and the reformulated view (that regulatory agencies are formed for good reason but are mismanaged) are both flawed because they ignore the fact that what is undesirable socially is often desirable to those establishing and influencing the regulation and additionally, regulatory agencies act reasonably efficiently but to attain legislator's inefficient goals[62].

Conversely it can be argued that regulation is desirable in order that external benefits (e.g. the proper administration of justice and legal certainty) are realised i.e. the marginal benefit to society of providing an appropriate quality service exceeds the marginal benefit to the direct consumer of that service (Stephen, 2008 p.1131).

2.2 Information asymmetry

In legal and professional markets, the prime threat to market failure is information asymmetry. Simply disclosing more information[63] may not solve the asymmetry as it requires understanding of what is disclosed, takes time and may incur interpretive costs or the hire of 'information intermediaries'[64]. The legal profession is not homogenous and there are essentially two professions – the corporate and the personal (Garoupa, 2008, p.470; Hadfield, 2000; 2008; 2010). Information asymmetry may be less prevalent in the commercial market as in-house counsel are equally qualified as their external lawyers, repeat purchasers and possibly better off without regulation (Grout et al., 2007; Zacharias, 2008). Armstrong and Sappington (2007) review the

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[62] Ehrlich and Posner (1974) likened legislators to a firm with extremely high production costs that increase with subject controversy.

[63] Disclosure of information is relevant to the shareholders and investors in litigation funders. The accounting and financial economics literature has reviews on information asymmetries and corporate disclosure (Healy & Palepu, 2001).

[64] A recent example of this in the USA was the 'predatory lending' for home loans. "*Federal law… is premised on a largely un-bounded rational actor model of borrower decision-making. This model functioned relatively well…in a world of fairly simple uniform loan products, the price and risk of which were hemmed in by usury limits and credit rationing…My thesis is that … the disclosures currently mandated by federal law for home loans neither effectively facilitate price shopping, nor do they result in good deliberate decision-making about risk*" (Willis, 2006).

theoretical work on the design of regulatory policy for situations where the regulated are more knowledgeable than the regulator.

Legal services are credence goods[65] which give the supplier, as agent, an opportunity to take advantage of the buyer by supplying products/services that are not appropriate or required ('moral hazard'). In theory, professional ethics respond to credence goods by requiring the supplier to further the interests of his client (Cabrillo & Fitzpatrick, 2008, p.159). As buyers cannot evaluate quality before buying ('adverse selection'), a 'market in lemons' may arise where good suppliers are driven out of the markets by bad ones (Akerlof, 1970). Litigation funders are both knowledgeable purchasers of legal services and repeat players and consequently may be better at extracting rent from lawyers than less informed claimants[66]. Removing information asymmetries may be too expensive relative to the welfare gains and alternative methods of responding to the problem may be more appropriate[67].

Government may decide that regulation is necessary to protect the public interest but the disadvantage is that government regulators are less flexible/reactive to changing environments[68] and slower to repeal outdated regulations (Miller, 1985). Surprisingly more monitoring but at low levels may actually result in more misconduct (Brown &

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[65] i.e. the buyer has to take it on faith that the service/treatment being provided is necessary, of good quality and priced fairly i.e. there is informational asymmetry regarding the product/service possibly not only before but even after supply has taken place. Empirical evidence from comparing knowledgeable and non-knowledgeable buyers suggests that credence goods result in under/over treatment (Darby & Karni, 1973; Dulleck et al., 2011; Dulleck & Kerschbamer, 2006; Emons, 1997; 2001).

[66] There is an argument that although litigation funders *could* do this, they may *choose not to* in order to increase the amount lent and basis of their fee. Against this may be set the desire of the funder to have a large portfolio of cases in order to spread the risk of losing.

[67] Leland (1979) suggests that strict liability for product failure may be one approach and refers to the work of Oi (1973), Spence (1977) and Epple and Raviv (1978). More recent empirical work has shown that the introduction of the European Directive 1985/374 on strict liability has not lead to an increase in product liability cases possibly because of the cost of access to justice and/or compensation provided by the Welfare State (Cavaliere, 2004). It is said that "*the transfer of a dollar to a victim of a product accident through the liability system requires more than a dollar on average in legal expenses*" and it follows that with limited benefits and high costs, the case for product liability is both problematic and often unwarranted (Polinsky & Shavell, 2010). Loss of corporate and/or brand reputation is also a powerful incentive to control product safety and maintain shareholder value (Rayner, 2003).

[68] N.B. the Claims Management Regulator was unusual in that it implemented its regime quickly - see page 34 below.

Minor, 2012). Leland (1979) showed licensing[69], although not a first-best solution may, in a number of cases, increase social welfare[70]. However a problem exists in finding a regulator who has the necessary competence and knowledge (Dingwall & Fenn, 1987). Given the nature of credence goods finding a regulator from the 'demanders' is difficult due to lack of knowledge and choosing from 'suppliers' may result in 'regulatory capture' or a mediocre level of competence. As a result governments may decide that self-regulation (see section 5) is the preferred method to overcome these issues and this brings the added advantage that the costs of regulation are borne by those who benefit from the regulation (Curran, 1998; Miller, 1985).

3 Regulation of entry

The regulation of professions presents a tension between the interest of the profession and the interests of the public and has resulted in a burgeoning area for empirical research (Haller, 2010). Furthermore, the approach to the regulation of professions varies from nation to nation and in federal systems from state to state. Typical market entry regulations are qualifications, membership of professional body, areas of reserved practice; obligatory insurance, and continuing education (Paterson et al., 2003). These supply side constraints may result in higher prices, reduced competition and too few providers e.g. Winston, Crandall and Maheshri (2011, p.55) estimate that the earnings premium for lawyers in 2004 in the USA was $64b or $71,000 per practicing [*sic*] lawyer. Competition authorities will be concerned about any rule or regulation that has an appreciable effect on competition as it may be illegal under European and/or National law (OFT, 2004).

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[69] Leland uses the term in a generic sense. In more recent work distinctions are drawn between three approaches –licensing, registration and certification - to occupational regulation. Registration requires those intending to sell professional services to simply pay a fee and inform the state of their intent. As such registration places no restrictions (or minimal restrictions e.g. registering as a company director) on entry but the buyer of the service is no better informed. Certification allows a member of an occupation to use a restricted title e.g. certified accountant if certain standards are met but does not preclude anyone from actually participating in the occupation. Licencing is the most restrictive term in that entry to (and sometimes continuance in) the profession is limited to those who meet minimum standards. See Curran (1998, pp. 248-251) for a more detailed review of regulatory form and their quality issues.

[70] Iossa and Julien (2010) analysed the incentives of the parties to hire-quality lawyers and of the lawyers to invest in training and other quality enhancing activity.

Whilst a bureaucratic entry process may enable useful information to be gathered for public-decision making or taxation purposes and may even screen out potential frauds and cheats, there are cost implications which could have adverse effects. In general the regulatory costs of establishing a new business in the UK are low compared to the rest of Europe (Klapper et al., 2006) which is reassuring given that countries with higher entry costs have larger unofficial economies and more corruption (Djankov et al., 2002).

Regulation and state-supported restrictive practices can create a barrier[71] for new entrants to a market[72]. On some occasions barriers serve a useful public/national purpose[73] but frequently they are anti-competitive and lead to less efficient markets (Baldwin & Cave, 1999, pp.9-17). In some instances, there are also barriers to exiting a market. Litigation funding requires the provision of finance over a period of years and consequently before exiting a market a period of run-off may be required to complete existing business. In Europe, USA and other WTO member states, the competition policy is to remove barriers which are not in the consumers' interest.

Licensing

Licensing may be applied by government or professions to individuals who undertake the work, the companies that employ them and the institutions that train them, the overall effect being to reduce the supply of potential new entrants (especially minorities and those from abroad[74]) and monopolise professional knowledge (Federman et al., 2006; Kugler & Sauer, 2005; Larson, 1977, p.48; Maurizi, 1974). Further restrictions may be applied *ex-ante* admission by varying the pass rate of

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[71] There are numerous definitions of a barrier to entry (see McAfee et al., 2004) including "*A barrier to entry is anything that prevents an entrepreneur from instantaneously creating a new firm in a market. A long-run barrier to entry is a cost necessarily incurred by a new entrant that incumbents do not (or have not had to) bear*" (Carlton & Perloff, 1994).

[72] For an exposition on the factors that interfere with the mobility of capital in and out of an industry and that confer an advantage to incumbents see Gilbert (1989).

[73] e.g. land use; preventing fragmentation of natural monopolies and rationing scarce resources.

[74] EC Council Directive 98/5/EC (Establishment Directive) makes it possible for a lawyer qualified in one member state to become full member of the profession in another member state without further examination. Bizarrely this does not apply to the mobility of the legal profession within the various UK jurisdictions (Garoupa, 2008).

exams[75] and *ex-post* through specialisation[76] and accreditation within the profession leading to a 'skills shortage'. Although forms of licensing lead to increased prices (Timmons & Thornton, 2010) it is debateable as to whether stricter licensing increases the quality of output (Kleiner & Kudrle, 2000) and it may even reduce quality as a result of false signalling (Leland, 1979). It has been recommended that licensing should be accomplished by boards whose members have no vested interest in the profession being licensed (Rayack, 1983).

Incumbents of an industry are usually supportive of introducing licencing as they inherit grandfather rights of entry whilst prospective new entrants bear additional costs and are less likely to be casual entrants and leavers (Perloff, 1980). Jackson LJ inferred[77] that litigation funders are no exception and IMF can be viewed as an exemplar as they submitted a paper supportive of regulation, complete with detailed suggestions on the form of that regulation (IMF, 2011c; Jackson, 2010).

Professional rights

Government may decide that particular types of work should be 'reserved' to members of a profession[78] or grant privileges[79] that are not available to competing

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[75] Increasing the licencing exam difficulty has been correlated with higher entry level lawyer remuneration (Pagliero, 2010). See literature review in Timmons and Thornton (2008) for other professions.

[76] The relationship between specialisation and professional competence within the legal profession creates worrying paradoxes about the quality and indeed legitimacy of the professional qualification as a general warrant of competence (Moorhead, 2010). Specialisation can be by subject or by function.

[77] "*The central issue which emerged was whether a voluntary code would suffice or whether there should be statutory regulation…At the Commercial Litigation Funding Conference on 23rd June 2009, the majority of those present indicated support for regulation*" (Jackson, 2010, p.118). N.B. this conference was organised by Barrister set No 5 Chambers and the majority of attendees were solicitors not funders (delegate list on file with author).

[78] Prior to 1986 conveyancing and probate work was reserved to solicitors.

[79] A case in point is insolvency practitioners who can dispose of a company as they see fit and owe few 'duties of care' to stakeholders affected by their actions other than, perhaps, the party that appointed them which is usually a bank (Cousins et al., 2000). The OFT found that "*So long as the banks do not recover their assets in full, the market works reasonably well. However, when the secured creditor is paid in full, the remaining unsecured creditors find it hard to control or influence the process, and are harmed as a result. The extensive system of regulation does not stop this harm*" (OFT, 2010).

professions ('monopoly rights'). Lawyers[80] enjoy reserved rights[81] and privileges[82] (e.g. they can fund litigation but are immune from adverse cost orders[83]). In the 'Turf Wars' between professions, lawyers practising within law firms have an advantage in that they can claim 'legal professional privilege' ('LPP') on topics such as tax advice and insolvency whereas accountants cannot[84] (Webb, 2004). Lawyers working in non-law firms (including litigation funders) cannot claim LPP[85] making them possible targets for disclosure/ discovery orders which could reveal the strengths and weaknesses of a claim.

In the US, the risk of losing attorney-client privilege as a result of disclosing case details to litigation funders has given rise to much speculation in a market where lawyers and funders compete as case funders (Frischknecht & Schmidt, 2011; Raymond, 2011). A recent Canadian class action case[86] considered that the existence of a funding agreement and its terms - but not necessarily the information on which the agreement was reached - needed to be disclosed, whereas in Australia the New South Wales Supreme Court concluded that funding agreements are privileged and need not be disclosed to the opponent[87].

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80 The oversight regulator of legal services is the Legal Services Board. The professions that provide legal services are solicitors, barristers, legal executives, licensed conveyancers, patent attorneys, trade mark attorneys, costs lawyers and notaries, all of which can claim to be 'lawyers' www.legalservicesboard.org.uk/can_we_help/approved_regulators/index.htm [Viewed 15 October 2014]. Within this work the term 'lawyers' usually implies solicitors and barristers.

81 These are listed in section 12 and explained in schedule 2 of the Legal Services Act 2007. They include rights of audience, conduct of litigation, notarial activities and the administration of oaths.

82 Historically barristers were immune from suit for negligence but that was overturned in *Barratt v. Ansell (t/a Woolf Seddon); Arthur JS Hall & Co v Simons* [2000] UKHL 38, [2002] 1 AC 615.

83 See *Flatman v Germany and Barchester Healthcare v Weddall* [2013] EWCA Civ 278 LJs Leverson.

84 "*Government had concerns about extension because it would greatly extend the number of individuals who could avoid the reporting of suspicious circumstances by citing Legal Professional Privilege. There could be potential risk to the ability of the Inland Revenue and Customs and Excise to challenge tax avoidance schemes (leading to increased loss from tax avoidance). We conclude that there should be no alteration to the scope of LPP*" (DCA, 2003, pp15-16).

85 *Walter Lilly & Company Ltd v Mackay & Anor* [2012] EWHC 649 (TCC).

86 *Fehr v. Sun Life Assurance Company of Canada* 2012 ONSC 2715 (CanLII) [3-4].

87 See *Re Global Medical Imaging Management Limited (in liq),* [2001] NSWSC 476.

As law firms are now permitted to access the capital markets through a public listing and operate using damages based agreements, they may in future choose to compete advantageously and directly with litigation funders.

Advertising

The legal profession has other rules and practices that cause concern and may impede both new entrants and competition within and between professions (Baldwin et al., 2003, p.4). One of these is restrictions on advertising[88] which professions often consider unethical but is viewed by economists as providing consumers with information regarding price and quality (Benham, 1972; Benham & Benham, 1975; Feldman & Begun, 1978; Love & Stephen, 1996; Stigler, 1961). Restrictions on lawyers' advertising have, for the most part, been removed but the Solicitors Regulation Authority ('SRA') still imposes some restrictions[89] (SRA, 2011, Ch. 8). There is scant evidence that advertising drives down the cost of legal services and may even result in higher prices (Engstrom, 2013, p.691). Most advertising in legal services is to promote brand name as opposed to competitive fees[90]. There are many adverts for consumer 'no win, no fee' financing on television and elsewhere. Commercial litigation funders although being free of advertising constraints[91], adopt a low profile in comparison and promote themselves through professional conferences, journal articles etc. Most commercial litigation funders have web sites which can act as a substitute or complement to other forms of media[92].

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[88] Pass et al (1994) comment on the findings of the Monopolies Commission investigations into various products and services including stockbrokers, doctors and osteopaths, cereals, detergents and coffee. N.B. the critique by Demsetz (1979) on the early works that considered advertising intensity and profits.

[89] E.g. making "*unsolicited approaches in person or by telephone to 'members of the public'* (but this does not include existing or potential professional or business connection, or a commercial organisation or public body*) in order to publicise your firm or in-house practice or another business"* (Solicitors Regulation Authority, 2011, O(8.3)).

[90] Studies 20 years ago and therefore before the internet played a prominent role in corporate promotion found that the overwhelming majority of conveyancing law firms in England and Scotland advertise but less than 5% advertise price (Stephen, 1994; Stephen et al., 1994).

[91] The Code of Conduct for members of ALFEW simply states that "*The promotional literature of a Funder must be clear and must not be misleading*" (Association of Litigation Funders of England & Wales, 2011b, §4).

[92] Goldfarb and Tucker (2011) explore substitution patterns across advertising platforms, using data on the advertising price per click paid by lawyers.

4 Regulation of conduct

The original three honourable/learned professions were law, medicine and ministry but the term is now more widely applied to other occupations including litigation funding. Most litigation funding companies are run by lawyers who are bound by professional standards. Lawyers are part of the state decision making process in that they draft law, legitimise and process it but they are also separate as a result of their relationships with clients (Flood, 1996). This dual function raises the question as to whether it is even possible to regulate lawyers effectively (Webb, 2008).

Adam Smith (1776, p.164), Milton Friedman (2002, pp. 137-160) and many other economists have been hostile to any form of regulation of occupations. Literature surveys on the regulation of professional services can often be found in reports for government departments (e.g. Baldwin et.al., 2003; Paterson et.al., 2003, pp. 15-21; Sullivan, 2011).

Professions are characterised by high degrees of generalized and systematic knowledge; primary orientation to community rather than self-interest; self-control of behaviour through codes of ethics; internalised processes and voluntary associations; a system of monetary and honorary rewards that is primarily a symbol of work achievement and thus an end in itself, not merely one of self-interest (Barber, 1963). Early sociologists saw professions as having an 'agreement with' society whereby in return for privileges and advantages such as high income, prestige and professional autonomy they would exercise self-control as individuals and formal and informal collective peer control through self-regulation (Rueschemeyer, 1964).

The theory that professionals subordinate their personal interest to that of the wider public interest has been widely criticised, particularly in the USA. Not only has the public perception of the prestige of the legal profession and the character and ethics of lawyers plunged since the 1970s (Asimow, 1999; Galanter, 1998) but lawyering is no longer thought of as a profession but as a business[93] conducted by the 'ethically

[93] Discussions as to whether the practice of law is a profession or a business are not new (e.g. Bowie, 1988; Cohen, 1916).

challenged' which is regulated without enforcement because the enforcers are the "*foxes in the hen house*" and the clients serve as "*plucked chickens*" (Barnhizer, 2004; 2009; Galanter, 1998). Irrespective of the view (cynical or otherwise) one has of lawyers, the legal profession will have a substantial input into the regulation and supervision of litigation funding. The risk to litigation funding companies is that those regulations will be driven by the highest ideals of the legal profession as opposed to its actual conduct or what is in the public interest[94].

How law is conducted and transforms society as a whole has been a major issue in the US (Brickman, 2011; Glendon, 1994; Olson, 1991). The practice of law has become a global services industry (Beaverstock et al., 1999; Faulconbridge et al., 2008; Morgan & Quack, 2005) no longer dominated by US and UK firms[95] which provides challenges for both regulator and regulated and sees conduct in one territory transferring to others (Faulconbridge & Muzio, 2008; Goldsmith, 2008)[96]. Litigation funding is also an international business in that funds are often raised in one jurisdiction and deployed in another. Regulators and the judiciary in the process of rulemaking look at and consider how other states respond to similar situations[97].

4.1 How to regulate – rules and principles

Actual performance can be monitored as an input (e.g. sanctioning speeding drivers because they may cause accidents) or as an output (e.g. sanctioning those who caused an accident) or a combination of both (Wittman, 1977). Information is also required to inform the decision as to where along the continuum between rule (e.g. the maximum permissible speed is 30mph) and standard[98] (one must drive safely at all

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[94] Ball et al. (2009) examine the mechanisms by which the legal system affects decisions on the acceptability of public risk and the unintended consequences that arise. They question whether a sound framework for the assessment of risk enshrined in statutes is properly applied.

[95] The widely reported tie-up between top-tier Chinese firm King & Wood and Australia's Mallesons Stephens Jacques in 2012 created a major international firm that did not originate in either the UK or the US. The subsequent merger with London firm SJ Berwin in 2013 created the first global law firm based in Asia.

[96] For a literature review of the private regulation of global business see Vogel (2008).

[97] E.g. Jackson LJ (2009, pp.8, 545-648) in his review of civil litigation costs visited seven countries and reviewed nine jurisdictions in his preliminary report.

[98] The continuum between a rule and a standard is a continuum between precision and generality: "*A standard indicates the kinds of circumstances that are relevant to a decision on legality and is thus*

times) regulation should be set (Ehrlich & Posner, 1974; Nelson, 2003). Debates as to whether regulation by specific rule or principle is to be preferred have flourished in many domains including accounting (Arjoon, 2006; MacDonald, 2004; Satava et al., 2006), the legal profession (Kaplow, 2000; Korobkin, 2000) and financial services (Ford, 2008). Following the recent financial crisis, current thought calls for a mixture of both rule and principles based regulation as explained in the following quote from the Chief Executive Officer of the US National Association of Insurance Commissioners ('NAIC').

> *The optimal structure of insurance supervision is likely to be a combination of a rules-based and a principles-based approach. That is, internal models should be an adjunct to a rules-based capital requirement that establishes a floor for regulatory capital. Capital regulation is a necessary, but not sufficient, additional requirement for effective financial regulation. On-site examinations, offsite analysis of financial performance and trends, and frequent interaction with the regulated entity are equally important. Finally, current developments have demonstrated that market discipline cannot be relied on as a substitute for regulation and supervision. The optimal regulatory structure is one that encourages supervisors to take action when it is appropriate, and a system that incorporates duplicative regulatory oversight may advance that objective (Vaughan, 2009).*

A critical feature of the rule v principle debate is which party (i.e. regulator or regulated) bears the responsibility for making the judgements and assumptions that underpin the need for the rule/principle, the determination of capital adequacy being a case in point. The concept of a continuum is not universally endorsed however. Brewer (1996, p.972) argues that a rules/ standards[99] continuum "*conflates logical and other semantic phenomena that it is both useful and important to* keep distinct" and Wilson (1995, p.777) observes that the dichotomy "*is empirically misleading and*

open-ended. ... A rule withdraws from the decision maker's consideration one or more of the circumstances that would be relevant to decision according to a standard" (Ehrlich & Posner, 1974).

[99] The terms 'rules' and 'standards' are often inter-changed in the legal literature whereas the term 'standard' in the accounting literature refers to a combination of both rules and principles. In common usage 'standards' is often *used to designate performance or conduct measures, not legal provisions that are contrasted with rules* (see Cunningham (2007) pp. 1418-1419 for more extensive review).

normatively wrong" and the real issue is how to apply the chosen doctrine in any particular situation[100]. Cunningham (2007, p.1421) concludes that "*Although the continuum metaphor has considerable appeal… the result is a classification scheme bearing a fuzzy logic, in which intuition plays as much a role as hard-headed conceptualization*".

4.2 The approach taken by various potential regulators

Due to the importance of capital adequacy, Jackson's initial view was that statutory regulation was required and the obvious regulator was the FSA. However, the FSA indicated that they were unable to regulate capital adequacy alone and the cost of full regulation would need to weighed against the benefits. Consequently Jackson deemed it appropriate to recommend full regulation by the FSA and proposed tightening up of the capital adequacy clauses in the voluntary code of conduct (Jackson, 2010, p.121).

The regulation of litigation funding has not been assigned to a specific agency although the Ministry of Justice ('MoJ') is the vehicle of state that is primarily monitoring the situation. The Financial Services Authority ('FSA') and its successors, the Solicitors Regulatory Authority ('SRA'), and the Claims Management Regulator ('CMRe') are existing regulators who might regulate third-party funding although none appear to have the appetite. This may indicate some conceptual difficulty as to whether the regulation of litigation funding is a financial services, legal services or consumer protection issue (Hodges et al., 2012, p.143). Until now the funding of litigation has been regulated by the courts on a case by case basis. It is useful to consider the approaches these particular regulators adopt as regulatory risk is faced by every litigation funder.

Financial Services Authority

The FSA decided to move from a rules based regime towards a principles and risk based regime because experience showed that prescriptive standards had been unable

[100] "*The forms of doctrine are like rules of grammar; they reveal underlying structures of judicial thought but provide little guidance in how to apply those structures in any particular situation. It is easier to know the difference between a subject and a verb than to write a decent sentence. It is likewise more difficult to create a good "fit" between a form of doctrine and a desired outcome than to reveal the existence of forms. The proper form, after all, is partially premised upon uncertain predictions*" (Wilson, 1995, p.843).

to prevent misconduct, detailed rules were burdensome on both the FSA's and industries resources, markets were changing rapidly and prescriptive regulation was unable to keep pace, detailed and complex prescriptive rules can divert attention towards adherence to the letter rather than the purpose of the regulatory standard (FSA, 2007, p.6). However the banking crisis has demonstrated that regulatory principles such as: "*a firm must conduct its business with due skill, care and diligence; a firm must take reasonable care to organise and control its affairs responsibly and effectively with adequate risk management systems; and a firm must maintain adequate financial resource;*" (FSA, 2012a, PRIN 2.1.1) are also inadequate in preventing misconduct. Black et al. (2007) argue that if principles based regulation is to succeed the rules of engagement for regulatory conversations need to be developed.

In July 2010 Government, in the wake of the financial crisis, announced its intention to restructure the UK's financial regulatory triumvirate of Treasury, Bank of England and FSA by breaking up the FSA into three parts because the Government's view was that "*Prudential and conduct of business regulation require different approaches and cultures, and combining them in the same organisation is difficult*". Bank of England subsidiaries would control macro-prudential regulation of financial systems through a Financial Policy Committee ('FPC') and oversee micro-prudential regulation of individual firms through a new Prudential Regulation Authority ('PRA'). An independent[101] Financial Conduct Authority ('FCA') would be concerned with regulating firm conduct within the financial system - including participants in wholesale markets and firms conduct with consumers (HM Treasury, 2010). Government implemented the reform through the Financial Services Act 2012 which amended the Financial Services and Markets Act 2000.

Both the PRA and FCA are 'judgement-led' regulators (HM Treasury, 2011b). Crucially the PRA's function is not to ensure that no PRA authorised firm fails – that is the responsibility of the directors and shareholders - but where a firm does fail in a

[101] The provisional name for this body was the Consumer Protection and Markets Authority ('CPMA') but was finalised as the Financial Conduct Authority (HM Treasury, 2011a, §1.10).

properly functioning market, it does so in an orderly manner (Bank of England & FSA, 2011). Similarly, the FCA's objective is to ensure that markets work well (i.e. in terms of competition, choice, transparency etc.) and to intervene early in order to tackle emerging risks and minimise consumer detriment but again, not to the standard of a zero failure regime (HM Treasury, 2012). The FSA indicated that where third party funding does not cover adverse costs as in *Arkin* this is outside the scope of their regulatory activities but where adverse costs are included then this may be a form of insurance (FSA, 2008). Whether third party litigation funders are ever regulated by either, both or neither of the PRA and FCA depends upon the wording of the legislation and whether the regulators consider it appropriate to capture them within their supervisory power.

Solicitors Regulatory Authority

Criticism of the legal profession and its self-regulation (e.g. Chandler & Fry, 2009; Davies, 2003) coupled with an investigation by the Office of Fair Trading ('OFT') into restrictive practices within the legal profession (OFT, 2001) prompted government scrutiny. As a result of its 2003 scoping study of legal services (Baldwin et.al., 2003) the government adopted the position that the existing framework for the regulation of legal services did not fulfill the demands of the market place or the needs of the consumer and described it as "*out-dated, inflexible, over-complex and insufficiently accountable or transparent; it has limited capacity to adapt to a rapidly changing landscape*" (DCA, 2003, §65). Government's Department of Constitutional Affairs ('DCA') was also concerned that the regulatory framework for legal services was a self-regulatory system in which primary accountability was to the trade association of the regulated (i.e. the Law Society) rather than the public (DCA, 2003, §70-71). David Clementi (2004) was appointed to conduct a "*thorough and independent investigation without reservation*" and recommended an oversight regulator in the form of a Legal Services Board ('LSB') as the Law Society and the Bar Council were inappropriate regulators because of their representative role.

The Legal Services Act 2007 created the LSB and section 1 of the act specified the regulatory objectives as*:*

(a) protecting and promoting the public interest;

(b) supporting the constitutional principle of the rule of law;

(c) improving access to justice;

(d) protecting and promoting the interests of consumers;

(e) promoting competition in the provision of services within subsection (2);

(f) encouraging an independent, strong, diverse and effective legal profession;

(g) increasing public understanding of the citizen's legal rights and duties;

(h) promoting and maintaining adherence to the professional principles.

A key feature was that for the first time the law firm entity as opposed to its individual members was subject to regulation which can be seen as a foundation stone for Alternative Business Structures ('ABS') and Multi-Disciplinary Practices (Flood, 2010). The legal profession is changing in that external capital can be introduced by way of market listing, routine work is being commoditized and senior management may consist of non-lawyers (Susskind, 2008).

The SRA has also moved from a rules based regime to outcome focused regulation based on principles which permits it to employ a risk-based approach to towards the achievement by firms of mandatory outcomes, rather than compliance with detailed rules (Solicitors Regulation Authority, 2010).

Claims Management Regulator

Government asked the Better Regulation Task Force ('BRTF')[102] to investigate the causes of a perceived compensation culture and make recommendations. The BRTF recommended that the Claims industry should set out in its Code of Practice how claims management companies should operate, and seek approval from the Office of Fair Trading, failing which the Department of Constitutional Affairs would step in and regulate the sector (BRTF, 2004, pp.20-24). The Claims Standards Council (CSC) was established in 2004 in an attempt to allow voluntary regulation of the claims management industry. Government promulgated a regulatory framework[103] in

[102] The BRTF was the forerunner of the Better Regulation Commission ('BRC') which was formed in 2006 and superseded by the Risk and Regulation Advisory Council ('RRAC') on 16 January 2008. The council completed its work in April 2009 (United Kingdom Parliament, 2009).

[103] From a technical perspective the Secretary of State for the MoJ is the Regulator and delegates authority to the Head of Claims Management Regulation.

the Compensation Act 2006 and regulation commenced from April 2007. This innovative approach enabled regulation to be implemented very quickly (Ministry of Justice, 2008). Thereafter the CSC's remit was to represent its members to the Regulator, government, the legal sector, the insurance industry, banking sector and consumer group and to promote a balanced view of the sector. In September 2012 it was compulsorily wound up[104].

Table 2 CMC Key statistics

	2009/10	2010/11	2011/12	2012/13	2013/14
	£m	£m	£m	£m	£m
Annual Regulation fees	1.30	1.88	2.50	2.60	4.20
Application fees	0.94	0.44	0.55	0.86	0.36
Annual Income	2.24	2.32	3.05	3.46	4.56
Annual Costs	2.25	2.32	3.02	3.46	4.45
Total Numbered of Authorised CMCs	3367	3213	3007	2693	2097

Source: CMC Annual Reports

The CMRe reported annual income and costs and the number of authorised entities is set out in Table 2. Within the CMRe regulatory regime, a claim is defined as "*A claim for compensation, restitution, repayment or any other remedy or relief in respect of loss or damage or in respect of an obligation...*" (Compensation Act 2006 §4(2)(c)). The types of claim of concern to the CMRe are primarily consumer[108] but involvement in "*claims in relation to financial products or services*"[109] e.g. Interest Rate Hedging Products (see FSA, 2012b) would require registration. The regulatory scope is set down in Statutory Instruments and the focus is regulatory compliance, enforcement and complaints handling (Ministry of Justice, 2011). The services within

[104] http://windinguppetitionsolicitors.co.uk/insolvency-lawyers-london/the-claims-standards-council-faces-winding-up-petition [Viewed 15 June 2015].

[108] E.g. Claims under the Criminal Injuries Compensation Scheme, claims in relation to personal injury, employment and housing repair Compensation (Regulated Claims Management Services) Order 2006, SI 2006/3319 at 4(3)).

[109] SI/2006/3319 at 4(3)(f).

the scope of the regulatory regime include: advertising for claimants, advising claimants about a cause of action, referring claimant's details to another person, and investigating the merits of a claim[110].

Comment

Comparison of the FSA, SRA and CMRe reveals different approaches to regulation. The FSA has been reorganised in order that the regulation of systemic threats to the financial system is separated from consumer protection. Current litigation funders, although having funds in aggregate amounting to a few hundred millions of pounds, are unlikely to pose a systemic risk to the financial system[111]. Legal claims are inalienable[112] and the selling of legal claims has been viewed as repugnant as trading in babies[113], drugs, body parts, blood or sex (Radin, 1987; Waye, 2008; Wendel, 2013). Were it not for these restrictions a traditional market in legal claims could be contemplated (Abramowicz, 2005; Choharis, 1995; Dobner, 1996; Martin, 1992; Shukaitis, 1987). Trading in financial instruments based on inalienable assets such as the rights to make a claim should a future tortious action occur (Cooter, 1989; 1999) and a futures market in body organs (Cohen, 1989; Crespi, 1994) are conceivable but are not likely to be a systemic threat to the financial systems!

The preliminary findings of the Oxford-Lincoln Litigation Funding Research Project were that third party litigation funding had not helped ordinary consumers and non-corporate clients[114] and that further product development would be required to meet consumer needs (Hodges et al., 2010a). The CMRe allocates significant resource to responding to consumer complaints in addition to compliance and enforcement tasks and it is hard to envisage how commercial litigation funding would fit with this

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[110] SI/2006/3319, 4(2).

[111] If a financial crisis arises as a result of litigation against one or more financial institutions that have undertaken risky or other activities, litigation funders may be involved and the extent that litigation funding contributed to the resulting crisis will no doubt be debated.

[112] "*An inalienable right is one that may not be waived nor transferred by the possessor to another*" (McConnell, 2000, p.12).

[113] For a rational analysis of a market for babies see (Posner, 1987; Prichard, 1984); for a satirical comment see (Swift, 1729).

[114] See Media Release "*Third party litigation funding has not helped ordinary consumers*" available at www.ox.ac.uk/media/news_stories/2010/100602.html, [Viewed 19 June 2012].

regulator were it not for the fact that the regulator is also the Secretary of State for the Ministry of Justice.

5 Self-regulation of litigation funding

The benefits of self-regulation according to its proponents are speed and flexibility coupled with lower costs, sensitivity to market circumstances and more practical standards that are more effectively policed. Critics argue that self-regulation fails to realise these claims as standards are weak, enforcement is poor and sanctions are mild. Furthermore self-regulation exists for the benefit of the industry not the public (Gunningham & Rees, 1997).

Over 20 years ago Baggott (1989) wrote[115] that "*Britain appears to be something of a haven for self-regulation*" as compared to other countries but observed that a move from voluntary to statutory-based systems was underway. The trend away from self-regulation continues but whereas in the past it was to command and control state regulation there is now the hybrid form of meta-regulation whereby external regulators deliberately induce targets to develop their own responses to public problems (Coglianese & Mendelson, 2010, p.250).

The Government's approach to litigation funding followed this model and in response the industry formed the Association of Litigation Funders of England and Wales ('ALFEW') and produced a Code of Conduct (ALFEW,2011b) which was endorsed by Jackson (2011). ALFEW also produced a parliamentary briefing note in response to the anti-litigation funding lobbying by the US Chamber Institute for Legal Reform ('ILR')[116] (ALFEW,2012; ILR, 2011; Rickard, 2011a; 2011b).

5.1 The Association of Litigation Funders of England and Wales

History

In June 2007 the CJC published a report which recommended that TPF should be permitted and rules of court should be produced to cover the situation where TPF is

[115] In support of this statement Baggott gives numerous citations.

[116] See ILR's website on the UK at www.instituteforlegalreform.com/global/united-kingdom [Viewed 20 May 2015].

used (Napier et al., 2007). At a February 2008 CJC workshop, the general consensus was that light-touch regulation of litigation funding as opposed to self-regulation was preferable (CJC, 2008b). Following this event the CJC established a working group to prepare regulatory proposals (CJC, 2010b). A draft voluntary code was discussed at a CJC workshop in July 2008 and reviewed in the light of Jackson's preliminary report (CJC, 2008a). A revised draft was reviewed at the February 2010 CJC workshop and the formation of an association was discussed (CJC, 2010a). After further work and following Jackson's final report, a public launch of ALFEW and the final code of conduct took place in November 2011 (Jackson, 2011).

Membership

The final[117] 'Code of Conduct' ('Code') for members of ALFEW is only two pages but it needs to be read in conjunction with the 'Rules of the Association' ('Rules') and the 'Articles of Association' ('Articles') (ALFEW, 2011a; 2011b; 2011c). The Association is a private company limited by guarantee[118] whose members are Funders who fund disputes in England and Wales ('E&W'), comply with the Code and are not statutorily regulated in respect of their litigation funding activities (Articles, §26). From this it is apparent that funders who raise capital in E&W but do not invest in disputes in E&W cannot be full members. Law firms are excluded if regulated by the SRA and it is conceivable that overseas funders, if regulated in their home territory, need not be members.

Membership of ALFEW can be terminated by a) withdrawal, b) death, c) ceasing to be eligible for membership, d) Code non-compliance, e) failure to pay annual subscriptions, and f) conduct likely to bring the company into disrepute. Termination for reasons c-f will be at the discretion of the full board (Articles, §30, 14(2)). Directors do not have to be members and can be appointed by a decision of the directors or by resolution of the members (Articles, §20, 22).

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[117] The 'final' Code of Conduct was revised on the 14th January 2014 and is referred to herein as the Revised Code.

[118] "*The liability of each member is limited to £1…*" (Articles §5).

Duties of funders who are members

The majority of the respondents to the CJC consultation on a Self-Regulatory Code of Third Party Funding were supportive of self-regulation in the first instance but notable exceptions were the Law Society who favoured statutory regulation and the SRA who favoured an outcome focussed principles approach. Respondents expressed concern that there was insufficient consumer protection and raised other issues including responsibility for adverse costs, capital adequacy, termination arrangements and demarcation lines (CJC, 2011). Similar concerns had been expressed by Jackson in his reports and a revised code was prepared which addressed those issues and satisfied Jackson (2009; 2010; 2011).

Members of ALFEW, in addition to maintaining confidentiality (Code, §5), addressed the CJC's and Jackson's reservations by the following measures:

Firstly, funders will take reasonable steps to ensure that litigants receive independent advice on the Litigation Funding Agreement (Code, §7a). There exists a potential conflict of interest between the solicitor acting in the dispute and his client[119] but the funder will not insist on completely independent advice if the litigant confirms he has taken advice from the instructed solicitor. This provision not only satisfies the need for consumer protection but also assists the funder should the case be won and the litigant seeks to avoid payment on the grounds of champerty. It also helps maintain the correct balance between funder and funded.

Secondly, funders undertake not to take steps that are likely to cause the litigant's legal team to act in breach of their professional duties or cede control or conduct of the dispute to the funder (Code, §7b-c). These provisions are a response to the judiciary's concerns regarding the protection of the integrity of the litigation process but they go further in that funders undertake not to compromise the legal teams by requiring fee sharing, commissions etc.

[119] It may be in the solicitor's interest to have a funder appointed because in the absence of a funder he may lose a client or have to agree to accept more risk e.g. a CFA. Against that must be weighed the solicitor's duty to inform his client fully on costs and alternative arrangements.

Thirdly, funders undertake to "*maintain at all times adequate financial resources to meet its obligations to fund all of the disputes it has agreed to fund…*" (Code, §7d). Concerns on capital adequacy arise from two sources. The first is protection of the consumer and ensuring that a funder fulfils his contractual obligation to his client. In many respects this is not a major issue as the consumer is not required to expend money before he receives service and consequently many of the drawbacks associated with credence goods do not materialise. The litigant's lawyer can request to be put in funds for own side costs and disbursements before they are incurred and if the funder goes bankrupt during the case, an alternative supplier ought to exist in a developed competitive market. (There may be some adjustment on the price as a result of the reduced supply but this may be offset by reductions as a result of uncertainties having been clarified with the passage of time). The second and greater concern is that the litigation funder may not be sufficiently solvent to pay the costs of a winning defendant (CJC, 2010a). Although the court will respond to a defendant's application for costs security by requiring payment into court if the future ability of the claimant to pay is in doubt[120], the amount of the security is likely to be less than the total potential costs (Cook, 2007, §13.29). ATE insurance may also have been arranged but as Insurers can repudiate liability a policy may not be acceptable to the court[121].

6 Regulation of solvency

The International Association of Insurance Supervisors ('IAIS') in its online glossary[122] describes solvency as the "*Ability of an insurer to meet its obligations to policyholders when they fall due*[123]*…"* An earlier definition was shorter – "*An insurance company is solvent if it is able to fulfil its obligations under all contracts under all reasonably foreseeable circumstances*" (IAIS, 2002). These definitions

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[120] See CPR part 25.

[121] In *Natas Group Ltd v Styles & Wood Limited* [2011] EWHC 3464 (TCC) the court weighed up the various issues and considered the suitability of an ATE policy as security for costs. *Michael Philips Architects Limited v Riklin* [2010] EWHC 834 (TCC) is a substantial judgement that reviewed the authorities, whilst *Geophysical Service Centre Co v Dowell Schlumberger (ME) Inc* [2013] EWHC 147 (TCC) further develops the issues for consideration.

[122] http://www.iaisweb.org/index.cfm?pageID=47&vSearchLetter=s## [Viewed 3 July 2012].

[123] *"…Solvency includes capital adequacy but also involves other aspects of a solvency regime, for example, technical provisions, qualitative aspects (such as would be addressed in an enterprise risk management framework), supervisory review and supervisory reporting. [Equivalent term: Financial health]*".

introduce both a time aspect and a risk element to the determination of corporate solvency.

A company may have substantial assets, none of which are readily realisable and is consequently asset rich and cash poor and unable to meet its debts as they fall due. Similarly, a company may be able meet its current debts but has insufficient assets to pay all debts as they fall due. Continuing to trade in these circumstances is to give preferential treatment to current creditors at the expense of deferred creditors. There is no single definition of insolvency as a number of tests have evolved over the years and become part of the law[124] (Heaton, 2007; Totty & Moss, 2008, A1-02). The Insolvency Act 1986 contains both a 'cash flow' or liquidity test i.e. being unable to pay debts as they fall due (§123(1)(e)), and a 'balance sheet' test i.e. liabilities exceed assets (§123(2)). Before declaring a company insolvent the court will consider whether there is any reasonable prospect of the company being able to meet its obligations by 'trading out of the difficulty' and conversely whether the 'end of the road' has been reached and to continue would amount to 'a fraud on future or contingent creditors' (see judgement of Lord Neuberger MR in *Eurosail*[125]).

Insurance companies, like litigation funders, have contingent liabilities that persist for many years. Litigation funders however, know when their liability ceases because a claim is finally settled, whereas an insurer may not have been notified of a claim let alone settled until long after the coverage period ends. Capital adequacy in insurance is perhaps more challenging than litigation funding and consequently the extensive literature on insurance solvency – classically[126] referred to as 'ruin' – is relevant. It is

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[124] See *Cheyne Finance Plc, Re* [2007] EWHC 2402 (Ch) for history.

[125] *BNY Corporate Trustee Services Ltd v Eurosail-UK 2007-3BL Plc & Ors* [2011] EWCA Civ 227. N.B. the comments in paras. 60-68 that in assessing assets and liabilities one might start with balance sheet values but "*they only represent the beginning of the enquiry in relation to the issuers' position*".

[126] Sandstrom (2010) identifies two distinct periods in the development of insurance solvency, the 'classical approach period' which existed post war until about 1980 and the subsequent 'economic approach period'. According to D'Arcy and Doherty (1988) actuaries and financial economists differ in their approach to a) the definition of risk, b) the return on investment, c) the profitability, d) the valuation of assets.

also useful to focus on general insurers[127] who function as "risk takers" as opposed to life insurers who function as "financial intermediaries" (Chen & Wong, 2004).

Predicting financial ruin using financial attributes has been a common methodology[128] with firm size, investment performance, underwriting result, liquidity, operating margin, premium growth, and growth rate of surplus all being identified as significant factors but it should be noted that the significant factors may vary by state (Chen & Wong, 2004). Many different statistical models have been used to study insurers' health (Altman, 1984; BarNiv & McDonald, 1992; Brockett et al., 1994; Carson & Hoyt, 1995; Daykin et al., 1994). Recent work has shown that small changes in the solvency model assumptions have a much greater impact on shortfall probabilities and expected policyholder deficits than they have on capital requirements (Schmeiser et al., 2012).

In recent years in Europe, because of its move from direct supervision of financial institutions to a more deregulated environment, the focus has been on the solvency margin required to secure both the existence of the company and the benefits due to claimants and policyholders. These objectives are supposed to be secured by the interlocking 'three pillar'[129] approach known as Solvency II (Sandström, 2006). Additionally providing existing and potential investors with information to make investment decisions is also important because the quality[130] of accounts has economic consequences e.g. on the cost of capital (Leuz & Verrecchia, 2000);

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[127] N.B. Legal Expenses Insurance is classified as general insurance.

[128] E.g. (Ambrose & Seward, 1988; Harrington & Nelson, 1986; Pinches & Trieschmann, 1974; Trieschmann & Pinches, 1973). See Lussier & Halabi (2010) for a review of similar studies in non-insurance companies.

[129] Pillar 1 is quantitative requirements e.g. capital requirements and balance sheet technical provisions; Pillar 2 is qualitative requirements and supervisory review e.g. governance, risk management, own risk and solvency assessment; Pillar 3 is reporting, disclosure and market discipline. Member states were originally required to implement the text of the Solvency II Framework Directive 2009/138/EC into national legislation by the 31 October 2012 with a deadline of 1 November 2012 for the application of the texts. The implementation and application dates were postponed (Directive 2012/23/EU) initially to the 30 June 2013 and 1 January 2014 and then (Directive 2013/58/EU) to 31 March 2015 and 1 January 2016.

[130] There are many definitions of quality in accounting, see Francis et al (2004) and Schipper & Vincent (2003).

efficiency of capital allocation (Bushman et al., 2011); and international capital mobility (Young & Guenther, 2003).

6.1 International Accounting Standards

The International Accounting Standards Board ('IASB') is committed to producing principle-based accounting standards (Hoogervorst, 2011; Tweedie, 2006) which by adoption into European Regulations[131] become law and require compliance from all publicly traded companies. In defining an effective and achievable accounting standard the determination of the "sweet spot" on the rules/principles spectrum is aided by publishing a set of generally accepted characteristics which the leaders of the six major international accounting firms[132] believe to *be 1) faithful presentation of economic reality; 2) responsive to users' needs for clarity and transparency, 3) consistency with a clear Conceptual Framework; 4) based on an appropriately-defined scope that addresses a broad area of accounting; 5) written in clear, concise and plain language; 6) allows for the use of reasonable judgment* (DiPiazza et al., 2008).

In 2004 the IASB issued 'International Financial Reporting Standard ('IFRS') 4 - Insurance Contracts', which made limited improvements to accounting practices but still permitted a wide variety of practices to continue. Increased information disclosure regarding insurance contracts was also required. The IASB recognises that IFRS 4 has limitations in that it allows practices which "*do not provide users of financial statements with information that is relevant and representationally faithful*". These practices also impede comparison with other financial institutions and can result in financial conglomerates producing financial statements that are internally inconsistent. Furthermore "*Accounting methods have sometimes been tailored more to meeting the needs of insurance regulators than to meeting the sometimes different needs of investors and other capital providers*" (IFRS, 2010a, BC4-5).

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[131] Council Regulation (EC) 1606/2002 of 19 July 2002 on the Application of the International Accounting Standards OJ L243/1.

[132] PricewaterhouseCoopers, KPMG International, Grant Thornton International, Deloitte Touche Tohmatsu, BDO International, Ernst & Young.

Litigation funding is not a contract of insurance[133] for FSA purposes but the scope of the 2010 IFRS Exposure Draft ('ED') on Insurance Contracts was wider as it extended to "*financial instruments containing discretionary participation features*" (IFRS, 2010b, p.19). The IASB subsequently decided that this clause should only apply to insurers and not to instruments issued by entities other than insurers (IFRS, 2012a) and reissued the ED in 2013 with the wording "*an investment contract with a discretionary participation feature that it issues, provided that the entity also issues insurance contracts*" (IFRS, 2013, p.13). This ED defines an insurance contract as *"A contract under which one party (the issuer) accepts significant* ***insurance risk***[134] *from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder."* But as the application guidance note B11 in Appendix B also says *"Insurance risk is the risk that the entity accepts from the policyholder. This means that the entity must accept from the policyholder a risk that the policyholder was already exposed to. Any new risk for the entity or the policyholder that is created by the contract is not insurance risk".* As the funding agreement is generally entered into before litigation commences, it is defined as a new risk, and consequently not captured by the accounting regulations applicable to insurers.

7 Stakeholder interests

The analysis in this section is relatively brief as books have been devoted to these topics[135] and journal articles[136] cover recent cases and legal developments.

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[133] Neither the law, nor the FSA specifically defines a 'contract of insurance' and the substance of the contract prevails over its form. A leading case is *Prudential v Commissioners of Inland Revenue* [1904] 2 K.B. 658 which, when read with later cases, "*treats as insurance any enforceable contract under which a 'provider' undertakes in consideration of one or more payments; to pay money or provide a corresponding benefit to a recipient; in response to a defined event; the occurrence of which is uncertain (either as to when it will occur or as to whether it will occur at all); and adverse to the interests of the recipient"* (Lowry & Rawlings, 2004, p.15).

[134] Insurance risk is defined as "*risk other than* ***financial risk****, transferred from the holder of a contract to the issuer*" and financial risk is defined as "*The risk of a possible future change in one or more of a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract*" (IFRS, 2013, p.37).

[135] E.g Waye (2008), Volsky (2013) and Pirozzolo (2014).

[136] E.g. Mulheron (2014b).

7.1 Protecting the investor

Litigation funding is a risky activity and it is not unreasonable for investors to expect a high return[137] for bearing that risk. Financial reporting in accordance with mandatory International Financial Reporting Standards ('IFRS') increases market liquidity, but only where there are incentives to be transparent and legal enforcement is strong (Daske et al., 2008). In chapter 3 I will examine the financial accounts of two listed litigation funders and comment on the lack of information and the shortcomings in the IFRS. Many litigation funders are not listed and their financial accounts are not publicly available which puts investors in a risky position.

Litigation funders argue that they are prevented from disclosing more case information to investors, particularly in respect of US cases[138] and in the absence of regulatory vigilance, monitoring by institutional investors and venture capitalists is less effective at reducing fraud when investors are optimistic about the prospects of the industry (Wang et al., 2010). The SEC (2013a) advises investors to be cautious where financial information is absent as the characteristic 'red flags' of a Ponzi scheme[139] include:

- High investment returns with little or no risk.
- Overly consistent returns.
- Unregistered investments.
- Secretive and/or complex strategies.
- Difficulty receiving payments.
- Issues with paperwork.
- Unlicensed sellers.

Some characteristics exhibited by a Ponzi scheme are similar to genuine litigation funding and distinguishing between the two is difficult for a prospective investor and

[137] Investors could expect a compound annual return of 11-13% less fees and costs of 3-4.5% which reduces the return to approximately 10% per annum (Stevenson, 2012).

[138] There are concerns that communications between funder and client may not be protected by legal privilege (Steinitz & Field, 2013, p.730-3). IMF (2012c) policy on US cases is not to disclose specific details of a case until after final resolution in order to mitigate the risk that public disclosure may have a detrimental effect.

[139] i.e. paying returns to investors from capital contributions of new investors as opposed to making payments from operating profits.

the protective questions[140] suggested by the SEC are of little assistance. Unless informative accounts are publicly available or made available to an independent regulator, early detection of Ponzi type activities remains difficult.

A tension exists between the law and its enforcement vis-à-vis regulation and corporate governance, as shareholders and managers are typically concerned with wealth maximization, whereas regulators are concerned with safety, soundness and responsiveness to public and political sentiment (Joskow et al., 1993). Stringent investor protection can increase corporate value (Bruno & Claessens, 2010) and rules that protect shareholder rights encourage economic development (Spamann, 2010). Whilst strong laws can create value (La Porta et al., 1998), strong law without strong enforcement can be ineffective (Bhattacharya & Daouk, 2009; Humphery-Jenner, 2013). Strong regulation and strong corporate governance are complements where regulators pressure firms to adopt effective monitoring structures (Becher & Frye, 2011) but regulation is not a replacement for traditional monitoring and financial firms may need more monitoring because of their heightened risk exposure (Masulis & Thomas, 2009).

7.2 Protecting the funded party

This work is concerned with the funding of commercial litigation and for corporate litigants the general UK legal position is that the law will not interfere in a commercial contract that has been freely entered into by the parties[141]. It is therefore of no surprise that Hyde (2013) reports ALFEW's chairman as saying that "*It is extraordinary to think that a government would want to regulate purely commercial arrangements between purely commercial entities*" despite the calls from critics for regulation and allegations that "*The intersection of injured tort plaintiffs desperate for money and wealthy interests seeking to make money off of tort litigation creates a*

[140] Is the seller licensed? Is the investment registered? How do the risks compare with the potential rewards? Do I understand the investment? Where can I turn for help?

[141] See comments of Clarke J in *Raiffeisen Zentralbank Osterreich AG v Royal Bank of Scotland plc* [2010] EWHC 1392 (Comm) at §313-315, 321. The recent incidents of Interest rate hedging products being mis-sold by the banks has resulted in this decision being reviewed and upheld in *Crestsign v National Westminster Bank & Royal Bank of Scotland* [2014] EWHC 3043 (Ch). Crestsign has been given leave to appeal.

scenario that can lead to litigation funding companies exploiting tort plaintiffs" (Cain, 2014, p.15) and that this is especially so in multi-party actions (Beisner et al., 2009b). Whether plaintiffs are technically 'commercial' litigants or 'consumer' litigants is not easily generalised but it is a fundamental precept in government's approach to regulation and consumer protection. 'Consumer' usually means "*an individual acting for purposes that are wholly or mainly outside that individual's trade, business, craft or profession"*[142] and it follows that claimants in a multi-party action, e.g. the recent airline ticket overcharging claim, could comprise both consumer and commercial litigants dependent on the reason for buying a ticket.

Where the claimant is an uninformed individual or an uninterested party in a class action then some regulation may be appropriate to prevent abuse and maintain the best interests of the funded party. For example, the Consumer Rights Act 2015 introduced, with effect from 1 October 2015, opt-out collective actions for competition cases[143]. The government originally decided that claims should only be bought by claimants or genuine representative bodies (e.g. trade or consumer associations) and not by law firms, third party funders or special purpose vehicles. The Government's fear was *that there could be a risk of abuse if legal firms, funders or special purpose vehicles established solely for the purpose of litigation were allowed to bring cases* (United Kingdom Parliament, 2013, §5.30-5.32)[144]. The Consumer Rights Bill contained restrictions on the financing of claims as it prohibited DBAs and did not provide for a claimant to be able to recover any uplift in a CFA. However, the prohibition on TPFs was removed as "*Blocking access to such funding would result in a collective actions regime that is less effective. …This would weaken private enforcement in competition law, which is of course not the Government's wish or intention*" (United Kingdom Parliament, 2014). To what extent TPFs actually decide to fund such actions remains

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[142] See Consumer Rights Act 2015 §2(3).

[143] These cases will take place in the Competition Appeal Tribunal ('CAT') and be heard by a specialist three-person panel consisting of a judge or senior barrister as Chairman and two members who are experienced in law, business, accountancy, economics and other related fields (CAT, 2011).

[144] A majority decision in an Australian court, held that litigation commenced for the purpose of generating legal fees rather than vindicating rights is an abuse of process. *Treasury Wine Estates Ltd v Melbourne City Investments Pty Ltd* [2014] VSCA 351.

to be seen.

The funder will obviously draft the contract to mitigate his risks of being misled, not being paid etc. (Chapter 1, section 1.2). Sebok and Wendel (2013) "*argue that contract law is better suited than regulation of tort liability to minimize both parties' risk inherent in litigation investment*" and Steinitz et al (2012; 2013), following an extensive discursive blog[145] on a number of the issues that need to be considered, drafted a model litigation funding agreement. In these circumstances it is the responsibility of the funded party and his advisors to ensure that sufficient information has been obtained to make an informed decision as to whether to accept the funding despite unclear issues such as solvency.

7.3 Protecting counter-parties

The most prominent campaigner on behalf of business counter-parties is the US Chamber Institute for Legal Reform (ILR) founded by the US Chamber of Commerce in 1998. The ILR has published various reports against Third-Party Funding and whilst the ILR claims to represent commercial business of all sizes its stance is anti-class action and usually pro-defendant. (Beisner et al., 2009a; Beisner, Miller, & Rubin, 2009b; ILR, 2010). It campaigns and lobbies at home and internationally in advancing its mission "*to restore balance and ensure justice for both claimants and defendants, and maintain integrity within the civil legal system*"[146]. In the UK it has backed the campaigns "Justice not profit" and "Our legal future"[147], and responded to the consultation phases of the Consumer Rights Bill, the CJC working party on Litigation Funding and the consultation on private actions in competition law[148]. Its correspondence with parliamentarians has also been quoted in the house (United Kingdom Parliament, 2012a, cl. 1589).

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[145] http://litigationfinancecontract.com/how-to-use-this-site/

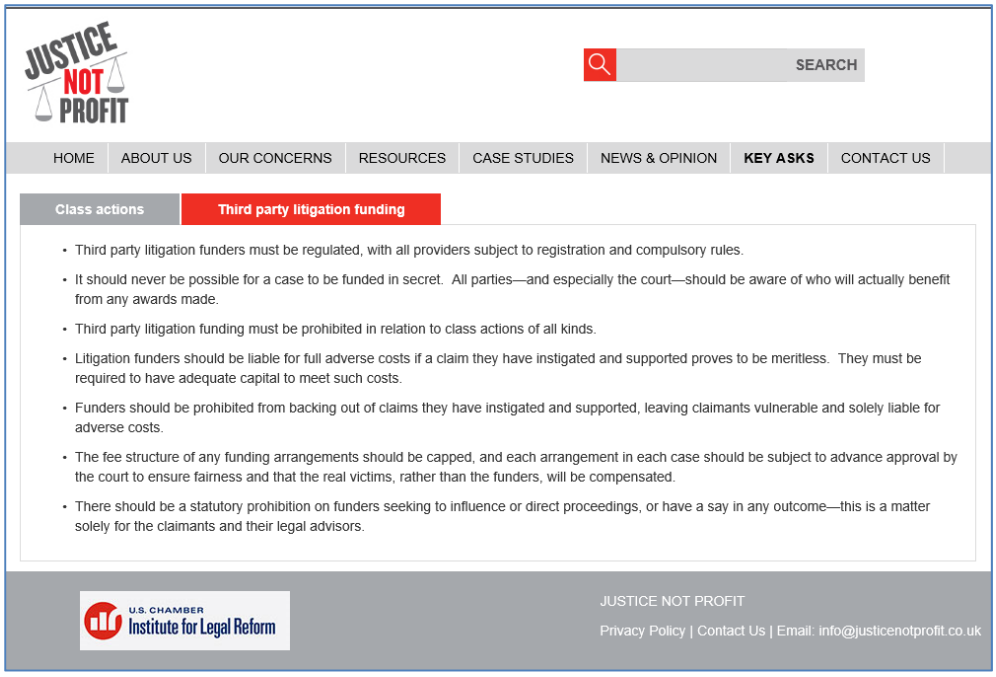
[146] www.justicenotprofit.co.uk/about-us/ (Viewed 8 June 2015).

[147] www.justicenotprofit.co.uk/ and http://ourlegalfuture.co.uk (Viewed 8 June 2015).

[148] www.publications.parliament.uk/pa/cm201314/cmpublic/consumer/memo/cr18.pdf; www.instituteforlegalreform.com/uploads/sites/1/CJC_Code_of_Conduct_Comments.pdf; http://ourlegalfuture.co.uk/pdf/BIS_response_12_July.pdf (Viewed 8 June 2015).

In essence the ILR 'key asks' (Figure 2) in respect of litigation funding are the regulation of litigation funders, the prohibition of TPF in class actions, and increased transparency. It cites solvency issues, abusive litigation and financial holdup as the drivers for reform.

Figure 2 'Key asks' of the US Chamber Institute for Legal Reform's Justice Not Profit Campaign



Source: http://www.justicenotprofit.co.uk/key-asks (Viewed 8 June 2015).

Unacceptable problems that arise in class action litigation may also arise in commercial litigation and include, according to Hodges & Money-Kyrle (2012) ('HMK'):

- They do not prevent or stop cases with little merit
- Excessive transaction costs that impose a high drag on the courts, defendants, and the economy
- Claimants are unable to recover their entitlements promptly as a result of cases taking too long

a) Holdup settlements i.e. i) settlement of low merit cases at a higher than value amount as it is cheaper for defendants to settle than fight; and ii) settlement of high merit cases at low value as it is cheaper for claimants to settle than fight;

b) Excessive and disproportionate remuneration to intermediaries (lawyers, funders, and claims managers) depriving wining claimants of much of their damages and burdening losing defendants with excessive costs;
c) Conflicts of interest where intermediaries control the strategic litigation decisions and settlements and adversely affect a party's rights;
d) Excessive volumes of litigation, especially where alternatives are available;
e) Bringing the legal system into disrepute.

HMK acknowledge there is insufficient evidence of abuse and base their evidence of cases of poor merit being advanced on "*a stream of cases brought in England & Wales from the 1980s and 1990s driven by lawyers and funded by legal aid with a 'no loser pays' rule, in which the clear majority of cases failed or, in a few cases, led to settlements where merits were unclear*". Since that time there has been major reform to the CPRs and to Legal Aid[149].

What is meant by a 'low merit' case is debateable and has to be treated cautiously. It is wrong to assume that all cases that fail have low merit, as cases can be lost for a variety of reasons[150]. Vexatious cases[151] may be of low merit, but arguable cases even where prospects of success appear low, may develop the law in new directions. *Donoghue*, *Factortame* and *Arkin*[152] were all cases where an independent pre-trial assessment may have considered them to have low prospects of success and without merit but the claimants and the courts decided otherwise.

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[149] These reforms started with the implementation of Lord Woolf's (1996) report.

[150] Hodges (2001, §16.16) comments that the common perception is the introduction of strict liability means that product liability cases have a high probability of success but pharmaceutical claims in particular have a low rate of success for various reasons.

[151] described by Lord Bingham *in Attorney General v Barker* [2000] EWHC 453 (Ch) at §19 as having "*little or no basis in law (or at least no discernible basis); that whatever the intention of the proceeding may be, its effect is to subject the defendant to inconvenience, harassment and expense out of all proportion to any gain likely to accrue to the claimant; and that it involves an abuse of the process of the court, meaning by that a use of the court process for a purpose or in a way which is significantly different from the ordinary and proper use of the court process*".

[152] *Donoghue v Stevenson* [1932] UKHL 100; *R (Factortame Limited) v Secretary of State for Transport, Local Government and the Regions* (No.8) [2002] EWCA Civ 932; *Arkin v Borchard Lines & Ors* (no.2) [2003] EWHC 2844 (Comm).

According to HMK (2012) it is not possible to produce just enough meritorious litigation and no abusive and unmerited litigation. They conclude "*If safeguards are put in place that give adequate protection against abuse, the collective litigation procedure will itself not work in providing widespread access to justice. There will be inadequate incentives for actors, and collective litigation will be inhibited, take too long, and cost too much*".

A fuller discussion on these issues is beyond the scope of this chapter but it should be noted that the courts are keen to protect defendants from abusive litigation and they have a duty to manage costs so that they are proportionate. The court can hold that interference in case conduct is an abuse of process and stay or strikeout the case[153]. The court also has discretion to hold funders liable for adverse costs[154] or require security for costs[155]. In addition to the court protections, defendants may also mitigate their risk by insurance e.g. product liability insurance.

7.4 Protecting the judicial system

7.4.i *Champerty and Maintenance*

In this sub-section I review the ancient laws of champerty and maintenance which have regulated litigation funding for centuries and the new act that is in the process of enactment and will impact the future litigation funding market.

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[153] Under CPR (2011) 3.4(2) a court may strike out a statement of case (in whole or part) at any stage of the proceedings (including after determination) if it appears to the court that there is no reasonable grounds for bringing or defending the claim; or that the case is an abuse of the court's process or likely to obstruct just disposal of the case; or there is a failure to comply with the rules, directions or orders of the court.

The court can also, under Rule 24.2, give summary judgment against either party (on the whole or on part of a case) if it considers that party has no real prospect of succeeding and there is no other compelling reason why the case should be tried.

[154] Section 51 of the Senior Courts Act 1981 and CPR (2011) Rule 46.

[155] CPR (2011) Rule 25.

The doctrines of champerty[156] and maintenance[157] have changed over time as a result of judicial decisions as opposed to statutory enactment[158]. The Law Commission defined maintenance and champerty in the following way:

> *"Maintenance… may be defined as the giving of assistance or encouragement to one of the parties to an action by a person who has neither an interest in the action nor any other motive recognized by the law as justifying his interference. Champerty is a particular kind of maintenance, namely maintenance of an action in consideration of a promise to give to the maintainer a share in the subject-matter or proceeds thereof, if the action succeeds"* (Law Commission, 1966, §3-4).

At that time, maintenance (which included champerty) was both a crime - punishable by fine and imprisonment – and a civil wrong. Champerty and maintenance was abolished as a crime in the Criminal Law Act 1967 but was retained as a civil tort 'against public policy'. The consequences of an illegal agreement are that the contract between litigant and maintainer/ champertor is both unenforceable and may render the maintainer/ champertor liable for a costs order in favour of the counter party. Over the years the courts[159] have recognised a number of parties who have overcome challenges of champerty and maintenance and shown that their interests and motives justify 'interference' in the litigation. As a result lawful maintainers and champertors

[156] Some jurisdictions e.g. Scotland, South Africa and Spain draw on Roman Law and use the Latin term *pactum de quota litis* to denote a contract by which the client undertakes to compensate the lawyer in the event of success by surrendering to him a share of the property recovered (Scott, 2004; Walton, 1920, pp.134-5).

[157] See Winfield (1919; 1921) and Dennis (1890) for historical accounts and Tapp (1861) for the status of the law in the mid nineteenth century. see *Neville v London Express Newspaper* [1919] AC 368 for authorities.

[158] The last statute on champerty and maintenance was in 1540 (32 Hen. VIII. c. 9.).

[159] Cases cited are UK cases many of which have been used as authorities in Australia, the USA and elsewhere.

include immediate family[160], friends[161], lawyers[162], creditors[163], trade indemnities[164], trade unions[165], insurers[166], banks[167], charities[168], shareholders[169], directors[170], well-wishers[171] and most recently entrepreneurial investors[172]. Over 30 years ago Lord Denning expressed[173] the opinion that *"champerty is an archaic concept and businessmen can look after themselves"*. His primary concern was that *"The real vice in the 20th century is the speculative financing of personal injury claims"*. In the 21st century the rules against champerty and maintenance are primarily concerned with protecting the integrity of the litigation process[174].

Jackson LJ, in his review of civil litigation costs, also differentiated commercial claimants from 'consumers' when he expressed the view that "*in ordinary commercial, construction and similar litigation there should be no special rules to protect weaker parties against adverse cost orders*" (Jackson, 2010, p.89). He also questioned whether the civil wrong of champerty and maintenance should be

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160 *Slywright v Page* [1587] 75 ER 1023; *Cooper v Maxwell* [1993] Ch 1 [1992].

161 *Martell & Ors v Consett Iron Co* [1955] Ch 363.

162 *Pittman v. Prudential Deposit Bank Ltd* [1896] 13 TLR. 110, C.A; *Re: Trepca Mines (No.2)* [1963] Ch 199; Access to Justice Act 1999; *Morris v Southwark LBC* [2010] EWHC B1 (QB) EWHC B1 (QB).

163 *Guy v Churchill* [1888] 40 Ch.D 481.

164 *British Cash and Parcel Conveyors Ltd v Lamson Store Service Co* [1908] 1 KB 1006.

165 *Greig v National Amalgamated Union of Shop Assistants* (1906) 22 TLR 274; *Hill v Archbold* [1967] 2 QB 418.

166 *Lloyds v Fleming* [1872] LR 7 QB 299; *Skelton v Baxter* [1916] 1 KB 321; *Murphy v Young & Co's Brewery Plc* 1 WLR 1591; *Chapman v Christopher* [1997] EWCA Civ; The *Colombiana* [1965] 1 QB 101.

167 *Trendtex Corporation v Central Bank of Nigeria* [1976] 1 WLR 868; *Camdex International v Bank of Zambia* [1998] QB 22.

168 *Holden v Thompson* [1907] 2 KB 489.

169 *Elliott v Richardson* [1865] LR 5 CP 744; *Wallersteiner v Moir* (no.2) [1975] QB 373 [1975].

170 *Taylor v Pace Developments* [1991] BCC 406.

171 *Plating Co v Farquharson* (1881) 17 ChD 49; *Hamilton v Al Fayed* [2002] EWCA 665.

172 *Factortame* [2002] EWCA Civ 932; *Arkin v Borchard Lines & Ors* (No.2) [2003] EWHC 2844 (Comm).

173 See *Flight v Leman* (1843) 4 QB 883 and *Trendtex Trading Corpn. v Credit Suisse* [1982] AC 679 at 643.

174 *Papera Traders Co Ltd v Hyundai (Merchant) Marine Co*, (No 2) [2002] EWHC 2130 (Comm) §45.

abolished and received a mixed response (Jackson, 2009, §15.4.2). Surprisingly, perhaps, the Litigation Funders Alliance was in favour of retaining the law "*as a useful mechanism to ensure the balance of power between claimant and professional funder remains appropriate*". Jackson's own view was that the 1967 Act which retained champerty and maintenance as civil wrongs should not be repealed[175] and that compliant TPFs would become another exception to illegal champerty and maintenance. His justification for retaining the old law was that:

> *"The law of maintenance and champerty has a wider impact, which goes beyond third party litigation funding of the kind discussed above. The abolition of this common law doctrine may have unforeseen and adverse consequences. Furthermore, such a drastic step is not necessary in order to protect the legitimate interests of third party funders"* (Jackson, 2010, pp. 123-4).

Jackson gives no further indication of the wider impact he was considering but he may have been guided by the New Zealand Law Commission ('NZLC') who also rejected, against overwhelming support, the proposition that 'the torts of champerty and maintenance should be abolished'. Their reasoning was that "*New Zealand commerce does not lack unruly corporations prepared to employ ruthlessly aggressive litigious processes against business rivals, hiding behind nominal litigants if need be*" (NZLC, 2001, pp.10-11).

Although Jackson's recommendation brings some clarity for TPFs, the purpose of champerty and maintenance laws in a modern age remains unclear. Oliver Wendell Holmes observed:

> *"The customs, beliefs, or needs of a primitive time establish a rule or a formula. In the course of centuries the custom, belief, or necessity disappears, but the rule remains. The reason which gave rise to the rule has been forgotten, and ingenious minds set themselves to inquire how it is to be accounted for. Some ground of policy is thought of, which seems to explain it and to reconcile it with the present state of things; and then the rule adapts itself to*

[175] In his preliminary report Jackson LJ added as a footnote "*The point has been made that the doctrine of maintenance and champerty serves a useful purpose when individuals (e.g. fraudulent directors) hide behind companies, while controlling litigation*" (Jackson, 2009, p.163, n.38).

> *the new reasons which have been found for it, and enters on a new career. The old form receives a new content, and in time even the form modifies itself to fit the meaning which it has received"*
> (Holmes, 1881).

Precedent and old laws which may be resurrected create legal uncertainty[176] where some unresolved doubts remain for a substantial period of time. From a practical perspective the risk may be mitigated by consensus among legal experts but there is still uncertainty in that courts may subsequently change 'settled views' of the law (MacNeil, 2009, p.70). Such 'legal shocks' are uncommon but not unknown. The landmark decisions that determined the duty of care owed by auditors to shareholders[177], and the earlier cases that determined duty of care to a neighbour[178] and the protection of corporate limited liability[179] were all legal shocks at the time. Investors in litigation may create a legal shock by testing legal grey areas as did Elliot Partners with their sovereign debt claims against Peru (Bradley et al., 2010).

The Legal Aid, Sentencing and Punishment of Offenders Act 2012 (LASPO)

The LASPO Act, which is in the process of implementation, will change litigation funding as a result of a redistribution of the costs and risks of litigation. During both the committee and the report stage of the bill, some members of the House of Lords tried unsuccessfully to amend the bill and introduce a clause specifically to bring TPF under government control (United Kingdom Parliament, 2012a; 2012b). Lord McNally[180] responded:

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[176] Legal risk is commonly understood to refer to the risk of being sued or being the subject of a claim or proceedings due to some infringement of laws or regulations, or committing a tort or some other act that gives rise to a civil liability (McCormick, 2006, p.10). Legal uncertainty is the subset of risk where the lack of clarity in the law poses risks for markets, transactions and legal structures (MacNeil, 2009, p.70).

[177] *Caparo Industries plc v Dickman* [1990] UKHL 2.

[178] *Donoghue v Stevenson* [1932] UKHL 100. It is not generally appreciated that this famous case of the snail in the ginger beer bottle was originally filed just three weeks after the Scottish Court of Session had decided the appeals in the case of *Mullen v Barr* [1929] SC 461 which concerned a mouse in a ginger beer bottle. It is relevant that the *Donoghue v Stevenson* case was for a determination of an issue of law and the factual evidence as to whether a snail ever existed was never tested.

[179] *Salomon v Salomon* [1897] AC 22.

[180] Minister of State at the Ministry of Justice.

> *"At the moment we are looking at how voluntary regulation is working in the area... We do not think that statutory regulation through this Bill is either the right place or the right time ... Both lawyers and legislators will have to follow the matter closely to see whether we will need to return to it at some future date"* (United Kingdom Parliament, 2012b).

Voluntary self-regulation may defer government regulation but, as the above quotation illustrates it does not remove the regulatory risk. Self-regulation can be considered as 'enforced' regulation when it is subject to government oversight (Baldwin & Cave, 1999, p.39).

LASPO is the enabling legislation for contingency fees in litigation in the UK[181]. Officially such agreements will be known as Damages Based Agreements ('DBA') but irrespective of the title, DBAs permit lawyers to be paid a share of the damages[182]. The uptake of DBAs by law firms has been low due to drafting problems and uncertainty over the legality of 'hybrid' DBAs[183] (Mulheron, 2013; 2014a). Government has ruled out hybrid DFAs "*as it is considers such arrangements could encourage litigation behaviour based on a low risk/high returns approach*" even though Dyson MR and Jackson LJ are both supportive (CJC, 2014). Litigation funders have tried to fill the resulting gap with their own 'hybrid' arrangements (Burford,2013b; Dunn & O'Dowd, 2014).

Comment

Statute Law, Regulatory Law and the Common Law are not static and evolve over time as a result of government decisions, judicial interpretation (biased or not), and even superior economic resources and lobbying. The regulations regarding appeals increase the risk that an incorrect judgement at first instance will not be corrected and

[181] The Coroners and Justice Act 2009 added §58AA to the Courts and Legal Services Act 1990 which, with effect from the 12 November 2009, provided for the regulation of DBAs in employment matters.

[182] *"... (i) the recipient is to make a payment to the person providing the services if the recipient obtains a specified financial benefit in connection with the matter in relation to which the services are provided, and (ii) the amount of that payment is to be determined by reference to the amount of the financial benefit obtained*" (§58AA (3)(a) of the Courts and Legal Services Act 1990).

[183] A two-part fee comprising a fixed or hourly based fee plus a success element based on the size of the recovery.

a precedent will be set that will only be overturned when a similar case arises in the future. To a 'one–shot' litigant the outcome may be beneficial or adverse, but to 'multi-shot' litigants and their agents (e.g. corporate defendants and litigation funders), error correction may be achievable but at significant cost. Litigation funders also face the risk that as a result of legislation, the market may be changed (e.g. the introduction of DBAs) or the regulatory regime itself.

It is ironic that the laws of champerty and maintenance (i.e. the barrier to litigation funding) which were originally intended to protect the litigating poor, had over time become the tool to prevent the impecunious from litigating. Bentham (1787) argued that whilst the law through regulation had given the wealthy the monopoly of justice against the poor, the law could dissolve that monopoly whenever it pleased. The old law is being slowly dissolved, but despite the legitimisation of third party litigation funding generally, defence lawyers are still litigating the detail[184].

The concerns of the court stem from issues surrounding public policy and oppression and whether those fears and concerns are allayed by the Litigation Funding Agreement ('LFA').

7.4.ii ***Public policy***

Public policy is not universal and will vary from jurisdiction to jurisdiction[185]. Public policy changes over time as Danckwerts L.J. explained over 45 years ago[186]. At the end of the 20th century Lord Mustill declared *"that the law on maintenance and champerty can best be kept in forward motion by looking to its origins as a principle of public policy designed to protect the purity of justice and the interests of vulnerable*

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[184] E.g. *JEB Recoveries v Binstoc*k [2015] EWHC 1063 (Ch) where the assignment of a claim to a special purpose vehicle was challenged as an abuse of process.

[185] In *Re ICP Strategic* [2014] (1) CILR 314, the Grand Court of the Cayman Islands decided that although a contingency agreement was against public policy in the domestic jurisdiction, it could nevertheless still give permission to a Cayman court appointed liquidator to issue proceedings in another jurisdiction under a contingency fee agreement.

[186] *"…the law of maintenance depends upon the question of public policy, and public policy …is not a fixed and immutable matter. It is a conception which, if it has any sense at all, must be alterable by the passage of time". Hill v Archbold* [1968] 1 QB 686 at 697.

litigants"[187]. Shortly afterwards Millett LJ confirmed that: "*It is not an abuse of the process of the Court or in any way improper or unreasonable for an impecunious plaintiff to bring proceedings which are otherwise proper and bona fide while lacking the means to pay the defendant's costs if they should fail"*[188] and the following year, he emphasised the importance of freedom of access to the Courts and the tension between the rights of a successful defendant to recover his costs and the claimant's right to seek a legal remedy when he concluded that:

> *"It may be unjust to a successful defendant to be left with unrecovered costs, but the plaintiff's freedom of access to the courts has priority. The risk of an adverse order for costs and consequent bankruptcy has always been regarded as a sufficient deterrent to the bringing of proceedings which are likely to fail … It is preferable that a successful defendant should suffer the injustice of irrecoverable costs than that a plaintiff with genuine claim should be prevented from pursuing it"*
> (*Abraham v Thompson* [1997] 4 All ER 362 at 379)

Concerns expressed more than a century ago[189] that maintenance would lead to strife and inconvenience and that uncontrolled funders would not be responsible for the consequences when a case failed, still persist and are oft cited by critics of TPF as reasons for opposing litigation funding[190]. Litigation funding has also been

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[187] *Giles v Thompson* [1994] 1 AC 142 at 164.

[188] He went on to say "*The position of a liquidator is a fortiori. Where a limited company is in insolvent liquidation, the liquidator is under a statutory duty to collect in its assets…He is under no obligation to the defendant to protect his interests by ensuring that he has sufficient funds in hand to pay his costs as well as his own if the proceedings fail*". *Metalloy Supplies Ltd v M.A. (UK) Ltd* [1996] EWCA Civ 671.

[189] Hawkins J in *Alabaster v Harness* [1894] 2 QB 897 at 904 "*to allow a person to assist another in litigation upon matters which do not immediately and directly concern him, would lead to more strife and inconvenience than could possibly result from the present law...*". On appeal Lord Esher MR stated in *Alabaster v Harness* [1895] 1 QB 339 at 342 "*it seems to have been thought that litigation might be increased in a way that would be mischievous to the public interest if it could be encouraged and assisted by persons who would not be responsible for the consequences of it when unsuccessful*".

[190] E.g. "*Practices like third-party funding increase the overall litigation volume, including the number of non-meritorious cases filed, and thus effectively reduce not increase the level of justice in the litigation system*" (Beisner, Miller, & Rubin, 2009a, p.4).

challenged on other grounds e.g. it is an 'abuse of process'[191] or it is an illegal managed investment scheme or credit facility[192].

As recently as 2009 an English court held[193] that the arrangements whereby a claims management company took assignments of claims[194] against financial institutions for the mis-selling of payment protection insurance were champertous[195]. Although this

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[191] E.g. the Australian case of *Deloitte Touche Tohmatsu v. JP Morgan Portfolio Services Limited* [2007] FCAFC 52 where the issue was whether giving control of the litigation to an non-party was an 'abuse of process'.

[192] These allegations were tried in Australia. In *Brookfield Multiplex Limited v. International Litigation Funding Partners Pte Ltd* [2009] FCAFC 147 where the court decided that the arrangement between a litigation funder, the solicitors and the representative party in a class action case constituted a managed investment scheme and as such was required to be registered under the provisions of the Corporations Act 2001 (Cth).

In March 2011 the NSW Court of Appeal in *International Litigation Partners Pte Ltd v Chameleon Mining NL* 2011-0315A-NSWCA held by majority that a Litigation Funding Agreement was prima facie a financial product under Section 763A of the Corporations Act 2001 (Cth) because it was a facility through which financial risk was managed. As a financial product issued by an unlicensed funder the LFA (Litigation Funding Agreement) could be rescinded and no fees were payable to the litigation funder. The effect of this judgment was that litigation funders of Australian cases must hold an Australian Financial Services Licence ('AFSL'). Special leave to appeal the Chameleon case was granted [2011] HCATrans 296 and the appellants won back their fees when the court ruled the agreement a 'credit facility' *International Litigation Partners Pte Ltd v Chameleon Mining NL (Receivers and Managers Appointed*) [2012] HCA 45.

Subsequently the Corporations Amendment Regulation 2012 (No. 6) enacted and declared that litigation funding schemes are financial products and not credit facilities, thereby overcoming *Chamelon* The amendment permits litigation funders to carry on without an Australian financial services licence or an Australian credit licence, but they are required to put in place written arrangements to manage conflicts of interest and review them annually.

A similar argument was advanced and lost in the 2006 Texas case of *Anglo-Dutch Petroleum International Inc v Haskell* 193 S.W.3d 87.

[193] *Claims Group Direct Limited v Lloyds TSB Bank PLC & Anor* [2009] Manchester CC Case No. 9MA03909 and 9MA04847.

[194] The law distinguishes between the assignment of property which carries with it the right to pursue a cause of action related to that property (e.g. assigning a debt and the assignment of a 'bare cause of action' ie a right to claim damages for a tortious wrong, unconnected with property rights. Whilst the latter is not assignable, there is no objection to assigning the 'fruits of the action' provided the assignee is not in a position to control the litigation *Glegg v Bromley* [1912] 3 KB 474, 488.

[195] The reasons for concluding that the agreement were champertous are summarised as follows:
1) The claims management company was a complete stranger to the proceedings
2) The claimants share at 34.5% plus an administration fee and disbursements was substantial and the terms of the agreement with the policyholder were onerous.
3) Public policy anticipates a degree of consumer protection, even in the context of access to justice. The likelihood is that many of the policyholders were unsophisticated.
4) The claimant company exercised substantial control over the litigation.
5) The company's interest was in generating claims rather than protecting the policyholders.
6) Solicitors would not have been able to enter into this type of arrangement and would not be permitted to blatantly ignore the CPR.

case was a 'consumer case' as opposed to a 'commercial case' the concerns may be common but the courts are less protective of commercial entities as they are considered less vulnerable litigants[196] and in a position to take advice before entering contracts.

7.4.iii ***Oppression***

The courts concern that the third party funding of litigation may be motivated by mischievous or oppressive conduct are understandable, but the mechanism by which 'mischievous or oppressive' litigation can be initiated has changed since the 19th and early 20th century cases. At that time a pauper[197] was entitled to have at no cost, a solicitor and/or counsel assigned to assist him sue or defend *in forma pauperis*. The assigned lawyer could not refuse the assistance without the courts permission and would be guilty of contempt of court if he sought any fee, profit or reward from the assignment. No investigation of the merits of the case took place prior to making the court order assigning the lawyer and consequently frivolous and vexatious actions were bought causing expense and inconvenience to the defendants, courts and lawyers (Cook, 1932).

The President of the Supreme Court of the United Kingdom recently commented "*If all members of society cannot gain genuine access to the courts, then the possibility exists for society to become exploitative, as some elements take advantage of the fact that they can ignore the law with relative impunity*", however serial litigation funding does pose some risks in that it could be used as a means to promote defendant's

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[196] In 'consumer' litigation there is concern that litigation loans/funding may be predatory. See the Canadian case of *Giuliani v. Region of Halton*, 2011 ONSC 5119 (CanLII) where the judge's view was that the loan neither facilitated access to justice nor advanced the cause of justice. He decided that the interest rate was unconscionable, unreasonable and arguably illegal and consequently he would not order the losing defendants to reimburse the interest charges as to do so "*would bring the administration of justice into disrepute and encourage predatory lenders whose business it is to extract unconscionable amounts of interest from vulnerable individuals*". He also said "*an award of interest in this case would likely have an adverse impact on other defendants' decisions to proceed to trial or to appeal… access to justice is a two-way street*" (§56-59). In *Schenk v Valeant Pharmaceuticals International Inc*., 2015 ONSC 3215 (CanLII), the judge saw "*no reason why such funding would be inappropriate in the field of commercial litigation*" but he rejected the funding agreement itself as the funder stood to recover more than 50% of the amount recovered (§8,19).

[197] "*Where a man will swear that he hath not £X in the world except his wearing apparel and the thing which he sues for*" The value of X was originally £5 but had increased to £25 by 1913 (Cook, 1932).

buying off unmeritorious claims and it may also create ethical pressures on lawyers (Neuberger, 2013).

By definition, bought off unmeritorious claims do not reach the courts and consequently the courts concern may be more theoretical than empirical as litigation funders state they have no interest in funding unmeritorious claims, and adverse costs act as a deterrent. Although a single case funder may extract a gain it would be more difficult for a serial funder to maintain credibility as a responsible funder[198].

Balancing rights as well as ensuring a 'level playing field' and 'equality of arms'[199] is a core theme when it comes to the courts' concerns as illustrated by the *Golden Eye* copyright infringement case[200]. Justice Arnold was concerned with balancing the conflicting parties' rights[201] arising from the European Charter[202] and the ECHR[203] as

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[198] Game theorists have studied various permutations of nuisance suits. Where the defendant is uninformed about the true value of the claim an equilibrium occurs when the defendant uses a mixed strategy and makes zero offers with some probability (Katz, 1990). Rosenberg and Shavell considered the situation where the cost of filing is low and the nuisance suit is common knowledge but the claimant is 'holding up' the defendant by filing a claim and demanding settlement. Their solution is to give defendants the option to have courts declare that settlement agreements will be not enforced and consequently nuisance suit claimants will not proceed to trial (Rosenberg & Shavell, 1985; 2006). Bebchuk (1996) considered a slightly different variation whereby the suit itself was meritorious but the low level of damages creates a negative value case. His analysis showed that a settlement could be extracted if the litigation costs were spread over time and litigation stages. Farmer and Pecorino (1998) consider the role of lawyer reputation in successfully bringing a nuisance suit and find that cost shifting will reduce the number of nuisance suits as a resulting of reducing the financial return from the activity. Also important is the analysis which shows that losing credibility by dropping a case after a claimant settlement offer has been refused will lead to settlement offers in future cases being refused. From this analysis one would expect litigation funders to be protective of their reputation by not promoting nuisance suits.

[199] CPR (2011) Rule 1.1.

[200] *Golden Eye (International) Ltd v Telefonica UK Ltd* [2012] EWHC 723 (Ch).

[201] The House of Lords in two 2004 cases - *Campbell v MGN Ltd* [2004] UKHL 22, and *Re: S (a child)* [2004] UKHL 47 - considered the interplay between conflicting legal articles. Four propositions emerged (Re: S (a child) at §17) - 1) neither article has as such precedence over the other; 2) where the values under the two articles are in conflict, an intense focus on the comparative importance of the specific rights being claimed in the individual case is necessary; 3) the justifications for interfering with or restricting each right must be taken into account and 4) the proportionality test must be applied to each - for convenience referred to as the ultimate balancing test.

[202] Charter of Fundamental Rights of the European Union [2000] OJ C364/01 ('Charter').

[203] European Convention for the Protection of Human Rights and Fundamental Freedoms [1950] Rome (European Convention on Human Rights, as amended) (ECHR).

a tension existed between the claimants' copyright[204] property[205] and intellectual property rights[206] as against the defendants' right to privacy[207] and right to the protection of personal data[208].

The judge found that the agreements whereby one claimant had full control to act on behalf of the other claimants in return for 75% or less of the proceeds were not champertous and with some hesitation he concluded that the agreements were unlikely to jeopardise the proper administration of justice or "*imperils the ability of the court properly to control the circumstances in which an order will be granted*". The Judge was however troubled and whilst he granted the lead claimant an order he refused to do so for the other claimants saying

> *"It does not follow, however, that it is appropriate, when balancing the competing interests, to make an order which endorses an arrangement under which the Other Claimants surrender total control of the litigation to Golden Eye and Golden Eye receives about 75% of the revenues in return. On the contrary, I consider that that would be tantamount to the court sanctioning the sale of the Intended Defendants' privacy and data protection rights to the highest bidder. Accordingly, in my judgment, to make such an order would not proportionately and fairly balance the interests of the Other Claimants with the Intended Defendants' interests."*
> *Golden Eye (International) Ltd & Anor v Telefonica UK Ltd* [2012] EWHC 723 (Ch) at §146

The ultimate intended defendants i.e. the copyright infringers, one presumes are 'unsophisticated' parties and this case, although it was between commercial entities, is illustrative of the courts concern to ensure that 'unsophisticated' consumers are not oppressed[209].

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[204] Claimants' copyrights are 'rights of others' within ECHR Article 8(2) and Charter Article 52(1).

[205] ECHR First Protocol Article 1.

[206] Charter Article 17(2).

[207] ECHR Article 8(1); Charter Article 7.

[208] Charter Article 8.

[209] N.B. on appeal *(Golden Eye (International) Ltd v Telefonica UK Ltd* [2012] EWCA Civ 1740) their lordships reversed this decision because they found the reasoning inconsistent with earlier decisions

Carrying out the ultimate balancing test may be in the claimant's interest as in the US case of *Miller UK Ltd v Caterpillar, Inc.* which was funded by Juris Capital, where the judge said:

> *"To sustain a maintenance/champerty defense in this case would create a greater legal wrong than vindicating the defense would avert. It would effectively endorse the alleged misappropriation of trade secrets (if, in fact, that occurred) and would encourage future commercial dishonesty – a wrong of manifestly greater significance than whatever wrong could be averted by recognizing the defense at the insistence of the alleged tortfeasor, who is a stranger to the contract claimed to be champertous. The maintenance of standards of commercial ethics and the encouragement of invention are the broadly stated policies behind trade secret law."*

In Australia, the Corporations Act 2001 §477(2B) requires liquidators to gain approval from the courts, the committee of inspection or the creditors if they are entering into long term agreements. As litigation funding agreements tend to last for longer than 3 months, liquidators sometimes seek the court's approval to enter into a funding agreement. Court approval will also give the liquidator a degree of protection against subsequent claims of a breach of duty. The courts, before deciding whether approving a litigation funding contract is for or against public policy, will consider the particulars of the specific case and will take into account the interests of all creditors and whether they have been consulted.

In *Re Imobridge Pty Ltd*[210] Fryberg J identified a number of factors that would affect the exercise of the discretion in the litigation funding context. The first relates to the liquidator's prospects of success in litigation where he held (§38) that while the Court should give due weight to the liquidator's commercial judgment, and should not attempt to try the proposed proceedings, the Court should nevertheless form some

in the original judgement.

[210] *Re Imobridge Pty Ltd*[210] (1999) 18 ACLC 29.

opinion as to the merits of the proposed action. Furthermore whilst good prospects of success would favour granting approval of the agreement, poor prospects, although not necessarily fatal to the application, would militate against approval. Of some significance to the Court is whether legal advice on the prospects had been sought.

The second concern was oppression to the respondents or another party in the proceedings. Examples would be undue delay by the liquidator; or the liquidator not having paid costs to another party in respect of a prior application; or even leading to proceedings where the respondent is in financial difficulty.

The third factor concerns the interests of creditors other than the respondent where controversially Fryberg J said (§41):

> *"... the fact that the most likely outcome of the litigation will benefit only the professionals involved in the winding up is not necessarily a reason to stifle the litigation… That there is also some chance of benefit for the unsecured creditors without any detriment to them to some degree reinforces the case for bringing the proceedings."*

In *Hall v Poolman*[211] Justice Palmer at first instance had the same concern because so few assets existed, the reality of the case being that the litigation funders would receive most if not all the proceeds of any recovery and that the creditors would obtain little if any benefit. Furthermore the litigation would burden the defendants further[212]. The case went to appeal[213] where it was held that:

> *"The public interest in the prosecution of insolvent trading and unfair preference proceedings is one important factor to be*

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[211] *Hall v Poolman* [2007] NSWSC 1330.

[212] *"I am gravely concerned at the extent and cost of this litigation and that the Liquidators seek to throw the whole burden of those costs onto the Defendants …*

What has happened, it seems, is that the complexity and cost of this litigation has expanded to fill the funding budget available. $2M has been spent to recover a possible maximum of $6M. In my view, this expenditure is quite out of proportion" Hall v Poolman [2007] NSWSC 1330 §381,383,384.

[213] *Hall v Poolman* [2009] NSWCA 64.

> *considered in the exercise of the court's discretion … However, the public interest is not so overwhelming as to extinguish all other considerations [§128].*

Conflicts of interest may exist where the funder is also a creditor of the insolvent company being funded[214] or where the litigation funder specifies the lawyer to be engaged. In an Australian case[215] the examinees complained that a form of oppression arose out of the relationship between the funder IMF and the law firm Walker Insolvency Lawyers ('WIL'). Under the terms of the funding agreement the liquidator agreed to engage WIL with respect to the examinations and if the option for further funding was exercised, any subsequent proceedings. Mr John Walker who was formerly a partner in the firm WIL was at the time of the trial non-executive chairman of that firm and at the same time a director of IMF. The firm and IMF also shared premises and a receptionist/telephonist, but none of the then partners of the firm had any financial interest in IMF. The court held that there was no evidence that WIL stood to benefit from the gains made by the funder IMF, as apparently their benefits were confined to their professional fees. The court saw no reason for thinking that the solicitors will conduct the litigation unduly aggressively in order to obtain collateral advantage, or that they would act otherwise than in a proper manner, so consequently there was no evidence of relevant oppression.

In most cases the Australian courts approve litigation funding agreements for liquidator's investigations and recovery. However failure to provide sufficient evidence on issues such as the prospects of success, liquidator's expenditure to date and the extent of the claims may hinder the judge's deliberations and prevent approval[216].

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[214] This issue was considered in *Pascoe; Re Matrix Group Ltd (in liq)* [2011] FCA 1117.

[215] *Re ACN 076 673 875 Ltd* [2002] NSWSC 578.

[216] c.f. *Jones, Saker, Weaver and Stewart (Liquidators), in the matter of Great Southern Limited (in liq) (Receivers and Managers Appointed)* [2012] FCA 807.

8 Conclusion

Historically the rules on litigation funding have been made in *ex-post* judicial decisions but in my opinion that is an unsatisfactory approach as only a small subset of disputes are litigated and of those litigated disputes, precedents only result where the opposing party is aware of litigation funding and finds it objectionable.

The litigation funding market is made up of a few firms who often act internationally and through complex corporate structures, which adds to the regulatory challenges and raises the question as to whether regulation should be applied to the firm, the management, both or neither. Other than capital, there is little to prevent entrepreneurs from establishing a new firm. Although the managers of most litigation funding entities have professional qualifications and are bound by the codes and regulations of that profession, no specific qualifications are required to be a litigation funder and consequently any manager's professional restrictions and sanction threats may be considered more theoretical than real.

Whilst new entrants to a market may be beneficial in increasing competition they can also reduce competition if they come with protective privileges. Law firms, who now have access to capital markets, becoming litigation funders or acting on damages based agreements may create an uneven 'playing field'.

There is very little empirical data and informational asymmetries abound in the industry and where information asymmetry exists there is opportunity for one party to benefit at the expense of another. The litigating party is in the unenvious position of purchasing two 'credence goods' – legal services and litigation funding. Although professional ethics will require the lawyer to protect his client's interest and the ALFEW Code encourages clients to obtain legal advice, the reality is that whilst knowledgeable in his specialist field he may have little experience of litigation funding contracts and how they react to the different situations that can occur during the life of a claim.

Regulation in the public interest may be desirable but all regulation comes at a cost and there are disadvantages. Regulators need to exercise judgement and whilst that is

relatively easy to do *ex-post* it is far more difficult to do *ex-ante* especially in a nascent industry such as litigation funding where the consequences are unlikely to be known and the knowledge is likely to lie with the regulated as opposed to the regulator. Finding a knowledgeable and competent regulator poses problems and whilst self-regulation overcomes some of these issues it is of little value to buyers if it is voluntary and there are no meaningful sanctions and indemnities when things go wrong. The once self-regulated legal profession is now regulated by the independent SRA and the timing of a similar outcome for litigation funding is probably driven by bad conduct.

In the UK, litigation funding has been taking place for well over 10 years. During most of that time there was little evidence that a winning defendant has gone unpaid, unmeritorious litigation has increased, the legal process has been abused, or that claimants have been taken advantage of. The fear of these vices provide a clarion call for regulation which is likely to increase as the type of incidents described in section 1.7 of chapter 1 increase.

Recent financial events have shown that complex regulatory systems cannot be described as either rules or principles-based or even on a continuum between the two. In the early part of this chapter, the literature has shown that no form of regulation is optimal and the banking experience demonstrates that when individual incentives are high and sanctions are low, undesirable conduct can follow. Although market discipline is one of the solvency II three pillars it cannot be relied upon as a substitute for regulatory supervision in some form.

A 2012 report recommends the following principles should be adopted as policy rules for litigation funding:

a) The client retains control over the litigation
b) The integrity of the lawyer-client relationship should remain intact
c) Core factors in any litigation should be the maintenance of the integrity of the court process and cases should be pursued on legal merits; and
d) The client should understand the terms of the agreement entered into with a third party so as to make an informed decision on whether to accept funding

> from a third party, lawyer or any other source (Hodges, Peysner, & Nurse, 2012, p.154)

These principles are already embodied in the common law and whilst they could be adopted as policy guidelines by a regulator, the need for a regulator has not been proven. Although litigation funding in practice has not been too problematic the fear is that *"It only takes the wrong case, by the wrong funder, with the wrong lawyer to have a very serious impact on the market's development*" (Musgrove, 2008). Expressed in the alternative, the fear is that one 'rogue funder' will seriously damage the market by not fulfilling his financial obligations. Consequently the issue of solvency is significant.

Although litigation funding is neither insurance nor a traditional hedge fund, there are similarities including the difficulty of interpreting the financial status of the entity which is examined further in the next chapter. Light touch self-regulation may be appropriate for a nascent litigation funding industry and should the need arise for a stricter regulator regime; government has demonstrated, with the CMRe, that one can be created quickly.

Chapter 3 Accounting for litigation funding

1 Introduction

The outcome of litigation is uncertain and the process rarely begins and finishes within the same financial year. This creates accounting issues for companies that fund litigation as to a) when is the income from the litigation funding contract to be recognised; b) how are costs incurred to date to be valued at the end of the accounting period; and c) how is future expenditure to be treated?

Users of financial statements face uncertainty –

- about the nature and role of financial statements;
- due to limitations of financial statement measurements and disclosures;
- about the nature of the business operations portrayed in the financial statements;
- about management's motives and intentions (Boritz, 1990).

These sources of uncertainty create risks which can lead to users relying on information which is incomplete, incomprehensible, irrelevant, unreliable or not comparable.

This chapter addresses the accounting issues and regulations that cause uncertainty as the answers impact on the reported annualised profitability of a company which in turn may affect investors, creditors, and/or lenders behaviour. I focus on whether shareholders have sufficient information to make informed decisions on both their investment and the directors' conduct. I examine the current accounting rules, what issues arise as a result of the complexity of litigation funding, how directors respond to the complexities of third party litigation funding in the preparation of accounts and what issues arise that may require regulation. I find that the annual and accountants reports, whilst conforming with accounting and auditing standards, fall short of the precision and explanation that investors might expect.

In the next chapter I investigate how the market responds to uncertainty by examining how the equity market interprets litigation news and values litigation funding entities.

By the end of that chapter, I will have addressed Boritz's uncertainties from a regulatory perspective.

1.1 Annual financial statements

The annual financial report and accounts are a primary source of information regarding the financial performance and solvency of a third party funding company and will be scrutinised by claimants who are making a decision on whether to litigate; defendants who are considering a security for costs application; shareholders and potential investors seeking reassurance that the directors are performing and that the company is a going concern. Other users will include creditors, bankers; academics; journalists, regulators etc. but each user will be interpreting the financial statements for his own purpose and valuation for one person may not be appropriate for another (Frings et al., 2012).

Although there are many users of the annual financial reports and accounts, in law few users are entitled to rely upon the auditor's certificate. The court's position is that the management of a company is entrusted to the board of directors which is answerable to shareholders in general meeting. The board of Directors have the statutory responsibility for producing accounts[217] and the function of the auditor is to ensure that the accounts prepared by the board are accurate and provide reliable information[218] for the shareholders as a body to scrutinise the conduct of the company's affairs and reward, control or remove directors. Thus, unless there are special factors[219], the auditor's duty is limited to the shareholders as a body which is identical to the duty to the company itself (Powell & Stewart, 2002, Ch.15).

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[217] *Secretary of State for Trade and Industry v Bairstow* [2004] EWHC 1730 (Ch).

[218] Hobhouse J in *Berg, Sons & Co. Ltd v Mervyn Hampton Adams* [1993] BCLC 1045,1064; [2002] Lloyd's Rep PN 41 *"...the purpose of the statutory audit is to provide a mechanism to enable those having a proprietary interest in the company or being concerned with its management or control to have access to accurate financial information about the company. Provided that those persons have that information, the statutory purpose is exhausted. What those persons do with the information is a matter for them and falls outside the scope of the statutory purpose.*"

[219] E.g. when accounting statement have been prepared for a specific purpose such as a takeover and the accountant has consented to the inclusion of the information provided (Powell & Stewart, 2002, 15-076). But note that even where the accountants have been engaged to ensure compliance there is still no duty of care to investors *Arrowhead Capital Finance Ltd (in liquidation) v KPMG LLP* [2012] EWHC 1801 (Comm), [2012] STC 2503.

Accounts are often said to be difficult to read and understand (Epstein & Pava, 2012) but users expect accounts to be accurate and to be able to use them to compare companies. Obtaining an unqualified audit report is essential to stakeholder confidence. However an auditor can only give an unqualified report if the company has complied with the rules of law and accounting standards. Compliance is dependent upon the conduct of the directors and management.

1.2 Nature of the litigation contract

A litigation funding agreement ('LFA') is an *executory contract*[220] consisting of a performance obligation (e.g. the payment of the client's legal fees) and a right to receive consideration (e.g. the success fee payable by the client and the costs recovered from the counterparty) the amounts of which are contingent upon an uncertain outcome at an uncertain point in time. From an accounting perspective the LFA is both a financial asset and a financial instrument[221]. However the accounting standards for financial instruments specifically exclude from scope some financial instruments such as insurance contracts. IFRS 4 – Insurance Contracts (IASB, 2012b, pp. A179-A207) defines an insurance contract as "*A contract under which one party accepts significant insurance risk (*defined as "*Risk, other than financial risk, transferred from the holder of a contract to the issuer*"*) from another party by agreeing to compensate the policyholder if a specified uncertain future event adversely affects the policyholder*" (IASB, 2012b, p. A198). Under accounting standards the issuer of an 'insurance contract' is not required to be an insurer for legal or supervisory purposes (IFRS 4:5).

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[220] In the UK the term 'executory contract' is not specifically defined and general legal usage is that it refers to "*A contract that is still to be carried out*" (Banham-Hall et.al., 2009, pp.217-8) i.e. one or both parties still have obligations to fulfil e.g. paying for goods delivered. In the US more consideration has been given to the definition because of its importance in bankruptcy law (Andrew, 1991; Westbrook, 1989). The American Black's Law Dictionary defines an executory contract in bankruptcy as "*A contract under which debtor and non-debtor each have unperformed obligations and the debtor, if it ceased further performance, would have no right to the other party's continued performance*" (Garner, 2010).

[221] "*A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. A financial asset is any asset that is: (a) cash; (b) an equity instrument of another entity; (c) a contractual right: (i) to receive cash or another financial asset from another entity; or (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; …*" (IASB, 2012b, p. A879).

The risks associated with the business of litigation funding, over and above the normal risks of doing business, can be characterised as case specific e.g. liability, causation, quantum and collection[222] and then as a portfolio with correlated risks[223]. The accounting issue is how to measure and value these risky contracts and what information should be disclosed about such risks, bearing in mind the possibility that disclosing information regarding litigation risks may impact case outcomes.

Historically, any future income in executory contracts would have been excluded from the financial statements because to do so would depart from an exchange basis of recording transactions where the recognition critical event is contract performance and value changes (other than depreciation) are based upon contract price at the exchange date rather than any form of market value (Hughes, 1978). However, accounting methods/practices have changed over time and further changes are foreseeable, consequently I discuss various accounting rules in the next section.

2 Normal accounting rules

In a recent speech, the Chairman of the International Accounting Standards Board ('IASB') described accounting policy as one of the most difficult and controversial topics to deal with as a result of the judgement and subjectivity of accounting methods. The "*accounting standard-setters often struggle to find a clear answer to the question of how an asset or liability should be valued*" and there are a variety of measurement techniques with the result that the same asset can have different measurement outcomes dependent on the basis on which it is held. The biggest measurement dilemmas relate to intangible assets and income recognition and he cites the insurance industry as one with a serious lack of comparability (Hoogervorst,

[222] There are other risks e.g. class action book building. IMF have described their perspective on the risks associated with litigation funding (Walker, 2005; Walker et al., 2009). Burford's Chief Investment Officer has also written on the subject, as an academic and practitioner (Molot, 2009; 2012).

[223] Correlated risks may result from a lack of clarity in law. Where a funder has a portfolio of claims with similar uncertainty he may prefer early settlement rather than clarifying the issue at trial and losing a number of cases (Macey & Miller, 1991; Waye, 2007). In Australia all shareholder class actions have settled rather than clarifying the law (Allens, 2013; Dobbie & Thompson, 2010).

2012).

According to a former chairman of the US Securities and Exchange Commission ('SEC'), the purpose of high quality accounting standards is to ensure transparency, consistency and comparability in reporting (Levitt, 2000). Historically European companies complied with the Generally Accepted Accounting Procedures ('GAAP') of individual nation states[224]. However regulation EC 1606/2002 (IAS Regulation) requires all European Community publicly traded companies listed on a European exchange to prepare accounts for financial years commencing after 1 January 2005[225] in accordance with International Accounting Standards ('IAS'), thus financial standards have a legal status and are more than a code of practice.

The IASB is the standard setting body of the International Financial Reporting Standards ('IFRS') Foundation whose goal is to "*develop, in the public interest, a single set of high quality, understandable, enforceable and globally accepted financial reporting standards based upon clearly articulated principles*" (IFRS, 2012b). In order to achieve this there has to be convergence of the different national GAAPs and it is proving challenging to integrate the US GAAP standards as set by the US Financial Accounting Standards Board ('FASB') with the IFRS adopted in Europe, Australia and elsewhere. The IASB (2012b, A21-A51) in the introduction to the Conceptual Framework ('CF') records its belief "*that further harmonisation can best be pursued by focusing on financial statements that are prepared for the purpose of providing information that is useful in making economic decisions*".

As new standards are developed they are adopted by European regulation[226]. Similar procedures apply in other countries, including Australia[227] but not all countries e.g.

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[224] UK GAAP is determined by the Financial Reporting Council who, in July 2012, took over the role from the Accounting Standards Board which in turn was preceded by the Accounting Standards Committee.

[225] Where a company is publicly traded on exchanges both in the EC and on a regulated third country market which are already applying another set of internationally accepted standards (e.g. the USA), then those companies were able to defer until 2007.

[226] *Community Accounting Legislation 2009* is a useful guide (EU, 2009).

[227] Australia adopted IFRS in 2005, with application for financial periods beginning on or after 1

Cayman Islands, adopt IAS. Because accounting standards are embodied in law and are in a state of change they constitute a regulatory risk for litigation funding entities. This chapter will focus on International Financial Statements and exclude treatment under national GAAP[228].

2.1 Accounting concepts

The measurement of financial position is related to the Balance Sheet elements of assets, liabilities and equity[229] and the measurement of financial performance is related to the elements of Income and expenses in the Income Statement [CF:4.2].

In May 2015 an ED for a revised CF was issued which, if implemented, will change the definitions in this chapter. The ED consultation period expires in October 2015 and the intention is to finalise the CF in early 2017 (IASB, 2014; 2015).

2.1.i *Elements*

As assets[230] do not need to be in physical form [CF:4.11] a litigation funding contract meets the definition of an asset so long as *future economic benefits are expected to flow to the entity*. An asset is no longer recognised in the balance sheet but treated as an expense when it's improbable that the benefit will flow to the entity beyond the end of the current accounting period [CF:4.45].

An obligation is a duty to act or perform in a certain way [CF:4.15] and consequently a litigation funding contract creates liabilities[231] in respect of fees etc. of the client and

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January 2005. Under their Corporations Act 2001 a company's financial report must comply with accounting standards. The financial statements and notes for a financial year must give a true and fair view else additional information must be included in the notes to the financial statements.

[228] In January 2012 the UK's Accounting Standards Board ('ASB') issued Financial Reporting Exposure Drafts ('FREDs') that proposed "*replacing all extant FRSs, Statements of Standard Accounting Practice ('SORPs') and Urgent Issues Task Force Abstracts ('UITFAs') in the UK and Republic of Ireland with a single FRS;"* (Accounting Standards Board, 2012, p.3). The mandatory effective date was 1 January 2015 but entities could implement earlier in order to achieve reduced disclosure and reporting burden (Holt, 2012).

[229] Defined as "*the residual interest in the assets of the entity after deducting all its liabilities*" [CF:4.4(c)].

[230] Defined as "*a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity*" [CF: 4.4(a)].

[231] A liability is defined as "*a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits*" [CF 4.4(b)].

potentially the counterparty.

IAS 1 - Presentation of Financial Standards (IASB, 2012b, pp. A513-A550) classifies assets and liabilities as current and non-current, the distinction being that current assets/liabilities which are held primarily for the purpose of trading are expected to be recovered/settled during the entity's normal operating cycle[232] or within the 12 months following the end of the current accounting period. All other assets are classified as non-current [IAS 1:60-69]. Income[233] is comprised of both revenue and gains. Revenue "*arises in the course of the ordinary activities of an entity*" whereas gains "*may, or may not, arise in the course of the ordinary activities of an entity*". Gains may be realised or unrealised and are "*often reported net of related expenses"* [CF:4.29-4.31]. Expenses[234] encompass losses which may be realised or unrealised and are *"often reported net of related income"* [CF:4.33-4.35]

2.1.ii ***Recognition***

Before an element can be incorporated into the balance sheet it has to pass a recognition test which requires that "*a) it is probable that any future economic benefit associated with the item will flow to or from the entity; and b) the item has a cost or value that can be measured with reliability*" [CF:4.38]. When recognising litigation funding contracts in the financial statements, the words 'probable' and 'reliability' in this definition result in numerous problems. 'Measured with reliability' does not preclude the use of reasonable estimates but where a reasonable estimate cannot be made the item is not recognised. The CF uses a lawsuit as an example: "*the expected proceeds from a lawsuit may meet both the definition of both an asset and income as well as the probability criterion for recognition: however if it is not possible for the claim to be measured reliably it should not be recognised as an asset or as income;*

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[232] "*The operating cycle of an entity is the time between the acquisition of assets for processing and their realisation in cash or cash equivalents. When the entity's normal operating cycle is not clearly identifiable, it is assumed to be twelve months*" [IAS 1:68].

[233] Defined as "*increases in economic benefits during the accounting period in the form of inflows or enhancements of assets or decreases of liabilities that result in increases in equity, other than those relating to contributions from equity participants*" [CF:4.25(a)].

[234] Defined as "*decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or incurrences of liabilities that result in decreases in equity, other than those relating to distributions to equity participants*" [CF:4.25(b)].

the existence of the claim, however, be disclosed…" [CF:4.41]. This approach to lawsuits presents some difficulties to many entities when a lawsuit is incidental to the entity's main purpose (Barnickol et al., 1985) but those difficulties increase dramatically when the primary business of the entity is investing in lawsuits.

If an element fails to meet the criteria for recognition it may warrant disclosure[235] in the notes or elsewhere. Disclosure is appropriate when the information is relevant for evaluating the entity's financial position and changes thereto [CF:4.43]. Whether disclosure has the same effect as recognition is contentious in spite of Fama's hypothesis[236] that the market[237] is informationally efficient (Fama, 1965; 1970). The aggregate evidence from many empirical studies supports the hypothesis[238] that greater and more specific disclosure reduces the cost of equity capital, but there is not a consensus (Botosan, 2006) as there is evidence that information in notes is not used by market participants (Healy & Palepu, 2001; KPMG, 2011; Miller, 2010). Only a few papers[239] study analysts behaviour in assessing firm's risk (Hope et al., 2014).

In practice, despite the definitions above, obligations under contracts that are equally proportionately unperformed (e.g. liabilities for inventory ordered but not delivered) are not normally recognised as liabilities in the financial statements. "*However, such obligations may meet the definitions of liabilities and, provided the recognition criteria are met in the particular circumstances, may qualify for recognition. In such*

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[235] There are various literature reviews of the economic consequences of financial disclosure (e.g. Daske et.al., 2008; Dumontier & Raffournier, 2002; Leuz & Wysocki, 2008).

[236] Grossman and Stiglitz (1980) "*argued that because information is costly, prices cannot perfectly reflect the information which is available, since if it did, those who spent resources to obtain it would receive no compensation*", leading to the conclusion that informationally efficient markets are impossible. Malkiel (2003) surveys the attacks on the efficient-market hypothesis and the relationship between predictability and efficiency.

[237] Kothari (2001) provides an extensive review of the empirical research regarding the relationship between financial statements and capital markets.

[238] The hypothesis, *ceteris paribus*, is that investors prefer securities with less information symmetry, low estimation risk and low transaction costs. Demand will be higher for securities with such characteristics, consequently prices will be higher and cost of equity capital will be lower. If increasing disclosure reduces information asymmetry, estimation risk and transaction costs, the prediction is that the cost of equity capital will fall providing estimation risk is priced and disclosure does not increase information asymmetry (Botosan, 2006, pp.34-35; Dumontier & Raffournier, 2002).

[239] Exceptions include Lui, et al (2007; 2012), Joos (2013) and Hope (2014).

circumstances, recognition of liabilities entails recognition of related assets or expenses" [CF:4.46].

2.1.iii ***Measurement***

The measurement of assets, liabilities, income and expenses is not precise, it is only ever an estimate based on choices made regarding measurement. In some cases there are specific rules which must be obeyed whereas in other instances a choice has to be made between two or more alternative but acceptable rules. In some cases there are no rules so a decision has to be made on how to report (Walton & Aerts, 2006, p.11).

Accounting employs various measurement bases including historical cost, current cost, realisable (settlement) value and present value. Historical cost is most common basis but it may be combined with other bases e.g. inventory that is valued at the lower of cost and net realisable value [CF:4.54-4.56].

The choice of measurement valuation method depends upon the nature of the transaction. Similar but technically different transactions can give rise to different forms of measurement e.g. litigation funder Juridica Investments Limited ('JIL') reported:

> *... in most of the Company's investments, all due diligence and transactions costs associated with an investment are capitalised as part of the investments, this particular investment was structured as an investment in intellectual property and IFRS accounting guidelines provided for only partial capitalisation* (JIL, 2012b, p.4).

Not only can transactions with similar purpose be reported in different ways, but given that there are no specific rules for how litigation funders should report, we are left with the position identified in the *Cadbury Report* (1992, §4.47) that "*a basic weakness in the current system of financial reporting is the possibility of different accounting treatments being applied to the same facts, with the consequence that different results or financial positions could be reported, each apparently complying with the overriding requirement to show a true and fair view*".

2.2 Current accounting practice

Generations of accountants were taught to abide by the maxim "*anticipate no profits and provide for all probable losses"* in order not to inflate profits and overstate balance sheet value (Bliss, 1924, p.110). As a result unrealised gains and contingent assets were not recognised in conservative accounting methodology[240]. Accounting practices however have changed in favour of neutrality, and in this subsection I briefly summarise the current accounting practice for long operation business cycles, contingent assets and liabilities, fair value and impairment.

2.2.i *How accounting responds to long operational cycles*

Litigation funding is not unique in having an operational cycle that extends long beyond the end of the accounting period and being a risky business. Insurance, research and development; exploration for mineral resources and film production all fall into this category. There are significant differences between FASB and IASB on these topics. The US approach is to publish Accounting Standards Codification ('ASC') for specific industries[241] which may be open to interpretation[242] whereas the IASB attempts to fit these cases into the framework of existing standards.

Insurance has some similarities[243] to litigation funding in that it also has long term and uncertain obligations but the accounting treatment of insurance contracts is hotly disputed and unsettled. According to the IFRS website[244]:

> *"Today, the accounting for insurance contracts does not provide users with the information they need to meaningfully understand the insurer's financial position, performance and risk exposure. In addition, IFRS*

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[240] Conservative accounting in the empirical literature is interpreted as the "*accountants tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses*" (Basu, 1997).

[241] E.g. ASC 926 Entertainment – Films and ASC 932 Extractive Activities – Oil and Gas.

[242] PWC's interpretation of the film industry standards concluded that "*Financial executives who are adept at navigating the intricate accounting and reporting rules will be able to drive the presentation of the key performance indicators for their companies*" (PWC, 2009, p.30).

[243] See page 11 and (Silver, 2014)

[244] http://www.ifrs.org/Current-Projects/IASB-Projects/Insurance-Contracts/Pages/Insurance-Contracts.aspx [Viewed 30 December 2015]

does not address specific insurance issues and it is not obvious how insurers should deal with these issues under current IFRSs. Consequently, great diversity in the accounting practices of the insurance industry has developed over time."

In 1997 the IFRS commenced the insurance contracts project and issued, as the first phase of a comprehensive review of insurance accounting, interim standard IFRS 4 *Insurance Contracts* in 2004. IFRS 4 resulted in some improvement in the accounting and disclosure of the amount, timing and uncertainty of future cash flows from insurance contracts but it still permitted various historical accounting practices pending the completion of a comprehensive standard. EDs intended to replace IFRS 4 and eliminate the inconsistencies and weakness have been issued and as technical discussions are ongoing, a new standard to enhance comparability between entities will not published before the end of 2015 or be effective before 1 January 2018 (IASB, 2012a; 2015).

In the case of exploration and evaluation of mineral resources (which are specifically excluded from the scope of IAS 16 - Property, Plant and Equipment (IASB, 2012b, pp. A671-A687) and IAS 38 Intangible Assets (IASB, 2012b, pp. A1027-A1060)), the IASB issued IFRS 6 (IASB, 2012b, pp. A229-A240) as a 'gap filling' standard until such time as the IASB can undertake a comprehensive review of accounting practices used by involved organisations [IFRS 6:IN1-4]. As a result entities are left with a choice of methods for valuing assets using either cost (IAS 16) or valuation (IAS 38), but having made a choice the method must be applied consistently. Any contingent liability obligations for removal and restoration that are incurred must be recognised in accordance with IAS 37 (IASB, 2012b, pp. A1003-A1026).

Even where there is no choice on valuation method, similar assets can still be measured in different ways. Film production costs are an example (KPMG, 2008), whereby the IASB requires consideration of the contractual arrangements and planned exploitation. Thus where the production is in-house and for short term exploitation by several clients (i.e. not a contract production), the asset is recognised in accordance with IAS 2 - Inventory (IASB, 2012b, pp. A551-A565) and measured at the lower of

cost and net realisable value [IAS2:9]. When the production is a contract production IAS 11 - Construction Contracts[245] (IASB, 2012b, pp. A613-A624) applies which allows the entity, providing some requirements are met, to recognize revenue and costs proportionately by reference to the stage of production [IAS 11:22-31]. Where the production is neither short term nor under contract, IAS 38 - Intangible Assets (IASB, 2012b, pp. A1027-A1060) applies and development costs are initially recognised at historical value, and thereafter valued at either cost or fair value. Unlike IAS 2, interest costs for borrowing may also be captured as a cost [IAS 38:51-66].

2.2.ii *Provisions, Contingent Liabilities and Contingent Assets*

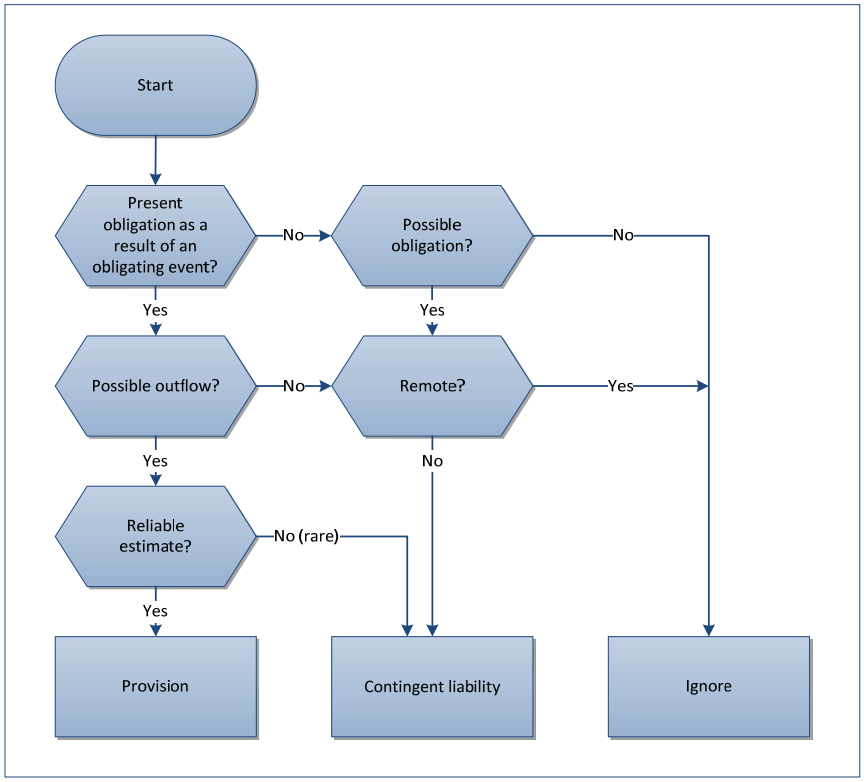
As a result of IAS 37, accountants distinguish between provisions and contingent liabilities when referring to liabilities where the timing and/or the amount is uncertain.

The decision tree in Figure 3 illustrates that the elements of the decision are a) whether there is a present or future obligation and b) whether there will be a measurable outflow of resources. Where it is unclear as to whether a present obligation has arisen from a past event a 'more likely than not' test is applied [IAS 37:16]. IAS 37 pragmatically states "*An entity shall not recognise a contingent asset*" as income may be recognised that is never realised. Where the income is probable the contingent asset can be disclosed [IAS 37:31-34].

The scope of IAS 37:1-2 specifically excludes executory contracts except where the contract is onerous and financial instruments that are within the scope of IFRS 9-Financial Instruments (IASB, 2012b, pp. A301-A368) and IAS 39-Financial Instruments: Recognition and Measurement (IASB, 2012b, pp. A1061-A1102). Where another standard deals with a specific type of provision, contingent liability or asset (e.g. as in IFRS 4) that standard not IAS 37 applies [IAS 37:5].

[245] A construction contract is defined as "*a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and function or their ultimate purpose or use*" [IAS 11:3]. This definition does not limit 'construction' to engineering projects.

Figure 3 Decision tree for determining Provisions and Contingent Liabilities



Source: IAS 37 Appendix B (amended)

The questions that need to be addressed are:

1) Notwithstanding the normal definition of an executory contract[220] does a LFA need to be treated in accordance with IAS 37?
2) If an LFA is an Insurance contract what provisions of IFRS 4 over-ride IAS 37?

Executory contracts and IAS 37

Executory contracts are defined as "*contracts under which neither party has performed any of its obligations or both parties have partially performed their obligations to an equal extent*" [IAS 37:3]. Under a LFA, a funder will have performed some of his obligations if he is providing interim funding and therefore one concludes that an LFA is not an executory contract unless "*both parties have partially performed their obligations to an equal extent*".

Unfortunately no guidance is provided as to what is meant by "*to an equal extent*" other than in the CF which states "*In practice, obligations under contracts that are equally proportionately unperformed (for example, liabilities for inventory ordered but not yet received) are generally not recognised as liabilities in the financial statements*" [CF:4.46]. The example is unhelpful as the obligations are sequential[246].

Executory contracts have also been problematic in recognising intangible assets such as operating licences granted in exchange for construction projects. The IFRIC[247] staff interpretation in that situation was that "*..., the signing of a sales contract does not in itself lead an entity to recognise the consideration it has a right to receive, nor to derecognise the goods and services that it has an obligation to deliver. The situation changes when one party performs some or all of its obligations under the contract. At that point, both parties must recognise the rights and obligations arising from that performance*" (IASB, 2006, §6-7).

The last sentence perhaps provides a clue to what is intended by the phrase "*both parties have partially performed their obligations to an equal extent"*. My working interpretation is that if both parties have partially performed the contract and in so doing create rights and obligations to the other party that are equal in value, then the LFA is an executory contract and IAS 37 does not apply. As this is unlikely, IAS 37 is applicable unless another standard applies.

IFRS 4 and IAS 37

The interim IFRS 4 requires an insurer to conduct a liability adequacy test at the end of each accounting period by assessing "*whether its recognised insurance liabilities are adequate using current estimates of future cash flows under its insurance contracts*" [IFRS 4:15]. It is left to the ED to clarify that an insurance contract

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[246] i.e. step 1 contract agreed for delivery over next year step 2 A – places a requirement for delivery, Step 3 B- produces and delivers to A, Step 4 A takes delivery; Step 5 A makes payment. In A's financial statements the custom is that he would not recognise the liability until step 4 even though he may be obligated to make payment if he cancels during step 3 but it is hard to understand what '*equally proportionately unperformed*' means when B is active in producing product in step 3 and A's potential exposure to cancellation is increasing.

[247] International Financial Reporting Interpretations Committee ('IFRIC') now the IFRS Interpretations Committee.

liability or assets is recognised when the insurer becomes a party to the insurance contract (IFRS, 2010b). On measurement, IFRS 4 states the liability adequacy test "*considers current estimates of all contractual cash flows and related cash flows*" but goes no further and simply requires the entity to disclose information that explains its accounting policies and assumptions in respect of insurance contracts [IFRS 4:36] and the nature and extent of the risks arising [IFRS 4:38].

Due to the limited nature of IFRS 4, IAS 37 continues to be relevant to insurance contracts and LFAs. UK insurance companies will be guided by the *ABI Statement of Recommended Practice on Accounting for Insurance Business* (ABI, 2005).

Other comments

IAS 37 has weaknesses[248] which led to a staff paper on the subject and work being conducted on a new IFRS (IASB, 2010b). One criticism of the standard on IAS 37 is the way in which similar asset classes are treated when one is a portfolio and the other is single asset. Consider an entity with debtors[249] of £500,000 and a default risk of 10%. The expected value of the debtors is £450,000. If the debtor amount is comprised of a single debtor then no provision for default is required as it is probable that the debt will be paid in full. If however the debtors were 500 debts of £1,000 then it is probable that the total amount received will be less than £500,000 and it is therefore justifiable to create a provision for default of £50,000 even though the probability of receiving nothing is negligible and there is a 99% probability of receiving more than £430,000. To an investor the portfolio would be the more attractive investment. Litigation portfolios tend to be reviewed and valued on a case by case basis and there is a danger that no provision will be made for losses even though each case will have less than a 100% prospect of success and some portfolio loss is highly probable (IFRS, 2010b, §13; Savage & Van Allen, 2002).

[248] not least of which is the interpretation of 'best estimate' which is ambiguous and often taken to be the 'most likely outcome' whereas para.37 of IAS 37 defines it as "*the amount an entity would rationally pay to settle the obligation at the end of the accounting period or to transfer it to a third party at that time*" i.e. an expected value [Discussion at BC3 in ED/2010/1].

[249] Assumed to be net of collection costs.

The US ASC 450-20 Contingencies also differs from IAS 37 and whilst the focus in this chapter will be on companies registered in nations that adopt IFRS, litigation funding is an international business and US companies seek funding from UK quoted companies will have expectations when they review the financial statements. In the US standard ASC 450-20 the key words are 'probable', which requires accounting recognition, and 'reasonably possible' which requires disclosure[250].

2.2.iii *Fair Value*

As an alternative to valuation at historical cost[251], some IFRS require or permit valuation at 'fair value'[252] which is intended to be an orderly market-based measurement, as opposed to an entity specific valuation, reflecting what a willing buyer in the principal market would pay after taking account of the risks[253] and characteristics attaching to the asset/liability (IFRS 13:IN5-IN9, 11, 15). IFRS 13 is intended to provide consistency in fair value measurement ('FVM') and disclosure in other standards and is applicable for accounting periods commencing on or after 1 January 2013, but earlier application is permissible.

FVM results in executory contracts being recognised ahead of completion of that transaction and takes account of both contingent assets and liabilities. It is argued that for regulators some representation of what is occurring economically is preferable to

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[250] For 'probable loss' contingencies, entities should accrue the best estimate of loss within a range or if no estimate in the range is better than any other, the minimum amount, with disclosure of the reasonably possible loss in excess of the amount accrued. The nature of the accrued loss contingency also needs to be disclosed and in some circumstances, the amount accrued if such disclosure is necessary to prevent the financial statements from being misleading.

For 'reasonably possible' loss contingencies, entities should disclose the nature of the loss contingency and either the estimate of the possible loss (or range of loss) or a statement that such an estimate cannot be made (Deloitte, 2011).

[251] There are other valuations but historical cost is the most generic.

[252] Paragraph 9 of IFRS 13 - Fair value measurement (IASB, 2012b, pp. A467-A512) defines fair value as "*The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date*". Paragraph 24 extends the definition by explaining that the orderly transaction takes place "*in the principal (or most advantageous) market at the measurement date under current market conditions (i.e. an exit price) regardless of whether that price is directly observable or estimated using another valuation technique*".

[253] Because of the uncertainty surrounding the amount and timing of cash flows, a market participant's valuation would include a risk premium that needs to be reflected in the valuation [IFRS13 B15-16].

deferring recognition to completion even if its measurement is estimated and uncertain. Thus gains and losses are recognised earlier than under the historical cost/exchange basis of accounting and although the lifetime transaction result is unchanged there may be more volatility along the way (Walton, 2006, pp.474-6). Management has incentives, of varying degrees of legality, to recognise revenue early but in so doing consequences e.g. tax becoming payable earlier, may arise (Altamuro et al., 2005; Bauman, 2005; Bukics & Fleming, 2000; Caylor, 2010; Levitt, 1998).

The inputs in the valuation technique used to derive fair value are categorised into three hierarchical levels. Level 1 inputs "*are quoted prices in active markets for identical assets or liabilities*..." (IFRS 13:72) and would include for example, quoted shares on a major stock exchange on the valuation day. Level 2 are "*inputs other than quoted prices included within level 1 that are observable for the asset or liability either directly or indirectly*" (IFRS 13:81) and would include bonds traded on a market but infrequently e.g. a price within a couple of weeks of the valuation date. Level 3 inputs, at the bottom of the hierarchy, are "*unobservable inputs for the asset or liability*" (IFRS 13:86).

There is no observable market for litigation funding contracts, which therefore fall into level 3. In such cases the company has to use "*valuation techniques that are appropriate for the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs*" [IFRS 13:61]. Estimates by the entity may form the starting point of a level 3 valuation, however should reasonably available information indicate that market participants would use different data when pricing, then the entity's estimates must be adjusted [IFRS 13:BC174].

In addition to recognition, an entity is required to "*disclose information that helps users of its financial statements assess*" (a) … the inputs and valuation techniques used to develop the FVM and (b) "*the effect of the measurements on profit or loss or other comprehensive income...*" [IFRS 13:91]. A qualitative and quantitative description of the sensitivity of the FVM to changes in unobservable inputs must be included if the FVM will vary significantly with changes to those inputs. If there are

"*reasonably possible alternative assumptions*" which change the FVM significantly, that fact and the effect of those changes also needs to be disclosed [IFRS 13:93(h)].

2.2.iv ***Impairment***

Irrespective of the measurement method employed, an entity must "*ensure that its assets are carried at no more than their recoverable amount*" i.e. assets are impaired if the amount to be recovered through use or sale of the asset exceeds the carrying amount [IAS 36:1]. IAS 36 - Impairment of Assets (IASB, 2012b, pp. A953-A1001) is applied to assets where existing standards do not apply[254].

The effect of impairments is to reduce the equitable value of the company sooner rather than later. Scenario A in Table 3 is presented under historical accounting conventions and represents an entity which raised 2,000 from shareholders and has made an initial investment of 500 into a case where the expected realisation is 1,750.

Table 3 Effect of impairment on balance sheet value

	Scenario A	Scenario B	Scenario C	Scenario D
Case investment	500	1,000	750	1,150
Cash resources	1,500	1,500	1,500	1,500
Outstanding obligations		-500	-500	-500
	2,000	2,000	1,750	2,150
Represented by:				
Shareholders capital	2,000	2,000	2,000	2,000
Profit and loss			-250	150
	2,000	2,000	1,750	2,150

The anticipated receipts from this case exceed the investment to date and no impairment is required. Scenario B is the same case but this time the future expected expenditure of 500 is provided for. The value of the entity under scenarios A and B is 2,000. After due consideration, the expected return from the investment is reduced to a conservative 750 although it may be 1,750 if a particular head of loss is allowed by

[254] e.g. *"... assets arising from construction contracts, deferred tax assets, assets arising from employee benefits, or assets classified as held for sale (or included in a disposal group that is classified as held for sale)*" [IAS 36:2].

the courts. It is worth continuing with the case as opposed to abandoning it, as the further investment of 500 is exceeded by 250[255] but overall this would be a 'weak win' and consequently the case investment is written down to 750 in scenario C even though the future obligations have yet to be met.

Such accounting is challenging because it not only changes stakeholders expectations of the company but it also makes decision making more difficult for management e.g. if another funder was prepared to take over the litigation and pay 500 for the right should the company cash in to avoid a potential loss? Using Fair Value accounting one might form the view that the probability of achieving 1,750 is only 40% but making 750 is a certainty. The expected value of the claim is 1,150 i.e. the 'fair value' in Scenario D, even though the outcome will be either 1,750 or 750.

2.3 Uncertainty in financial statements

The previous section has demonstrated the difficulties in the interpretation and application of the accounting standards to TPFs. This is especially true as to whether a LFA is to be accounted for as an insurance contract under IFRS 4, a financial instrument under IFRS 9 or as a construction contract under IAS 11. In Section 4 below I look at how funders answer that question. In Table 4, I summarise the alternative treatments of expenditure arising from various accounting standards and in Table 5 I do the same for income.

Much of the content of financial statements is based upon estimation, assumptions and judgement, the accuracy of which will only be confirmed with the passage of time. Some standards remain controversial after implementation and may have unintended consequences[256]. Although, international accounting standards are beneficial in

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[255] This is similar to the insight advanced by Bebchuk (1996) on the importance of the divisibility of litigation costs over time and the extraction of a profitable settlement in a negative expected value suit. As a claimant's costs are sunk at each decision point, future costs reduce and become less than the expected value of recovery. However the offer from the defendant may be insufficient to prompt settlement and the true negative value of the suit may be revealed (Schwartz & Wickelgren, 2009).

[256] E.g. IAS 39 Financial Instruments: recognition and measurement. Pensions & Investments Research Consultants Ltd ('PIRC'), an investor lobbyist group, argue that the accounting standard is flawed and enables banks and others to overstate profits because it uses an 'incurred loss model' which prevents early recognition of bad loans. Standard setters are aware of the issue and have

creating comparability and consistency, the process of standard setting takes years of effort and often projects are paused or abandoned after creating years of uncertainty for preparers and users of financial statements. Comparison of an entity's accounts pre and post standard change can sometimes prove difficult.

Table 4 Alternative treatment of Expenditure

	Nature of event	Recognition (options)	Measurement (Options)	Impact on Equity Value in Accounting Period
Expenditure & liabilities				
Actual expenditure to date	Known	amount is known or can be estimated	Expense	Reduce
			Asset at historical cost	None
			Asset at Fair Value	Increase or decrease
Future expenditure on behalf of client or defendant	Certain	amount is known or can be estimated	Provide for liability & Expense at cost	Reduce
			Provide for liability & Asset at actual cost	None
			Provide for liability at cost & Asset at Fair Value	Increase or decrease
		amount cannot be quantified	Ignore in financial statements but disclose	None
	Uncertain but Probable	amount is known or can be estimated	Provide for liability & Expense in full	Reduce
			Provide for liability & Asset at full actual cost	None
			Provide for liability in full at cost & Asset at Fair Value	Increase or decrease
		amount cannot be quantified	Ignore in financial statements but disclose	None
	Uncertain not probable but possible	amount is known or can be estimated	Ignore	None
			Ignore in financial statements but disclose	None
			Provide for liability & Expense in full	Reduce
			Provide for liability & value Asset at cost	None
			Provide for liability in full & value Asset at Fair Value	Increase or decrease
		amount cannot be quantified	Ignore	None
			Ignore in financial statements but disclose	None

been working on a replacement of IAS 39 (e.g. IFRS 9) using an 'expected loss model'. However, the effective date is unlikely to be before 2018. In the meantime, PIRC argue that financial accounts fail to give a 'true and fair view' contrary to law and allow banks to overstate their profits (Crump, 2012; MacDougall, 2011).

Table 5 Alternative treatment of Income

	Nature of event	Recognition (options)	Measurement (Options)	Impact on Equity Value in Accounting Period
Income				
Current income from case	Interim settlement[257]	amount is known or can be estimated	Treat as Income and expense relevant asset	Increase or decrease
			Reduce asset value	None
	Final settlement	amount is known or can be estimated	Treat as Income and expense relevant asset	Increase or decrease
		amount cannot be quantified	expense relevant asset and disclose	decrease
Future income from case	Certain	Recognise amount due as a Debtor	As above	As above
	Uncertain but Probable	amount is known or can be estimated	Recognise in Fair Value of asset	Increase or decrease
		amount cannot be quantified	Ignore in financial statements but disclose	None
	Uncertain not probable but possible	amount is known or can be estimated	Ignore	None
		amount cannot be quantified	Ignore	None

Where standards have been agreed an effective date is published but companies can choose to implement earlier providing they disclose their early adoption. Applying a standard requires that both the reported on and the comparative year comply with the standard. The effective date is usually set in respect of accounting periods that *commence* about 12 months after the standard has been issued (see Table 6). This gives entities the opportunity to consider how the changed standard affects the current year's results (which will become the comparative year's figures once the standard is effective). During this transitional phase comparing one company against another can be difficult.

[257] Before a litigation project is completed payments may be received from the counter-party in respect of a): costs of an interlocutory hearing, b) a payment on account of damages and/or interest, c) a payment on account of final costs to be determined by assessment, d) settlement of a claim which is the subject of appeal.

Table 6 Accounting standards – Issue and Effective Dates

	Standard Title	Issued	Effective Date: annual period commencing on or after
IAS 02	Inventories	Dec-03	01-Jan-05
IAS 11	Construction Contracts	Dec-93	01-Jan-95
IAS 16	Property Plant & equipment	Dec-03	01-Jan-05
IAS 18	Revenue	Dec-93	01-Jan-95
IAS 32	Financial Instruments: Disclosure and Presentation	Dec-03	01-Jan-05
IAS 36	Impairment of Assets	Mar-04	31-Mar-04
IAS 37	Provisions, Contingent Liabilities and Contingent Assets	Sep-98	01-Jul-99
IAS 38	Intangible Assets	Mar-04	31-Mar-04
IAS 39	Financial Instruments: Recognition and Measurement	Dec-03	01-Jan-05
IFRS 04	Insurance Contracts (as issued 2004)	Mar-04	01-Jan-05
IFRS 04	Insurance Contracts (2005)	Dec-05	01-Jan-07
IFRS 05	Non-Current Assets Held for Sale and Discontinued Operations	Mar-04	01-Jan-05
IFRS 06	Exploration for and Evaluation of Mineral Resources	Dec-04	01-Jan-06
IFRS 07	Financial Instruments: Disclosures	Aug-05	01-Jan-07
IFRS 09	Financial Instruments (2009)	Nov-09	01-Jan-13
IFRS 09	Financial Instruments (2010)	Oct-10	01-Jan-13[259]
IFRS 13	Fair Value Measurement	May-11	01-Jan-13

Source: (IASB, 2012b, B2205-B2218)

[259] The mandatory date was later removed and a revised IFRS09 issued in July 2014. The mandatory date for all entities will not be before 2018.

3 Implications of current practice and proposals for change

3.1 Implications of current practice

3.1.i *Subjectivity in valuations*

Although it appears that LFAs meet the definition of an insurance contract, the lack of a finalised international accounting standard with an effective date gives TPFs choice on the approach they adopt in preparing their financial statements. LFAs are an unobservable illiquid asset and their valuation at 'fair value' requires many subjective inputs. A very small change in a reasonable subjective input value can turn a point estimate into a range estimate with significant materiality[260] as found [261] by Christensen et al (2012). The adoption of fair value accounting may also change management's behaviour as well as values (Beatty, 1995; 2007). Entities may deliberately not trade some types of assets in order to obstruct discovery of market prices thereby avoiding undesirable adjustments to balance sheet values and such tactics may be exacerbated when regulators impose balance sheet constraints (Milbradt, 2012).

3.1.ii *Audit opinion*

The credibility of information is enhanced by an auditor's unqualified opinion based on an audit review of the information (Boritz, 1990, p.38). Christensen et al (2012) question whether the auditor's ability to provide a high level of positive assurance that accounts in all material aspects are fairly stated has been outstripped by transaction and reporting complexity when a large range of point estimates could justifiably be assessed as reasonable. They also question whether financial statements and audit

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[260] Calculated as 5% of pre-tax income.

[261] Using Wells Fargo and General Motors as examples, they found management's subjective inputs and estimates in FVM resulted in estimation uncertainty or imprecision that was many times greater than materiality E.g. in 2008 Wells Fargo & Company ('WFC') pre-tax income was $3.257b thus a 5% audit materiality is $0.163b. Total assets (before liabilities) amounted to $1,309.6b of which $99.7b was mortgaged backed securities at FVM (Cost $106.6b). Stockholder's equity was $99,084m. The company report that a 200 base point (i.e. 2%) increase in interest rate would result in a FVM of $90.9b = an increase in the unrealised loss of $8.8b = an 8.9% reduction in stockholder's equity, whereas a 200 base point decrease would result in a FVM of $104.0 = a reduction in the unrealised loss $4.3b and a 4.3% gain in stockholder's equity (WFC, 2009, pp.53,87-88).

reports adequately convey the level of estimation uncertainty and the related impact on reported income?

International Standard on Auditing[262] (UK and Ireland) 540 *Auditing Accounting Estimates, including Fair Value Accounting Estimates, and Related Disclosures* ('540') (APB, 2012) states that the auditor's objective is to obtain sufficient audit evidence as to whether the accounting estimates are 'reasonable' and the disclosure is 'adequate' (540:6). The auditor is required to a make a judgement as to whether the uncertainty in the estimates gives risk to a significant risk of material misstatement[263] of the accounting reports (540:8-11).

The auditing standard recognises that on occasion the auditor may need to employ specialized skills or knowledge to obtain audit evidence especially where complex computations and level three valuations are being made (540:14 & A97). If auditors are dealing with litigation involving their client they may, if insufficient audit evidence is available from the entity, make enquiries of the entity's external legal counsel (APB, 2009, §10). The funder's external counsel will not be knowledgeable about the cases financed and it is probable that counsel acting for the TPF's client will refuse to provide the auditor with information. Consequently the auditor will have to seek information from the funder's claim manager and updates received by him from the claimant, however that information may be subject to legal privilege and withheld. If the auditor is unable to obtain sufficient audit evidence he must, if he is unable to conclude that the financial statements as a whole are free from material misstatement, modify his audit opinion in accordance with ISAUK 705. It has been suggested that the difficulties arising from the audit of 'fair value' may create more litigation against

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[262] International Standards on Auditing ('ISA') are issued by International Federation of Accountants ('IFAC') through the International Auditing and Assurance Standards Board ('IAASB'). International Standards on Auditing (UK and Ireland) ('ISAUK') are issued by the Auditing Practices Board ('APB') which is part of the Financial Reporting Council ('FRC') and are based on standards of the same name issued by IAASB.

[263] Defined in IAS 8:5 as "*Omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions that users make on the basis of financial statements. Materiality depends upon the size and nature of the omission or misstatement judged in the surrounding circumstances. The size or nature of this item, or a combination of both, could be the determining factor*"(IASB, 2012b, p.A588).

audit firms and those who are required to exercise professional judgement (Packer & Todd, 2009; Yanez, 2009).

3.1.iii *Increased disclosure*

Future regulation may require more information to be disclosed, but the value of that disclosure is only enhanced when it can be independently verified as credible and reduces uncertainty. Providing too much information is generally not consequential in terms of adversely affecting investor decisions; however, it is costly and inappropriate, particularly if it is involuntary (Boritz, 1990, 37-40). Bamber and McMeeking (2010, p.135) draw on the literature to summarise that firms engage in voluntary disclosure to:

1) *Reduce the information asymmetry associated with capital market transactions,*
2) *Explain away poor performance,*
3) *Increase the liquidity of the firm's shares and reduce contracting costs,*
4) *Mitigate the threat of litigation, and*
5) *Signal the quality of management*

It has been suggested that management should disclose in their report the historical accuracy of previous estimates[264] as users of financial statements find such information useful (Bell & Griffin, 2012; Koonce et al., 2010; Lundholm, 1999; 2003; Petroni et al., 2000). Against this needs to be weighed the Landsman and Ohlson (1990) study which found an under-reaction by the market to the disclosures of off balance sheet pension assets and liabilities which suggests that mere disclosure is not always sufficient and recognition in the financial statements is more important.

3.2 Proposals to change contingent assets and liabilities

Current rules favour the non-accrual and minimal disclosure of contingent assets and liabilities. Accounting standard setters on both sides of the Atlantic have proposed significant changes but the Canadian proposals met considerable resistance from

[264] The audit process requires auditors to consider the accuracy of historical estimates in order to gather information on the effectiveness of management's estimation process and assist in the determination of circumstances susceptible to management bias [540:A39-40].

lawyers and failed[265]. The US FASB and the European IASB were considering amendments to their existing standard at about the same time.

3.2.i *FASB proposal*

The project was added to the agenda in 2007 when users of financial statements requested enhanced disclosures to assist in assessing the likelihood, timing, and amount of future cash flows of loss contingencies, specifically those related to litigation. EDs were released in June 2008, and July 2010 with many stakeholders weighing in on the issues (FASB, 2012a).

The 2010 ED retains the existing "probable" criterion for accruing a loss and proposes that *public* companies provide enhanced disclosures about their loss contingency accruals by including in the notes a tabular schedule explaining the period-to-period change in the accrual account, by class of contingency. All entities, both public and private, would provide enhanced 'over-the-life-cycle' disclosures about loss contingencies deemed reasonably possible or probable[266]. If the potential impact is severe, all entities would provide contingencies information even though the outcome is remote (FASB, 2010).

The feedback on both EDs was overwhelming opposition to the enhanced loss contingency disclosures. The main concern related to the imposition of disclosures that could be prejudicial to the reporting entity (FASB, 2012a). On 9 July 2012, after discussion with the regulators, the FASB removed the project from the agenda (FASB, 2012b).

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[265] Dykeman & Entwistle (2004) review the failure of the Canadian project which was based on probability categories - virtually certain (91-99%); Likely (>50%); neither likely nor unlikely (50%); Unlikely (<50%); remote (<15%) (see also (Chesley, 1986). Contingent losses had to be recognised if likely, and disclosed - in terms of nature and range of estimated dollar amounts - if unlikely but not remote. Virtually certain gains had to be recognised. Lawyers indicated they would not provide the required information and the project was abandoned in October 1996.

[266] Early in the life cycle of a contingency, the disclosures would be limited to factual information such as the contentions of each party and publicly available information about the claim amount. The disclosures would become more robust as the contingency nears settlement and the likelihood of a loss increases (FASB, 2010).

3.2.ii *IASB proposal*

IAS 37 Provisions, Contingent Liabilities and Contingent Assets, originally issued in 1998 and only changed by amendments to other standards, was due for substantial review and revision into a new IFRS. An ED of proposed amendments was issued in 2005 and following representations was revised and reissued for final consultation in January 2010; the intention being to replace IAS 37 by 3rd quarter of 2010 (IASB, 2010d). At the February 2010 CJC meeting on litigation funding (which included a discussion on capital adequacy), I approached a number of litigation funders for their views on the ED and its implications but none of them were aware of its existence, let alone its implications!

The proposed IFRS, which would apply to liabilities arising from legal disputes, would not include the 'probability of outflows' criterion. Instead, an entity would account for uncertainty about the amount and timing of outflows by using a measurement that reflects their expected value ('EV'), i.e. the probability-weighted average of the outflows for the range of possible outcomes. The IASB rejected earlier criticisms[267] of EV and adopted a hard line:

> *"Having considered the criticisms on several occasions since publishing the exposure draft, the Board does not intend to revisit them. So it has not invited comments on this aspect of the proposals."* [ED 2010, BC7].

The IASB staff reported to the March 2010 Board meeting that there had been large interest in the ED and some confusion. As a result it was decided to extend the consultation period by a month to 19 May 2010 and publish on the website a staff paper on "*Recognising liabilities from lawsuits*" (IASB, 2010c). In September 2010 the board decided to consider the feedback comments (including those on EV) and

[267] One of the critiques to the IASB came from the Institute of Management Accountants in New Jersey who used the following legal example to support their position: *"Assume a company has a maximum litigation exposure of $5 billion and that the company will either win or lose that amount (i.e., only two possible outcomes). Assume there is a 10% (remote) chance of losing. Under the ED, the company would accrue $500 million (ignoring the time value of money and any incremental risk weighting). This amount will never be paid—it will be $5 billion or nothing. Now assume it is highly probable (90%) that the company will lose the litigation. Under the ED, the company would accrue $4.5 billion even though in all likelihood it will pay $5 billion. We believe that these results are not decision useful or readily explainable"* (Homan, 2010).

then republish an ED thereby postponing a new IFRS until the 2nd half of 2011 (IASB, 2010f). At the November 2010 board meeting in the US the board reverted to a 'more likely than not' threshold for the recognition of a liability. Later that month the IASB and FASB decided to amend the timetable for projects that are important but less urgent and the project was suspended[268]. At the IASB July 2015 Board meeting, IAS37 was discussed[269] and it was decided that review and amendment of IAS37 would not be undertaken until the Conceptual Framework project neared completion in 2016.

The IASB desire to implement an EV approach to recognising assets and liabilities has been negated for the time being as a result of push-back from lawyers and large corporates, but the subject has not been removed from the agenda. Were EV to be implemented, litigation funders would have to provision for adverse costs (as well as future own costs). If one assumes that adverse costs are similar to own side costs[270] and the portfolio probability of success is 70% then the provision is 30% of the total expenditure (irrespective whether paid to date) on the portfolio of cases. Although the provision is an unrealised loss it will reduce the entity's equity value immediately[271] to the chagrin of investors and therefore forms a significant regulatory risk for litigation funders.

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[268] See http://www.ifrs.org/Current+Projects/IASB+Projects/Liabilities/Liabilities.htm [Viewed 3 July 2015].

[269] See http://media.ifrs.org/2015/IASB/July/ProvisionsContingentLiabilities_ap14_am.mp3 and http://www.ifrs.org/Current-Projects/IASB-Projects/Provisions-Contingent-Liabilities-and-Contingent-Assets/Pages/default.aspx [Viewed 2 October 2015].

[270] Which will not be true in 'David v Goliath' cases or where claimant's lawyers are on a CFA and defendant's lawyers are not.

[271] Consider an entity that raises £1,300 in order to invest £1,000 in a case. Probability of success is 70% and provision for adverse costs is 300. Equity value is no longer £1,300 but £1,000 before any Fair Value measurement.

4 What funders actually do

The summary in Section 1.2 of Chapter 1, was that litigation funding has potential for generating high returns but there are also great risks involved due to the high investment and the great uncertainties over total cost and final income, duration and case determination. Unlike other high risk projects, litigation is challenging because of the potential for a large additional liability if a case is lost or abandoned and the TPF is limited in the degree of control it can exercise over the expenditure and the litigation strategy.

In this section I review the financial statements with the annual reports of TPFs listed on stock markets in the UK and Australia. Both nations have adopted IFRS and in theory similar transaction should be comparable. Listed in the UK[272] with financial year end date of 31 December are Burford Capital Limited and Juridica Investments Ltd. Incorporated and domiciled in Australia and listed on the ASX with financial year end date of 30 June are IMF (Australia) Ltd[22] and Hillcrest Litigation Services Ltd (HLS, 2011, p.20; IMF, 2011a, p.34).

Burford issued 80m ordinary shares and raised $130.7m when it was admitted to trading on AIM[273] on 21 October 2009. It issued a further 100m shares on 9 December 2010 raising a further $172.4m and claims to be the "*world's largest provider of investment capital and risk solutions for litigation*"[274].

Juridica issued 80m ordinary shares and raised $158.5m when it was admitted to trading on AIM on 21 December 2007. It raised a further $49.1m with the issue of 30.7m shares on 6 April 2009. It has since bought back 6m shares. Both companies are authorised closed-ended investment companies incorporated under The Companies

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[272] London Stock Exchange listed company City of London Group plc (symbol CIN) owned a 50% shareholding in investment advisor and litigation funder Therium Capital Management Limited. That stake was sold in 2015 to an unnamed financial services company (CIN, 2015).

[273] The London Stock Exchange's international market for smaller companies is known as AIM ('Alternative Investment Market').

[274] This claim is made on the website www.burfordfinance.com (Viewed 29 July 2012) and repeated on the index page of the Company's Annual Report 2011 (Burford, 2012b).

(Guernsey) Law, 2008 and have adopted the 31 December as their year-end date (Burford, 2012b, p.18; Juridica, 2012b, p.14).

In 2001 Insolvency Management Fund Ltd, a private company formed in 1998 by Mr John Walker, reversed into the listed company Max Multimedia Limited to create IMF. A rights issue which raised A$10m followed in October 2001. Further share issues took place in the year ending June 2005 raising A$15.7m. Subsequently various minor share issues and the exercise of share options have increased the value of contributed equity to A$41.9m plus a further A$33.6m in convertible loan notes as at 30 June 2011.

HLS was until 2005 a mineral resource exploration company with the name Hillcrest Resources Limited. At the end of June 2004 the equity value of the company was A$0.6m comprising A$14.4m of contributed equity and accumulated losses net of reserves of A$13.8m. Between January and March 2011 HLS raised A$1.4m as a result of a rights and share issue.

4.1 Basis of preparation and compliance with IFRS

The information in this section has been taken from the annual reports ending 31 December 2011 for UK companies and 30 June 2011 for Australian companies. All companies say they are compliant with IFRS and other regulations but they are not early adopters of new standards. Table 7, sets out the issued standards applicable to each entity and when they will be adopted. All four companies report that they have re-valued certain assets at fair value.

Table 7 Accounting Standards and Interpretations issued but not yet effective

Standard	Standard description	Burford	Juridica	IMF	HLS
IFRS 7	Disclosures	1 Jan 2013	No ref	No ref	No ref
IFRS 9	Financial Instruments	1 Jan 2015	1 Jan 2015	No ref	No ref
IFRS 10	Consolidated Financial Statements	1 Jan 2013	1 Jan 2013	1 Jul 2013	1 Jul 2013
IFRS 11	Joint Arrangements	1 Jan 2013	No ref	No ref	1 Jul 2013
IFRS 12	Disclosure of Interests in other entities	1 Jan 2013	1 Jan 2013	1 Jul 2013	1 Jul 2013
IFRS 13	Fair Value Measurement	1 Jan 2013	1 Jan 2013	1 Jul 2011	1 Jul 2011
IAS 1 (Rev)	Presentation of Financial Statements	No ref	1 Jul 2012		
IAS 12 (Rev)	Disclosures of interest in other entities	No ref	1 Jan 2012		
IAS 27 (Rev)	Separate Financial Statements	No ref	1 Jan 2013		
IAS 28 (Rev)	Investments in Associates and Joint Ventures	No ref	1 Jan 2013		
IAS 32 (Rev)	Financial Instruments Presentation	1 Jan 2014	1 Jan 2014		
AASB 9	Financial Instruments			1 Jul 2013	1 Jul 2013
AASB 2009-9	Amendments to AASBs arising from AASB 9			No ref	1 Jul 2013
AASB 2009-12	Amendments to AASBs			1 Jul 2011	1 Jul 2011
AASB 2010-2	Amendments to AASBs re reduced disclosure requirements			1 Jul 2013	No ref
AASB 2010-4	Amendments to AASBs from annual improvements project			1 Jul 2011	1 Jul 2011
AASB 2010-5	Amendments to AASBs			1 Jul 2011	1 Jul 2011
AASB 2010-6	Amendments to AASBs 1 & 7 on Transfers of Financial Assets			1 Jul 2011	1 Jul 2011
AASB 2010-7	Amendments to AASBs re. fair value option on financial liabilities			1 Jul 2013	1 Jul 2013
AASB 2010-8	Amendment to AASB 112 Deferred tax recovery			No ref	I Jul 2012
AASB 2011-1	Amendments to AASB arising from Trans-Tasman Convergence project			No ref	1 Jul 2011
AASB 2011-2	Amendments to AASB arising from Trans-Tasman Convergence project			1 Jul 2013	I Jul 2013
AASB 124 (Rev)	Related Party Disclosures (Dec 2009)			1 Jul 2011	1 Jul 2011
AASB 1053	Application of Tiers of Australian Accounting Standards			1 Jul 2013	1 Jul 2013
AASB 1054	Australian Additional Disclosures			1 Jul 2011	1 Jul 2011

Note: For the UK companies the date is the effective date whereas the date for the Australian companies is when they will implement the standard issued by the Australian Accounting Standard Board ('AASB').

4.2 How funders treat expenditure on litigation contracts

4.2.i *Burford*

Burford categorizes its investments in claims as 'available for sale financial assets' and recognises the asset on the earlier of the date funds are disbursed or the specific date when the company becomes contractually committed to pay a fixed amount. Investments are initially measured at the cash sum invested (including due diligence costs[275]). Subsequently assets are measured at fair value on the specifics of each investment as they progress through key stages in the legal process at a value, which in the Investment Adviser's and Board's judgement, a third party would be prepared to pay for the company's rights in the investment. Unrealised fair value gains and insignificant losses for each investment are taken to the equity 'available for sale reserve'. Realised gains and losses are recorded as income (Burford, 2012b, pp. 18, 21). Burford (2013a, pp.10-11, 25-28) comment on the challenges of adapting IFRS to their business in the annual report for year to December 2012, and make specific reference to IFRS 9 which it adopted in 2012.

4.2.ii *Juridica*

In most of the Company's investments, all associated due diligence and transactions costs are capitalised as part of the investment (JIL, 2012b, p.4). Juridica categorises the majority of its investments in claims as 'contractual interests'. Juridica also makes investments in litigation through equity holdings in other entities that benefit from litigation and classifies these as 'available for sale financial assets'. It also lends to firms of lawyers in general and more specifically to the related firm of Fields Sullivan PLLC (formerly Fields, Scrantom, Sullivan PLLC ('FSS'))[276]. By the end of

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[275] Due diligence costs for potential investments not pursued are expensed.

[276] Richard Fields, Timothy Scrantom and Paul Sullivan owned FSS. Juridica's investment manager is Juridica Capital Management Limited ('JCML') a Guernsey company with a UK subsidiary Juridica Capital Management (UK) Limited ('JCMLUK'). Fields and Scrantom were both directors of JCMLUK and Fields is also a Director of JCML. Sullivan was the Legal Advisor (Sourced from http://www.juridica.co.uk/regulation.php Viewed 15 April 2010 and on file with author). On 25th October 2010 Scrantom resigned from JCML and Sullivan was promoted to Senior Vice President (JIL, 2010). In June 2011 Scrantom departed FSS.

December 2011 Juridica had agreed to loan Fields Sullivan $95m and is prepared to loan up to approximately 50% of the net proceeds of the capital raised (JIL,2012b, p.27).

Contractual issues

Investments are initially measured at the cash sum to acquire an interest in a plaintiff's claim or the case advanced under a loan agreement. Interest on performing (in contrast to non-performing) contractual interests will be recognised using the 'effective interest rate' method[277]. This process recognises estimated income and expenditure over the period to conclusion. Semi-annually and on a case by case basis, assets are subjected to a fair value estimation.

Available for sale financial assets

Juridica justifies[278] its departure from IFRS in its classification of 'available for sale financial assets'. The 2011 half year report describes the 'available for sale assets' as consisting *"...of equity interests the Company holds in certain entities that have rights to proceeds from certain cases and also include the Company's equity holdings in the Manager*" i.e. a 15% interest in its investment manager (fair value of $2.3m at 31 December 2011) and a holding in an "*entity for expanding interest in contractual claims*" (fair value of $5.3m at the end of 2010) (JIL, 2011a, p.21; 2011b, p.6).

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[277] IAS 39:9 defines '*effective interest method'* and '*effective interest rate'*. The '*effective interest rate'* is determined by developing a set of scenarios for each case, encompassing the merits and risks. Probabilities are assigned to the alternative outcomes together with a range of likely settlement proceeds and the most likely claim resolution date. Monte-Carlo analysis is conducted and the results are used to calculate the future value of each case. An 'effective interest rate' is then derived based on the investment and the determined future value (JIL, 2012b, p.20).

[278] "*Available for sale financial assets are those intended to be held for an indefinite period of time, and that may be sold in response to needs for liquidity or changes in interest rates, exchange rates or equity prices. The Group could be seen to have significant influence over certain of its available for sale financial assets as a result of its stake in each of those assets. If significant influence exists, that investment, under IFRS, should be accounted for as an 'Associate' and hence the equity accounting method should be applied. However, the Board have taken the view that (a) there is no material difference in accounting for these investments as associates and accounting for them as financial assets at fair value through profit and loss; (b) there is no material difference in the disclosure; and (c) the strategy of the Group is to hold investments as part of an investment portfolio with a view to the ultimate realisation of capital gains rather than as a medium to carry out its own business, hence accounting for these investments as available for sale is the most appropriate method*" (JIL, 2012b, p.16).

Although significant additional investment was made in 2011 there was a net $5m reduction in fair value for the year (Table 8), the explanation for which has not been disclosed[279]. The movement (Table 9) is more dramatic when looked at on a half year basis (JIL, 2011a, p.21).

Table 8 Juridica Investments Limited - 'Available for Sale Financial Assets' 2008-2011

	2008	2009	2010	2011
Balance at 1 January	-	2,400,005	7,505,521	9,217,177
Additions	2,935,950	5,105,516	1,370,912	3,177,536
Fair value movement	- 535,945		340,744	**-4,953,960**
Balance at 31 Dec	**2,400,005**	**7,505,521**	**9,217,177**	**7,440,753**
Comprising at Fair				
Investments in JCM	2,400,005	2,400,005	2,575,963	2,282,209
Entity for expanding		5,105,516	5,302,399	?
Other			1,338,815	?
Balance at 31 Dec	**2,400,005**	**7,505,521**	**9,217,177**	**7,440,753**

Source: Juridica Investments Ltd Annual Report & Accounts

Table 9 Juridica Investments Limited - 'Available for Sale Financial Assets' 1st and 2nd halves 2011

	Half year to 30 June 2011	Half year to 31 December 2011	Full year to 31 December 2011
Balance at 1 start of period	9,217,177	17,528,361	9,217,177
Additions	7,056,927	-3,879,391	3,177,536
Fair value movement	1,254,257	**-6,208,217**	**-4,953,960**
Balance at 31 Dec	**17,528,361**	**7,440,753**	**7,440,753**
Comprising at Fair Value			
Investments in JCM at Fair value	2,575,963	2,282,209	2,282,209
Entity for expanding contractual claims	?	?	?
Other	?	?	?
Balance at end of period	**17,528,361**	**7,440,753**	**7,440,753**

Source: (Juridica Investments Limited, 2011b; 2012b)

[279] The Investments Managers Report states "*Valuation of the Company's available for sale financial assets decreased by US$1.8 million reflecting the net of US$3.2 million in additional funding for investments and US$5.0 million decrease due to the net change in the individual investment's fair value*" (JIL, 2012b, p.6).

4.2.iii *IMF*

IMF adopts the position that litigation contracts in progress are intangible assets and are measured at cost on initial recognition and are carried at cost until determination or settlement, at which point they are recognised in profit and loss and derecognised as an asset. Internal[280] and interest costs are capitalised. At the 30 June 2011 the carrying value of litigation contracts was A$59.6m of which A$14.1 was capitalised internal costs and A$1.9 was capitalised interest. At each reporting date the litigation contract is tested for impairment on a value in use basis and written down as appropriate (IMF, 2011a, pp.43-44,53,65).

4.2.iv *HLS*

HLS is similar to IMF in that it treats litigation contracts in progress as intangible assets which are measured at cost on initial recognition and are carried at cost less impairment until determination or settlement at which point they are recognised in profit and loss and derecognised as an asset. The recoverable amount of litigation contracts is their value in use calculated using cash flow projections and discount rate of 7% (HLS, 2011, pp.23,29).

4.2.v *Comment*

The analysis above shows a distinct difference between UK and Australian accounting treatment of litigation funding. The UK companies are adopting fair value whereas the Australian companies adopt historical cost and regard litigation contracts in progress as intangible assets. The Australian quoted companies have been in existence for much longer than the UK companies (in IMF's case the litigation funding activities preceded the public listing) and have always adopted the intangible assets at cost as the recognition and measurement method. Accounting standards have changed over time but the uncertainty that existed as to the classification of litigation funding for accounting purposes allowed both methods to be applied. In the years since 2011 the Australian companies have not adopted fair value accounting for litigation contracts.

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[280] Directly attributable costs of managing the litigation including certain wages (approx. 67% of total salary costs), occupancy costs and out-of-pocket expenses (approx. 26% of overhead costs) (IMF, 2011a, p.65).

4.3 How funders treat expenditure to be incurred on litigation contracts

4.3.i *Burford*

Having disclosed the general nature of its agreements with clients, Burford estimates that at the year-end, considering both capped and uncapped funding obligations, its commitment was $72m (2010: $33m) but that figure does not include "*executed investment agreements that are capable of cancellation without penalty by the Group for adverse findings during a post-agreement diligence period*" (Burford, 2012b,p.34).

4.3.ii *Juridica*

Juridica discloses that it has expensed $4m in relation to due diligence on potential investments. In the event these cases become investments the due diligence costs will be written back to assets. Juridica also discloses that it provides lines of credit to some counterparties and at the financial year the maximum commitment was unchanged at $12.3m. There is also a note to the effect that Juridica is exposed to liquidity risk as a result of contractual interests and loan to lawyers which require significant capital. The amounts are not disclosed and the Directors opine that the risk is low as "*cash and cash equivalents exceed unmatched liabilities or other contractual commitments*" (JIL, 2012b, pp.25,30).

4.3.iii *IMF*

IMF does not provide for future expenditure on litigation contracts in progress but it does provide for adverse costs as soon as a case has been lost. As regards its litigation portfolio it does not recognise or disclose any commitments or contingent liabilities (IMF, 2011a, pp.54,65).

4.3.iv *HLS*

HLS does not provide for future expenditure other than adverse costs on a lost case, nor does it recognise or disclose any commitments or contingent liabilities in relation to its litigation portfolio (HLS, 2011, p.23).

4.3.v *Comment*

The UK and Australian approaches differ because of the differences in measurement i.e. fair value reflects future cash flows. What is not clear from the disclosures reviewed is the extent to which potential adverse costs are provided for or how much

of the cash resource will be required by existing obligations to clients. There is no disclosure regarding the sensitivity to changes in unobservable input variables as required by IFRS 13:93(h)(i) and disclosures along the lines of "*should the value of investments have been 10% higher or lower than provided for…*" add nothing to an investor's understanding. The fair value measurement method relies on the numerous subjective assessments made by the investments advisor and whilst it is said that the advisor "*is experienced in evaluating the investment worthiness of a particular opportunity*" (JIL, 2012b, p.20) it is difficult to calibrate the level of that expertise.

Juridica's annual report to June 2013, provided additional explanatory notes and a sensitivity chart in order to comply with IFRS 13 (Figure 4)[281]. Concurrently due diligence and transaction costs were removed from investment costs as they would now be expensed as incurred.

Table 10 shows the movements in contractual interests for Juridica since the company was listed. From this table it is apparent that the company has invested $66.6m into cases and has realised $9.5m net from those cases which have been completed. It is also apparent that the rate of investing has slowed down.

Table 11 is an extract from the statements of comprehensive income and shows how much of the income from contractual interest is realised and unrealised but it is not known how much was actually invested in those cases that have been settled, nor how much of the closing balance for contractual interest is due to accumulated fair value movement.

In the early years of its existence, Juridica reported financial details and revaluations for individual cases but that practice ceased after the half year results to June 2010. (From year ended 31 December 2012, the company has reported the total income and sum invested on each case - Table 12 refers).

[281] In the same set of accounts it is noticeable that the value of the contractual assets for the year ended 31 June 2012 were restated i.e. the restated balance at 31 December 2012 was now US$43,103,722 a 5.2% reduction on the previously reported value.

Figure 4 Extract from notes to the Juridica Annual Report to June 2013

The Company has identified three key unobservable inputs to the valuation model used in the valuation of investments held at fair value through profit or loss: expected quantum, expected duration, and cost of equity.

Expected quantum
The greater the quantum expected at conclusion, the greater the valuation at any point in time, other than at conclusion. However, the sensitivity of the present value of an investment to changes in expected terminal value is dependent on the investment's base internal rate of return ("IRR"). The higher the base IRR, the lower the impact a change in expected quantum will have on valuation.

Expected duration
The greater the expected duration of an investment, the lower the valuation at any point in time, other than at conclusion. However, the sensitivity of the present value of an investment to changes in expected duration is dependent on an investment's base IRR. The higher the base IRR, the lower the impact a change in expected duration will have on valuation.

Cost of equity
As the Company's cost of equity decreases, the valuations at any point in time will increase, other than at conclusion. As the Company's cost of equity increases, the valuations at any point in time will decrease, other than at conclusion.

The following table summarised the sensitivities:

Unobservable input	Investment IRR	Reasonable possible shift (+/-)	Change in valuation (due to +/- change in input)
	29%		±38.35%
Quantum	41%	10%	±26.05%
	216%		±11.41%
	29%		(38.01%) / 42.19%
Timing	41%	1 year	(25.81%) / 28.65%
(years)	216%		(11.30%) / 12.55%
Cost of equity	11%	3%	(4.46%) / 4.78%

Source: (Juridica Investments Limited, 2014, note 6)

Table 10 Juridica Investments Ltd. Contractual interests at 31 December 2008-2013

	2008	2009	2010	2011	2012	2012 restated	2013	Total
	US $	US $	US $	US $	US $	US $	US $	US $
Balance 1 January	0	14,118,352	36,080,911	38,800,709	37,964,964	36,992,534	43,103,722	0
Additions	24,607,600	20,644,523	7,322,611	7,447,822	11,242,654	3,098,104	3,523,067	66,643,727
Disposals	-17,250,000	-7,525,334	-6,607,268	-10,482,868	-1,261,026	- 1,261,026	-3,228,572	-46,355,068
Fair value movement	1,570,476	7,779,752	733,361	236,091	-1,312,212	5,462,315	2,588,438	17,398,003
Realised Gain	5,190,276	1,063,618	1,271,094	1,963,210	-1,188,205	- 1,188,205	1,167,245	9,467,238
Balance 31 December	14,118,352	36,080,911	38,800,709	37,964,964	45,446,175	43,103,722	47,153,900	47,153,900

Source: Juridica Investments Ltd. Annual Reports and Accounts 2008-2013

Table 11 Juridica Investments Ltd. Income for periods ending 31 December 2008-2013

	2008	2009	2010	2011	2012	2012 restated	2013	Total
	US $	US $	US $	US $	US $	US $	US $	US $
Realised gain on contractual costs	5,190,276	1,063,618	1,271,094	1,963,210	-1,188,205	-1,188,205	2,508,995	10,808,988
Other income arising on contractual costs	1,632,347	7,779,752	733,361	236,091	-1,312,212			10,381,551
Income - Contractual costs	**6,822,623**	**8,843,370**	**2,004,455**	**2,199,301**	**-2,500,417**	**-1,188,205**	**2,508,995**	**21,190,539**
Other income arising on available for sale debt securities	868,839	8,878,487	12,017,971	14,095,964	19,635,791			35,861,261
Realised loss on investments	- 44,696							-44,696
Interest Income	4,092,740	530,540	264,454	72,250	27,560	27,560	5,308	4,992,852
Other Income				1,484				1,484
Amortisation of intangible assets					-770,498	-770,498	- 952,546	- 1,723,044
Gain on revaluation of case proceeds payment obligation					481,245			-
Gain on bargain purchase					4,329,188			-
FV change in available for sale assets		6,071,655	-13,692,973	30,653,022	21,645,510	46,710,952	11,300,163	81,042,819
Foreign exchange/gain loss		- 503,202	75,035	-20,380	73,975	73,975	143,868	- 230,704
Total Income & Investment movements	**11,739,506**	**23,820,850**	**668,942**	**47,001,641**	**42,922,354**	**44,853,784**	**13,005,788**	**141,090,511**

Source: Juridica Investments Ltd. Annual Reports and Accounts 2008-2013

Table 12 Juridica Investments Ltd. Case income for periods ending 31 December 2012-2014

Investment Number	2012 Amount Invested	2012 Amount Recovered	2012 IRR	2013 Amount Invested	2013 Amount Recovered	2013 IRR	2014 Amount Invested	2014 Amount Recovered	2014 IRR
Completed Investment									
0208-G	12,050,211	13,750,000	29.99%	12,050,211	13,750,000	29.99%	12,050,211	13,750,000	29.99%
0308-R	9,294	3,500,000		9,294	3,500,000		9,294	3,500,000	
0908-U	3,119,371	4,337,693	60.81%	3,119,371	4,337,693	60.81%	3,119,371	4,337,693	60.81%
6308-F	1,522,802	2,487,749	60.91%	1,522,802	2,487,749	60.91%	1,522,802	2,487,749	60.91%
0408-W	2,872,424	3,793,389	19.53%	2,872,424	3,793,389	19.53%	2,872,424	3,793,389	19.53%
6509-A	2,476,681	4,500,000	54.76%	2,476,681	4,500,000	54.76%	2,476,681	4,500,000	54.76%
6409-V	785,819	5,302,905	260.52%	785,819	5,302,905	260.52%	785,819	5,302,905	260.52%
0210-M	1,526,040	2,478,220	45.05%	1,526,040	2,478,220	45.05%	1,526,040	2,478,220	45.05%
2510				1,059,994	3,000,000	38.11%	1,059,994	3,000,000	38.11%
7608-A				2,141,121	1,239,032	-27.58%	2,141,121	1,239,032	-27.58%
Total Completed	**24,362,642**	**40,149,956**	**81.97%**	**27,563,757**	**44,388,988**	**66.67%**	**27,563,757**	**44,388,988**	**66.67%**
Investments with partial recoveries									
7508-O	5,154,486	105,371		5,154,486	333,943		6,258,413	333,943	
0708-B	4,512,061	1,618,500		4,512,061	1,618,500		7,040,873	1,618,500	
7608-A	2,138,733	1,239,032		completed					
3608-A	95,003,314	43,916,773		96,267,416	74,424,491		102,362,835	148,024,521	
1610				4,208,516	4,000,000		4,217,948	4,000,000	
Total Partial Recoveries	**106,808,594**	**46,879,676**		**110,142,479**	**80,376,934**		**119,880,069**	**153,976,964**	
Total Cash Recovered to Date		**87,029,632**			**124,765,922**			**198,365,952**	

Source: Juridica Investments Ltd. Annual Reports and Accounts 2012-2014

From an examination of the 4 cases that completed over the periods to 31 December 2009 (Table 13) it can be seen that of the net gain on case 0908-U, $1,200,000 was recognised as an unrealised fair value gain in 2008 and only $18,321 as a realised gain in 2009. Overall a 39% return on investment. In case 6308-F, the majority of the gain occurred in 2009 and the total gain of $914,840 represented a 60% return on investment. It is also possible to see from Table 13 that of the $36.1m contractual assets value at 31 December 2009, about $8m arises from unrecognised gains[282].

Table 13 Juridica Investments Ltd. Case income for periods ending 31 December 2008-2009

Case Ref.	0208-G	0308-R	0908-U	6308-F	All other	Total
Additions	$12,050,211	$9,513	$3,119,371	$1,189,757	$8,238,748	$24,607,600
Disposals	-$13,750,000	-$3,500,000	$0	$0	$0	-$17,250,000
FVM due to effective interest	$0	$0	$1,200,000	$13,047	$357,429	$1,570,476
Realised Gain	$1,699,789	$3,490,487	$0	$0	$0	$5,190,276
at 31 Dec 2008	**$0**	**$0**	**$4,319,371**	**$1,202,804**	**$8,596,177**	**$14,118,352**
Additions	$0	$0	$0	$333,045	$20,311,478	$20,644,523
Disposals	$0	$0	-$4,337,692	-$2,437,642	-$750,000	-$7,525,334
FVM due to effective interest	$0	$0	$0	$0	$2,167,466	$2,167,466
FVM due to changes in est. cash flows	$0	$0	$0	$0	$5,612,286	$5,612,286
Realised Gain/(loss)	$0	$0	$18,321	$901,793	$143,504	$1,063,618
at 31 Dec 2009	$0	$0	$0	$0	**$36,080,911**	**$36,080,911**

Source: Juridica Investments Ltd. Annual Reports and Accounts 2008-2009

If the accumulated revenue reserves include a substantial amount of unrealised gains, it appears that the company is in a position to make distributions by way of dividends. The doctrine of capital maintenance[283] makes dividend payments out of capital illegal[284], as dividends must be paid out of accumulated realised profits less

[282] The disposal of $750,000 and the realised gain of $143,504 relate to a part payment against case 0708-B which had a fair value adjustment in the period to December 2008 of only $29,071 and thus does not impact this commentary.

[283] Ardern and Aiken (2005) describe the development of this doctrine in English law.

[284] The common law forbade the repayment of shareholder capital to protect creditors by preventing a reduction of shareholder limited liability (Mayson, 2010, p.374). In Australia the Corporations Amendment (Corporate Reporting Reform) Act 2010 removed the restriction.

accumulated realised losses[285]. Juridica, however managed[286] to pay a $5.3m dividend[287] at the end of its first period of trading from a net profit of $2.4m which included $2.5m of unrealised gains! The dividend announcement was made at the same time as the announcement to raise a further £35m of capital (JIL, 2009).

The Australian historical accounting approach does not recognise the future obligation to existing clients or the potential adverse costs liability and as a result it is difficult to know how much of the existing resources will be required to fulfil contractual obligations. Between 10 May 2004 and 31 December 2008, IMF made quarterly ASX announcements detailing its large case portfolio giving the then best current estimates of latest completion date[288] and maximum claim value for each case. From the ASX announcements[289] it has been possible to identify on an individual basis, dates, cost, income and gain for most of these cases. By combining the case portfolio at various accounting dates with the eventual total incurred cost of a completed case it is possible, with hindsight, to estimate the contingent liability at different accounting dates.

In Table 14 are shown the number of major cases that are open at the end of each financial year and the number of those cases for which the litigation cost is now known. The average value of valued cases is calculated from the data set in

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[285] The accounting guidance is that "*A profit is realised, as a matter of generally accepted accounting practice, where it arises from: the recognition in the financial statements of a change in fair value, in those cases where fair value has been determined in accordance with measurement guidance in the relevant accounting standards or company law, and to the extent that the change recognised is readily convertible to cash*" (ICAEW & ICAS, 2010, 3.9(c)). As unrealised gains on litigation contracts are not readily convertible to cash, such gains cannot be part of distributable profits. Part 23 of the Companies Act 2006 as amended by the Companies Act 2006 (Amendment of Part 23) (Investment Companies) Regulations 2012, is the legal authority in England and Wales.

[286] Juridica is a Guernsey company. Guernsey has abandoned a capital maintenance model in favour of a solvency one.

[287] Announced on 9 March 2009 and reported in the Chairman's statement in the annual reports and accounts for period ending 31 December 2008 in recognition that two of the cases had settled realising $5.19m (JIL, 2008; 2009).

[288] In practice the latest estimated completion date tended to be 30 June or 31 December being the financial year and half year accounting dates.

[289] See Chapter 1 §3. IMF ASX announcement between June 2001 and June 2013 have been examined.

appendices 4 and 5 and multiplied by the total number of open cases. This amount is then compared to the balance sheet value of contracts in progress to estimate a contracted obligation contingent liability[290].

Table 15 is an extract from the annual accounts to which the contractual obligations computed in Table 14 have been added. The Equity value of the company has not changed as the obligation is matched by the increased value of the investment.

Investors and other stakeholders who are concerned with liquidity frequently review the ratio of current assets to current liabilities, which based on the published accounts, is anything from 1.47 to 12.24 suggesting that the company is very solvent and does not have to liquidate non-current assets[291] to meet its obligations. However when the current assets are compared to the current liabilities plus the future obligations the revised quick asset ratio is somewhat different in that the current assets are less than the total liability and obligations. Whilst it can be argued that some of the future obligations do not need to be met within the next year and future profits are being ignored, the reality is that the company would be vulnerable if it was faced with a run of unsettled cases or losses. This is especially true in the early years when the number of cases in the portfolio is relatively low.

[290] There are limitations in this approach as a) the balance sheet value will include minor as well as major cases in progress; b) the average case value excludes cases that start and settle within the same accounting period; c) the presumption is that where case costs are not known that the case is progressing and incurring costs; d) the contingent value of adverse costs on won cases is not known. In 2008 the average case value increased dramatically as a result of the two Centro class action cases which commenced in 2008 and were settled in 2012.

[291] IMF classifies all its investments in claims as non-current assets.

Table 14 IMF Case Values

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of Major Cases	3	8	10	20	31	38	37	28	29	33
Number of valued Major cases	3	8	9	18	25	30	29	19	19	19
Avg. Value of valued cases	1,880,315	2,021,377	2,228,426	2,464,871	2,130,591	1,980,071	1,996,937	3,576,209	4,858,169	3,631,447
Estimated obligation of contracts in progress	5,640,945	16,171,019	22,284,258	49,297,423	66,048,328	75,242,699	73,886,661	100,133,865	140,886,899	119,837,763
Deferred litigation costs per balance sheet	0	8,232,615	9,051,417	12,471,395	24,002,052	32,865,988	30,323,969	28,123,388	32,275,955	40,487,439
Contracted obligation	5,640,945	7,938,404	13,232,841	36,826,028	42,046,276	42,376,711	41,565,756	67,230,275	108,610,944	79,350,324

Table 15 IMF Quick Asset Ratio

	Ln	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Current Assets	1	4,700,377	6,543,049	15,715,633	15,176,479	19,376,454	26,748,747	36,074,156	66,421,449	69,765,548	49,296,587
Non-Current Assets	2	31,408	8,506,018	11,142,012	15,619,287	31,019,987	42,559,134	36,668,187	30,515,909	33,879,854	42,997,596
Contracted obligation	3	5,640,945	7,938,404	13,232,841	36,826,028	42,046,276	42,376,711	41,565,756	63,927,588	114,847,360	121,780,422
Current Liabilities	4	-3,195,456	-3,255,465	-4,249,040	-5,312,815	-6,226,256	-5,927,660	-2,947,182	-21,160,372	-29,058,722	-7,859,878
Contractual obligations	5	-5,640,945	-7,938,404	-13,232,841	-36,826,028	-42,046,276	-42,376,711	-41,565,756	-63,927,588	-114,847,360	-121,780,422
Non-Current Liabilities	6	0	-52,602	-2,178,000	-3,532,816	-7,439,311	-23,259,769	-22,990,013	-8,546,711	-9,810,556	-11,898,649
Equity Value		1,536,329	11,741,000	20,430,605	21,950,135	36,730,874	40,120,452	46,805,148	67,230,275	64,776,124	72,535,656
Quick asset ratio	1/4	1.47	2.01	3.70	2.86	3.11	4.51	12.24	3.14	2.40	6.27
Revised Quick asset ratio	1/(4+5)	0.53	0.58	0.90	0.36	0.40	0.55	0.81	0.78	0.48	0.38

Source: IMF Annual accounts 2001 to 2010 as modified

4.4 How funders remunerate fair value advisors

Fair value advisors are used by the UK companies and in practical terms have substantial influence over the conduct of the business.

4.4.i *Burford*

Burford Group Limited is the independent investment advisor to Burford Capital Ltd. The investment advisor's remuneration consists of an advisory fee and a performance fee. The advisory fee is the greater of 2% of the 'adjusted net-asset-value'[292] of the fund and $6m. The performance fee is 20% per annum of the increase in the adjusted net-asset-value subject to non-compounded hurdle rate of 8% per annum[293]. In 2012 Burford Capital Ltd acquired Burford Group Limited (Burford, 2012a).

4.4.ii *Juridica*

Juridica Capital Management Limited ('JCML'), in which the group[294] holds a 15% stake[295], is investment advisor to Juridica Investment Limited and receives an advisory and performance fee. The advisory fee based is 2.5% of 'adjusted net-asset-value'[296]. The performance fee is staged, being 20% of the increase in adjusted-net-asset-value between the hurdle rates of 8% and 20%; 35% of the increase in adjusted-net-asset-value between the hurdle rates of 20% and 40%; and 50% of the increase over 40%[297].

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[292] The 'adjusted net asset value' means the net asset value of the company at the appropriate time after accruing for the advisory fee and after deducting unrealised gains on available for sale assets and providing for any write downs of those assets where they have not been written off in full (Burford, 2012b, p.23).

[293] Further qualifications are that the performance fee does not reduce the adjusted net-asset-value below the hurdle rate and that 30% of the performance fee is subject to a clawback if the hurdle rate is not maintained for three years. The potential clawback element of the performance fee will be paid in shares in the company at the end of the three year period (Burford, 2012b, p.23).

[294] The group is Juridica Investments Limited and its subsidiaries (JIL, 2012b, p.14).

[295] On the 31 December 2012, Juridica Investments Limited announced that it had acquired shares from the trustees of the LTS trust and as a result its holding in Juridica Capital Management was now 36.17% of the issued share capital. Timothy Scranton, a co-founder of Juridica, is the beneficiary of the LTS trust (JIL, 2012a).

[296] The 'adjusted net asset value' means the net asset value of the company at the appropriate time after accruing for the advisory fee, and after deducting unrealised gains on investments, and providing for any write downs of those assets where they have not been written off in full, and deducting the value of the investment in Juridica Capital Management (JIL, 2012b, p.26).

[297] Further qualifications impose a 'high water mark' to prevent a performance fee being made if the net asset value of the company does not exceed the net asset value at the time the previous performance fee was made (JIL, 2012b, p.26).

The agreement with JCML was amended and restated on 15 October 2013 with additional clauses to permit the payment of a post termination performance bonus. The agreement terminated on 1 January 2014 and replaced with an investment management agreement with Fields Capital Management Limited renamed Juridica Asset Management Limited ('JAML'). The new company is wholly owned by Fields Asset Management LLC, a Delaware company controlled by Juridica co-founder Richard Fields (JIL, 2013).

4.4.iii *Comment*

The advisors are not truly independent valuers. The advisors are remunerated by fund performance and are the principles who represent the business to potential clients, carry out due diligence, manage day to day relationships with clients etc. and consequently there are multiple areas for principle agent issues to arise (Barlev & Haddad, 2003). The fund manager, when able to influence the progress of a case, has incentives[298] to manage cash flows and liquidate good investments early and delay exiting bad investments (Phalippou, 2009). Advisor fees are a major claim on shareholder wealth and whilst advisor's activities also impact shareholder wealth they are not directly accountable to the investors or easily removed by them (Fung & Hsieh, 1999; Goetzmann et al., 2003; Habib & Johnson, 2012; Hodder & Jackwerth, 2007).

4.5 What funders report regarding risk

Managing the risk of possible reductions in shareholder value as reflected in share value is as appropriate to litigation funders as any other business. The AIM admission documents for Burford and Juridica contained information on the specific risk factors to be considered by investors and these are summarised under five general headings in Appendix 2 . Many identified risk factors are common to both companies and are perhaps the result of 'boilerplate' drafting. However, some risk factors are specific to litigation funding and are of particular relevance to the regulation of the industry and are considered in later chapters.

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[298] Incentives include a) increasing his own fees over the course of the fund despite clawback provisions; b) improving the internal rate of return which is often used by investors as a performance measure and may result in attracting more capital (Phalippou, 2009).

Risk reporting and its auditing have been subjected to enhanced study as a result of the financial crisis with the ICAEW[299] expressing the need for better presentation of risk information in order to assist shareholders (ICAEW, 2010). It is noticeable that whilst the risk disclosure in the AIM admission document runs to many pages of text (Juridica 11 pages; Burford 8 pages), the concentrated accounting disclosure, which includes tables in the annual report is no more than 4 pages with other risk commentary dispersed through the report.

IFRS 7:31 states "*An entity shall disclose information that enables users of its financial statements to evaluate the nature and extent of risks arising from financial instruments to which the entity is exposed at the end of the reporting period*" (IASB, 2012b, pp. A241-A282). Linsley & Shrives (2006) found that companies exhibited a willingness to disclose forward-looking risk information but it was uncommon to find monetary assessment of risk information. Litigation funders conform to this stereotype.

4.6 What the auditors opine

4.6.i *Burford*

Burford are audited by Ernst & Young LLP and in their opinion the consolidated financial statements a) give a true and fair view; b) have been prepared in accordance with IFRS as adopted by the EU; and c) comply with Guernsey company law. Furthermore there are no matters that are required to be reported by exception (Burford, 2012b, p.13).

4.6.ii *Juridica*

Juridica are audited by PriceWaterhouseCoopers CI LLP and in their opinion consolidated financial statements a) give a true and fair view and c) comply with Guernsey company law. The opinion contains an "Emphasis of Matter" paragraph which, without qualifying the opinion, draws attention to the disclosures in the notes regarding investment risk and the fair value valuation. The paragraph concludes *"…the consolidated financial statements include non-current assets stated at their fair*

[299] Institute of Chartered Accountants in England and Wales ('ICAEW').

value of US$192,534,202. Because of the inherent uncertainty associated with the valuation of such non-current assets and the absence of a liquid market, these fair values may differ from their realisable values, and the differences could be material" (JIL, 2012b, p.9).

4.6.iii ***IMF***

IMF are audited by the Perth office of Ernst and Young and in their opinion the financial and remuneration reports a) give a true and fair view; b) have been prepared in accordance with Australian Accounting Standards and IFRS; and c) comply with Australian company law. Furthermore there are no matters that are required to be reported by exception (IMF, 2011a, p.80).

4.6.iv ***HLS***

HLS are also audited by the Perth office of Ernst and Young and the format and opinion are identical to IMF (HLS, 2011, p.39).

5 Conclusion

The objective of financial reporting is to provide financial information about the entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity [CF:OB2]. The IASB's objective is to require all entities to report and accounted for like transactions in the same way and consistently over time. Consequently the IASB does not intend to permit choice in accounting treatments (IASB, 2010e, §12). This chapter has shown that litigation funders do exercise choice over financial reporting and accounting, making comparative analysis difficult. Consequently, if the IASB fulfils its objectives, litigation funders should expect future regulation to remove that choice.

This chapter focussed on publicly listed companies, two of whom have listed recently. Third party funders compete in the marketplace for capital and it is not clear whether the different accounting treatments are intended to influence the entity's cost of capital (Easley & O'Hara, 2004) or whether there are other incentives e.g. fund advisors maximising their own compensation and tenure (Frings, Frings, & Mastilak, 2012).

It is striking that the fair value methodology is adopted by the UK entities who have separate investment advisor companies which remunerate the principals[300] whereas the Australian entities adopt historical cost and remunerate the principals directly. From the investor's perspective, significant fees are paid to the investment advisor companies but there is little opportunity for an investor to monitor how this money is applied as the entity is offshore.

Table 16 IMF Australia Portfolio as at 30 June 2012

Claim Value Range	Est. Claim Value	No of cases	Expected Completion		
			FY 2013	FY 2014	FY 2015
	$m		$m	$m	$m
<$10m	10	2	$5	0	$5
$10m-$50m	288	13	$70	$98	$120
>50m	935	10	$510	$275	$150
	$1,233	**25**	**$585**	**$373**	**$275**

Source: (IMF, 2012d)

Litigation funding is risky and substantial sums are being invested into cases by the companies reviewed in this chapter but investors have little idea as to: a) what the total obligation is; b) what the expected return is; and c) when that return will occur. IMF do make quarterly statements regarding their portfolio (e.g. Table 16) but that information is no longer case specific and apart from showing the number of cases in progress (where IMF's potential fee exceeds $0.5m), the only other quantitative data is an estimate of the client's claim value by financial year of anticipated finalisation,

[300] Juridica's AIM Admission document stated "*The Principals, who are the senior management of the Investment Manager and partners in FSUS, will select and appropriately structure investments for the Company on the basis of case analysis systems and standards being developed by the Investment Manager. Following Admission the owners of the Investment Manager will initially be the Company as to 15 per cent and related family trusts of the Principals as to the remainder*" (JIL, 2007, p.27).

Burford's AIM Admission document stated "*In addition to the Directors' experience, the Company can also draw upon the expertise of the Principals who have extensive litigation and litigation management experience…In addition, the Principals have a depth of contacts and relationships with a wide range of experienced and respected experts in law as well as in other occupations that will assist the Company with the sourcing and analysis of potential investments*" (Burford, 2009, p.18).

which serves little financial purpose[301] even though it may have marketing value[302]. When a claim is completed, IMF report their fee and not the original claim value and consequently it is extremely difficult to calibrate estimates.

The harder it is for users to correlate information contained in the financial statements with the ability of the entity to earn income and generate cash flows in the future, the more uncertainty and the higher the risk of loss (Boritz, 1990, p.42). It has been shown in section 4.3 that the historical cost form of accounting is deficient in not disclosing the extent of the future contractual obligations as that creates the impression that the company has far greater resources available than reality. The danger is that the company may over lever current resources and could run out of cash if cases do not settle promptly and profitably. On the other hand, the fair value measurement lacks transparency and it is difficult to understand how much profit is made on any settled case if unrealised gains and losses are taking place every year. Balance sheet manipulation can be achieved by varying the assumptions used in the fair valuation or by changing the method of accounting as the following example demonstrates.

Consider a claim where liability is not in issue but the extent of the compensation is. The total costs are expected to be 50 if the case proceeds to trial. 20 of the costs have already been paid. The claimant also expects to recover 70% of his costs at trial providing he wins some damages. Against loss item 1 the claimant is 95% confident of recovering 10 and against loss item 2 the claimant is 75% confident of recovering 40. The prospects of reaching a settlement now are 50/50 and the claimant would settle at 45 including costs to realise a profit of 25.

Alternative accounting treatments present very different results as shown in Table 17. Under historical accounting the claim would be carried on the balance sheet at 20 and

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[301] This is of dubious value because a) IMF's share is not known; b) claim and settlement/judgment amounts vary significantly especially where heads of claim are speculative; c) the distribution of claimed amount is not known; d) the probability of success is not known.

[302] E.g. Value of our investment portfolio is $1.2 billion. This metric is often used by IMF in its investor presentations.

none of the other costs and income would be recognised (Example A in Table 17). Were the funder required to recognise the contingent liability of going to trial then the claim value would be increased to 50 and the contingent liability recognised. Overall there is no change to the balance sheet value (Example B in Table 17).

If settlement negotiations fail and the case proceeds to trial only 70% of costs would be recovered and therefore application of the maxim "*anticipate no profits and provide for all probable losses*" would result in both the asset value and shareholder equity being reduced (Example C in Table 17). Adopting a fair value approach, a settlement now would result in income of 45 and profit of 25 as compared to a probable outcome at trial of between 45 and 85 with a profit between -5 and 35 (mean 15). The Directors adopt the view that an unrealised gain of at least 15 at this stage is not unreasonable and prudently fix the fair value at 35 (Example D in Table 17).

If an EV method of valuation was used the unrealised gain would be 23[303] which takes account of a gain on settlement of 25, a complete loss at trial of -50, a small win at trial with net loss of -5 and a big win at trial with a net gain of 35 (Example E in Table 17).

Table 17 Comparison of alternative accounting treatments

Example	A Historical Cost	B Historical Cost & Cont. Liability	C Historical Cost & Cont. Liability & Impairment	D Fair Value	E Expected Value
Claim Asset	20	50	35	35	43
Contingent Liab.		(30)	(30)		
Nett Asset		**20**	**5**	**35**	**43**
Contributed Equity	20	20	5	20	20
Unrealised gain				15	23
Shareholder funds	**20**	**20**	**5**	**35**	**43**

The intended move towards EV as a measurement measure for litigation may have been useful to investors in litigation funding companies but the discussion on the

[303] 0.5(0.05[-50]+0.95[(0.7*50-50)+0.25(10)+0.75(50)])+0.5(45-20)= 23.125 (say 23).

proposed standard tended to be centred on defendants and signalling concerns. For investors in TPFs, the fundamental outstanding question is whether it is detrimental to their interests to disclose more information on litigation. Also outstanding is whether the accounting standards setters have the resolve to progress the issue of EV[304] or whether the lobbying on behalf of US lawyers and big business prevails. The objection that it would be difficult for auditors to verify the highly subjective management judgements measuring litigation using EV (IASB, 2010a, p.16) does not appear to be an issue when similar judgements are used in 'fair value' measurement.

Compliance with IFRS disclosure requirements reduces information asymmetry and enables financial analysts to provide more accurate forecasts to investors and other stakeholders (Hodgdon et al., 2008). The normal expectation is that non-compliance will result in audit qualification which in turn negatively impacts lending decisions and how the market views the entity (Firth, 1980; Schneider & Church, 2008). From January 2013 adoption of IFRS 13 became mandatory and consequently investors will be relying on auditors to ensure that litigation funders provide more quantitative analysis of the sensitivity of the input variables in fair value measurement especially where those estimates have a material effect. Juridica's increase in fair value in the 6 months to June 2011 being followed by a significant reduction in fair value for the 6 months to December 2011 being a case in point (Table 9). Reporting on the accuracy of historical disclosures would also be useful in reducing information asymmetry and calibrating confidence in estimates (Bell & Griffin, 2012; Koonce, Williamson, & Winchel, 2010; Lundholm, 1999; 2003; Petroni, Ryan, & Wahlen, 2000).

Investors, especially institutional ones, are primarily concerned with corporate performance over the short-term[305] and recent research shows that investors are discounting 5 year cash flows at rates more appropriate to 8 or more years hence (Haldane & Davies, 2012). Such short-termism is difficult for litigation funders when individual case investment can take years to realise and closure dates are

[304] It was suggested that mandating risk adjustments in the project to replace IAS 37 should be deferred until after the finalising the insurance contracts project (IASB, 2010a, p.7).

[305] In 2009, US institutional investors (including hedge funds) own over 70% of the largest 1,000 companies but the average period of ownership is about 7-9 months (Heineman & Davis, 2011).

unpredictable. Disclosing to the markets an ever increasing equity value and reporting increasing (but unverifiable) values of claim in the portfolio may reassure the markets especially when it is impossible to identify how much or the equity value is composed of unrealised gains. This may be more important in the early years of a funding company before the 'pipeline' of investments starts producing a dividend stream.

5.1 Is additional regulation required?

Investors and creditors do not need to be protected from themselves or to have their expectations managed but they do need information to make informed decisions – absent such information they are effectively betting on little more than the arrival of good news. Within that context the current regulations are deficient. Additional regulation which will impact TPFs is in the pipeline (Table 7 refers), but that will not address all the issues. The analysis above has shown that even respected publically quoted companies can have their balance sheet value reduced by millions of pounds simply by changing the accounting rules on the treatment of outstanding obligations to clients and the contingent liability for adverse costs.

Corporate solvency is difficult to consider when unrealised and unrecognised gains and liabilities exist and whilst not perhaps the primary concern of short term investors, balance sheet solvency is a risk indicator for creditors and other stakeholders. Banks and insurance companies are subjected to regulatory oversight from institutions like the FSA on solvency but this is not a requirement for litigation funders and consequently either more accounting recognition and disclosure or formal regulatory oversight may be appropriate.

Formal regulatory oversight may also be appropriate in the UK given the pivotal role (with all the potential conflicts of interest) of Investment Managers who are rewarded with substantial fees but are not directly accountable to the capital investors. The EU Directive[306] on Alternative Investment Fund Managers came into effect in July 2013 and addresses similar issues but it is unclear as to whether the Directive applies to litigation funders, if not, then it should.

[306] Council Directive 2011/61/EU.

Chapter 4 The market's reaction to public information

1 Introduction

The previous chapter demonstrated the limitations of financial statements in providing useful financial information relevant to the unpredictability of litigation outcomes and the uncertainty surrounding financial outcomes. Nevertheless regulators and others concerned with solvency in the sectors that characterise the litigation funding industry need to consider unrealised and unrecognised gains/losses, even though they are not reflected in the financial statements. This raises the question as to whether the market is an adept monitor of the solvency of a listed litigation funder? It was noted in the previous chapter that investors, especially institutional ones, are primarily concerned with corporate performance over the short term and are discounting future cash flows aggressively (Haldane & Davies, 2012). The inference being that removing uncertainty over the future gain and the timing of case settlements could be highly attractive to those investing in litigation funders. From a regulatory perspective, if investors are effectively monitoring a litigation funder's cash flow and solvency risk via the market then is additional regulation necessary?

In this chapter, event study methodology in various forms (i.e. the market model with both single and multiple factor and the constant mean return model) is applied to a single litigation funder to examine how the Australian securities market reacts to litigation news (i.e. market announcements concerning new cases and case outcomes) and the impact on the share price of that company. IMF was selected for study because it is possibly the world's most transparent litigation funder and has been publicly quoted since 2001. As a result it provides the longest time series of all litigation funders and a rich source of data in contrast to other funders where empirical evidence is scarce. IMF is also respected and influential[307] and consequently is an appropriate proxy of the litigation funding industry.

[307] IMF's founders are regarded as one of the "*Top 50 Big Law Innovators of the last 50 years*" (Sparkman, 2013).

Bhagat & Romano (2002a; 2002b; 2007) specifically reviewed the application of event study methodology to legal issues, however event studies[308] have been applied to firm specific and economy wide events in many disciplines[309] across many topics and have become the standard methodology for studying the reaction of share/security prices due to specific events (Binder, 1998, p.111; MacKinlay, 1997, p.13). Share prices may be affected as a result of information which is specific to the firm in question or to the market as a whole. The intention of an event study is to separate the two by identifying the variation to the prediction ('abnormal variation') of what would have been the share price, absent the event under scrutiny[310].

Most empirical research has been conducted using data from the US Markets which are all quote driven dealer markets whereas the ASX is an electronic order driven market[311]. Brailsford and Faff (1993; 1996) identified several features - market size, dominance of trading activity of the largest companies, extended periods of little or no trading of the smallest companies, significance of the natural resources sector, degree of regulation and the dominance of institutional investors - which distinguish the ASX from the US. Recent work by Dou, Gallaher and Schneider (2013) show that the Fama and French (2008) anomalies[312] that exist in the US markets are quite different in the Australian market and consequently this finding does not support risk based explanations of anomalies. Further information on the Australian market can be found in Appendix 3 .

McWilliams and Siegel (1997) note that the event study's popularity is due to it obviating the need to analyse accounting measures of profit which according to Benston (1982) are not very good indicators of the firm's true performance because

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[308] The literature on event studies is vast. Kothari & Warner (2007) provide a recent review.

[309] The methodology and use varies across disciplines. For a comparison of the methods and use in finance, industrial organisation, law and economics, and public finance and labor economics, see Sandler & Sandler (2014).

[310] Although an event study may demonstrate a relationship it does not necessarily provide 'legal proof' cf. *Fyffes Plc v DCC Plc & Ors* [2005] IEHC 477 where academic expert evidence was rejected.

[311] For other differences between the ASX and US markets see Lim & Coggins (2005; Sandler & Sandler, 2014) and Aitken & Frino (1996).

[312] i.e. size, value, momentum, contrarian, profitability, earnings growth, asset growth and accruals.

managers can manipulate profits and accounting procedures, whereas stock prices are not subject to manipulation by insiders as they supposedly reflect the discounted value of all future cash flows and incorporate all relevant information.

Where the court delivers a judgement the parties and the public's prior uncertainty relating to liability and quantum is removed to at the same time[313], whereas with a settlement the parties and the world resolve the uncertainty at different times. Consequently it is of interest to compare how the market (as reflected in the funders' share price) reacts over a period of time surrounding both judgement and settlement events. Any abnormal returns associated with these events are signals that investors' have updated their prior beliefs as a result of the new information.

Questions addressed in this chapter include:

- Does the market react to the news of funding new cases i.e. is the market drawing on all the available information to update prior beliefs?
- Does the market react to removing uncertainty in litigation cases as theory predicts?
- Is the market filling a regulatory gap by monitoring performance and the risk of default?

In the next section I consider how this work fits within the existing literature. In section three I consider the methodology of event studies and more specifically, the use of single firm multiple event methods and their application to the questions posed in this chapter. Section four describes the origins of the data used and discusses its characteristics and limitations. This is followed by section five which uses litigation announcements and outcomes as events to test the market's reaction. For robustness, various event study approaches are used to analyse the market's reaction to news from litigation funders. In section six I discuss the results before presenting my interpretation and conclusions in section seven.

[313] i.e. when the judgement is pronounced.

2 Prior Literature

2.1 The efficient market hypothesis

Underpinning the analysis in this chapter is the efficient market hypothesis ('EMH')[314] which asserts that at any point in time security prices 'fully reflect' all available information i.e. an efficient market will rapidly establish risk adjusted values for assets and liabilities by impounding the information on risk into the market price. The EMH does not mean that the market always prices securities correctly, it merely means that the market is not systematically biased and as new information becomes available the market will adjust its estimate of the value of assets and liabilities (Cox & Portes, 1998). On this basis one would expect the security price of a litigation funder to not only reflect the prospects of success of the litigation portfolio but also the expected magnitude of the settlement. The intuition is that market prices may react when new cases are announced; as the case progresses and new information is revealed; and when case outcomes become known. Sunshine (2010) recounts from personal experience how monitoring a case closely prior to judgment can create opportunities for hedge fund investors.

Fama (1970) observed that although the EMH responds well to the data it is an extreme null hypothesis and is not expected to be an exact description of reality although it is a good approximation[315]. Individual share prices do not react to whole market events in the same way. Lloyds brokers promoted Burford Capital as an investment by observing that correlation[316] between the daily returns of IMF and S&P/ASX 200 Index is close to 0.01 clearly suggesting that the returns from this asset class are uncorrelated with equity markets (Execution Noble, 2010).

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[314] According to Sewell (2011, pp 3-4), Fama (1965, p.90) was the first to define an 'efficient market' and the term 'efficient market hypothesis' is attributed to Roberts (1967).

[315] The broader approach which assumes that securities are priced according to risk and misvaluation ie behavioural biases that impact investor decision making, is surveyed by Hirshleifer (2001).

[316] The relationship between the return from an individual share price movement and the return from the market movement is known as 'beta'. Individual shares that perform the same as the market as a whole have a beta of 1.

2.2 Disclosure of information

Market news can be classified as *scheduled* or *unscheduled*. Scheduled news would include reporting quarterly, half yearly and annual results as well as macroeconomic announcements and whilst the timing of the news is pre-existing knowledge, the contents are not. Analysts will have estimated the news content beforehand and the market will have adjusted prices as a result of those estimates. On publication it is only the unexpected element that remains to be adjusted for by the market. Most event studies have been conducted around scheduled news. Unscheduled news, by definition is a 'surprise' in both timing and content and may trigger price jumps in an otherwise continuous stock price (Bohn et al., 2013).

Govindaraj et al (2007) find that the market reaction to all but the most extreme and infrequent events is generally not significant. They suggest that the event study methodology may not generally be useful to study the social costs of litigation, but may be useful for unexpected abnormal litigation events where the potential liabilities (including reputation and other losses triggered by litigation) may far exceed the legal liability reserves setup by firms. Palmer & Sanders (2010) found similar results with their study of 'blockbuster' jury awards. In those cases[317] where there was a stock market response, it occurred with firms whose total award to market capitalization ratio was in excess of 9%.

Clearly the EMH is not entirely correct, some lag - be it nanoseconds or days - for interpretation is to be expected between information being made available and share prices reacting and stabilising. As a result the markets are not perfectly efficient and consist of two types of participants – those that have an advantage in obtaining, processing and analysing pertinent information and can benefit by such effort and those that do not have the advantage and rely upon the market price to be a fair price (Grossman & Stiglitz, 1980)[318].

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[317] Having looked at both case filing and award date data, they generally found trivial stock market effects for 11 of the 17 companies, despite the size of the awards.

[318] Within the theoretical literature on asset pricing under asymmetric information there are two competing theories as to how private information is impounded into asset prices. The critical difference is the ability of the trader's own behaviour to impact the price. Bossaerts, Frydman & Ledyard (2014) use laboratory experiments to compare the noisy rational expectations equilibrium

In an efficient market the price cannot be said to be fair if information is not disclosed or if the disclosed information is misleading. The US cases of *Basic*[319] and *Amgen*[320] defined the rebuttable doctrine known as the 'fraud on the market presumption of reliance'[321] which facilitates class action certification because the court can "*presume that investors trading in efficient markets indirectly rely on public, material misrepresentation through their 'reliance on the integrity of the price set by the market*' "[322].

The Australian form of 'continuous disclosure' differs from the US where disclosure occurs by quarterly reporting and there is no general requirement to publicly disclose material developments as and when they occur. As a result US private investors have no regulatory mechanism to access price sensitive information until the next quarterly report becomes available (ASIC & ASX, 2000; SEC, 2000)[323].

Hay (1995) argues that early case settlement is inhibited by *exogenous* asymmetric information[324] and later settlement is inhibited by *endogenous* asymmetries. The disclosure of information regarding the progress of a litigated case is unusual in that

('NREE') theory (Diamond & Verrecchia, 1981; Grossman & Stiglitz, 1980; Hellwig, 1980) to the Bayesian Nash Equilibrium theory ('BNE') (Holden & Subrahmanyam, 1992; Kyle, 1985) and find that, contrary to BNE, price efficiency increases with the proportion of traders that hold inside information and that NREE best predicts the end-of-period price quality.

[319] In *Basic Inc. v Levinson* 485 US 224 (1988) the US Supreme court accepted fraud on the market theory as a rebuttable presumption. The first favourable judgement relying on market efficiency was *Blackie v Barrack* 524 F.2d 891 (9th Cir. 1975).

[320] *Amgen Inc. v Connecticut Ret. Plans & Trust Funds* 133 S. Ct 1184 (2003), 1192-1193.

[321] Nowadays a large part of IMF's business derives from funding shareholder class actions but the concept of 'fraud on the market' has not been adopted in Australia (Duffy, 2005; Pompillo, 2012) and as at May 2011 none of the Australian securities class actions have proceeded to a judgement by the Australian courts (Allens Arthur Robinson, 2011; Mould & Grave, 2010). In the US, there are issues as to who should logically be included in a class action suit (Duffy, 2005; Erenburg et al., 2011).

[322] There are various ways to compute the extent of the damages based on finance theory (Cornell & Morgan, 1990).

[323] In recent years US quoted companies have been required to make more form 8-K disclosures of significant events but the disclosure obligation is fragmentary and remains periodic specific as opposed to 'continuous'. A 2013 SEC staff report to Congress recommends that a comprehensive approach should be used to review and revise the disclosure requirements (SEC, 2013b).

[324] Spier (2007) provides a useful literature review on asymmetric information in litigation and Bernhardt and Lee (2015) a concise review of why litigating parties fail to settle.

sometimes information is revealed to the general public, the litigants[325] and the litigation funder at the same time (e.g. a court judgment) and on other occasions the litigants and the funder will be aware of settlement discussions, their progress and outcome in advance of the general public (e.g. a settlement).

2.3 Market reaction to litigation

Corporate litigation affects shareholder wealth. Defendants who lose pay damages, their own litigation transaction costs (to the extent they are uninsured) and a percentage[326] of the claimant's costs. When a corporate claimant wins, shareholders benefit by recouping past company losses less unrecovered litigation transaction costs. Consistent with earlier research, Murphy et al (2009) found that on average, announcements of alleged corporate misconduct[327] result in a significant abnormal negative stock price reaction.

A specific form of corporate litigation is the shareholder class action[328] where the purpose of the claim is to correct pricing errors arising from misreporting by the directors and officers. Ultimately the shareholders are both claimant and defendant, creating a 'circularity problem' in that they receive damages in cash but suffer investment loss as their shareholdings reflect the reduced corporate value (Caskey, 2014; Coffee, Jr., 2006). Litigation is not a 'zero-sum' game because of the existence of litigation transaction costs. Romano (1991) found that the impact on share price was insignificant when a class action was initiated, which would be expected in a 'zero-sum' game with low transaction costs. Gande & Lewis (2009) confirmed Romano's observation that the insignificant impact on share price on case initiation

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[325] Although the litigants are expected to be unaware of the judgement, written reserved judgements are made available to the legal representatives in advance of the court handing down its decision (CPR, 2011, PD40e).

[326] The percentage will vary according to jurisdiction and court ruling. In the USA the typical percentage will be zero. Even in cost shifting regimes, not all costs are recoverable, hence the percentage will be lower than 100%.

[327] Corporate misconduct allegations were found by searching the *Wall Street Journal* Index for the subject keywords: antitrust, breach of contract, bribery, business ethics, conflict of interest, copyright/patent infringement, fraud, kick-backs, price-fixing, securities fraud, and white-collar crime.

[328] *"A shareholder class action is a suit filed by a shareholder on behalf of a class of shareholders similarly situated against the firm, its directors, its officers, its majority shareholders, or any combination of these"* (Jones, 1980, 543).

may be due to the market previously anticipating the litigation and Cox et al. (2004) show that actual shareholder settlements are highly correlated with the estimate of losses from corrected share price movements. In previous studies of the impact of litigation on share price, the litigation is a small part of the company's activity whereas for a litigation funder, where litigation is the primary activity, the impact may differ.

The landmark papers of Ball and Brown (1968) and Fama et al (1969) form the foundation of the modern approach to testing the EMH[329]. Recently a group of US law professors gave evidence as *amicus curiae*[330] noting limitations of the EMH and arguing that the single firm, single event study is a reliable and practicable method for courts to determine whether misstatements distort the market[331].

3 Event study methodology

3.1 Event study structure and measuring the normal and abnormal returns

There are seven common steps to an event study – 1) Event definition i.e. defining a pre and post event window; 2) Selection criteria; 3) Normal and abnormal returns; 4) Estimation procedure; 5) Testing procedure; 6) Empirical results and 7) Interpretation and conclusion (Campbell et al., 1997, pp.150-152). The steps are self-explanatory, however the issues and assumptions are considered and discussed further in section 3.2. Salinger (1992) concluded that *"There is a schizophrenia in the event study literature between a very close attention to methodology and the view that for events of any importance, methodology is unlikely to matter a great deal. The latter view is probably quite appropriate when news is revealed over a brief, identifiable interval. When news leaks out gradually, however, methodology is likely to matter."*

There are a variety of model methods[332] which can be used to measure the normal and abnormal returns of a firm(s) stock. The two most common methods are the constant

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[329] MacKinlay (1997) has identified event studies as early as 1933 when Dolley (1933) considered the impact of stock splits on prices.

[330] "*A non-party who gives evidence before the court so as to assist it with research, argument or submissions*" (Banham-Hall et.al., 2009).

[331] *Halliburton Co v Erica P. John Fund Inc*. 134 S.Ct 636 (2013) Case No. 13-317 2014 WL 60721 (U.S.) at 24A. Brief of Law Professors as Amici Curiae in Support of Petitioners.

[332] Alternative models include the multi-factor model; the dummy variable method (eg Hertzel &

mean return model ('CMR') and the market model ('MM'). The CMR assumes that the mean return is constant through time (i.e. price is impervious to macro-economic events) and it is company specific events that impact price i.e.

Equation 1

$$R_{it} = u_i + \varepsilon_{it} \quad [1]$$

Where R_{it} is the return on security i in time period t (after adjusting for dividends and stock splits during the period); u_i is the mean return for security i and ε_{it} is the error term for security i in period t.

The MM assumes that both company specific and macro-economic events impact price and seeks to remove the macro-economic effect from any abnormal return. The assumption is that a stable linear relationship exists between the return on the market and the return on the equity and thus a market index can act as a proxy for macro-economic events. The downside is that events which are only industry wide may not influence the whole market and consequently the choice of the proxy index may be significant. The extent to which the MM succeeds in explaining any abnormal return due to market as opposed to company specific events will depend upon the R^2 of the regression in Equation 2:

Equation 2

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad [2]$$

Where R_{it} is the return on security i and R_{mt} is the return on the market m in time period t (after adjusting for dividends and stock splits during the period) and ε_{it} is the error term for security i in period t. The parameters of the MM are specified by α_i and β_i.

Smith, 1993; Mathios & Plummer, 1989) as well as the CAPM model and the Arbitrage Pricing model referred to earlier. It should be noted that Karafiath (1988) found that the dummy variable method yielded test results identical to the market model (Prince & Rubin, 2002).

Multi-factor models such as those of Chen, Roll and Ross (1986) attempt to predict returns using variables that represent the percentage change in pertinent macroeconomic activities e.g. production, inflation etc. Other multi-factor models use firm characteristics such as size and the ratio of book to market value e.g. Fama and French (1996). Black (1993) argues that "*in the presence of data mining and estimate error and changing risk premium, none of these methods adds enough accuracy to warrant its complexity*" and Kliger and Gurevich (2014, p.28) assert that "*it is worth noting that the more advanced benchmarks entail more complicated structures and so might be more prone to estimation error. Thus, notwithstanding their simplified nature, the naïve and single-factor benchmarks have their own merits.*"

The traditional event study is a two stage process of regression based on the pre-event data followed by prediction of returns during the event window and identification of abnormal returns. Karafiath (1988) suggested that using a unique dummy variable for each observation in the event window in a multivariate regression is a simplification that allows prediction errors and test statistics to be obtained in a single step process without loss of precision. Weinstein (2008, p.210) however cautions "*that drawing inferences from dummy variables is the same as drawing inferences from the residual for that given day or days. However, in the presence of auto-correlated residuals this is no longer the case*".

As litigation funding is said to be either uncorrelated or negatively correlated with the market[333] both the CMR and the MM (in both single and multiple regressions formats) are used in this chapter.

[333] E.g. "*Litigation funding is also popular with investors because it is a non-correlated asset class. Indeed, legal claims are often counter-cyclical with general economic conditions, as illustrated by the legal fall-out from the financial crisis*" (Pierce & Burnett, 2013). "*Third party funding offers investors the benefit of uncorrelated risk with high potential returns*" (Mirchandani & Edwards, 2008).

3.2 Issues and assumptions with event studies

Originally event studies samples were based on daily (or even monthly) equity prices. However it is now possible to use technology and work with intra-day trading of stock at either short time intervals or on a tick by tick basis. Table 18 illustrates the variation in computational method and the need to consider the following:

3.2.i *Event Date Uncertainty*

The main assumption with event studies is that the event is substantially unanticipated and both the estimation and measurement windows are free of contamination from other significant events. A market reaction can only be expected if the 'news disclosure' is new and relevant and controls for novelty and surprise need to be considered (Ittonen, 2012). Rumour about impending announcements may be sufficient to affect the security's price ahead of the announcement (Beaver & Malernee, 1990).

Prince and Rubin (2002) studied both litigation filing dates and award dates as relevant events for investors in litigant entities and found significant negative returns around the date of the initial announcement of a potential liability. For investors in litigation funding, news of a lawsuit is relevant when a) a funding contract is won and b) when an outcome is determined. On the first event a positive return which increases the valuation of the company by the anticipated income discounted for the risk of losing and the time effect of money is expected. On the second event these uncertainties cease to exist and a further positive incremental return would be expected if the case was won and a reversal of the original return if the case is lost.

Garber and Adams (1998) examined whether the outcome of automobile manufacturers product liability cases had an impact on the market and were unable to detect any effect. Trial verdicts were selected as the relevant event for econometric analysis because they were sufficiently numerous, prominent and documented as well as containing elements of surprise. In commercial litigation many judgments are reserved and drafts of the judgement may be supplied in confidence to the parties lawyers before the judgment is formally handed down and made public (CPR, 2011, PD 40E).

Table 18 A sample of event studies of litigation, regulation or news events between 1980 and 2013 for comparative purposes

Study	Description	Model	Data source	Sample Period	Sample Size	Estimation Window	Event Window	Units
Wier (1983)	Costs of anti-merger lawsuits	Market	CRSP	1962-1979		[-308,-109]	[-108, +60]	days
Binder (1983; 1985)	Effect of regulatory change	MVRM		1887-1978	20	60 250		Months days
Fischel & Bradley (1985)	Derivative suits	Market	CRSP	1962-1983	48	[-280,-41]	[0,+4]	days
Cutler & Summers (1988)	Pennzoil	Market	S&P	Jan 1984-Jan 88	Two firms	Not specified	[0,+1] [0,+5]	days
Viscusi & Hersch (1990)	Product Litigation	Market	CRSP	1970-1985	33	[-100,-30]	[-30,+30]	days
Romano (1991)	Shareholder suits – lawsuit filing	Market	CRSP	1966-1987	99	[-365,-11]	various	days
Bhagat et al (1994)	Interfirm lawsuits	Market	CRSP WStJ	1981-1983	550 events	[-171,-22]	[-1,0]	days
Little et al (1995)	Hazardous waste lawsuits	Market	CRSP WStJ	1977-1986	103 events	[-261,-61] [-60,60]	[-1,0]	days
Garber & Adams (1998)	Product liability cases	Market	Dow Jones	1985-1996	180	[-120,-1]	[0,1]	days
Cox & Portes (1998)	Mergers in regulated industries	Market				[-366,-1]	[+1], [+2] & [+5]	
Koku, Qureshi & Akhigbe (2001)	News effect on interfirm and non-interfirm lawsuits	Market	CRSP	1990-1994	465	[-220,-16]	-15,+5	TD
Prince & Rubin (2002)	Effect of litigation on Firm value	DV	Dow Jones	1985-1995	104	[-150,+50]	[-1,+1], [-5,+5]	
Cox et al (2004)	Enforcement of Securities law	Market	CRSP & Compustat	1990-2003	389	[-24,-6]	Class period	months
Sloan et al (2005)	Tobacco companies - Litigation announcements		CRSP	1986-2003	5 firms, 10 cases	1 year pre event	[-1,+1]	Days
Govindaraj et al (2007)	Automobile Companies	DV	CRSP	1985-2000	144 filings 465 other		-1,+1	Days
Karpoff et al (2008)	Financial misrepresentation		CRSP	1978-2005	328			
Gande & Lewis (2009)	Shareholder lawsuits -	Market	CRSP Execucomp	1996-2003	605,377	[-135,-11]	[-10,+1]	TD
Palmer & Saunders (2010)	Jury awards > $100m	Various	CRSP	1999-2003	17 firms	-6,100	[-5,+5], [0,+5] [0,+25]	Days
Kaltchev (2013)	Shareholder lawsuits -	Market	CRSP	1990-2003	138 cases	180	[-15,+15]	Days

AT&T = Accounting Trends and Techniques published by AICPA
CPR = Comparison Periods Return = Constant Mean Return
AT&T = Accounting Trends and Techniques published by AICPA
CPR = Comparison Periods Return = Constant Mean Return
CRSP = Centre for Research in Security Prices (http://www.crsp.com/)
DV = Dummy variable method
MVRM = Multivariate Regression Model (Gibbons(1980))
SIRCA = Sirca Ltd (http://www.sirca.org.au/about-sirca/)
SCALC = Securities Class Action Lawsuit Clearinghouse
S&P Standard & Poor's Composite Stock Index
TD = Trading Days
WStJ = Wall Street Journal

Most commercial disputes however are settled out of court by negotiation. Where the negotiations take place through the medium of formal mediation, the public may be aware that the negotiations are taking place. On other occasions negotiations may be conducted in private. In such cases it may be difficult to be precise as to when the settlement decision was made public as there may be media comment in advance of formal announcement. If they are not involved in the discussions the litigation funders may be delayed in making the announcement that the parties have reached a settlement.

Whenever the information about the event date is less precise than the reporting of price data there is the potential for event-date misspecification (Ball & Torous, 1988).

3.2.ii *Timing and day of announcement*

Within the realm of public relations it has long been a tradition that late Friday afternoon is the best time to release bad political news as Saturday newspapers are least read and national news shows on television have already been finalised (Lee, 2005; Pavlik, 2006). Finance and accounting research has also found that earnings announcements on Fridays and after the market has closed are more likely to be negative (Damodaran, 1989; Patell & Wolfson, 1982).

The prominence and complexity of an announcement is also relevant to the way the market reacts. Files et al (2009) in their examination of accounting restatements found that less prominent disclosure significantly reduced the likelihood of a class action lawsuit and that "*disclosure prominence is significantly negatively associated with returns in a model that controls for the seriousness of the GAAP violation, restatement magnitude, other restatement characteristics, and potential endogeneity*" over a three day event window but over a 22 day event window the effect of prominence was not significant i.e. the market adjusts over time. The work of Chang & Suk (1998) is supportive as their evidence suggests that secondary dissemination of information e.g. via the Wall Street Journal, can affect market prices if the original SEC disclosure only attracts limited attention. Plumlee (2003) concluded that complexity reduces analysts' use of information i.e. less complex information is assimilated into analysts' forecasts to a greater extent than more complex information. Her explanation is that "*either analysts' abilities to incorporate specific information into their forecasts is a*

decreasing function of the complexity of that information, or analysts choose not to assimilate complex information because the cost would exceed the benefit".

Technological innovations in the mid-1990s changed both the news and business environments to the extent that news is now provided and updated on a 24 hours basis. As market trading can be conducted around the world using the internet, the ability to trade on information is less time constrained to the extent that only 27% of US earnings announcements are now made during trading as opposed to 67% in prior research (Bagnoli et al., 2006).

Dellavigna and Pollet (2009), using a data set of announcements between 1994 and 2006, find that 80.5% of announcements are made between Tuesday and Thursday, 13.8% on a Monday and just 5.7% on a Friday. They also found that firms announcing on Friday have more negative earnings surprises and 10% smaller market capitalization. Perhaps of more interest is their finding that the immediate market reaction to Friday surprise announcements is less than on other days but the impact over the next 75 days is greater. This they attribute to investor inattention and broker distraction as evidenced by less abnormal volume.

The 'weekend effect' has been tested in markets other than the USA (e.g. Aggarwal & Rivoli, 1989; Zaluki et al., 2012) but the results are not consistent (Liu & Li, 2010).

3.2.iii ***Event window uncertainty***

Event studies assume that the market is efficient but the issue is how much time elapses between one state of market equilibrium and the next. If the EMH is true information will be incorporated into the market price immediately and the event window should be short.

If the event date can be identified precisely then any abnormal prices immediately prior to the event date when information was not public may be indicative of insider

trading. Where an entity releases sensitive information, a temporary halt to trading may be enforced in order to allow time for traders to absorb the new information[334].

More problematic perhaps is determining when the event window ends. Contrary to the EMH, some investors need time to interpret news - especially if it is bad and consequently share prices may need time to settle at a new equilibrium price (Ball & Brown, 1968; Bernard & Thomas, 1989; Dichev & Piotroski, 2001; Womack, 1996). However the longer the event window the more difficult it becomes to control for other intervening causes which may also impact equity price.

3.2.iv *Estimation window and sampling interval*

The usual specification of the length of the time period used as the estimation window is that it needs to be sufficiently long to enable proper estimation of the relevant parameters (Aktas et al., 2007). An underlying presumption is that the coefficients of the predictive variables are constant over time but Blume (1971; 1975), using monthly data, demonstrated that beta coefficients varied over time. The message from Lyon et al (1999) is that the "*analysis of long-run[335] abnormal returns is treacherous*" and can lead to inappropriately specified test statistics as a result of bias[336]. Practitioners know that coefficients are rarely constant and as a result build models with rolling windows, but even with rolling windows it can take time for evolutionary changes[337] in the market to be fully reflected in the model. The industry response has to been to use higher frequency data (Wright & Satchell, 2007, p.105) but that also raises issues of continuity across trading breaks (e.g. weekends and out of hours). In statistical terms

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[334] In Australia, the process for making disclosure is to send the information via the ASX's Company Announcements Platform ('CAP') to the ASX Market Announcements ('AMA') office who then disseminate the information to a range of data vendors and, in real time, via the ASX's public website. If the AMA considers the information 'market sensitive' they will initiate a brief trading halt of approximately 10 minutes unless the announcement relates to a takeover offer or a scheme of arrangement in which case the halt will last about one hour (ASX, 2005; 2012a).

[335] In their paper, Lyon et al use monthly returns over periods of one, three and five years.

[336] Three forms of bias are identified: a) new listing/survivor bias as a result of sampled firms being tracked for a long post event period whereas firms in the reference index typically include firms that join the index after the event; b) rebalancing bias where the reference portfolios compound returns are calculated assuming periodic rebalancing whereas the sample firms are compounded without rebalancing; c) the skewness bias because the long-run abnormal stock returns is positively skewed.

[337] E.g. the internet effect.

the sample size depends upon the desired bounds on the error of estimation and the inherent variability in the population of measurement.

The choice of time interval is important as longer time series are more likely to be confounded by intervening events and/or overlapping events whilst shorter time intervals of less than 100 days present difficulties by impacting statistical accuracy and consequently some compromise is required. Early work was based on monthly data and Fama (1977) observed that daily returns departed substantially more from normality than monthly returns. There may also be serious problems of non-synchronous trading with the result that for single securities the measured variance overstates the true variance and that reported returns appear serially correlated and leptokurtic relative to actual returns (Scholes & Williams, 1977). Morse (1984) compared daily and monthly prices and observed the superiority of daily over monthly figures. Brown and Warner (1985) examined the properties and characteristics of daily stock returns and how they may affect event studies of firm specific events on share price. Their evidence is that both monthly and daily returns were fat-tailed relative to a normal distribution and that whilst non-normality and biases in estimating the market model were unimportant in tests for abnormal performance, the choice of variance estimator used in hypothesis tests was of some concern as it affected both the specification and the power of the tests. Overall Brown and Warner (1980; 1985) conclude that the characteristics of daily data present few difficulties in event study methodology whereas Ahern (2009) suggests that their results may not hold in actual event-studies.

In event studies using daily data the typical length of the pre-event estimation window is at least 120 days (Pynnönen, 2005) and in daily event studies the window is usually set from day -250 to day -30 (Aktas, de Bodt, & Cousin, 2007) but the period can vary dramatically as indicated in Table 18.

If the timing of an event is known precisely, then the ability to statistically identify the effect of the event will be higher for a shorter sampling period. The increase results from reducing the variance of the abnormal return without changing the mean (Campbell, Lo, & MacKinlay, 1997, p.175).

The examination of high-frequency data has become a new area of financial research[338] (see literature review of Goodhart & O'Hara, 1997 for example). Data sets can now be compiled with time intervals based on minutes or even on a transaction basis e.g. Barclay and Litzenberger (1988) used an interval of 15 minutes in their study of new equity issues as do Bohn et al (Bohn et.al., 2013) in their study of scheduled and unscheduled news. As the timing intervals decrease to seconds small changes in the timing specification of the economic variables can significantly alter the outcome (Henker & Wang, 2006). Measuring high frequency data may introduce effects which are not present in less frequent sampling *e.g. hourly data will pick up the end-of-day effects where traders need to leave their books balanced overnight.* (Wright & Satchell, 2007, p.105). Gürkaynak and Wright (2013, p.53) state that "*In assessing the effects of news announcements on major markets, it is now typical to use roughly 20 minutes windows bracketing release times (5 minutes before the release to 15 minutes after.*"

Relevant to the selection of the sampling interval is the speed at which information is assimilated by the market and a new equilibrium price is established. A recent hacking of the Associated Press Twitter account resulted in a false message regarding explosions at the White House being posted. The message was quickly marked as false but in a 3-minute period the Dow Jones dropped 143.5 points or about 0.98% and then recovered. Automated electronic trading may have been a major element of the fall and bounce (Miller, 2013). Ederington and Lee (1993; 1995) found that the bulk of a price adjustment on the Chicago foreign exchange futures markets[339] occurred within one minute of a major announcement and volatility was higher than normal for approximately fifteen minutes and remained slightly elevated for several hours. Busse and Green (2002) show that positive new information is incorporated into stock prices in under a minute but the impact of negative information is larger but

[338] Note the special editions of leading journals and specialist conferences (Pacurar, 2008, n 1). Lewis (2014) maintains that the US market is rigged and out of control as traders, using high speed computers and acting on information within nanoseconds are able to 'front run' trading requests from investors.

[339] Chicago Board of Trade and Chicago Mercantile Exchange.

the impact is more gradual with prices falling over a fifteen minute period. They conclude that "*Although security prices do not fully reflect all available information instantaneously, the market is efficient enough that a trader cannot generate profits based on widely disseminated news unless he acts almost immediately*".

3.2.v ***Non-synchronous trading***

When prices and volumes of equities and indexes are assumed to be recorded at specific times of the day but are in fact collected at other times, the time intervals are not only irregular but can give rise to inaccurate correlation. An example is the end of day closing price which is often assumed to be at a 24-hour interval. The closing price of Equity A is the price of the last transaction which may be hours, or even days in the case of thinly traded stock, before the exchange actually closed. It follows that the daily return of an index of frequently traded stock based on closing prices will lead the 'daily return' of Equity A if that equity is not traded at the same time intervals.

Easley et al *(1996) report that "On the London Stock Exchange, 50 per cent of listed stocks account for only 1.5 per cent of trading volume, and over 1000 stocks average less than one trade a day. On the New York Stock Exchange (NYSE), it is common for individual stocks not to trade for days or even weeks at a time, while one stock in London never traded in an eleven-year period.*" As the frequency of sampling increases so the problems associated with 'thin, trading'[340] becomes more acute i.e. the standardised tests are incorrectly specified (Cowan & Sergeant, 1996). Although Scholes and Williams (1977) showed that non-synchronous trading creates *potential* problems in that beta estimates will be biased and inconsistent, subsequent studies have found that the Scholes and Williams procedure to correct the bias in beta estimates did not perform any better than the OLS procedure for transaction level data (Aktas, 2008, p.1479; Brown & Warner, 1980). On the other hand, less active stocks are more likely to be traded by informed traders, accentuating the importance of private information (Easley et al., 1996).

Information may become available during non-trading periods (e.g. weekends or

[340] Characterised as large numbers of zero and large non-zero returns resulting in non-normal distributions.

overnight) and one hypothesis is that this gives rise to a 'calendar effect' of significantly lower, if not negative, returns on Monday when markets reopen (Thaler, 1987). A Tuesday effect has also been detected in the Western Pacific Rim markets linking to the Monday effect in the US markets (Jaffe & Westerfield, 1985). It was also found that a dummy variable for a trading day following a weekend is a significant explanatory variable for a shift in variance and an increase in volatility (Brailsford, 1995). Recent studies show a declining Monday effect in the US market (Chen & Singal, 2003) and a questionable effect[341] in the Australian market (Marrett & Worthington, 2008). Over a long period of time other events, such as dividends, may also confound the market price.

3.2.vi ***Dividends***

In a world of no taxes and transaction costs, dividends are irrelevant to investors but they may convey information about future earnings and cash flows (Miller & Modigliani, 1961). Dividends in cash are returning to investors something they already own and consequently the reward should be offset by a similar fall in the share price (Porterfield, 1959). The usual procedure in an event study is to adjust the return on the date the equity goes ex-dividend by the amount of the dividend but this is perhaps an oversimplification that introduces bias.

Dividend payment announcements have usually been found to have positive impact on stock prices (Aharony & Swary, 1980; Akhigbe & Madura, 1996; Asquith & Mullins, Jr., 1983; Charest, 1978; Kalay & Loewenstein, 1985; Pettit, 1972; 1976; Woolridge, 1982) but not always (Ang, 1975; Gonedes, 1978; Watts, 1973). Although most work has been conducted in the US, there has been work in other markets including Australia (Easton, 1991) and the UK (Lonie et al., 1996) where dividend and earnings announcement happen simultaneously.

The difference between cum dividend and ex dividend price in practice does not equal the dividend (Campbell & Beranek, 1955). This could be due to tax effects (Elton & Gruber, 1970) but there are inconsistencies between common stock and preferred

[341] Dicle & Levendis (2014) found a very significant negative effect on Monday, and Tuesday as well as a very significant positive effect on Friday and a significant positive effect on Thursday.

stock (Eades et al., 1984). Furthermore, studies in non-tax countries find other impediments e.g. bid-ask spreads and bounces (Frank & Jagannathan, 1998; Yahyaee et al., 2008) and tick size (Bali & Hite, 1998) as well as transaction costs (Kalay, 1982).

Dividends are relevant to equity price but as Black (1976) wrote "*The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together"*. Recent work has shown that the existence of taxes and transaction costs precludes the determination of a unique equilibrium point for the stock price adjustment after a dividend distribution (Borges, 2009). In undertaking an event study a decision has to be made on how to deal with the period between announcements and ex dividend and how to adjust the return as the equity goes ex dividend.

3.3 Trading volume

In his investigation of trading volume before scheduled and unscheduled corporate announcements, Chae (2005) found that trading volume before unscheduled announcements dramatically increased and showed little relation to common information asymmetry proxies such as bid-ask spreads[342]. Increased volume trading before an announcement can be explained by legitimate reasons e.g. speculation on rumour as well as by illegitimate explanations e.g. insider trading (Jarrell & Poulsen, 1989).

In the leading US case of *Cammer v. Bloom*[343] the court held that trading volume is one of five specific areas indicative of an efficient market. Drawing on Bromberg & Lowenfels (1988) the court decided that "*Turnover measured by average weekly trading of two percent or more of the outstanding shares would justify a strong presumption that the market for the security is an efficient one; one percent would justify a substantial presumption*".

[342] See Clarke and Shastri (2000) for discussion on information asymmetry metrics.

[343] 711 F.9 Supp. 1264 (D.N.J. 1989).

3.4 Testing method

In many event studies t- and F tests are used to evaluate the statistical significance of an event. Such tests assume that returns are jointly multivariate normal and independently and identically distributed through time but for over 50 years it has been recognised that daily equity data is not normally distributed as a result of skewness and/or fat tails (Fama, 1965; Mandelbrot, 1963; Officer, 1972). In general, single firm stock returns display positive skewness whereas aggregate returns display negative skewness[344]. It has been argued that Bayesian single-firm event studies can overcome the erroneous assumption of normally distributed abnormal returns with the result that the Bayesian result may conflict with the standard approach (Brav, 2000; Hawkins, 2011).

A common parametric, abnormal return test used in Event Studies is the Patell (1976) Z-test which standardizes the abnormal return by an estimate of the individual firm's price variability. However this test is poorly specified for thinly traded stocks and shares with low prices as it too frequently rejects a true null hypothesis (Campbell & Wasley, 1993; Maynes & Rumsey, 1993). Intervening events may occur during the estimation window that cause changes to the abnormal return and Aktas et al (2007) suggest that these are tested for using a Two State Market Model Test ('TSMMT'). Kolari and Pynnönen (2010) found that when there was event date clustering, over rejection of the null hypothesis occurred even with relatively low cross-correlation among abnormal returns. Their test statistic modifies the Boehmer, Musumeci and Poulsen ('BMP') (1991) and utilizes a scaled (or standardized) abnormal return that accounts for cross-correlation and inflation of event-date variance.

Nonparametric tests such as the sign test (Cowan & Sergeant, 1996; Cowan, 1992) and the rank test (Campbell & Wasley, 1993; Corrado, 1989; Corrado & Zivney, 1992) avoid the assumptions regarding the distribution of returns and can detect small levels of abnormal returns leading to more reliable inferences than standard

[344] Albuquerque (2012) argues that the behaviour of stock prices around firm earnings announcement events is consistent with the existence of positive skewness in firm returns and that cross-sectional heterogeneity in the timing of these events can account for the negative skewness in the aggregate returns.

parametric tests (Campbell, Lo, & MacKinlay, 1997, §4.7). Whilst nonparametric tests are preferable to parametric tests for event studies of single day abnormal return there are problems with multiple day analyses of cumulative abnormal returns (Cowan, 1992, p.11) which prompts researchers to use parametric tests. Kolari and Pynnönen (2011) propose a generalized rank (GRANK) test that is appropriate for both single day and cumulative abnormal returns ('CAR'). For the sake of robustness, many event studies used both parametric and non-parametric tests.

3.5 Single firm event studies

Much of the testing methodology reviewed above relates to the standard event study context in which there are many firms exposed to the effects of a single event. Consequently, the standard method relies on the specification of an estimation window and an event window, and statistical inference relies on the combination of multiple firms, and multiple observations on each firm's share price within the relevant windows. The tests are then effectively a simple comparison of means across the two windows in order to compute "abnormal returns". In large samples therefore the standard errors of the mean estimates are sufficiently small that the need to control for extraneous company-specific events is assumed to be negligible (Campbell, Lo, & MacKinlay, 1997). However, these ideal conditions are not always met, and alternative approaches relying on the use of dummy variables[345] to capture company-specific events have been proposed (Karafiath, 1988; Larcker, Gordon, & Pinches, 1980; Malatesta, 1986).

Karafiath (1988) demonstrated the equivalence between the residual analysis (abnormal returns) method and the dummy variable approach in the standard many firm, single event studies. However, as referred to above, one of the key advantages of using a DV approach is that it is capable of dealing with separate impacts for multiple and distinct events (Hakala, 2010; Sandler, 2012; Sandler & Sandler, 2014). This means not only can it be used to control for extraneous events (such as the reporting cycle) but also it can be used to estimate the effect of different instances of the event studied (e.g. litigation outcomes).

[345] Sometimes referred to as "intervention analysis" (Larcker et al., 1980).

Clearly, when the number of firms in the event study reduces, the importance of capturing the effects of extraneous firm-specific events becomes more important. In certain contexts which are relevant to this thesis, such as securities litigation, it has become common to explore the impact of an event on the share price of a single specific company (Gilson & Black, 1995; Ruback, 1982; 1983). In relation to single firm event studies using the DV approach there is a further issue to be resolved, namely the use of standard significance tests may be biased due to the lack of normality (Gelbach et al., 2013). These authors suggest an alternative test based on sample quantiles of the empirical distribution of pre-event fitted excess returns. The 'SQ test' uses "*sample quantiles of the estimated excess returns distribution to estimate the critical value for the event effect*". In other words, the fitted residuals from the estimation model are sorted. If the significance test is to be at the 0.05 level the value of the residual at the 5th centile is compared to the event dummy coefficient and the null hypothesis is rejected if the coefficient value is less than the 5th centile value.

4 Data description and sample characteristics

4.1 Data sources

As mentioned in chapter 1, a core contribution of this thesis is the compilation of a unique and extensive case information and history data set relating to the portfolio of litigated cases funded by IMF. Quantitative and qualitative information was extracted from IMF sources in relation to individual case announcements and settlements. In this section I first explain how this information on IMF's portfolio of cases was sourced from the company's reports and disclosures. I then describe the sources used to capture the market's information about the initiation, progress and resolution of these cases. Finally, I set out the sources used to track IMF's share price and the relevant market indices, and use this to show how the relationship between these (i.e. beta) varied over time.

4.2 Portfolio of cases

On 17 April 2004, IMF announced that it would publish on a quarterly basis *"due to strong and continued demand from brokers and analysts to better understand IMF's*

investment portfolio", key information regarding its investment portfolio where the budgeted IMF fee is greater than A$500,000. The information released was: Case Name, Estimated Latest Completion Date, Estimated Maximum Claim Value and Category e.g. Insolvency, Group or Commercial and the first announcement contained 19 cases with a total estimated claim value of $369m. On occasion the announcement also contained footnotes with additional information. With the exception of the first announcement the information was dated at the end of IMF's quarterly accounting dates of 30 September, 31 December 31 March and 30 June. Between May 2004 and 29 January 2009, 19 such releases were made. The data extracted from these announcements was transferred to the individual case cards in order that changes in estimates of completion date and maximum claim value could be tracked.

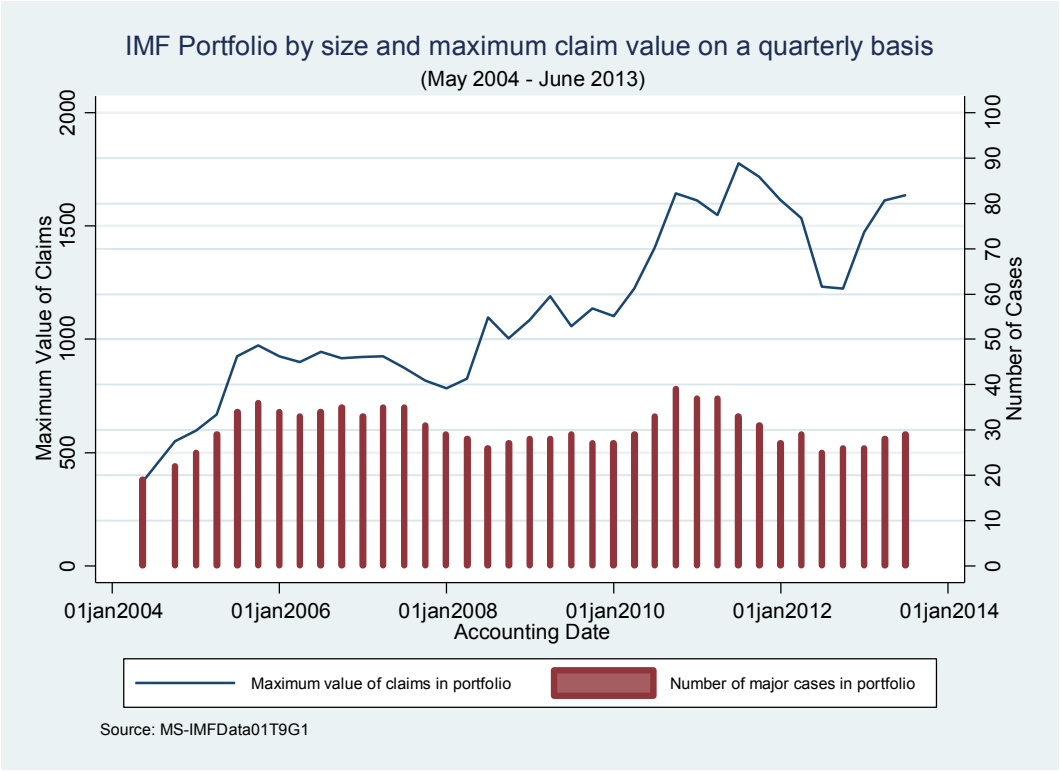
On 30 April 2009 IMF announced that "*Disclosure of the details of individual cases has caused problems for recipients of IMF's funding and has enabled defendants to raise un-necessary issues. Accordingly, the directors have decided to change the way the portfolio is reported in a manner that does not diminish the report's value to IMF's existing and prospective shareholders.*" With effect from the report as at 31 March 2009 case level information was no longer provided and instead IMF reported the total number of cases and the aggregate maximum recoverable claim amount for various periods of time i.e. the remainder of the current financial year and the following two or three years. The format of reporting was changed again with effect from the report of March 2010 in that the cases were grouped into three claim value range bands (<A$10, A$10-A$50m, >A$50m) before reporting the total number of cases and the aggregate maximum recoverable claim amount for various periods of time. A quarterly time series of the number of cases in the portfolio and the maximum claim value is shown in Figure 5.

The definition of a 'case' is somewhat loose as a single set of circumstances may give rise to claims against multiple defendants which make take several years to finalise[346].

[346] In its first annual report to 30 June 2002 IMF stated it had *"chosen five major pieces of litigation in its first nine months of operation"*. Each of these actions could be described as a 'class action' and one of them was the Finance Broking Scandal in Western Australia. In December 2006, IMF announced that it was *"funding the litigation of 2,000 clients …claiming some $120m in damages from the State of Western Australia and the seven law firms which acted for those clients…"*. The

Similarly, a set of circumstances may result in more than one funding agreement[347] and separate funding agreements may subsequently be combined and treated as though they are one case[348]. Furthermore, cases that are decided at trial may be appealed and IMF may enter into a separate funding agreement for the appeal case.

Figure 5 Quarterly case portfolio statistics



announcement went onto say that the State had offered an ex gratia payment of $30m if the case against them was dismissed. In August 2007 an announcement was made that settlement had been agreed with insurers representing some defendant firms. The final settlement however was not announced until March 2009 (IMF, 2002a; 2006; 2007; 2009f).

[347] In April 2008 IMF announced it proposed to fund claims on behalf of certain clients of Opes Prime Stockbroking limited against ANZ banking group in respect of their entitlement to shares pursuant to equity financing arrangements. On 10 September 2008 a new funding agreement for the Paul Choiselat Beconwood companies claim against ANZ Bank was announced. This claim concerned Beconwood's entitlement to shares provided to Opes Prime Stockbroking Ltd pursuant to equity financing arrangements which shares were subsequently sold to ANZ following the collapse of Opes. The two cases were shown separately on IMF's subsequent quarterly portfolio reports (IMF, 2008b; 2008e).

[348] On 26 March 2008, IMF issued two new funding agreement announcements – 'Stapled Security Holders ("SSH's") v Centro Retail Ltd & Centro MCS Manager Ltd ("CER")' and 'Stapled Security Holders ("SSH's") v Centro Properties Ltd & CPT Manager Ltd ("CNP")'. Both announcements had similar wording and the claims progressed together (IMF, 2008f; 2008g).

In March 2002[349] IMF advised ASX that it would pursue a policy of notifying the ASX "*of all occasions upon which it agrees to fund, settle, obtains judgement or abandons cases which are likely to give rise to a net $1 million in fees to IMF (ie ... net of actual payments by IMF during the course of the funding)*" (IMF, 2002b).

Every IMF announcement to the market during the period 19 October 2001 to 25 October 2013 was read in order to identify the cases that comprised IMF's investments. A record card was created for each case and key information as described in Table 19was recorded.

Table 19 Cost Card Data

Item	Data	Comment
1	Case ref number	Started as sequential integer number but case may be divided later
2	Case Name	Case name as described by IMF may be different from case name in court
3	Case Description	A brief description of the case
4	Date IMF announced their interest in case	The first date IMF announce their interest
5	Date Proceedings started	Date court proceedings commenced. May be before item 4
6	Date IMF Started their due diligence	IMF may announce they are conducting due diligence before deciding to fund a case
7	Date IMF signed client	Date client signed contract may be some time before item 4
8	Date IMF announced an outcome for the case	Date IMF announce a case outcome
9	Method of closure (Settlement, Judgement, withdrawal)	How case was concluded
10	Investment amount	Amount IMF invested in case
11	Cash inflow	Amount IMF received back from the case
12	Gain/Loss	Item 11 less Item 10
13	Estimated value of claim	Date and amount IMF estimate as claim value (NB not their fee estimate)
14	IMF's anticipated share	Date and amount IMF indicate will be their fee
15	Comment/Notes	Date and comment on case e.g. 'proceedings to stay defeated'
16	Anticipated Closure Date	Date given as anticipated closure date
17	Date Case file closed	Date case actually closed

Notes:

Items 10 – 12 Are often amended over time
Items 13 - 16 may be updated on numerous occasions
Each item is also cross referenced to a source

[349] IMF ASX announcement of 22 March 2002 states that it informed the ASX of this policy on the 14 March 2002, however there is no mention of the policy in the website announcement of that date.

In addition to the ASX announcements, irregular visits were made to the IMF website and the case cards were updated with any additional information that had been placed thereon. As IMF has a website on which it makes information public, using the wayback machine the internet archive[350] was searched for IMFs historical web pages. From July 2013 an automated change detection monitor was set up to notify the author of changes to the current IMF webpages. Screenshots of the various webpages have been saved as an annex to the case cards. The contents of the webpages were used to expand the case cards if additional information was found. Key information such as case starts and completions on the website lags behind ASX announcements.

Having identified that IMF were involved in a case that reached an outcome, the Austlii[351] or equivalent database was searched for final and interim judgements on cases in which IMF have been involved. Searches were also conducted of the Australian Federal Court online case files to identify milestone events during the proceedings. From these searches additional information on claim values, dates and outcomes was sometimes obtained and the case cards were updated accordingly. It was found that a) *Ezishop* judgement of 18 March 2003 was not announced by IMF until 8 August 2003; and b) the *Essington* judgement of 19 October 2004 and the *Benson* judgement of 21 February 2006 were not formally announced by IMF[352].

The information recorded on the case cards was converted to the variables shown in Table 20 and from there various dummy variables were constructed (Table 21).

Online newspaper searches of Sydney Morning Herald, The Age, Business Online, Central Coast Herald, Fairfax Community Newspapers NSW & Victoria, Illawarra Mercury, Newcastle Herald, Sun-Herald, Sunday Age were undertaken to seek examples of news being leaked in the press before an official announcement was made to the market. No such examples were found.

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[350] http://archive.org/web/

[351] Australasian Legal Information Institute at http://www.austlii.edu.au/

[352] *Ezishop Net Ltd (In liq) and Anor v Verenu Pty Ltd and Ors* [2003] NSWSC 156; *Essington Investments v Regency Property Group* [2004] NSWCA 375; *Cook v Benson* [2003] HCA 36

Table 20 Variables created from case card data

Variable	Description
CaseID	Identifying number. Started as a sequential integer number but case may be divided later.
CaseName	IMF's case name which may be different from case name in court
CaseType	IMF's original classification of case as either Insolvency, Group or Commercial
Date_DAI	Date IMF announced an Interest (DAI) in the matter. The key case information sought was the first date that the 'world' was told that IMF had taken on a case. Often this was straight forward as IMF issued a "New Funding Agreement" announcement but sometimes this came after the case had been mentioned elsewhere. The DATE_DAI may differ from the date the funding agreement was signed with the client.
Date_DFC	Date Funding Commenced (DFC) IMF provide on their website, numerous vignettes of past cases, and the funding date is sometimes mentioned within that narrative. If no date it is mentioned specifically it is assumed to be the DATE_DAI
Date_DAO	Date IMF Announced made First Outcome (DAO) announcement
DateTrading_DAI	The Trading day appropriate to the announcement
Date_Outcome	Date used for Outcome
AnnRef_DAI	DAI 'AnnounceNo'
AnnRef_DFC	DFC 'AnnounceNo'
AnnRef_DAO	DAO 'AnnounceNo'
DateTrading_DAI	The Trading day appropriate to the announcement
Date_Closed	Date Case file closed
EvtNo_Outcome	Event Number allocated to Outcome
Comment_1	Free type for comment re announcement
Comment_2	Explain of why Date_Outcome and Date_DAO differ
Outcomeby	Outcome determined by Settlement, Judgement, Withdrawal
Amount_Invested	Amount invested, returned and gained from investment in case. Amounts extracted in first instance from announcement but updated from disclosures in accounts
Amount_Returned	
Amount_Gained	

Table 21 Dummy Variables relating to case data

Variable	Description
DA1	Was the AnnRef_DAI specified as a 'New Funding Agreement Announcement'? (No =0, Yes =1)
DA2	Was this case commenced pre 14/3/2002 ie the date IMF announced a policy to disclose starters etc (No =0, Yes =1)
DA3	Is case to be ignored as being pre 8 August 2003 (the earliest internet archive date we can find)
DA4	Was announcement buried within another announcement (No =0, Yes =1)
DA5	Was this one of 2 or more cases announced on this date (No =0, Yes =1)
DA6	Number of cases announced on this date
DA7	Was this a settlement? (No =0, Yes =1)
DA8	Was this a judgment? (No =0, Yes =1)
DA9	Was this a withdrawal? (No =0, Yes =1)
DA10	Was case subject of an appeal (No =0, Yes =1)
DA11	Are values mentioned in AnnRef_DAO (No =0, Yes =1)
DA12	Set to 1 if a gain was made on investment Default =0
DA13	Set to 1 if a loss was made on investment Default =0
DA14	Set to 1 if a gain exceeds average gain on investment Default =0
DA15	Set to 1 if a loss exceeds average loss on investment Default =0
DA16	Set to 1 if case determined before IMF joined ASX300 Default =0
DA17	Set to 1 if case determined after IMF joined ASX300 Default =0
DA18	Pre ASX Outcome Event Study
DA19	Post ASX Outcome Event Study

4.2.i *Announcements re case commencements*

IMF joined the ASX in October 2001 with a portfolio of signed cases, and up to 25 October 2013, provided the market (either directly or via its website) with information on 132 cases in which it has invested. 51 of these cases were commenced after IMF joined the ASX300 on 20 March 2009. The date of the first announcement concerning a case is regarded as the event date when considering the impact of new funding agreements[353] even though the provision of funding may be conditional[354].

In August 2003 a presentation was made to brokers, and from November 2003 new cases tended to be routinely and formally announced[355]. The 23 cases initiated prior to November 2003 are excluded from the analysis of 'new case' announcements as are

[353] On most occasions the date of a case specific ASX announcement is the first announcement but there are some occasions where the funding of a new case is less obvious because it is disclosed within another announcement e.g. a quarterly portfolio or a presentation to brokers.

[354] e.g. IMF announced on 23 April 2009 "*…that it proposes to fund claims…subject to the level of participation being acceptable…*". On 2 October 2009 IMF announced that it had "*decided not to fund…due to the level of participation not being satisfactory*" (IMF, 2009c; 2009d)

[355] Prior to August 2003 new cases were not always announced as they were signed up.

the 9 cases that were first identified within an announcement on a different issue or because they simply appeared on the quarterly case portfolio. On some occasions more than one case is announced on a day with the result that the remaining 100 cases were announced on only 88 different days.

4.2.ii *Announcements re case outcomes*

For the purposes of this chapter an outcome[356] event (D23) (be it through withdrawal (D4), settlement (D5) or a court judgement (D6)) is considered to be when IMF first announces that an investment outcome is substantially less uncertain e.g. the date an announcement that a settlement has been reached is considered to be the event date even if that settlement is conditional on receiving court approval and/or the magnitude of the settlement is yet to be determined or unlikely to be received for some time. Similarly, the date a court of first instance issues a judgement, even though an appeal may follow and the decision reversed, is regarded as the event date of a case outcome. If more than one outcome announcement is made on the same day that is treated as one event. Subsequent announcements regarding the investment outcome are ignored.

Up until the 30 June 2013 the outcome of 89 cases have become known of which 37 have occurred since joining the ASX300 (Table 22). After adjustments[357] for

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[356] I use the neutral term 'outcome' in preference to 'resolution' because at the time of the announcement some uncertainty may still remain e.g. settlements may be conditional and judgments may be followed by appeals.

[357] IMF did not formally announce to the market the outcome of four of these cases and consequently these are not treated as events.

On 22nd October 2004 IMF provided an outcome on three cases, *Essington Investments* was determined by a judgment on 19 October 2004 and that date has been used as the event date; the remaining two events are treated as a single event on 22nd October 2004 (IMF, 2004).

On 19th February 2008 an announcement was made that two cases had been settled and these are treated as a single event (IMF, 2008d).

On 28 July 2008 IMF published its "*Case Investment Portfolio as at 30 June 2008*" which contained a note stating that IMF had withdrawn from two cases during the quarter. As this was the first announcement concerning the outcome of these two cases they are treated as a single event dated 28 July 2008 (IMF, 2008c).

On 31 January 2011 the withdrawal from two cases was announced and this is also treated as a single event, as are the announcements on 9 May 2012 of the settlement of the two Centro cases and the announcement on 24 July 2009 of the two cases against ANZ Bank (IMF, 2009b; 2011b; 2012e).

concurrent dates etc. there are 79 outcome events for the period to 30 June 2013.

Table 22 Outcome (Variable D23) by resolution method

Variable	Outcome	Pre ASX300	Post ASX300	Total
D4	Judgment	7	8	15
D5	Settled	36	25	61
D6	Withdrew	9	4	13
		52	**37**	**89**

4.3 ASX Market Announcements

The date (ASXDate) and nature of every ASX announcement attached to the IMF[358] code for the years 2001 to 2013 was obtained from the ASX website[359]. A total of 862 announcements were obtained with more than one announcement being made on some days as shown in Table 23. IMFs own website also lists market announcements and this was used to verify that all announcements had been identified. Each announcement was given a unique identifier (AnnounceNo).

On 17 August 2009, IMF announced the settlement of two cases. The first was a confidential settlement of one of the Westpoint cases and IMF reported that they *"…received revenue of $1.4m and generated a profit after capitalised overheads of $0.7m (before tax). There is no change to IMF's expected net profit after tax for the year end 30 June 2009, as these amounts had already been factored into the result*". As IMF made an ASX announcement regarding a conditional confidential settlement with an undisclosed defendant on 15 June 2009 it is possible that this was the Westpoint case. The first case has therefore been designated as Event 48 and dated as 15 June 2009.

The other settlement of 17 August 2009 (Event 51) was the Peninsula case where IMF announced that it would receive $0.8m an amount sufficient to reimburse the external costs and the majority of the internal capitalised overheads. As there was a less than full recovery of the 'internal capitalised overheads' this case is considered to be a financial loss (IMF, 2009e).

[358] NB Prior to 19 October 2001 the company traded as Max Multimedia Limited under ASX code MXM

[359] http://www.asx.com.au/. It should be noted that announcements made by other companies that involve IMF will be included within this list.

Table 23 Number of Announcements made by IMF 2001-2013

Announcements made on a single day	Unique Days	Total number of Announcements
1	517	517
2	92	184
3	32	96
4	9	36
5	3	15
6	1	6
7	0	0
8	1	8
Total	**650**	**862**

The historical records on the ASX website do not show a time stamp but in an attempt to identify precisely when an announcement was made, announcements with time stamps were also obtained from Netquote[360], HotCopper[361] and Bloomberg and it was possible to specify the time (ASXDateTime) for 625 of the 862 announcements. 107 announcements were made before the markets opened at 10:00hrs. The ASX market closing price is fixed at 16:10 hrs and the 150 announcements made after this time will not be reflected in market prices until the following trading day. A Trading Date variable was created to represent the first trading date on which an announcement could have an impact. Where no time has been found or an announcement was made before 16:10 hrs it is assumed that the announcement date and first trading date are the same. Where a time stamps indicates that the announcement was made after 16:10, that announcement has been attributed to the next trading day.

'Price sensitive'[362] announcements are indicated on the ASX website having been coded as such by specialist staff within the ASX Company Announcement Office

[360] www.Netquote.com.au. Netquote ceased trading July 2015

[361] www.hotcopper.com.au

[362] Announcements in respect of half and full-year results, acquisitions and disposals, takeovers and rights issues are automatically coded as price sensitive. Other announcements are coded on a case by case basis with the ASX erring on the side of caution and classifying announcements as price sensitive if there is any uncertainty. Thus the number of price sensitive announcements may be an upwardly biased estimate of the true number of price sensitive announcements (Poskitt, 2005).

(Brown et al., 2004). The number of IMF price sensitive announcements made each month as a fraction of all IMF announcements is set out in Table 24.

Table 24 Number of price sensitive IMF related ASX announcements as a fraction of all IMF announcements by month and year January 2001 to December 2013

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2001	0/1	0/0	1/1	1/1	0/0	2/3	0/5	0/3	0/9	7/22	1/3	0/0	8/42
2002	1/3	0/2	2/2	1/2	1/1	0/1	½	0/0	2/5	3/8	1/5	0/0	12/31
2003	½	0/3	1/1	1/2	0/0	1/1	2/6	0/3	1/2	1/4	1/7	1/3	10/34
2004	1/1	1/8	0/1	1/2	0/3	1/2	4/6	2/19	0/9	2/6	0/8	3/9	15/74
2005	2/14	1/3	0/2	3/8	1/4	0/5	3/11	3/5	0/9	1/5	0/5	3/5	17/76
2006	1/9	1/12	1/3	1/2	1/3	0/2	1/3	1/9	2/6	4/11	2/6	1/1	16/67
2007	2/4	3/5	2/3	3/8	1/4	2/3	2/7	4/4	0/1	3/7	0/7	0/0	22/53
2008	2/4	4/6	1/8	8/12	5/6	2/3	4/8	4/8	2/5	2/6	2/5	3/4	39/75
2009	2/4	4/8	3/9	4/8	1/4	4/7	3/12	6/7	3/8	4/7	2/5	2/3	38/82
2010	3/3	7/10	3/6	2/2	5/14	3/6	6/9	6/10	1/2	5/11	2/5	1/6	44/84
2011	4/6	3/10	2/10	2/2	3/8	1/4	¾	2/6	1/2	4/4	0/4	1/7	26/73
2012	¾	4/9	2/4	3/5	5/9	5/7	2/3	1/4	4/8	2/4	3/6	2/4	36/67
2013	2/2	2/5	3/4	4/8	1/4	4/7	1/5	3/4	2/6	7/23	3/17	6/13	38/98
Total	24/57	30/81	21/55	34/69	24/60	25/54	32/81	32/82	18/72	45/118	17/83	23/55	325/862

Each Announcement and any attachment was read and coded against one or more of the classification dummy variables in Table 25. Each Announcement was also read for information about cases being funded by IMF. The case information found was transferred to the individual case cards described in chapter 1 and cross referenced to its source.

An announcement dataset by trading date was also constructed (Table 26). The 862 announcements which were made on 650 unique dates was reduced to 796 announcements by excluding the 32 announcements made before IMF joined the ASX and the 34 observations that occurred after 25 October 2013. [3 dates added]

Table 25 Dummy variables classification

	Variable default value = 0, Coded as 1 if
D1	Announcement coded as price sensitive by the ASX;
D2	This is the first announcement regarding a case
D3	This is an announcement providing an update on a case
D4	This is the first announcement on case outcome and the case has settled
D5	This is the first announcement on case outcome and IMF has withdrawn
D6	This is the first announcement on case outcome and the case has been judged
D7	Announcement about a change in Directors share interest
D8	D7 is an increase in Directors Interest
D9	D7 is a reduction in Directors Interest
D10	Announcement concerns a new Share Issue or share buy back
D11	Announcement about a change in substantial shareholding
D12	Notice that an investor has become a substantial shareholder
D13	Notice that an investor has ceased to be a substantial shareholder
D14	Notice that a substantial shareholder has increased his holding
D15	Notice that a substantial shareholder has reduced his holding
D16	Announcement regarding the case portfolio
D17	Announcement of quarterly, half year and annual reports and accounts
D18	Announcement concerning a profit forecast
D19	Announcement concerning a Dividend
D20	Announcement concerning convertible notes
D21	Other announcements
D22	A Regular announcement
D23	Outcome Event Day
D24	Non-ASX announcement
D25	Announcement made by a listed company other than IMF
D26	Uncoded as D2-D21 (to ensure all announcements coded)
D27	Announcement made after market closed and applied to Next Trading Day

Table 26 Additional summary variables for announcements

	Variable default value = 0, Coded as 1 if
Date	First trading date on which an announcement could have an impact
S1	Total number of D1-Sensitive announcements made this day
S2	Total number of D2-New Case announcements this day
S22	Total number of D22-Regular announcement this day
S23	Total number of D23-Outcome events this day
S24	Total number of D24-Not ASX Announcements this day
AnnTot	Total number of announcements this day

4.4 Financial information

IMF's financial year end date is 30th June and consequently investors will anticipate financial news announcements (identified as AnnounceNo and Announcedate) on or before the dates set out in Table 27. Data against the financial variables in Table 28 has been extracted by accounting date from these announcements. Figure 6 provides an extract and summary of annual amounts. Descriptive statistics are set out in Table 29.

Within the notes to the accounts and the other narrative forming the annual report, IMF discloses financial information on the Amount invested, returned and gained from investment in specific cases. The amounts recorded on the case cards are in the first instance the amounts extracted from the ASX announcements but these are subsequently updated from the disclosures in the audited accounts.

Table 27 IMF Accounting dates and latest ASX notification dates

		Accounting Date	Maximum period for providing news	Latest Date for Anticipated News
Annual Report	Preliminary	30 June	2 months	31 August
	Final	30 June	3 months	30 September
Half-Year Report		31 December	2 months	28 February
Quarterly Report		31 March 30 June 30 September 31 December	1 month	30 April 31 July 31 October 31 January

Figure 6 Summary of Financial Variables as at year end 2002 - 2013

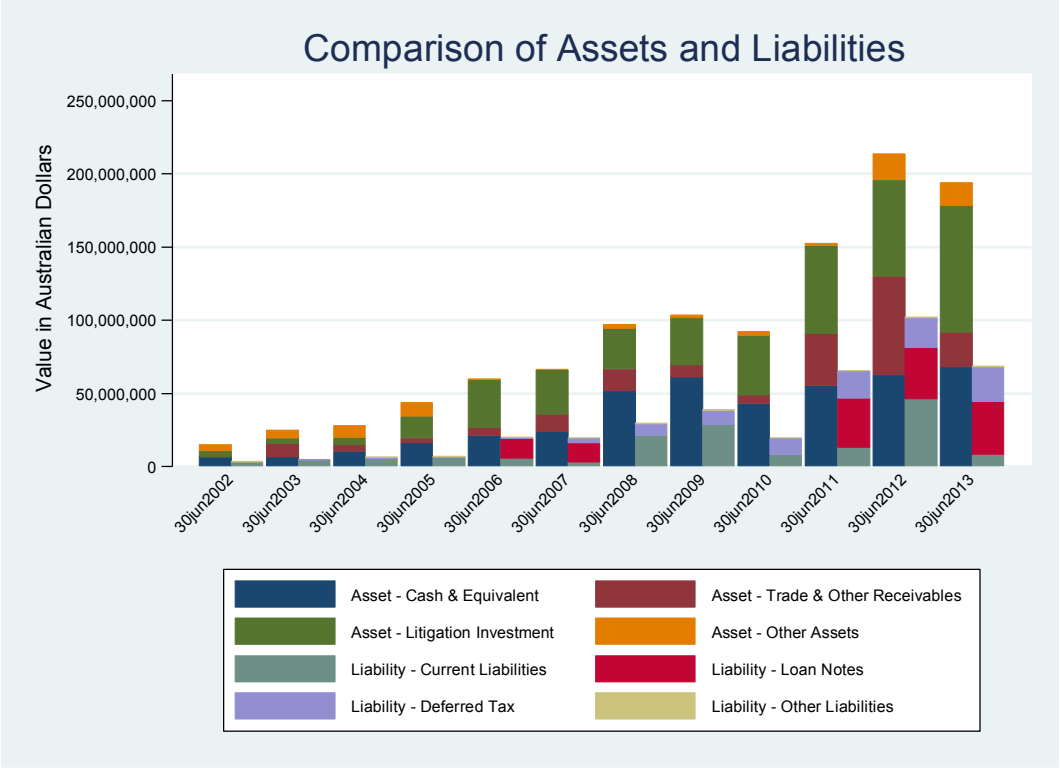


Table 28 Financial Variables

#	Variable Name	Brief Description
	Current assets (CA) (normally positive values)	
1	CA_Cash	Amount of cash shown as a current asset
2	CA_TradeDebtors	Amount of trade debtors shown as a current asset
3	CA_Other	Amount of other current assets
4	CA_Total	Total amount of current assets (# 1 to #3)
	Non-Current Assets (NCA) (normally positive values)	
5	NCA_TradeOther	Amount of trade debtors as NCA
6	NCA_Plant	Net book value of plant and equipment
7	NCA_Financial	Financial Investments shown as NCA
8	NCA_Litigation	Investment in litigation shown as NCA
9	NCA_Other	Other NCA
10	NCA_Total	Total amount of non-current assets (# 5 to #9)
11	Total_Asset	Total value all assets (# 4 + #10)
	Current Liabilities (CL) (normally negative values)	
12	CL_Trade	Amount of trade creditors shown as a CL
13	CL_Tax	Amount of tax payable shown as a CL
14	CL_Provision	Amount of provisions shown as a CL
15	CL_Loans	Amount of short term loans repayable as a CL
16	CL_Other	Amount of other current liabilities
17	CL_Total	Total amount of current liabilities (# 12 to #17)
	Non-Current Liabilities (NCL) (normally negative values)	
18	NCL_Provision	Amount of provisions shown as a NCL
19	NCL_Notes	Amount of loans and notes repayable as NCL
20	NCL_DefTax	Amount of Deferred tax as NCL
21	NCL_Other	Amount of other non-current liabilities
22	NCL_Total	Total amount of non-current liabilities (# 18 to 21)
23	Total_Liab	Total amount of liabilities (# 17 + #22)
24	Net_Assets	Total Net assets (# 11 + #23)
	Equity (EQ) (normally negative values)	
25	EQ_Shares	Issued share capital
26	EQ_Reserves	Accumulated reserves
27	EQ_Retained	Retained profits
28	Total_Equity	Total due to Shareholders (# 25 to #27)
29	Total_Shares	Total number of shares issued

Table 29 Descriptive statistics of financial variables

variable	N	mean	sd	cv	min	p50	max	skewness	kurtosis
CA_Cash	49	3.53e+07	2.53e+07	.7157391	3411000	2.99e+07	8.40e+07	.401495	1.827861
CA_TradeDe~s	25	1.27e+07	1.59e+07	1.246722	9000	6310000	6.72e+07	1.949627	6.675699
CA_Other	25	2508084	3710607	1.479459	6000	346959	1.12e+07	1.275	3.134304
CA_Total	25	5.03e+07	3.52e+07	.6992728	4701000	3.77e+07	1.30e+08	.543397	2.157972
NCA_TradeO~r	25	2046387	5381869	2.629937	0	0	1.73e+07	2.342529	6.534083
NCA_Plant	25	404608.8	183605.5	.4537852	20000	375878	798667	.2533121	2.742548
NCA_Financ~l	25	258955.3	368197.3	1.421857	0	25000	982852	1.021789	2.365767
NCA_Litiga~n	25	3.00e+07	2.49e+07	.8310126	0	2.94e+07	8.61e+07	.6993727	2.52145
NCA_Other	25	43166.4	194940.5	4.516023	0	0	973435	4.61215	22.51115
NCA_Total	25	3.27e+07	2.91e+07	.8891549	31000	2.98e+07	1.02e+08	.964056	3.036912
CL_Trade	25	-5079971	5746974	-1.131301	-2.45e+07	-2299070	-342667	-1.925575	6.741838
CL_Tax	25	-1433016	3755993	-2.62104	-1.39e+07	0	1540364	-2.709874	9.039512
CL_Provision	24	-1765857	2071440	-1.173051	-8118689	-1015719	-37577	-1.687091	5.185966
CL_Loans	25	-1216722	1619981	-1.331431	-4060614	0	0	-.7060571	1.732157
CL_Other	25	-514809.5	2446009	-4.75129	-1.22e+07	0	0	-4.687177	22.99501
CL_Total	25	-9939741	1.03e+07	-1.03663	-4.65e+07	-5927660	-998000	-2.178944	7.672457
NCL_Provis~n	25	-265342.8	212099.3	-.7993407	-583380	-245867	0	-.0664069	1.567216
NCL_Notes	25	-1.05e+07	1.47e+07	-1.409812	-3.63e+07	0	0	-.9198417	2.102045
NCL_Other	25	-8321.04	40984.58	-4.925416	-205026	0	0	-4.693232	23.03185
NCL_DefTax	25	-7091414	8158314	-1.15045	-2.38e+07	-3113153	154675	-.8198143	2.202813
NCL_Total	25	-1.78e+07	2.21e+07	-1.240471	-6.05e+07	-9810556	28457	-1.012653	2.352516
EQ_Shares	25	-3.17e+07	1.00e+07	-.3164814	-4.19e+07	-3.44e+07	-1.17e+07	.7654281	2.443145
EQ_Reserves	25	-7251042	4268817	-.5887177	-1.31e+07	-7235936	0	.3016734	2.256214
EQ_Retained	25	-1.63e+07	2.69e+07	-1.655073	-7.64e+07	-1550000	1.17e+07	-.8113964	2.466517
Total_Equity	25	-5.53e+07	3.57e+07	-.6459304	-1.26e+08	-4.68e+07	-1537000	-.3535968	2.087257
Total_Shares	80	1.02e+08	2.57e+07	.2513404	3.07e+07	1.14e+08	1.23e+08	-1.054715	2.941601
CAP	80	111.4626	72.91819	.6541945	0	86.62431	235.9903	.0743746	1.487951
NAV	25	55.28078	35.70754	.6459305	1.538	46.80515	125.5044	.3535986	2.087246

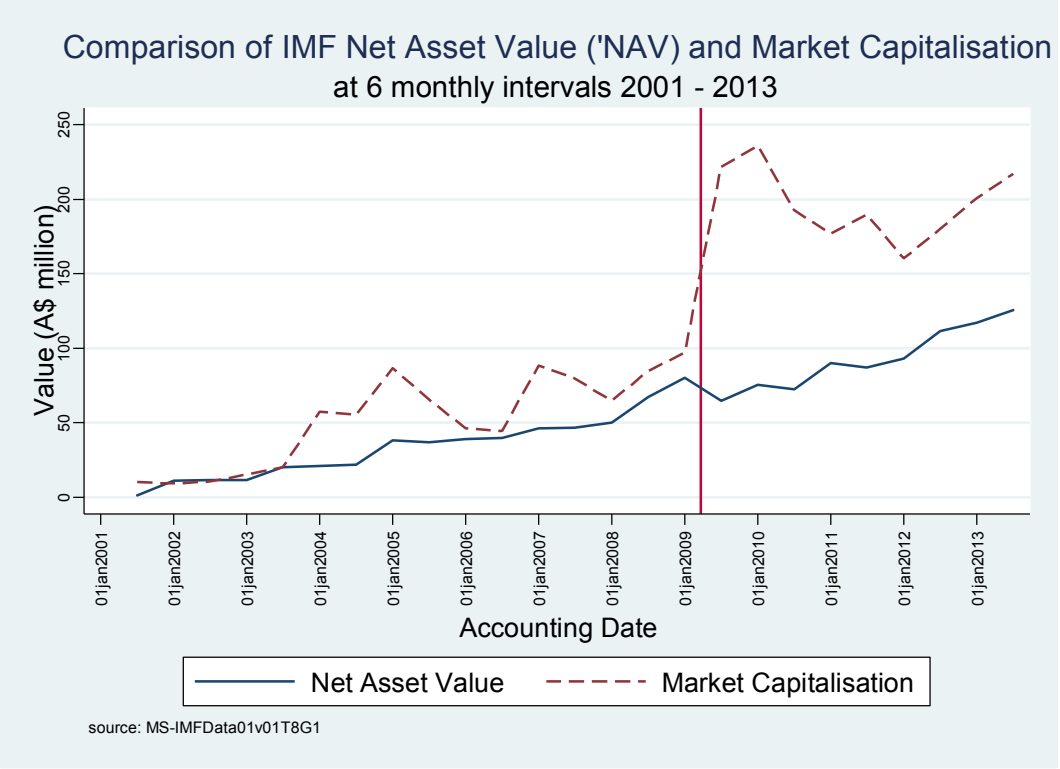
IMF is also required to provide the market in accordance with Appendix 4C of the ASX Listing Rules[363] a commitments report which shows various cash flows during the quarter and the cash balance at the quarter end. This balance has been recorded in variable CA_Cash at the quarter end dates which are not co-terminus with half year and annual results.

On coming to the market in October 2001, IMF had 66,699,734 shares in issue. From the published annual and half year accounts of IMF the number of shares in issue was obtained and compared to the preceding half year results. When the number of shares in issue had changed, the accounting data of such change and the change in numbers (Shares_issued) and the new cumulative number of shares in issue (Total_Shares) was identified from the announcements. Multiplying the Total_Shares by the IMF unadjusted share price for the trading date gives the Capitalised Market value (CAP) of the company in A$m.

[363] Available at http://www.asx.com.au/regulation/rules/asx-listing-rules.htm

A comparison of CAP and NAV[364] is provided in Figure 7. It is apparent that the CAP value increased dramatically after IMF was admitted to the ASX300. Given the increasing gap between the two valuations, any party interested in corporate solvency must carefully weigh whether there really are substantial realisable off balance sheet assets which could be turned into cash should the entity find itself short of cash to meet short term commitments.

Figure 7 Comparison of IMF NAV and market capitalisation at 6 monthly intervals 2001-2013



4.5 IMF share price and share volume

IMF was readmitted to the ASX on 19 October 2001. The ASX market website was searched and the annual announcements regarding trading days and non-trading was used to compile a list of the 3042 business days on which the ASX was open between 19 October 2001 and 25 October 2013 (4390 days less 94 public holidays and 1254 weekend days = 3042 days).

[364] Ie the Net Asset Value (variable Net_Assets) expressed in A$m

Data sets of IMF share prices and ASX index prices were initially obtained from Bloomberg at time intervals of 1, 5, 10 and 15 minute and at daily closing with the intention of examining how quickly the market price reacted to company specific news around the time of an announcement. Unfortunately, this data set was only available from 3 January 2011 and it was found that the IMF 10 and 15 minute data might be erroneous as a result of duplication. The Bloomberg data was compared to similar data extracted from Google finance and inconsistencies appear throughout the period 17 January to 24 February 2011. The Bloomberg data was therefore abandoned.

A further dataset of Open, High, Low, and Close prices and volumes for IMF together with the ASX300 index was extracted from Yahoo Finance on 28th October 2013. That data set also provided an adjusted closing price in addition to the usual closing price. The adjusted closing price, which adheres to CRSP methodology, takes into account stock splits[365] and dividends[366] (Table 30) and makes computation of returns over time easier[367] (CRSP, 2012; Yahoo, 2013).

Plots of the share price and volume over time are shown in Figure 8 and descriptive statistics for the indices and the IMF prices are shown in Table 31.

Open, High, Low, Close prices and volumes traded for both IMF and numerous indices (described further below) was also obtained from www.asxhistoricaldata.com on 31 December 2014. The unadjusted IMF closing share price and volume plus from that dataset were compared to the yahoo data set to ensure consistency and completeness of data. Similar checks were conducted on the ASX300 index. Any

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[365] A 2 for 1 stock split will double the shares in issue and halve the price. Comparisons of periods before and after the split are not comparable unless an adjustment is made to both volume and price.

[366] e.g. the dividend declared on 22nd February 2011 became ex-div on 24th March 2011. The unadjusted prices on 23rd and 24th March were A$1.71 and A$1.60 as compared to the adjusted prices of A$1.42 and A$1.41.

[367] From a regulatory and continuous monitoring perspective the historical prices will need to be recalculated every time a dividend is paid or a stock is split.

missing data in one data set was replaced with non-missing data from the other data set.

Table 30 IMF Dividends

Year	Declaration date	Ex div date	Books close	Payable date	Amount (AUD)	Franked	Franking credit (AUD)
2007	28-Feb	30-Mar	05-Apr	16-Apr	$ 0.03	0%	$ -
2008	25-Aug	26-Sep	02-Oct	17-Oct	$ 0.05	100%	$ 0.021
2009	16-Jan	21-Jan	28-Jan	11-Feb	$ 0.05	100%	$ 0.021
	25-Jun	06-Jul	10-Jul	24-Jul	$ 0.10	100%	$ 0.043
2010	25-Feb	03-Mar	10-Mar	24-Mar	$ 0.05	100%	$ 0.021
2011	22-Feb	24-Mar	30-Mar	13-Apr	$ 0.10	100%	$ 0.043
	24-Aug	26-Sep	30-Sep	07-Oct	$ 0.05	100%	$ 0.021
2012	29-Jun	23-Aug	29-Aug	13-Sep	$ 0.10	100%	$ 0.043
2013	21-Aug	14-Oct	18-Oct	31-Oct	$ 0.05	100%	$ 0.021

Source: ASX announcements

Figure 8 IMF share price and traded volume over time

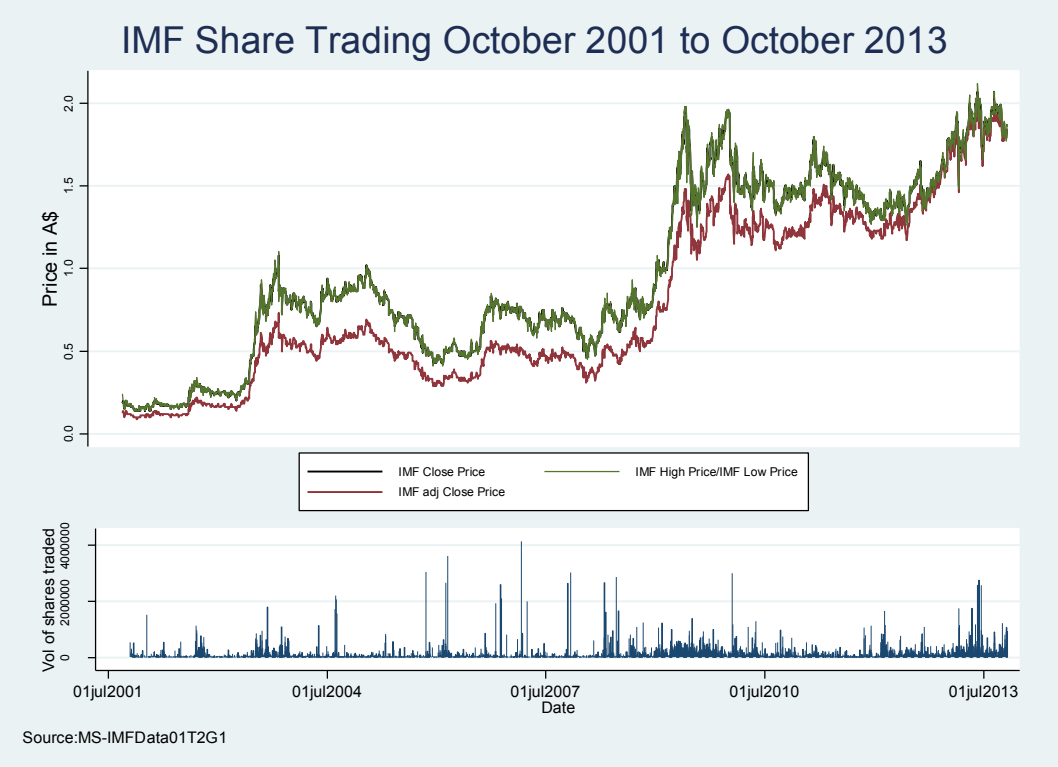


Table 31 Descriptive statistics of IMF share price and traded volumes

variable	N	mean	sd	cv	min	p50	max	skewness	kurtosis
Open	3111	.9761234	.5227928	.5355806	.14	.82	2.05	.2086199	1.848575
High	3111	.987287	.5293417	.5361579	.14	.83	2.12	.2095141	1.843792
Low	3111	.9636869	.5162111	.5356627	.14	.8	2.01	.2036264	1.849994
price	3111	.9753295	.5232508	.5364862	.14	.81	2.07	.2045553	1.845461
volume	3111	152726.7	280818.9	1.838702	0	70800	4131600	6.060353	55.95994
adjprice	3111	.788036	.5138454	.6520583	.09	.56	2.01	.5155007	1.981804

The mean volume of IMF shares traded each week (0.73%) is quite low (Figure 9) but is far in excess of the two UK Aim listed companies (Figure 10). *Cammer v Bloom*[343] set criteria of 2% and 1% for determining efficiency in a market. In IMF's case of the 624 full weeks studied only 44 (7.1%) would "*justify a strong presumption that the market for the security is an efficient one"* and only 138 (22.1%) *"would justify a substantial presumption*" that the market for the security is an efficient one.

The traded volume of IMF shares has increased following admission to the ASX 300 (Figure 9). An increase in volume does not mean that public investors have increased their trading[368] as it may be symptomatic of an increase in intra-day inter-dealer activity[369]. Stock which is traded infrequently can lead to beta estimates which are severely biased downwards (Dimson, 1979). Additionally, infrequently traded stock often have a low share price giving rise to increased measurement error as a result of price rounding.

[368] Dyl (1999, p.8) explains how reported Nasdaq trading volumes need to be adjusted to exclude trades by brokers. E.g. selling 100 shares via a broker is recorded as a trading volume of 200 not 100. If a second broker was involved then the volume recorded would be 300.

[369] Automated High Frequency Trading ('HFT') in equity markets outside the US has become more prevalent (Durbin, 2010, p.10). For comment on HFT on the ASX see Kohler (2012).

Figure 9 Perecentage of issued IMF shares traded each week 19 October 2001 to 28 October 2013

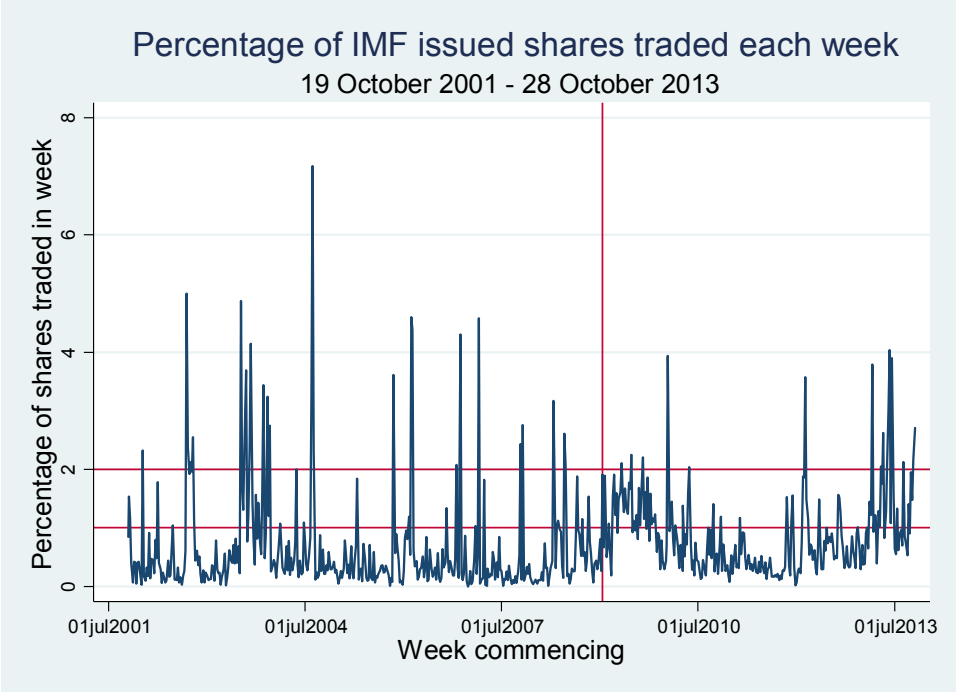


Figure 10 Juridica and Burford shares traded each week 19 October 2001 to 28 October 2013

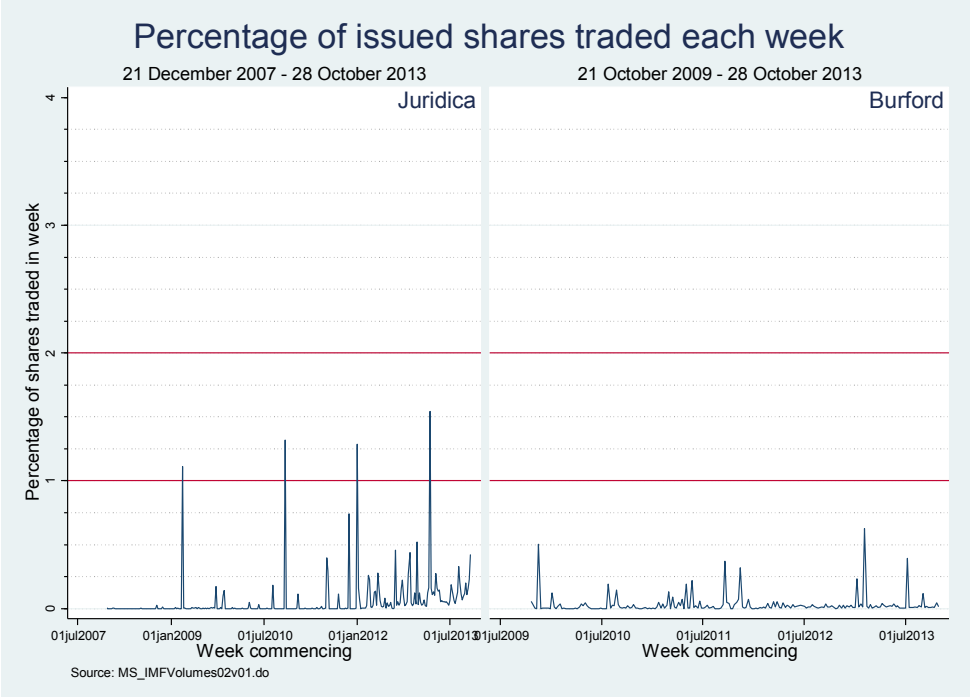
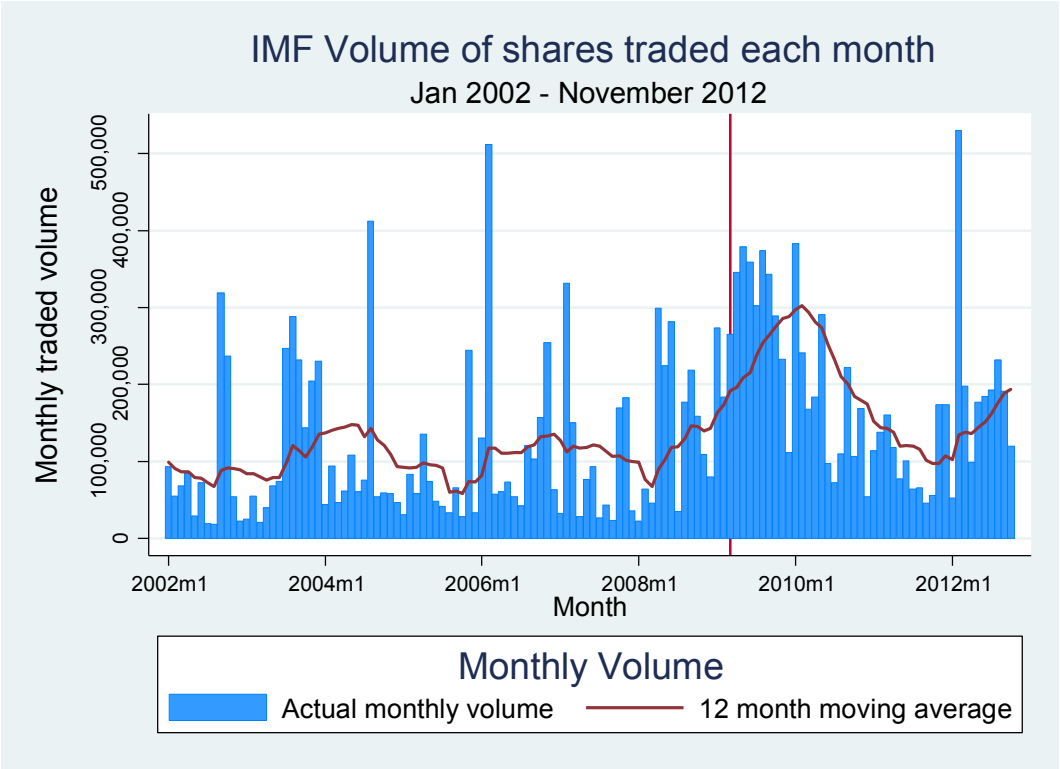


Figure 11 IMF volume of shares traded each month January 2002 – November 2012



4.6 Market Indices

For the period 19 October 2001 to 25 October 2013, 24 Australian market indices were considered as candidates for an independent variable the coefficient of which would measure the systematic risk of IMF's share price relative to the market as a whole. Open, High, Low, Close prices for these indices was obtained from www.asxhistoricaldata.com on 31 December 2014. Close examination of the data identified a small number of errors[370] and these were corrected. Data was also missing for 26 days. The variables for Open, High, and Low prices together with the four indices that covered substantially less than the full period were discarded.

Plots of the indices against time are shown in Figure 12 and descriptive statistics of the retained variables are presented in Table 32.

[370] The typical error was that the index number was incorrect by a factor of 100

Figure 12 Various ASX Indices October 2001 to October 2013

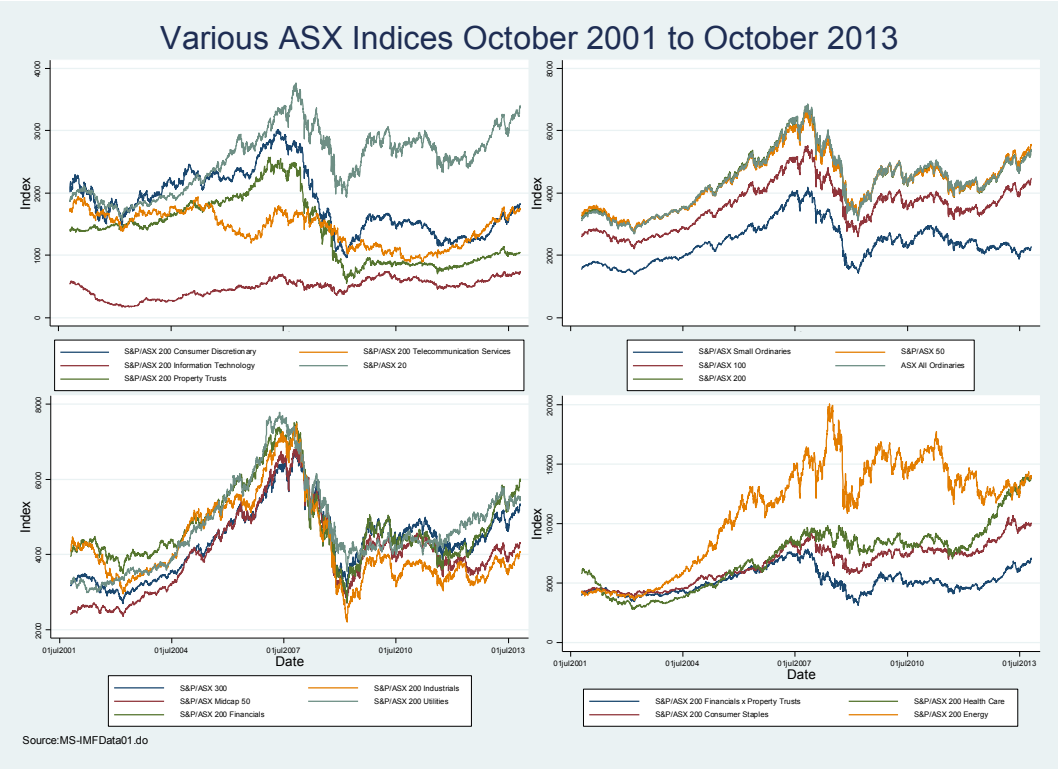


Table 32 Descriptive statistics of various ASX Indices

variable	N	mean	sd	cv	min	p50	max	skewness	kurtosis
XAO_Close	3017	4394.048	928.9227	.2114048	2673.3	4422.3	6853.6	.2925799	2.552898
XDJ_Close	3017	1851.635	485.9843	.2624622	960.1	1752.9	3016.2	.4134349	2.28789
XEJ_Close	3017	11171.41	4367.724	.3909733	3568.9	12517.6	20035.5	-.4880121	1.911524
XFJ_Close	3017	4797.384	981.2715	.204543	2715.1	4476.1	7525.8	.983903	3.29321
XFL_Close	3017	4371.833	862.2634	.1972316	2724.3	4409.6	6636.5	.2328899	2.424451
XHJ_Close	3017	7253.077	2664.53	.3673655	2818.4	7920	14173.5	.2004572	2.631014
XIJ_Close	3017	481.1538	145.0999	.3015666	167.4	501.5	736.7	-.4265843	2.29417
XJO_Close	3017	4389.043	911.9321	.2077747	2700.4	4413	6828.7	.3281649	2.578534
XKO_Close	3017	4385.699	914.0845	.2084239	2696.3	4403.4	6845.4	.3461022	2.613569
XMD_Close	3017	4056.661	1083.833	.2671737	2349.9	4015.6	6903.3	.5862787	2.872968
XMJ_Close	3017	9448.006	3404.321	.3603216	3726.1	9885.1	17334.8	-.1051225	1.975954
XNJ_Close	3017	4270.53	1108.617	.259597	2204.8	3820.8	7482.8	1.068758	3.337359
XPJ_Close	3017	1391.312	512.4082	.3682914	546.9	1425.8	2575.6	.4426464	2.152123
XSJ_Close	3017	6652.018	1689.503	.2539835	3850	7040.5	10661.7	.0127773	2.042083
XSO_Close	3017	2406.448	631.0446	.2622307	1377.4	2345.6	4176.5	.705539	3.091648
XTJ_Close	3017	1442.649	271.8511	.1884389	891	1510.2	1941	-.3461499	1.862033
XTL_Close	3017	2533.293	496.737	.1960835	1560.5	2600	3758.7	.0017587	2.057483
XTO_Close	3017	3578.437	732.7725	.2047745	2208.3	3601.5	5513.3	.2784746	2.500877
XUJ_Close	3017	4748.783	1151.944	.2425767	2971.8	4462.7	7791.6	.7599189	3.034645
XXJ_Close	3017	5159.888	1022.656	.1981935	3131.3	5011.4	7846.2	.6641991	2.655705

In order to determine which Index to use for the market return (mktrtn) in the event studies, each index was regressed against the IMF adjusted return (adjret). The 220

days on which the traded volume of IMF shares was zero and the 2 days on which there was no index value were excluded before the IMF adjusted return (adjret) and the individual index returns (idxrtn) were computed i.e.

$$adjret_n = (adjprice_n - adjprice_{n-1})/adjprice_{n-1}$$

$$idxrtn_{in} = (mktprice_{in} - mktprice_{in-1})/mktprice_{in-1}$$

Where adjprice is the IMF adjusted price on day *n* and mktprice is the index(*i*) also on day *n*.

The first day was then excluded before running the regressions as it had no return. Of the remaining 2820 observations, 968 had a zero IMF adjusted return despite having been traded. The results of the regression are shown in Table 33. Separate regressions for pre and post joining the ASX 300 were also conducted (Table 34).

Table 33 Regression results from various indices returns against IMF returns

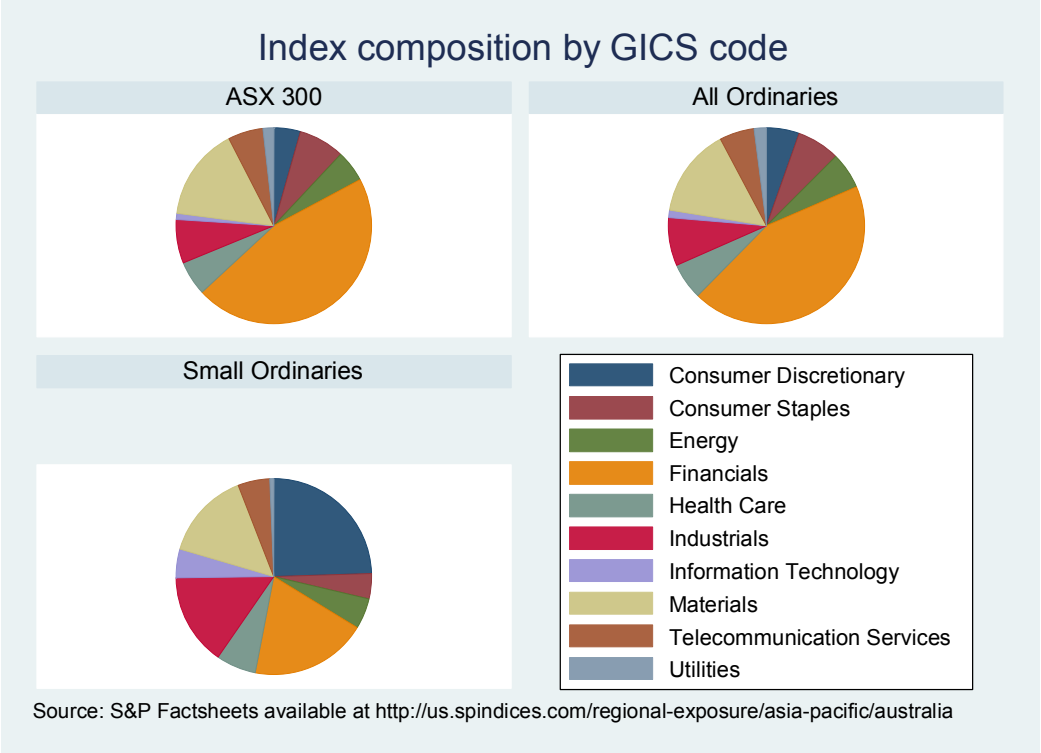
Variable	Code	Obs	AdjR2	Const	Coeff idxrtn	tstat	p>t
S&P/ASX 20	XTL	2800	0.010	0.0003	0.3008	5.52	0.000
S&P/ASX 50	XFL	2800	0.011	0.0003	0.3198	5.65	0.000
S&P/ASX 100	XTO	2800	0.011	0.0003	0.3302	5.74	0.000
S&P/ASX 200	XJO	2800	0.012	0.0003	0.3372	5.85	0.000
S&P/ASX 300	XKO	2820	0.012	0.0003	0.3460	5.98	0.000
ASX All Ordinaries	XAO	2820	0.013	0.0003	0.3625	6.11	0.000
S&P/ASX 200 Consumer Discretionary	XDJ	2800	0.008	0.0004	0.2449	4.85	0.000
S&P/ASX 200 Energy	XEJ	2800	0.006	0.0003	0.1682	4.11	0.000
S&P/ASX 200 Financials	XFJ	2800	0.009	0.0004	0.2646	5.28	0.000
S&P/ASX 200 Health Care	XHJ	2800	0.002	0.0004	0.1436	2.76	0.006
S&P/ASX 200 Information Technology	XIJ	2800	0.003	0.0004	0.1109	3.00	0.003
S&P/ASX 200 Materials	XMJ	2800	0.007	0.0004	0.1639	4.43	0.000
S&P/ASX 200 Industrials	XNJ	2800	0.010	0.0004	0.2872	5.42	0.000
S&P/ASX 200 Property Trusts	XPJ	2800	0.009	0.0004	0.2229	5.16	0.000
S&P/ASX 200 Consumer Staples	XSJ	2800	0.004	0.0003	0.2258	3.57	0.000
S&P/ASX 200 Telecom Services	XTJ	2800	0.004	0.0004	0.1744	3.47	0.001
S&P/ASX 200 Utilities	XUJ	2800	0.005	0.0004	0.2273	3.75	0.000
S&P/ASX 200 Financials Property Trusts	XXJ	2800	0.008	0.0004	0.2293	4.83	0.000
S&P/ASX Midcap 50	XMD	2800	0.011	0.0003	0.3288	5.75	0.000
S&P/ASX Small Ordinaries	XSO	2820	0.017	0.0004	0.3856	7.10	0.000

Table 34 Pre and post joining ASX 300 regression results from various indices returns against IMF returns

Variable	Code	Obs	AdjR2	Const	Coeff idxrtn	tstat	p>t	Obs	AdjR2	Const	Coeff idxrtn	tstat	p>t
S&P/ASX 20	XTL	1640	0.005	0.0004	0.2476	3.11	0.002	1160	0.037	0.0003	0.4055	6.73	0.000
S&P/ASX 50	XFL	1640	0.005	0.0004	0.2624	3.15	0.002	1160	0.039	0.0003	0.4281	6.93	0.000
S&P/ASX 100	XTO	1640	0.006	0.0004	0.2727	3.20	0.001	1160	0.040	0.0003	0.4346	7.02	0.000
S&P/ASX 200	XJO	1640	0.006	0.0004	0.2795	3.25	0.001	1160	0.041	0.0003	0.4390	7.15	0.000
S&P/ASX 300	XKO	1658	0.006	0.0004	0.2886	3.35	0.001	1162	0.043	0.0003	0.4468	7.25	0.000
ASX All Ordinaries	XAO	1658	0.006	0.0004	0.3040	3.44	0.001	1162	0.044	0.0002	0.4650	7.36	0.000
S&P/ASX 200 Consumer Discretionary	XDJ	1640	0.004	0.0005	0.1840	2.62	0.009	1160	0.035	0.0002	0.4125	6.58	0.000
S&P/ASX 200 Energy	XEJ	1640	0.001	0.0003	0.1023	1.75	0.081	1160	0.036	0.0004	0.3164	6.70	0.000
S&P/ASX 200 Financials	XFJ	1640	0.004	0.0004	0.2066	2.82	0.005	1160	0.038	0.0002	0.3780	6.84	0.000
S&P/ASX 200 Health Care	XHJ	1640	0.002	0.0004	0.1495	2.04	0.041	1160	0.003	0.0003	0.1290	2.05	0.041
S&P/ASX 200 Information Technology	XIJ	1640	0.002	0.0004	0.1031	1.99	0.046	1160	0.006	0.0004	0.1313	2.89	0.004
S&P/ASX 200 Materials	XMJ	1640	0.003	0.0003	0.1237	2.32	0.020	1160	0.029	0.0004	0.2505	5.92	0.000
S&P/ASX 200 Industrials	XNJ	1640	0.004	0.0004	0.2142	2.69	0.007	1160	0.044	0.0003	0.4101	7.40	0.000
S&P/ASX 200 Property Trusts	XPJ	1640	0.004	0.0005	0.1697	2.77	0.006	1160	0.038	0.0003	0.3499	6.86	0.000
S&P/ASX 200 Consumer Staples	XSJ	1640	0.002	0.0003	0.1712	1.88	0.060	1160	0.018	0.0003	0.3430	4.73	0.000
S&P/ASX 200 Telecom Services	XTJ	1640	0.004	0.0004	0.1981	2.66	0.008	1160	0.004	0.0004	0.1319	2.40	0.016
S&P/ASX 200 Utilities	XUJ	1640	0.002	0.0004	0.1757	2.00	0.045	1160	0.019	0.0003	0.3336	4.88	0.000
S&P/ASX 200 Financials Property Trusts	XXJ	1640	0.003	0.0004	0.1770	2.55	0.011	1160	0.033	0.0003	0.3310	6.33	0.000
S&P/ASX Midcap 50	XMD	1640	0.006	0.0003	0.2811	3.18	0.001	1160	0.039	0.0003	0.3984	6.92	0.000
S&P/ASX Small Ordinaries	XSO	1658	0.009	0.0004	0.3517	4.06	0.000	1162	0.054	0.0003	0.4281	8.21	0.000

None of the index returns is highly correlated with the IMF return and the ultimate choice lay between the ASX300, the ASX All Ordinaries[371], and the ASX Small Ordinaries (i.e. companies in the ASX300 who are not in the ASX100). As the coefficients, and test statistics results for these indices were similar, the composition of the indices by Global Industry Standard Classification (GICS) was then considered (Figure 13).

Figure 13 Breakdown of ASX300 by GICS sector



Source: S&P Factsheets available at http://us.spindices.com/regional-exposure/asia-pacific/australia

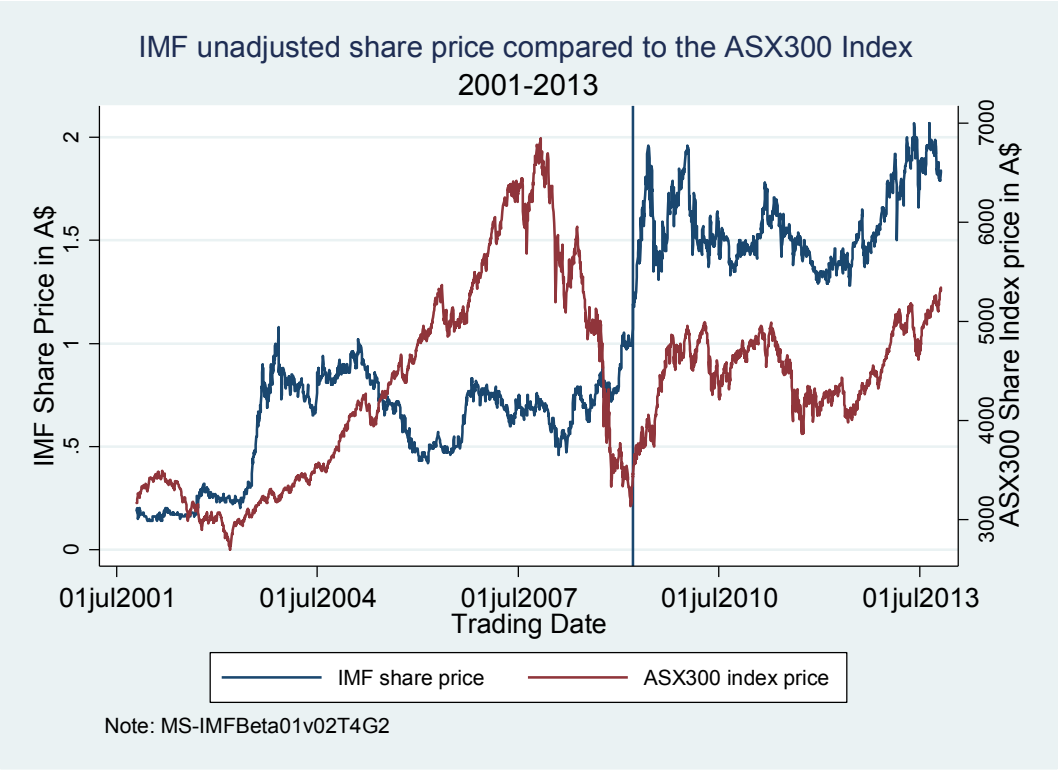
The composition of the Small Ordinaries index is very different from the other two indices as it has a far smaller financial and much greater consumer discretionary, industrial and information technology sectors. Given the low correlation between IMF and the IT sector index in Table 33 and that IMF is classified under GICS as a 'diverse financial' entity[372], the two remaining indices were preferred. IMF joined the

[371] N.B. The All Ordinaries Index is compiled from the 500 largest companies in the Australian stock market and not all the companies listed on the market as the name may suggest.

[372] i.e. it is part of Sector 40 - Financials which contains companies involved in banking, thrifts & mortgage finance, specialized finance, consumer finance, asset management and custody banks, investment banking and brokerage and insurance. This Sector also includes real estate companies

ASX 300 index[373] on 20 Mar 2009[374] and this determined the final choice of index as comparisons could be made between pre and post this event.

Figure 14 IMF share price compared to ASX ordinary share index 2001-2013



The ASX 300 index is highly liquid[375], float-adjusted[376] and includes approximately

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and Real Estate Investment Trusts ('REITs'). Within this sector the applicable Industry group is Diversified Financial (4020).

[373] The ASX300 is used extensively as a performance index and was introduced in 2000. The S&P/ASX 300 index includes the large cap, mid cap and small cap components of the S&P/ASX index family. Therefore, any strategic holdings that are classified as either corporate, private or government holdings reduce the Investable Weight Factor ('IWF') which, in turn, results in a reduction in the float-adjusted market capital. Any strategic shareholdings that are greater than 5% of total issued shares are excluded from the relevant float (Standard & Poor, 2011).

[374] The announcement that IMF would join the ASX300 was made on 6 March 2009.

[375] Only stocks that are regularly traded are eligible for inclusion in any S&P/ASX index. A stock's liquidity is measured relative to its peers. Relative Liquidity is calculated as Stock Median Liquidity/Market Liquidity where Stock Median Liquidity is the median daily value traded for each stock divided by the average float/index weight-adjusted market capitalization for the previous six months and; Market Liquidity is determined using the market capitalisation weighted average of the stock median liquidities of the 500 constituents in the All Ordinaries index (Standard & Poor, 2011).

[376] In calculating a stocks float adjusted market capital shares held by founders directors of the company, trusts, venture capitalists and other strategic holdings are excluded. In order to be included in the index at least 30% of the issued shares must be with shareholders with a total

300 of Australia's largest securities by float-adjusted market capitalization [377]. The index covers approximately 81% of Australian equity market capitalization and eligibility is reviewed regularly. Announcements of index change are made on the first Friday of March and September, two weeks ahead of implementation (Standard & Poor, 2011).

Shown in Figure 14 is the IMF share price against the ASX300 Index price over the 12-year period since IMF re-joined the ASX on 19 October 2001.

4.7 Estimating Beta

IMF joined the ASX300 on 20 March 2009 and for the period prior to that the IMF share price appears to have little correlation with the ASX300 (R^2=0.051, F(1,1657) =89.06). After joining the ASX300 Index the correlation improves (R^2=0.4074, F(1,1160) =797.37).

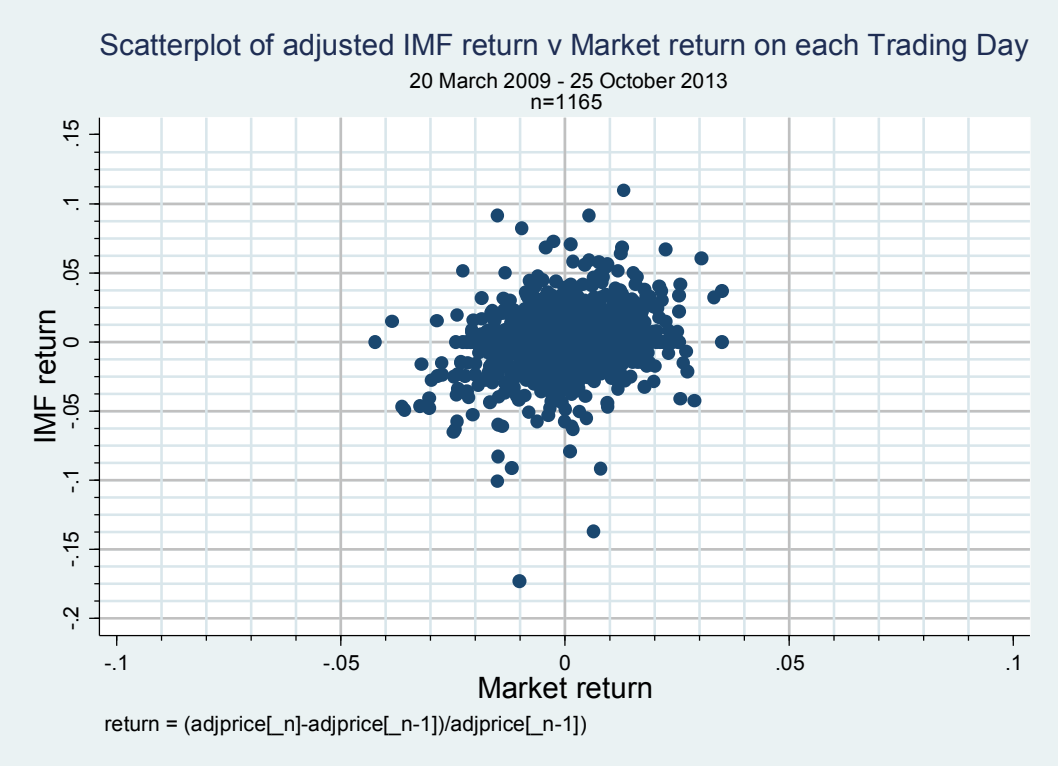
The decline in the ASX300 index coincides to some extent with the recession in the USA between December 2007 and June 2009. Although the Australian economy slowed it did not fall into recession (McDonald & Morling, 2011; Morling & McDonald, 2011). On the 9 August 2007 when BNP Paribas terminated withdrawals the ASX300 stood at 6183.7 and it continued to rise until November 2007 when it peaked at 6845.4 before sliding downwards to a bottom of 3136.8 on 6 March 2009.

The market model assumes that a stable linear relationship exists between the return on the market (mktrtn) and the return on the equity (adjret) and that a market index is an adequate proxy to capture all the market wide, industry wide and non-firm specific information. A simple scatter plot of the IMF daily return against the market return (Figure 15) reveals that the daily market return is usually within the bounds of ± 0.025 whereas the daily IMF return is usually within the bounds of ± 0.050 but there are a number of outliers.

holding of less than 5% of the issued shares (Standard & Poor, 2011).

[377] At 30 September 2013 there was 301 constituent companies ranging in size of market capitalization between A$13.15m to A$114,785.46m. Mean value A$4,609.81m and median value of A$885.27m (Standard & Poor, 2013).

Figure 15 Scatterplot of IMF trading day return against market trading day return



Using the simple market model, regressions of the IMF return against the ASX300 return was conducted for varying periods[378]. IMF's beta for the whole period prior to joining the ASX300 was 0.3022 (R^2=0.007, F(1,1662)=13.09) whereas the beta for the post ASX300 period to 25 October 2013 was 0.4310 (R^2=0.039, (1,1161)=47.49). Beta can be computed over any period but the usual period is the preceding 12 months (approx. 250 trading days). Shown in Table 35 and graphically in Figure 16 are the IMF month end beta based on the trading days in the preceding year.

[378] Beta in this instance is calculated using simple regression but there are more complex methods e.g. those using methods developed by Scholes and Williams (1977) e.g. the CRSP Beta which is calculated each year as follows :

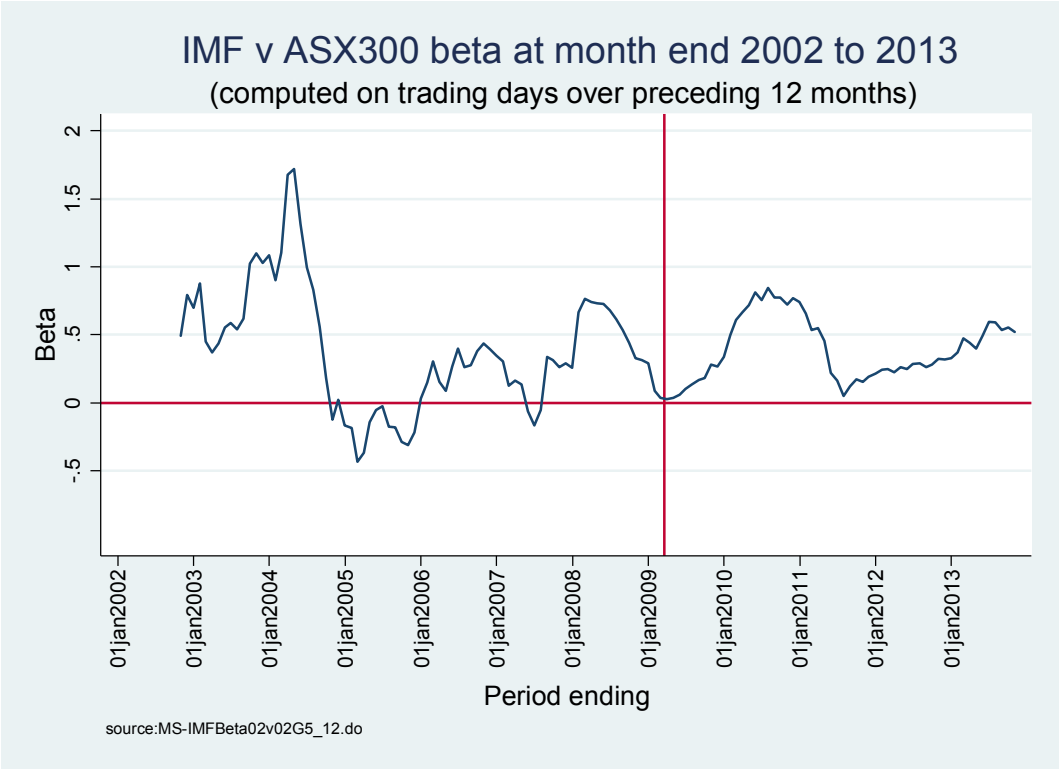
$$\beta_t = \frac{\Sigma_t\,(ret_{i,t}\,mret3_t) - \left(\frac{1}{n}\right)(\Sigma_t ret_{i,t})(\Sigma_t mret3_t)}{\Sigma_t\,(mret_t\,mret3_t) - \left(\frac{1}{n}\right)(\Sigma_t mret_t)(\Sigma_t mret3_t)}$$

Where $ret_{i,t}$ = log of (1 + return for security i on day t); $mret_t$ = log of (1 + value weighted market return on day t); $mret3_t = mret_{t-1} + mret_t + mret_{t+1}$ (a 3 day moving average market window); n = number of observations for the year; and where summations over t are over all days on which security I traded, beginning with the first trading day of the year and ending with the last trading day of the year (CRSP, 2012).

Table 35 Beta for IMF at end of each month 2001-2013 based on 12 month period prior to month end date

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002										0.493	0.791	0.696
2003	0.877	0.450	0.372	0.434	0.552	0.587	0.538	0.617	1.023	1.099	1.026	1.083
2004	0.902	1.104	1.679	1.718	1.317	0.995	0.830	0.559	0.183	-0.122	0.021	-0.166
2005	-0.183	-0.436	-0.367	-0.141	-0.054	-0.026	-0.175	-0.179	-0.290	-0.311	-0.219	0.033
2006	0.150	0.304	0.155	0.086	0.265	0.400	0.261	0.277	0.380	0.438	0.394	0.347
2007	0.306	0.124	0.161	0.136	-0.062	-0.165	-0.055	0.338	0.314	0.259	0.289	0.258
2008	0.664	0.764	0.740	0.733	0.725	0.678	0.616	0.533	0.439	0.330	0.311	0.290
2009	0.089	0.035	0.028	0.035	0.059	0.102	0.136	0.166	0.183	0.282	0.266	0.339
2010	0.497	0.609	0.666	0.717	0.813	0.756	0.843	0.774	0.776	0.724	0.769	0.740
2011	0.655	0.533	0.548	0.454	0.218	0.162	0.051	0.122	0.174	0.156	0.191	0.212
2012	0.243	0.250	0.224	0.260	0.247	0.283	0.291	0.262	0.282	0.324	0.317	0.327
2013	0.368	0.471	0.439	0.396	0.492	0.595	0.591	0.534	0.551	0.521		

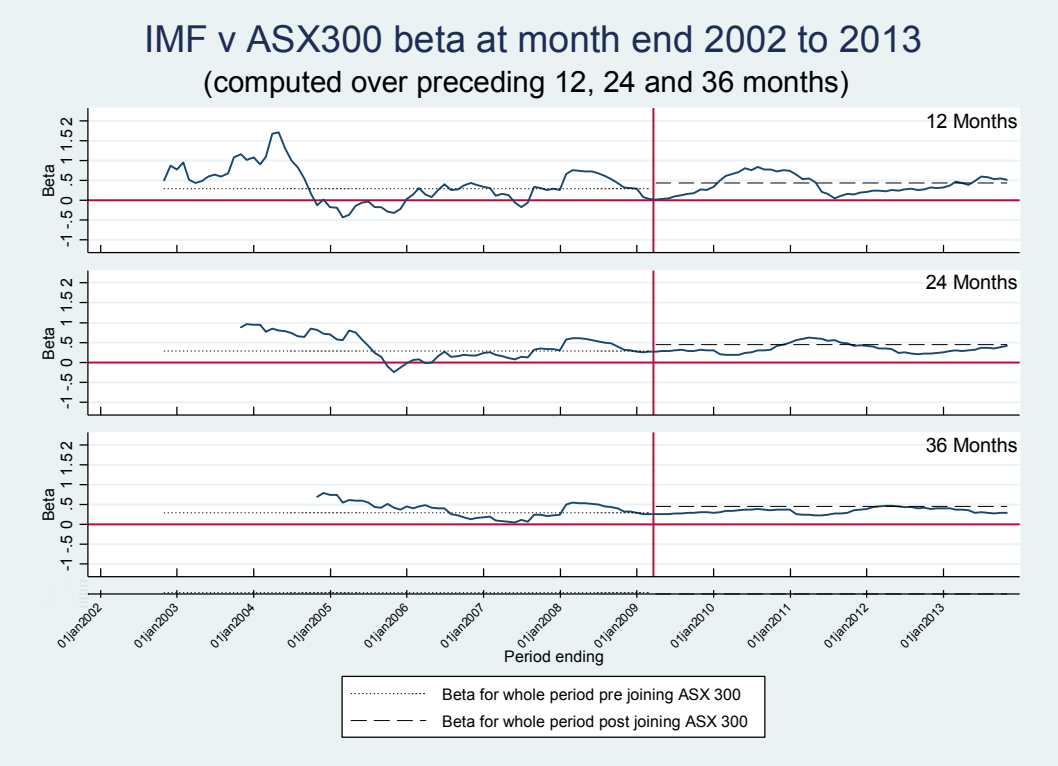
Figure 16 IMF market beta on monthly basis 2002-2013 based on preceding year



Vertical line indicates date of joining ASX300

Blume (1975) suggested, and it is apparent from Table 35 and Figure 16 that the beta as calculated varies over time - although the beta is generally positive. Calculating beta over a longer period e.g. 24 and 36 months increases the stability (Figure 17).

Figure 17 IMF market beta on monthly basis 2002-2013 based on preceding 12, 24 and 36 months



Recent work using high frequency data sampled every 25 minutes, found that the beta of S&P500 equities increased on average, irrespective of whether the news was 'good' or 'bad', by 0.16 on the day of an earnings news announcement before falling back the following day by 0.03 and reverting to average 5 days after the announcement. Furthermore, the increase in beta was greater for announcements that resolve more uncertainty (Patton & Verardo, 2012).

Company specific information has been released over the beta computation period and consequently the IMF return will reflect such information. Nevertheless, comparison of the beta results in Table 35 with the zero price sensitive announcements in Table 24 suggests that there may be other causes for a varying beta. One reason being that the index is comprised of a number of firms who are also impacted by firm specific information and consequently the index return is a composite of both the effect of news affecting the market as a whole as well the aggregation of the effect of firm

specific and sector[379] specific news.

Gilbert et al (2014) "*find that 'opaque' firms have high-frequency[380] betas that are smaller than their low-frequency betas, while the opposite applies to 'transparent' firms*". They conclude that this frequency dependence of beta, arises from uncertainty about the effect of systematic news on 'opaque' firms and not because of the standard microstructure frictions. They hypothesise that market participants in 'opaque' firms[381] require more time to understand the implications of systematic news on the value of the firm. Litigation funders could be described as 'opaque' firms due to their complexity.

Joining an index can change the way an equity performs on some markets because of changes in trading strategies (Liu, 2011; Vijh, 1994). Qiu and Pinfold (2008) looked at the ASX 100 and ASX 300 for the period from the second quarter of 2000 to the end of 2003 and did not find an economically significant index effect in the Australian market although trading volumes were abnormal on both announcement and implementation dates consistent with passive fund managers adopting index matching strategies.

Petajisto (2009; 2011) observed that contrary to neo classical finance theory, uninformed price shocks (e.g. joining or leaving the S&P 500) will move prices. The concluding explanation is that in the market are professional money managers whose income is derived from fees, as well as end investors with risk aversion seeking a return. The demand curve for these two groups differ and consequently the overall demand curve for an equity is far steeper than investors risk aversion alone would suggest.

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[379] A breakdown of the ASX300 index as at Jan 2014 showed that the two biggest constituent sectors were financial (44.4%) and materials/mining (17.4%). IMF falls within the financial sector. See discussion in the previous section.

[380] In the context of that particular paper 'high-frequency' refers to daily returns and 'low-frequency' means quarterly returns.

[381] e.g. complex, multi-industry conglomerate.

5 Analysis

Having reviewed the data available for analysis, my objective is to use this data in order to establish whether the market responds to news about the arrival, progress and outcomes of litigation cases funded by IMF. This does not imply a test for "market efficiency" per se, but rather an attempt to test whether investors and/or market-makers have responded predictably to news about the announcements and/or outcomes of IMF's supported claims. If it is possible to categorise outcomes in terms of how "good" or "bad" they are for IMF's future profitability and/or solvency relative to what was expected, then it is possible to test whether these have affected the share price (for a similar approach to insurance announcements following a major fire, see Baginski et al., 1991). If they do, then it is evidence in support of the possibility that the market is capable (on average) of adjusting (perhaps partially) to the risks faced by IMF. As stated above in section 3.5 of this chapter, the method by which this hypothesis is tested in this section is through the use of a regression approach to estimating a single firm, multiple event study – that is, through the use of dummy variables for the relevant event categories, controlling for alternative specifications of market returns, as discussed below in sections 5.1 to 5.2. In section 5.3 I explore a traditional CAR approach in respect of individual announcement events, using for robustness both market model and constant mean model variants of this approach. Finally, in section 5.4 a more detailed investigation of abnormal returns around specific outcome events, using a market model and an intervention method with dummy variables to control for confounding events, shows that, while the market may adjust on average, it appears not to have done what was expected for some particularly important cases.

5.1 The ASX market's reaction to IMF's announcements

An underpinning presumption of this work is that IMF's market announcements regarding new cases and/or case outcomes may impact market return. An investigation was undertaken to consider what type of announcements, if any, were of interest to the market. Some announcements are unlikely to affect the market return

(e.g. the date of the AGM)[382] whereas others will have either a positive or negative impact.

5.1.i *All announcements*

Each day on which an announcement(s) was made during the period 19 October 2001 to 23 October 2013 was attributed with a dummy variable set to 1 – potentially a total of 606 dummy variables. 31 announcements took place on dates on which no stock was traded and these were ignored. A regression of IMF return on the Market return and the dummy announcement was then conducted and summarised results are set out in Table 36.

Table 36 IMF announcements regression results

Variable	no of vars	Coefficient Range		Sum	Sig
d1-d8	8	-0.289312	-0.103243	-1.193630	***
d9-d13	5	-0.101700	-0.086130	-0.459766	**
d14-d20	7	-0.067200	-0.079220	-0.509870	*
d21-d162	142	-0.010231	-0.062364	-3.636358	
d163-d395	233	-0.010000	0.010000	0.090276	
d396-d546	151	0.010365	0.062149	5.019321	
d547-d562	16	0.063404	0.078748	1.156095	*
d563-d570	8	0.082731	0.100043	0.726812	**
d571-d575	5	0.112465	0.170259	0.703195	***
Market return	1			0.3882606	
constant	1			-0.000172	
N		2819			
F		1.46			
R^2		0.2725			
Adjusted R^2		0.0856			
rmse		0.0320			

legend: * p<=.05; ** p<=.01; *** p<.001

Of the 575 dummy variables, the coefficient for 233 dummies was in the range of -0.01 to + 0.01 which means they have no real impact on the IMF return as they do not equate to a price movement of at least A$0.01 in IMF's share price. The largest positive and negative coefficients relate to announcements regarding tobacco tax

[382] Company specific news reported other than through announcements (e.g. analysts' comments) may impact returns.

litigation[383]. 49 of the dummy variables had significant coefficients (*p<=0.05*) and these are grouped in Table 37 as relating to a) cases[384]; b) changes in directors or substantial shareholders interest; c) investor presentations; and d) dividends, annual and quarterly reports. The last two categories could be considered as 'expected news' (22.5%) and the first two categories could be 'unexpected news' (77.5%). Overall few announcements appear to have a significant impact on the market.

Table 37 Significant announcement by category

Announcement	Significance Level			Total	%
	*	**	***		
Case related	10	9	8	**27**	55.1
Change in directors or substantial shareholder's interests	8	1	2	**11**	22.4
Investor presentations	2	1	1	**4**	8.2
Dividends, annual and quarterly reports	3	2	2	**7**	14.3
Totals	**23**	**13**	**13**	**49**	**100.0**

legend: * p<=.05; ** p<=.01; *** p<.001

5.1.ii *Announcements in respect of funding agreements*

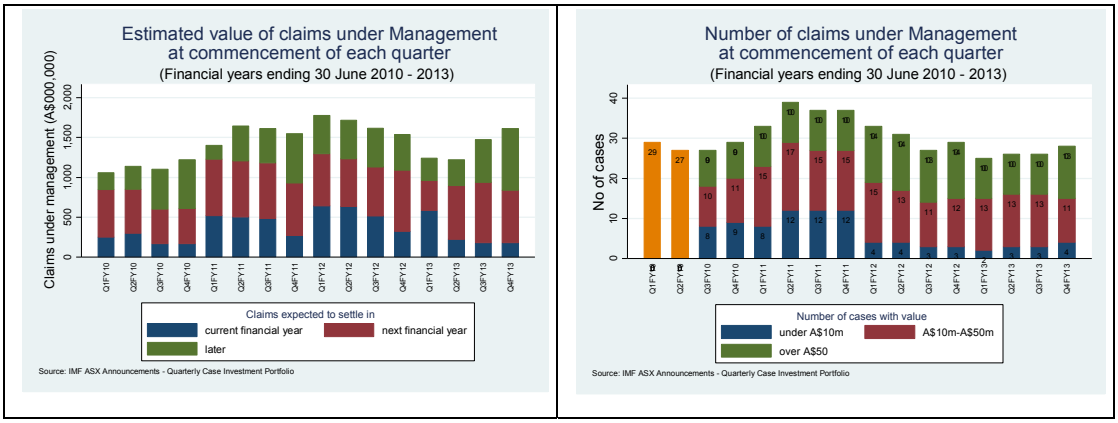
The market reaction to the announcement of a new funding agreement is contrary. On the one hand, investors may take the view that as the normal business of the company is litigation funding, signing a new contract with considerable uncertainty as regards the value and timing of a future gain many years hence is not a significant event, especially when the company provides information quarterly on the number of cases and the total value of claims in the portfolio (Figure 18). Furthermore, signing a new agreement is a commitment to spend money thereby possibly reducing any guaranteed investment income and could be viewed as the acquisition of additional risk. On this basis, stock prices would be expected not to increase as the price already anticipates new business.

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[383] The largest negative dummy coefficient (-0.2893) relates to a case related announcement on 17 September 2002 that "*a private members bill was introduced into the Australian parliament …, which in essence aims to impose as a tax an amount equal to the excise that was levied and paid by retailers to tobacco wholesalers*". This bill, if passed, could have negatively impacted not only the settlement negotiations with one of the defendants announced the preceding day, but also the IMF financed ongoing claims against other defendants. On 23 September the largest positive coefficient occurred (0.1703) when the case related announcement was that the "*Government has advised interested parties that it will not support the pursuit of State franchise fee paid by tobacco retailers to tobacco wholesalers …".*

[384] Includes taking on a new case, reporting progress e.g.the case has been filed in court or a mediation date has been set, settlement outcomes, judgements etc. (cf. example case card in appendix 1).

Figure 18 IMF Estimated value and number of claims under management at commencement of each quarter 2010 -2013



The alternative view is that a new investment is yet another opportunity for spectacular returns and a further diversification of portfolio risk. On this basis, stock prices are expected to increase by the anticipated increase in the time and risk discounted present value of the future cash flows accruing to the stock holders.

When the outcome of a case becomes known the risk and time discounts reduce dramatically and the stock market prices are expected to reflect the revised present value of the future cash flows. Judgements as compared to settlements may have a heightened element of uncertainty because of the possibility of an appeal. As IMF expects[385] to win 70-80% of the cases in which it invests any initial valuation will be discounted by the markets assessment of the costs of losing (i.e. own and adverse costs). Cases lost theoretically affect the market valuation of the entity not only by the loss of the amount previously invested into the case plus any adverse costs now payable to the winning counter-party but also by any amount imputed into the share price as a result of valuing a win[386].

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[385] In 2003, IMF stated that it expected to lose 1½ cases out of 10 i.e. a legal win rate of 85% (IMF, 2003). However, a legal win of nominal damages (e.g. $10) is not a financial success and a commercial win rate of 70%-80% is a more realistic expectation (see Table 40)

[386] In simple terms assume the prospects of winning are 75% and that the profit on a win is 100 and the cost of a loss is -20, then the future value of a case is 75% of 100 less 25% of 20 = 70 which is then discounted to present value. When the case settles the uncertainty is removed and, assuming the costs and outcomes are accurately forecast, the entity value changes either by 30 (100-70) for a win or by -90 (-70-20).

I investigate the relationship on any trading day (t) of IMF's adjusted return ($adjret_t$) with respect to the market return (R_{mt}) and case announcements by using a generic model with a dummy variable (a_t) for the first day an announcement can impact the market. In order to recognise any news leakage prior to the formal announcement, a second dummy variable (a_{t-1}) is used for the day preceding the announcement and, to recognise any delay in investor response, a third dummy variable (a_{t+1}) is used for the day following the announcement. In the case of new funding agreements, the 3 dummy variables are set to 1 if variable D2 (see Table 25) on trading day t =1 and for case outcomes variable D23 (see Table 25) is used to set the dummy variables.

Equation 3

$$adjret_t = \alpha + \beta R_{mt} + \gamma a_{t-1} + \delta a_t + \zeta a_{t+1} + \varepsilon_t \quad [3]$$

where $a_{t-1} = a_t = a_{t+1} = 1$ and t is the trading day of the relevant announcement by IMF.

The results of regressing the market return and the dummy news variables against the IMF return for the periods pre and post joining the ASX300 and as a whole are shown for funding announcements in Table 38 and case outcomes in Table 39.

Table 38 Regression results of IMF returns against new funding agreement announcements (3 day event window)

	(Pre ASX300)		(Post ASX300)		(Whole Period)	
	coef	t	coef	t	coef	t
Market return	0.28936***	(3.35)	0.44151***	(7.17)	0.34480***	(5.95)
a_{t-1}	-0.00313	(-0.51)	-0.00719*	(-2.35)	-0.00549	(-1.57)
a_t	-0.00042	(-0.07)	0.00260	(0.85)	0.00123	(0.35)
a_{t+1}	-0.00233	(-0.40)	0.00249	(0.82)	0.00014	(0.04)
Constant	0.00052	(0.51)	0.00036	(0.54)	0.00047	(0.72)
N	1658		1162		2820	
F	2.90883		14.89850		9.57009	
R^2	0.00699		0.04898		0.01342	
Adjusted R^2	0.00459		0.04570		0.01201	
Pr(a_{t-1}+ a_t+ a_{t+1}=0)	0.55695		0.68519		0.47764	

t statistics in parentheses
Source: MS_Issue02v02
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 39 Regression results of IMF returns against outcome announcements (3 day event window)

	(Pre ASX300)		(Post ASX300)		(Whole Period)	
	coef	t	coef	t	coef	t
Market return	0.28028**	(3.26)	0.45283***	(7.34)	0.34519***	(5.98)
a_{t-1}	-0.00855	(-1.39)	-0.00125	(-0.33)	-0.00541	(-1.38)
a_t	0.01615**	(2.71)	0.00821*	(2.17)	0.01260***	(3.30)
a_{t+1}	0.00457	(0.74)	0.00130	(0.35)	0.00296	(0.76)
Constant	0.00002	(0.02)	0.00003	(0.04)	0.00005	(0.08)
N	1661		1162		2823	
F	5.30309		14.40287		12.37836	
R^2	0.01265		0.04743		0.01727	
Adjusted R^2	0.01026		0.04414		0.01587	
$Pr(a_{t-1+} a_{t+} a_{t+1}=0)$	0.25852		0.22216		0.13955	

t statistics in parentheses
Source: MS_Issue02v02
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In Table 38 the coefficients for the day of the announcement (a_t) and the following day (a_{t+1}) are not significant. The significant ($p<0.05$) negative coefficient (a_{t-1}) on the day before the announcement in the post ASX300 period is unexpected and may be the result of other announcements[387] . From this analysis it does not appear that investors react immediately to announcements of new funding agreements.

The announcement of a case outcome (Table 39) is highly significant ($p<0.001$) for the period as whole but examining the pre and post joining ASX300 split reveals a very significant ($p<0.01$) pre and a lesser significance ($p<0.05$) post joining the ASX300. It should be noted that, while the event day returns are statistically significant, the Wald tests for the joint significance of the 3-day event window dummies (as shown in the final row of the tables), are not significant. It is not possible to confirm whether outcome announcements, as a group, affect IMF returns in their event windows. In what follows I explore whether the outcome announcements can be categorised into separate groups which do significantly affect returns in their event windows.

[387] E.g. event 6 is dated Monday 13 July 2009 when the adjusted share price was A$1.20. On Thursday 9 July 2009 it was announced that employee options had been exercised the day before and an additional 110,000 shares had been issued at A$0.80. Over the week 6-10 July 2009 the adjusted share prices were A$1.30 A$1.29 A$1.22 A$1.19 A$1.09. The Friday closing price of A$1.09 was after over 1m shares had been traded in the last hour.

5.2 Search for additional explanatory variables

The regression results in Table 39 were the result of regressing over a 3-day event window the market return against the IMF return on the case outcome announcement dates. In this section various models are created in the search for alternative variables descriptors which increase the power of the statistical inference from the regression analysis. (Appendix 5 describes each model and provides the regression results.)

5.2.i *'Good' and 'Bad' outcome announcments*

Testing for the joint significance of all events is inappropriate because some events would be expected to lead to a fall in share price whereas others would be expected to lead to an increase. One solution is to aggregate events based on a prior expectation that they may be 'good' or 'bad'. The known financial results of each event are illustrated in Figure 19 and detailed in Appendix 6 but these may not become available until after the announcement of the outcome. The origination of the event outcomes and their classification is shown in Table 40.

Figure 19 Ultimate IMF net gain/loss arising from each event

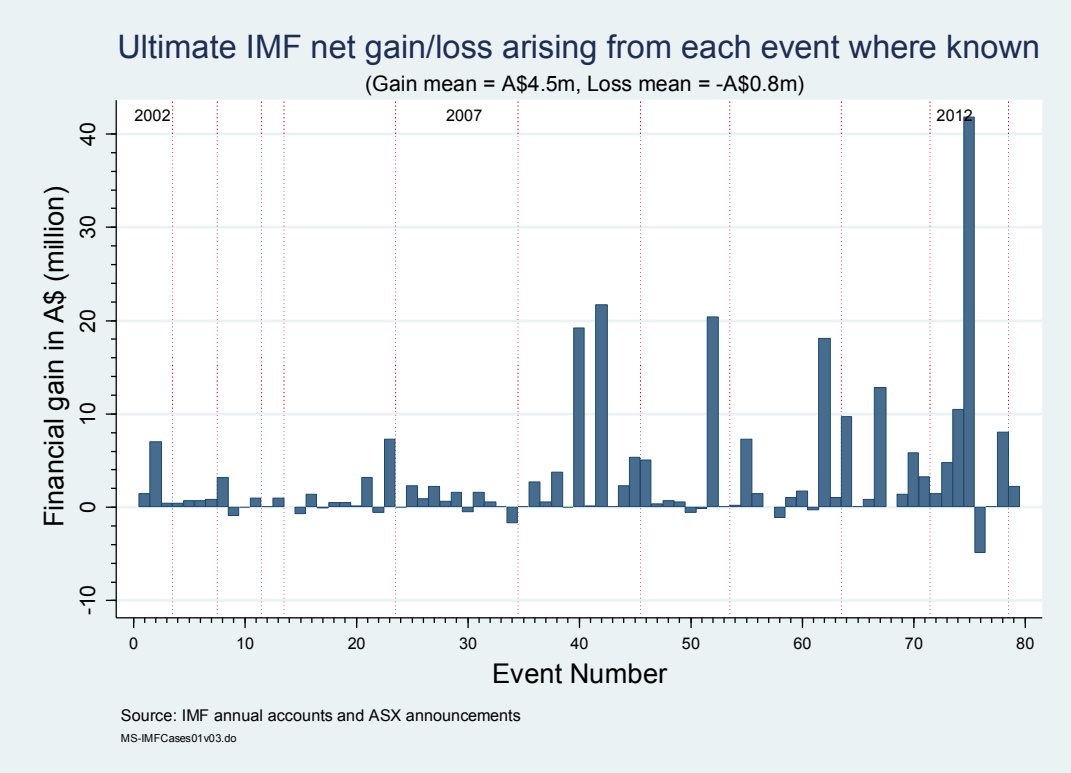


Table 40 Event outcomes

Determined by	'Gain' Pre ASX300	'Gain' Post ASX300	'Loss' Pre ASX300	'Loss' Post ASX300	Total
Settlement	31	20	2	2	55
Judgement	2	3	4	5	14
Withdrawal	0	0	7	3	10
Total	33	23	13	10	79

In these models IMF's return on day t (R_{it}) is initially considered as a relationship between the market return R_{mt} and the receipt of 'good' or 'bad' news on an announcement day (g_t, b_t) and, because announcements may occur late in the afternoon, the following day (g_{t+1}, b_{t+1}) as well as the preceding day (g_{t-1}, b_{t-1}) because occasionally court judgements are made the day before the IMF announcement or other 'leakage' may occur.

Equation 4

$$R_{it} = \alpha_{i+} \beta_i R_{mt} + \gamma\, g_{t-1} + \delta\, g_t + \zeta\, g_{t+1} + \eta\, b_{t-1} + \iota\, b_t + \kappa\, b_{t+1} + \epsilon_{it} \qquad [4]$$

Where: $g_{t-1} = g_t = g_{t+1} = 1$ if the announcement is 'good'

and $b_{t-1} = b_t = b_{t+1} = 1$ if the announcement is 'bad'.

What defines `good' and `bad' is subjective and various definitions were tried. The simple variant is to treat 'good' as making a financial gain and 'bad' as making a financial loss. The results are shown in Table 41 for regressions on the IMF unadjusted and adjusted returns analysed, pre and post joining the ASX300 and in total[388].

[388] A variation (models 15 and 16) of the whole period models was to introduce a dummy variable = 1 for the period post joining the ASX300 but it was found that this was not significant (t stat -0.26 for unadjusted model & -0.06 for adjusted model). Another variation (models 17 and 18) was to use a dummy variable for regular announcements but again this was not significant (t stat 1.10 and 1.20).

Table 41 Regression results of 'good' and 'bad' outcome models of IMF return

	IMF Unadjusted Return			IMF Adjusted Return		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model9	Model10	Model11	Model12	Model13	Model14
Mkt Rtn	0.3080***	0.4249***	0.3545***	0.2821**	0.4384***	0.3429***
	(3.70)	(6.81)	(6.30)	(3.28)	(7.17)	(5.94)
g_{t-1}	-0.0070	-0.0013	-0.0046	-0.0077	-0.0003	-0.0046
	(-1.03)	(-0.29)	(-1.05)	(-1.09)	(-0.08)	(-1.02)
g_t	0.0229***	0.0214***	0.0222***	0.0218**	0.0209***	0.0213***
	(3.37)	(4.71)	(5.05)	(3.10)	(4.71)	(4.73)
g_{t+1}	0.0009	-0.0005	0.0002	0.0009	-0.0005	0.0001
	(0.14)	(-0.11)	(0.03)	(0.13)	(-0.12)	(0.01)
b_{t-1}	0.0024	-0.0046	-0.0007	-0.0002	-0.0046	-0.0022
	(0.22)	(-0.67)	(-0.11)	(-0.01)	(-0.69)	(-0.32)
b_t	0.0017	-0.0213**	-0.0085	0.0024	-0.0212**	-0.0082
	(0.16)	(-3.10)	(-1.26)	(0.22)	(-3.16)	(-1.18)
b_{t+1}	0.0151	0.0044	0.0104	0.0122	0.0054	0.0093
	(1.42)	(0.64)	(1.54)	(1.11)	(0.81)	(1.33)
Constant	-0.0001	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	(-0.13)	(-0.27)	(-0.20)	(-0.04)	(0.07)	(0.03)
N	1661	1163	2824	1661	1163	2824
F	4.1320	11.6762	10.1757	3.3477	12.5154	9.0037
R^2	0.0172	0.0661	0.0247	0.0140	0.0705	0.0219
Adjusted R^2	0.0130	0.0604	0.0222	0.0098	0.0649	0.0195
$Pr(g_{t-1}+g_t+g_{t+1})=0$	0.1572	0.0149	0.0219	0.2226	0.0109	0.0342
$Pr(b_{t-1}+b_t+b_{t+1})=0$	0.3013	0.0734	0.9230	0.4510	0.0822	0.9235

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The market return is highly significant (p<0.001) and as one would expect the 'good' news coefficients (g_t) on the event day are positive. The coefficients (g_t) are also either highly (p<0.001) or very significant (p<0.01), and the Wald tests of joint significance of 'good' events over the 3-day window are significant for the post-ASX and overall models. The 'bad' news coefficients on event day are negative overall and post joining ASX300. There are no significant 'bad' news coefficients on the days before and after the event day but the reversal of the coefficient sign may indicate some insignificant market adjustment, and the Wald tests show no significance over the event window overall. There are relatively few 'bad' news announcements and they are often 'low key'. As it is recognised that investors may not consider withdrawing

and losing a case as equally 'bad', regressions were retried where the dummy variables b_{t-1}, b_t and b_{t+1} were reset to zero if the case was one of withdrawal (models 19-24). A summary comparison of the adjusted returns is provided in Table 42 which shows some slight improvement in the b_t significance and the Wald test for bad events over the 3-day window is significant in the post-ASX sample, excluding withdrawals).

Table 42 Comparison of regression results of 'good' and 'bad' outcome models of IMF adjusted return with and without withdrawals

	Adjusted Return inc. withdrawals			Adjusted Return excl. withdrawals		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model12	Model13	Model14	Model22	Model23	Model24
Mkt Rtn	0.2821**	0.4384***	0.3429***	0.2863***	0.4421***	0.3461***
	(3.28)	(7.17)	(5.94)	(3.33)	(7.25)	(6.01)
g_{t-1}	-0.0077	-0.0003	-0.0046	-0.0078	-0.0003	-0.0047
	(-1.09)	(-0.08)	(-1.02)	(-1.11)	(-0.08)	(-1.03)
g_t	0.0218**	0.0209***	0.0213***	0.0217**	0.0209***	0.0213***
	(3.10)	(4.71)	(4.73)	(3.08)	(4.71)	(4.72)
g_{t+1}	0.0009	-0.0005	0.0001	0.0008	-0.0005	0.0000
	(0.13)	(-0.12)	(0.01)	(0.11)	(-0.11)	(0.00)
b_{t-1}	-0.0002	-0.0046	-0.0022	-0.0082	-0.0058	-0.0071
	(-0.01)	(-0.69)	(-0.32)	(-0.51)	(-0.72)	(-0.77)
b_t	0.0024	-0.0212**	-0.0082	-0.0002	-0.0288***	-0.0160
	(0.22)	(-3.16)	(-1.18)	(-0.01)	(-3.60)	(-1.74)
b_{t+1}	0.0122	0.0054	0.0093	0.0114	0.0060	0.0088
	(1.11)	(0.81)	(1.33)	(0.71)	(0.75)	(0.95)
Constant	-0.0000	0.0000	0.0000	0.0001	0.0000	0.0001
	(-0.04)	(0.07)	(0.03)	(0.07)	(0.06)	(0.12)
N	1661	1163	2824	1661	1163	2824
F	3.3477	12.5154	9.0037	3.2727	12.9610	9.1861
R^2	0.0140	0.0705	0.0219	0.0137	0.0728	0.0223
Adjusted R^2	0.0098	0.0649	0.0195	0.0095	0.0672	0.0199
$Pr(g_{t-1}+g_t+g_{t+1})=0$	0.2226	0.0109	0.0342	0.2330	0.0107	0.0361
$Pr(b_{t-1}+b_t+b_{t+1})=0$	0.4510	0.0822	0.9235	0.9133	0.0407	0.3699

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Arguably, the relatively weak significance of the 'bad' events could be due to a simple lack of statistical power as the number of events with financial losses are relatively low. One possible way of increasing the number of 'bad' events is to redefine "good" and "bad" events as those where the net financial gains were above and below the net mean of A$3,099,879 (N=78 Models 25-30) or median gain of A$756,334 including

withdrawals (Models 31-36) or A$1,031,649 excluding withdrawals (Models 31A-36A). Another variant would be to define 'good' as above the mean (A$4,611,709, N=55, Models 37-42) or median (A$1,475,975, N=55, Models 43-48) of all profitable outcomes and 'bad' as below the mean (A$846,770, N=14) or median (A$502,915) of all loss making outcomes. The Wald and *t*-test results (Appendix 5) do not however improve upon those in Table 42

5.2.ii ***Magnitude of the dummy variable***

As losses loom larger than gains in decision making (Kahneman & Tversky, 1979) and people often demand much more to give up an object than they are willing to pay to acquire it (Thaler, 1980) using dummy variables set to 1 is questionable as the magnitude of the gain/loss is not fully reflected.

To overcome this limitation, the dummy variables a_{t-1}, a_t, a_{t+1} =1 in Equation 3 are replaced in Models (49-54) so that $a_{t-1} = a_t = a_{t+1} = n_{t-1} = n_t = n_{t+1} = Nav$ where *Nav* is the magnitude of the gain (+ve) or loss (-ve) arising from the case expressed as a percentage of the net asset value of the company as at the end of the last half year preceding the event. The results of the regression are shown in Table 43.

A more current measure is to express the magnitude of the gain or loss as a percentage of the company's capitalisation on the day preceding the event window (variable *Cap*). Models (55-60) employ variables $c_{t-1} = c_t = c_{t+1} = Cap$ and the regression results are shown in Table 44.

A comparison of the two approaches using the adjusted returns (Table 45) suggests there is little to choose between the two sets of models with the capitalised version having very slighted better adjusted R^2. The capitalised version shows the day before the event overall to be significant (t=1.97) and the overall coefficient of the day after the event reverses the coefficient of the event day which implies that any change in the IMF return as a result of the case outcome may be short lived. However, the Wald tests do confirm an overall increase in returns during the event windows, but only for the post-ASX sample.

Table 43 Regressions results for models where the gain or loss of event is a percentage of net asset value

	IMF Unadjusted Return			IMF Adjusted Return		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model49	Model50	Model51	Model52	Model53	Model54
Mkt Rtn	0.3240***	0.4269***	0.3633***	0.2982***	0.4432***	0.3523***
	(3.92)	(6.85)	(6.49)	(3.49)	(7.27)	(6.14)
n_{t-1}	0.0007	-0.0001	0.0004	0.0007	0.0001	0.0005
	(1.62)	(-0.29)	(1.39)	(1.69)	(0.24)	(1.66)
n_t	0.0013**	0.0017***	0.0015***	0.0014***	0.0017***	0.0015***
	(3.13)	(5.32)	(5.09)	(3.32)	(5.30)	(5.20)
n_{t+1}	-0.0017***	-0.0005	-0.0013***	-0.0016***	-0.0005	-0.0013***
	(-3.98)	(-1.46)	(-4.37)	(-3.78)	(-1.62)	(-4.25)
Constant	0.0003	-0.0002	0.0001	0.0003	0.0001	0.0002
	(0.32)	(-0.24)	(0.21)	(0.28)	(0.12)	(0.34)
N	1661	1163	2824	1661	1163	2824
F	10.7494	19.7726	21.9775	9.9324	21.1699	21.1297
R^2	0.0253	0.0639	0.0302	0.0234	0.0681	0.0291
Adjusted R^2	0.0230	0.0607	0.0289	0.0211	0.0649	0.0277
$Pr(n_{t-1}+n_t+n_{t+1})=0$	0.6579	0.0407	0.2249	0.4824	0.0248	0.1339

t statistics in parentheses Source:MS-Issue04v01.do

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 44 Regression results for models where the gain or loss is a percentage of capitalised value

	IMF Unadjusted Return			IMF Adjusted Return		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model 55	Model 56	Model 57	Model 58	Model 59	Model 60
Mkt Rtn	0.3267***	0.4296***	0.3662***	0.3005***	0.4455***	0.3551***
	(3.96)	(6.90)	(6.55)	(3.52)	(7.31)	(6.20)
c_{t-1}	0.0010	-0.0003	0.0008	0.0011	0.0000	0.0009*
	(1.77)	(-0.42)	(1.71)	(1.87)	(0.07)	(1.97)
c_t	0.0019**	0.0036***	0.0023***	0.0021***	0.0035***	0.0024***
	(3.23)	(5.37)	(5.02)	(3.36)	(5.35)	(5.12)
c_{t+1}	-0.0028***	-0.0011	-0.0024***	-0.0027***	-0.0011	-0.0024***
	(-4.71)	(-1.58)	(-5.44)	(-4.39)	(-1.75)	(-5.18)
Constant	0.0003	-0.0001	0.0002	0.0003	0.0001	0.0003
	(0.36)	(-0.22)	(0.28)	(0.31)	(0.14)	(0.40)
N	1661	1163	2824	1661	1661	2824
F	12.6178	20.0139	24.6976	11.4227	21.4219	23.4237
R^2	0.0296	0.0647	0.0339	0.0269	0.0689	0.0322
Adjusted R^2	0.0272	0.0614	0.0325	0.0245	0.0657	0.0308
$Pr(c_{t-1}+c_t+c_{t+1})=0$	0.8706	0.0535	0.4582	0.6315	0.0352	0.2739

t statistics in parentheses Source:MS-Issue04v01.do

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 45 Regression results of IMF adjusted returns against outcome value (3 day event window)

	(Percentage of Net Asset Value)			(Percentage of Capitalised Value)		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model 52	Model 53	Model 54	Model 58	Model 59	Model 60
Mkt Rtn	0.2982***	0.4432***	0.3523***	0.3005***	0.4455***	0.3551***
	(3.49)	(7.27)	(6.14)	(3.52)	(7.31)	(6.20)
n_{t-1}	0.0007	0.0001	0.0005			
	(1.69)	(0.24)	(1.66)			
n_t	0.0014***	0.0017***	0.0015***			
	(3.32)	(5.30)	(5.20)			
n_{t+1}	-0.0016***	-0.0005	-0.0013***			
	(-3.78)	(-1.62)	(-4.25)			
c_{t-1}				0.0011	0.0000	0.0009*
				(1.50)	(0.08)	(1.97)
c_t				0.0021***	0.0035***	0.0024***
				(3.44)	(5.35)	(5.12)
c_{t+1}				-0.0027***	-0.0011	-0.0024***
				(-4.39)	(-1.75)	(-5.18)
Constant	0.0003	0.0001	0.0002	0.0003	0.0001	0.0003
	(0.28)	(0.12)	(0.34)	(0.32)	(0.14)	(0.40)
N	1661	1163	2824	1661	1163	2824
F	9.9324	21.1699	21.1297	11.4227	21.4219	23.4237
R^2	0.0234	0.0681	0.0291	0.0269	0.0689	0.0322
Adjusted R^2	0.0211	0.0649	0.0277	0.0245	0.0657	0.0308
$Pr(n_{t-1}+n_t+n_{t+1})=0$	0.4824	0.0248	0.1339			
$Pr(c_{t-1}+c_t+c_{t+1})=0$				0.6315	0.0352	0.2739

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.3 Models for a single firm with numerous single events

While the DV regression results in sections 5.1 and 5.2 above confirm that the market does appear to respond predictably on average to financial gains and losses associated with litigation outcome announcements, a more fundamental issue is whether it responds to individual events in a predictable way. In this section I conduct conventional single event studies on the CARs of announcement outcomes using the market model (MM) and then, for robustness, the constant mean return (CMR) model.

5.3.i *Market model of a single firm with numerous single events*

A rearrangement of equation 2 (section 3.1 above) based on Fama's (1977) single firm market model, enables each outcome event to be considered individually to compute an abnormal return AR_t equal to the firm's return R of on trading day t less the market predicted return βR_{mt} of a weighted index return from the ASX300. The coefficient α is the intercept, β is the observed coefficient from ordinary least square ('OLS') model estimates for the firm and ε_t is the error term, being that part of the stock return that cannot be explained by market wide events.

Equation 5

$$AR_t = R_t - (\alpha + \beta R_{mt} + \varepsilon_t) \qquad [5]$$

Using as event day the day the market was first open and investors could act on the outcome announcement, regressions were conducted with 7 different estimation windows for the event day commencing at event day -11 and backwards to between event day -100 and event day -400 (see Appendix 7 for descriptive statistics). Because, announcements may be posted in the late afternoon prior to closing and investors may not respond till the following day or even later and in the alternative, as news may leak in advance of the formal announcement, a 5-day event window (announcement date ±2 days) was used.

Table 46 Alpha and beta ranges for various event windows

Est Win period	Obs in Est win	Range of alpha values		Range of Beta Values	
-100 to -11	89	-0.0062	0.0062	-0.8201	1.0364
-150 to -11	139	-0.0051	0.0060	-0.6702	1.0478
-200 to -11	189	-0.0051	0.0050	-0.4522	0.9244
-250 to -11	239	-0.0051	0.0038	-0.5999	1.1885
-300 to -11	289	-0.0051	0.0042	-0.2924	1.2716
-350 to -11	339	-0.0051	0.0030	-0.3238	1.0989
-400 to -11	389	-0.0051	0.0026	-0.2975	0.9279

The alpha value (α) for all events lies between -0.0062 and +0.0062 and is occasionally significant ($p<0.05$) (Table 46). Beta, varies dramatically from -0.8201 to 1.2716, not only over time, as expected from the analysis in section 4.7, but also

with changes in the length of the estimation window (see Appendix 8 for regression results). Varying the length of the estimation window increases the number of events that have a significant beta coefficient but early case outcomes ought to be excluded due to an insufficiently long estimation period.

If a non-significant event's beta value from one model is compared to a significant beta from another model one might expect the variation to be large[389] but even where all the betas are highly significant ($p<0.001$) the spread can be great. Thus in event 57 where the beta spread is from 0.4302 to 0.9442, both the predicted normal return and the abnormal return will vary. On this particular occasion the market return was only -0.015 and consequently the impact in real terms is immaterial when compared to the minimum share price change permitted by the market, but had the market return or the share price been greater, additional inaccuracy could have resulted.

Significance tests[390] were applied to both the daily (Appendix 9) and the cumulative abnormal return (Appendix 10) on each of the 5 days in the event window. The number of significant events by model based on a daily abnormal return is shown in Figure 20 and a similar graphic for the cumulative abnormal returns is shown in Figure 21. The cumulative results show a more consistent result across the models and fewer events are significant. Analysis of the CAR results shows that only 19 of the 79 events had a significant result on one of more of the days in the event window.

As beta has been shown to vary over time and the market model analysis above detected relatively few significant events, case outcomes have also been analysed using the constant mean return method as this ignores beta.

[389] Event 9 is the extreme example where the beta spread is from -0.3395 to +1.2716 i.e. 1.6111.

[390] i.e. the results that indicate that the abnormal return is outside 1.96*, 2.575** and 3.09*** standard deviations of the mean [i.e. the 95% 99% and 99.9% intervals].

Figure 20 MM Abnormal Returns - number of significant events by model

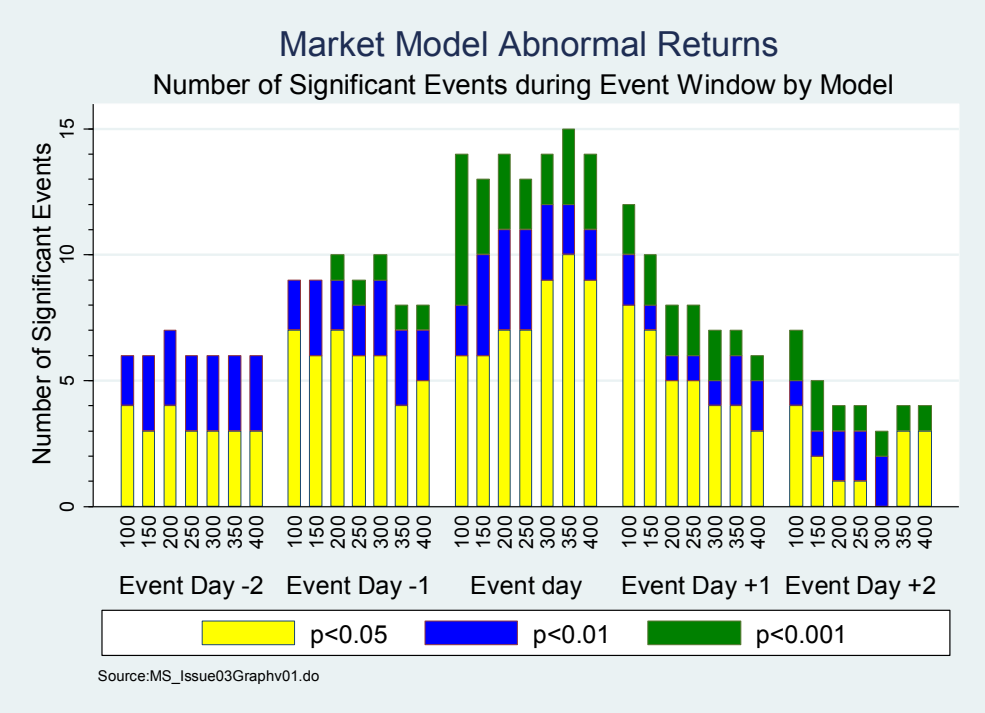


Figure 21 MM Cumulative Abnormal Returns - number of significant events by model

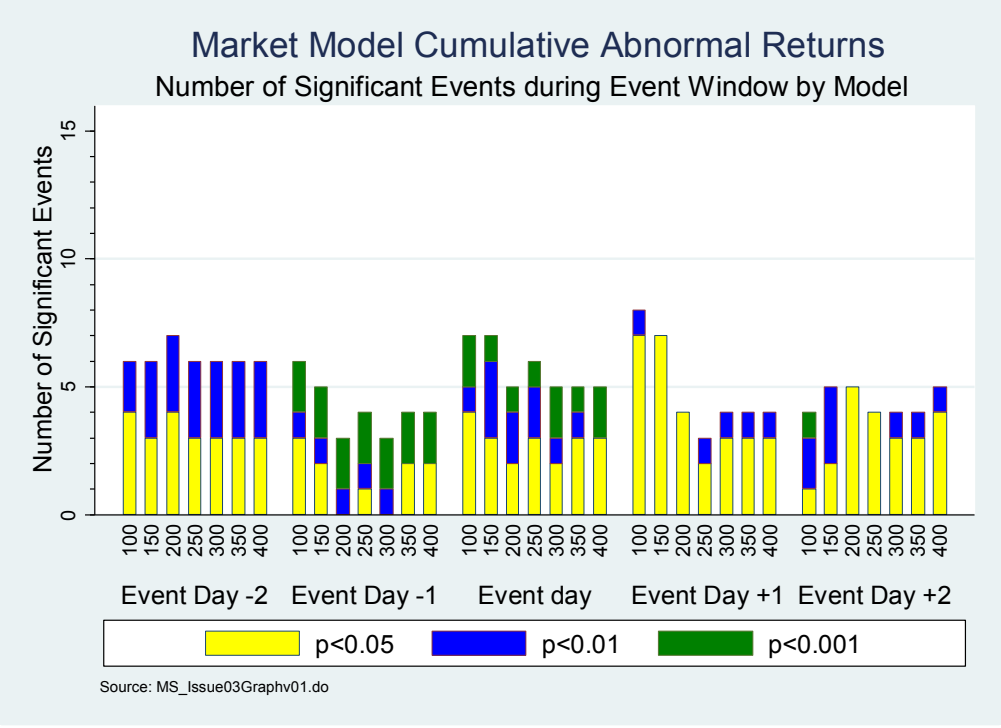


Figure 22 CMR Abnormal Returns - number of significant events by model

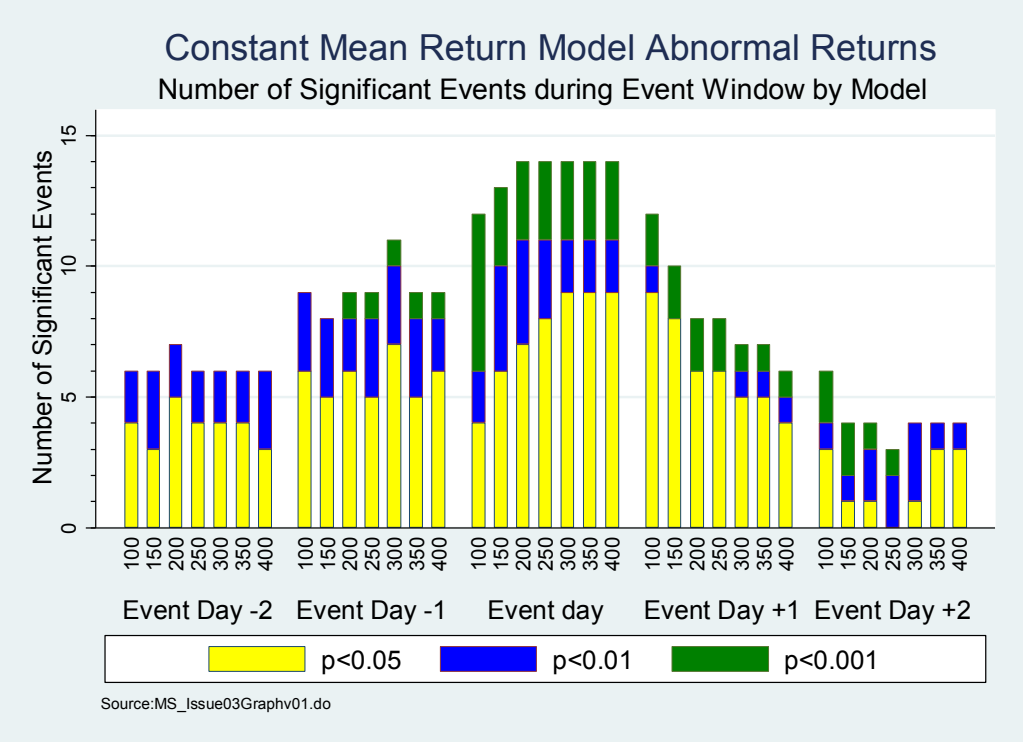
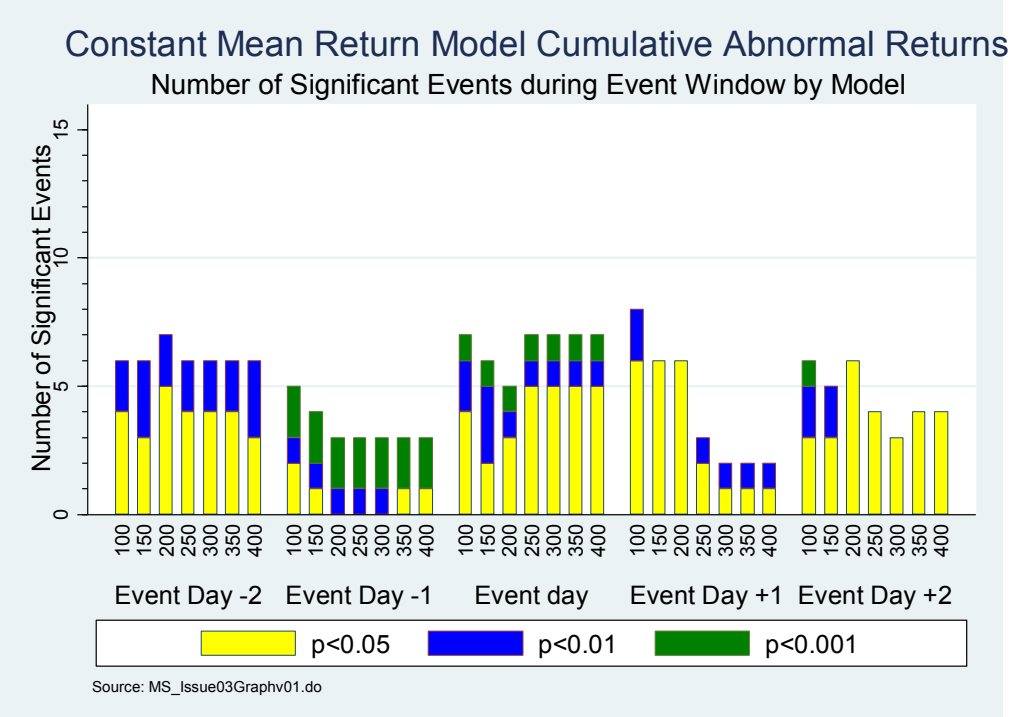


Figure 23 CMR Cumulative Abnormal Returns - number of significant events by model



5.3.ii *Constant mean return model*

Using the same estimation and event windows as above, test statistics have been computed for both daily (Appendix 11) and cumulative abnormal returns (Appendix 12) using the constant mean return model described earlier.

Significance tests were applied to both the daily and the cumulative abnormal return on each of the 5 days in the event window. The number of significant events by model based on a daily abnormal return is shown in Figure 22 and a similar graphic for the cumulative abnormal returns is shown Figure 23.

Both the MM and CMR models give similar results notwithstanding the variations in beta in the MM models. It is also apparent that increasing the estimation window does not materially change the number of events that are detected as significant. Overall few case results are very ($p<0.01$) or highly significant ($p<0.001$) and roughly 80% of all case announcements show no degree of significance.

It was shown in Table 37 that various categories of firm specific announcements can have a significant impact on the firm's market return and an issue with both of the above approaches is that, whilst a longer event window leads to a more stable beta and mean, it is more prone to the influence of intervening events. The above models also assume that the magnitude of the case outcome is immaterial and that gains and losses are treated in a similar fashion. Furthermore, the same results are expected irrespective of whether IMF is listed in the ASX300 (when more trading activity might be expected) or not.

Although the market responds to outcome announcements overall, the analysis in this section by individual event shows that very few events have a significant impact. In the next section additional variables will be introduced to address some of the remaining issues.

5.4 Market model of a single firm with multiple events and multiple dummy variables.

In order for a case outcome event to be considered 'significant' the abnormal return in the event period has to be nearly twice (1.96) the standard deviation of the abnormal returns (AR) during the estimation window. The AR during that estimation window is affected by events that take place during that window including other case outcomes and corporate events. If these events are included without adjustment the variation to the mean is likely to increase and as a result statistical tests for significance of case outcomes become more challenging and could ignore what might otherwise be an extreme event (Brav & Heaton, 2015).

One way to control for such confounding events is to introduce a separate dummy variable for each event, the effect of which will be to create a zero abnormal return on that date. The alternative is to simply omit those observations from the regression estimation window, however, there is an impact on the Gelbach SQ test[391] which relies on identifying the residual values for the centile results in the tail of the distribution.

The multiple dummy approaches used in this section to alleviate the shortcomings in the market models above, are the limited intervention approach ('LIA') and the comprehensive intervention approach ('CIA') approaches.

5.4.i *Limited intervention approach*

In the LIA I introduce separate event binary dummies equal to 1 for each day on which an outcome announcement is made and separate binary dummies for each of the single days either side. Thus for 79 events 237 variables were created. Using an estimation window which ends 11 days prior to the event and commences 200 days prior to the event, the IMF unadjusted return is regressed against the ASX300 return and the binary dummy variables (excluding the dummy variables for the event in question). The IMF return is then predicted for the event window of 1 day before to 1

[391] (Gelbach, Helland, & Klick, 2013)

day after the event and a SQ test (Gelbach, Helland, & Klick, 2013) of the daily and cumulative abnormal return during this event window is then conducted. This process is then repeated for estimation windows commencing 250, 300, 350 and 400 days prior to the event. The daily and cumulative abnormal returns and their SQ significance are shown in Appendix 13. The regression analysis above was then re-run with the addition of the *Cap* variable (see 5.2.ii above). The resulting daily and cumulative abnormal returns and their SQ significance are summarised in Table 47 and detailed in Appendix 14.

Table 47 Summary of SQ significant events on a daily and cumulative basis for various Estimation Windows

		Daily Abnormal Returns				Cumulative Abnormal Returns			
Est. Win.	Sig.	Day-1	Day0	Day+1	Unique	Day-1	Day0	Day+1	Unique
200 Days	*	13	12	7	20	13	16	13	26
	**	0	0	0	0	0	0	0	0
	***	2	3	6	9	2	5	11	12
250 Days	*	12	11	9	21	12	17	15	27
	**	1	2	1	4	1	0	1	0
	***	1	2	2	3	1	6	7	9
300 Days	*	11	10	7	19	11	15	15	25
	**	1	1	1	3	1	0	2	1
	***	1	4	1	4	1	5	7	9
350 Days	*	9	10	6	19	9	14	8	17
	**	0	1	1	2	0	0	3	3
	***	1	4	1	4	1	5	7	8
400 Days	*	10	9	6	18	10	11	9	16
	**	0	2	1	2	0	0	3	3
	***	1	3	2	4	1	7	6	9

* sq <0.05, ** sq<0.01, ***sq<0.001

As the event abnormal return can be significant on more than one day, the number of unique events is also shown. Less than 50% of the events (N=79) examined had a significant impact on the market return.

5.4.ii *Comprehensive intervention approach*

To control for company specific events other than case outcomes which may result in bias and error in the event effect estimates[392], I use the CIA. I follow Aktas et al

[392] Hakala (2010) concludes that it is preferable to include 'false' (i.e. erroneous or incorrectly specified) events than exclude significant 'accrual' events as statistically the former have a minimal

(2007) and form a two state world of announcements and non-announcements by creating a dummy variable equal to 1 for the day on which IMF make an announcement(s) to the market[393] and separate variables for the preceding and following day. Adopting the same process as in the LIA, I compute daily and cumulative abnormal returns which are subjected to the Gelbach SQ test (Appendix 15). The regressions are then repeated with the addition of the Cap quantum variable (Appendix 16). In total, the LIA and CIA analysis have involved 1,580 event regressions[394].

Although the intervention approach controls for intervening events the impact of individual dummy variables is to create nil residual values on those particular dates. As expected from section 5, the vast majority of the dummy variables are insignificant. By removing zero value residuals, the number of observations in the estimation window is reduced and consequently the SQ significance test statistic becomes more demanding[395]. For this reason, the CIA with Cap was rerun using only those announcements that were determined to be significant in section 5 and the results are reported in Appendix 17.

Visual analysis of each event, using each of the methods: MM, CMR, LIA and CIA, computed over various estimation windows, have been presented in Appendix 18. Each figure comprises 4 graphs which have common axis and legends.

Event 9 relates to Case 18 - Doran Construction and provides the explanatory example in Figure 24 below. The event occurred on Friday 9th July 2004 (i.e. event window day 0) when it was announced that the claim had been unsuccessful and dismissed

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average effect of slightly increasing the standard errors of the estimates in the market model relative to the actual standard errors whereas the latter does result in a significant loss of precision in estimating the market model parameters relative to the True Model.

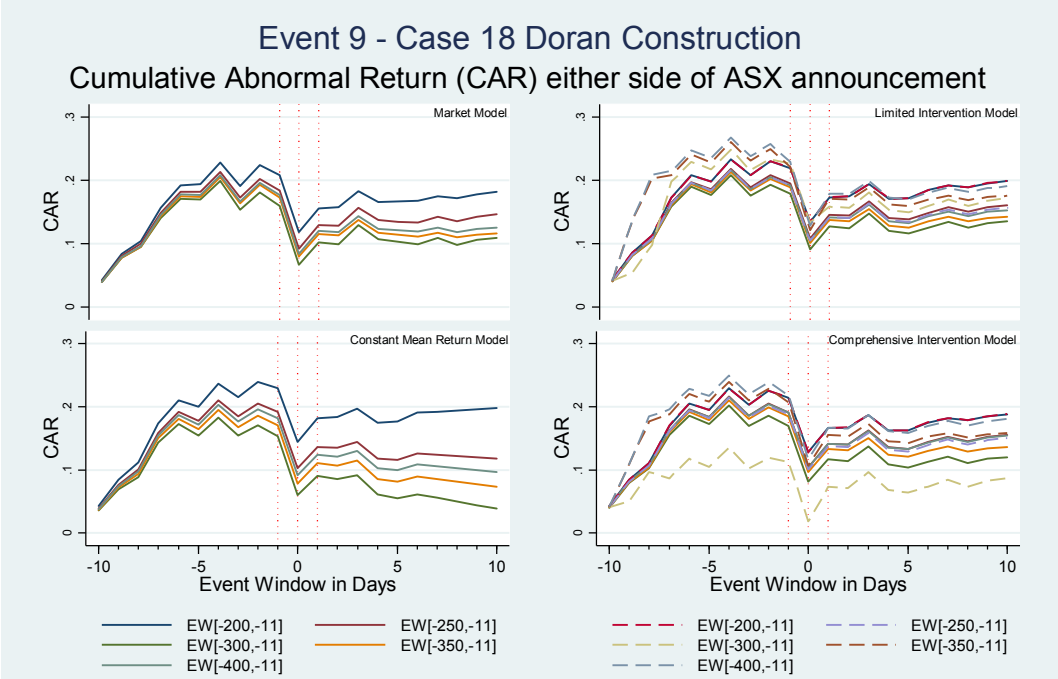
[393] This simple model could be developed further by weighting the dummies according to the number of announcements on a particular day and/or categorising the announcement into various types. The dummy representing the event announcement is excluded.

[394] The descriptive statistics, coefficients and results of each regression have been saved to an Excel workbook which is available from the author.

[395] Assume 400 observations ranked n1-n400 in increasing order of size, then the 2.5% and 97.5% residual are taken from observations 10 and 390. If 40 observations with a zero value are removed then original observations n=9 and n=391 become the test value.

with costs which were likely to amount to about $400,000. The top left graph plots, for different lengths of estimation window, the CAR for the market model as calculated in section 5.2.

Figure 24 Comparative graphics for Event 9 of cumulative abnormal returns under various event methods and over various estimation windows



case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

From Appendix 9 it can be seen that the negative abnormal return on day 0 was significant but from Appendix 10, the 5 day CAR (-2 to +2) was not. The bottom left graph is based on the CMR model of section 5.3.ii. The mean daily return during the estimation window varied from -0.0008 [EW 200,11] to 0.0030 [EW 300,11]. The abnormal return is greater when the mean is low and consequently [EW 200,11] is the top line plot and [EW 300,11] is the bottom.

The right hand graphs are the results of the Intervention analysis approach of section 5.4 and the dashed lines are for those models that have a coefficient for the CAP magnitude variables. The top right graph is for the LIA model. On day -8 (Tuesday

29 June 2004) the Supreme Court of Victoria handed down judgement[396] in favour of the claimants in an earlier event (event 8) and IMF would realise a substantial gain (the ratio of gain/NAV = 15.30 and gain/CAP = 6.145). There was no impact from CAP on the predicted return for EW [200,11] and EW[250,11] as the coefficient was effectively zero and little in the remaining windows (EW [300,11] , EW [350,11] and EW [400,11]) as the coefficients are 0.0032, 0.0069 and 0.0078 respectively.

The bottom right graph is based on the CIA model which uses all announcements. In addition to the event announcements on days -8 and 0 there were sensitive announcements on day -4 relating to a new issue of shares in respect of share options, on day -3 regarding an update on the settlement of event 8, and day +10 regarding a further update on event 8 … plus a non sensitive announcement on day +6 regarding the signing of a new funding agreement. As these events occurred after the estimation window they do not attract a dummy coefficient.

5.5 Discussion of results

The analysis in section 4.7 shows that IMF's performance is not closely correlated to that of the market. Since joining the ASX300 the overall model R^2 value has increased from 0.007 to 0.039 but simply being in the ASX300 is not a significant explanatory variable (t = -0.13) of the IMF return.

Section 5.1.ii supports the generalised view that investors consider new litigation funding contracts as normal business and as the timing and nature of the outcome have considerable uncertainty, an announcement is not a significant event. Announcements regarding case outcomes (Table 39) reduce that uncertainty and are highly significant (t=3.30) but this simple model only explains a small part (adj R^2=0.017) of the movement in IMF returns.

Sections 5.2 and 5.3 tested the possibility that the market is capable of adjusting to the risks faced by IMF by examining whether investors and/or market-makers have

[396] *Newman v Financial Wisdom Limited* [2004] VSC 216.

responded predictably to "good" or "bad" news about the claims IMF supports. After the company joined the ASX300 Table 42 shows a highly significant response to both good (t=4.71) and bad (t=-3.16) news and more so when withdrawals cases are excluded (t=4.71 and t=-3.60). However, a regulator concerned about solvency is more likely to be concerned about smaller and newer companies and the pre ASX300 results failed to detect any response on the 'bad' case outcomes (including withdrawals t=0.22; excluding withdrawals t = -0.01) although a very significant (including withdrawals t=3.10; excluding withdrawals t=3.08) result was found for the good outcomes. Replacing the dummy variables for good and bad with a magnitude variable based on net asset value or capitalised value (Table 45) improved the explanatory power of the models (overall adj R^2 = 0.031) and hints that a market adjustment takes place on the day following an announcement.

The results (Appendix 17) from the CIA using the ratio of gain/loss to net asset value and only announcement variables previously found to be significant produced a varying number of significant results depending upon the estimation window used (Table 48).

Table 48 Unique events identified as Gelbach significant for varying length of estimation window

	Average Abnormal Return (AAR)				Cumulative Abnormal Return			
Estimation Window	* q<.05	** q<.01	*** q<.001	Total[397]	* q<.05	** q<.01	*** q<.001	Total[397]
[-200,-11]	19	0	14	33	15	0	23	38
[-250,-11]	19	1	11	31	21	1	15	37
[-300,-11]	17	2	10	29	21	1	15	37
[-350,-11]	18	2	9	29	23	1	13	37
[-400,-11]	19	3	6	28	20	2	10	32

Cumulative Abnormal Returns for 15 cases in the model with an estimation window of [-300,-11] are highly significant (q<.001) according to the Gelbach's test (q), and a further 22 cases are very significant (q<0.01) or significant (q<.05). The 15 highly

[397] N.B. This is the total number of events that were significant. Some events may be significant at different degrees on different days and thus this is not the sum of the days.[398] The value of the case prior to settlement will also take account of the probability of losing c.f. footnote 386.

significant cases CAR are summarised in Table 49 and a further case (Table 50) which is highly significant (q<.001) in the daily AR analysis but not in the CAR analysis. Some of these cases are discussed further in Appendix 19. It is notable that all the highly significant cases are wins.

Table 49 CAR highly significant case outcomes

Evt No.	Event date	Case	SQ sig (q)	Outcome	Settled By	Gain/(Loss) A$
2	16-Sep-02	Tobacco Wholesalers	***	Good	Settled	7,000,000
7	10-Jul-03	NSW Supermarkets	***	Good	Settled	816,000
13	17-Nov-05	Global Market Link	***	Good	Settled	1,000,000
16	23-May-06	Westpac	***	Good	Settled	1,362,000
19	22-Sep-06	ACT Pty Ltd		Good	Settled	460,000
23	13-Dec-06	Finance Brokers		Good	Settled	7,302,467
40	23-Apr-08	Wright v Wright	***	Good	Settled	19,192,687
42	19-May-08	Aristocrat Leisure Ltd	***	Good	Settled	21,674,959
45	31-Oct-08	Downer EDI		Good	Settled	5,366,144
62	23-Nov-10	Pan Pharma	***	Good	Settled	18,089,435
64	1-Feb-11	National Potato		Good	Judgement	9,707,945
67	10-May-11	Oz Minerals		Good	Settlement	12,801,183
71	7-Oct-11	Koonara Mgt.		Good	Settled	3,278,630
72	21-Feb-12	Kimberley Global	***	Good	Settled	1,437,918
75	09-May-12	Centro	***	Good	Settled	41,779,280

Legend: *q<0.05, **q<.01 ***q <.001

Table 50 AR Significant case outcomes

Evt No.	Event date	Case	SQ sig	Outcome	Settled By	Gain/(Loss) A$
69	22-Aug-11	Credit Corp Group		Good	Settled	1,426,627

The Centro case outcome is interesting, not only because of its magnitude but also because it was a mid-trial settlement. Priest and Klein (1984) hypothesised that cases that proceed to trial have an overall probability of success approaching 50%. The result of the event study is that the market increased IMF's capitalisation by about A$11m or 25% of the financial gain value[398], the implication being that the remainder

[398] The value of the case prior to settlement will also take account of the probability of losing c.f. footnote 386.

of the gain was already imputed into the capitalisation and the market was more optimistic than theory might otherwise predict.

Perhaps more interesting are the highly relevant case outcomes that do not appear to have any impact on the market. Innovatorone/Collyer Bristow (Event 76) was the single biggest loss in IMF's history (A$4.9m see appendix 6) and as the outcome was determined by a court judgement it could have been a shock but none of the event studies conducted was able to detect any significant abnormal return despite the loss being approximately 2.5% of market capitalisation.

Similarly, not all large gains result in significant movements in the market return. Events 55 (gain of A$7.3m) and 74 (a gain of A$10.4m) were all valuable outcomes without appearing to be statistically significant. These cases were finalised by settlements and it's possible that there was some suspicion amongst investors that an outcome was due. Visual inspection of the graphs in appendix 18 show changes in the return even though the results were not statistically significant.

In the context of litigation funding, the determination of a single case may impact a number of cases within a funder's portfolio. In the history of litigation funding in Australia the non IMF funded *Fostif*[399] decision of 1 April 2005 was extremely important[400] as the New South Wales court of appeal overturned a lower court decision and determined that a litigation funder, whose main purpose was to profit from investment in a portfolio of legal claims, did not warrant a stay for abuse of process i.e. litigation funding is legal.

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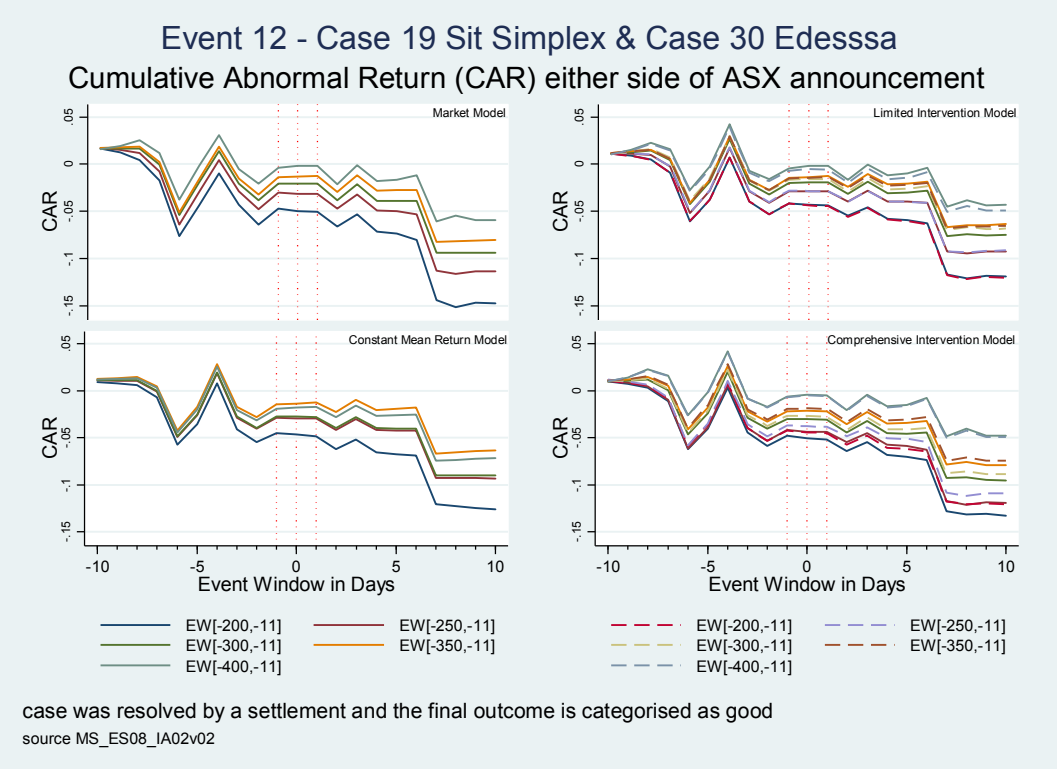
[399] *Fostif Pty Ltd v Campbells Cash and Carry Pty Ltd* [2005] NSWCA 83.

[400] *"In general, it is simply no business of a defendant to be taking up the cudgels on behalf of the funded litigants who are either parties or represented persons, invoking interlocutory processes ostensibly on behalf of the funded litigants but in reality in its own interest...*

Defendants may in proper cases seek security for costs and they may obtain special costs orders against funders if the proceedings fail. But they have no entitlement to be protected from litigation where the Appellants have been indemnified by an intermeddler, against the negative effect of adverse costs orders" (Fostif Pty Ltd v Campbells Cash and Carry Pty Ltd [2005] NSWCA 83 at 119 & 120).

IMF (2005b) made an announcement about this case[401] on the 5th April 2005 and on the following day announced that it was funding 3 new cases and had profitably settled two. The settlement cases are outcome event 12 and the relevant graphic from appendix 18 is reproduced below as Figure 25. It is apparent from Figure 25 that all this positive news had no significant impact on IMF's return.

Figure 25 Abnormal returns surrounding the *Fostif* decision



Note: Day 0 is Wednesday 6th April 2005; Day -1 is Tuesday 5th April 2005 and Day -3 is Friday 1st April 2005.

6 Interpretation and conclusions

The objective of this chapter was not to test for "market efficiency" per se, but rather an attempt to test whether markets have responded predictably to news about case outcomes, as evidence in support of the possibility that the market is capable of adjusting to the downside risks, such as insolvency, would be of interest to regulators acting on behalf of stakeholders.

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401 "*The judgment is extremely important for the future of professional litigation funding in Australia…It is sensible to think that the satellite litigation of this type is likely to diminish consequent upon this judgment*" (IMF, 2005a).

In this chapter event study methodology using both the 'market return' and the 'constant mean' method has been used to look at how the market reacts to the funder IMF's announcements of new cases and cases that have reached an outcome. Single firm event study methodology has limitations[402] but it is a method that has been recognised by the courts, especially in the USA, for measuring changes in corporate value following one off events and will consequently be an approach recognised by many in the legal and regulatory fraternity. The power of the analysis improved when a single firm, multiple event study was undertaken which took account of all significant announcements as well as the ratio of the gain/loss to the net asset value of the company.

Data on IMF has been used because they are of a size, not only to be quoted on a major exchange, but over the last 5 years have been one of the larger companies on that exchange. In common with other litigation funders, the actual volume of IMF shares traded on a weekly basis is low (Figure 9), and consequently the market may not be efficient in promptly imputing market announcements into prices. *Cammer v Bloom*[343] set criteria of 2% and 1% for determining efficiency in a market. In IMF's case of the 624 full weeks studied only 44 (7.1%) would "*justify a strong presumption that the market for the security is an efficient one*" and only 138 (22.1%) "*would justify a substantial presumption*" that the market for the security is an efficient one.

Stock which is traded infrequently can also lead to beta estimates which are severely biased downwards (Dimson, 1979). Furthermore, infrequently traded stock often has a low share price, giving rise to increased measurement error as a result of price rounding. The traded volume of IMF shares increased following admission to the ASX300 (Figure 9) as has the company's beta, but this does not mean that public investors increased their trading as it may simply be a symptom of an increase in intra-day inter-dealer activity, accordingly it should not be inferred that any closer analysis of the core business is being undertaken. Further analysis of intraday trading pre and post admission to the ASX300 is an obvious extension of this work. Another

[402] cf Brav & Heaton, 2015

interesting extension of this work would be to consider whether the market treats IMF and other litigation funders in the same way as other enterprises where the concern is primarily short term cash and dividend flow.

Table 51 Extract of IMF Statement of Completed Matters as provided to Productivity Commission

Outcome	No of Cases	Total Income generated by IMF	Net income generated by IMF	Average funding duration
Settled	95	A$ 358,853,330	A$243,876,977	2.53
Judgements - Won	14	A$69,980,153	A$44,460,211	2.72
Judgements - Lost	5		(A$3,165,646)	2.35
Withdrawn	35	A$ 224,766	(A$4,118,560)	1.32
Total Portfolio	**149**	**A$429,058,249**	**A$281,052,982**	**2.29**

Source: IMF (2013b)

Table 52 IMF cases completed in Financial Year ended 30 June 2012

	Case announced as settled	investment portfolio value at 30 June 2011	Total Litigation contracts income	Total litigation expense (including overheads)	Net gain on disposal of intangible assets
Credit Corp	Aug-11	15,000,000	4,354,813	2,928,186	1,426,627
Babcock & Brown	Sep-11	50,000,000	7,265,000	1,409,396	5,855,604
Thomson Playford	Oct-11	10,000,000	4,593,529	1,314,899	3,278,630
National Potato	Nov-11	70,000,000	14,506,945	4,799,000	9,707,945
Centrex	Feb-12	5,000,000	1,937,788	499,870	1,437,918
Uniloc	Mar-12	150,000,000	7,295,922	3,647,961	3,647,961
Transpacific	Apr-12	65,000,000	13,004,397	2,548,979	10,455,418
Centro	May-12	200,000,000	61,976,563	20,197,283	41,779,280
Collyer Bristow	May-12	60,000,000		4,946,215	-4,946,215
		625,000,000	**114,934,957**	**42,291,789**	**72,643,168**
Sons of Gwalia			1,050,774		1,050,774
Others			1,821,634	4,948,530	-3,126,896
Totals in A$		**625,000,000**	**117,807,365**	**47,240,319**	**70,567,046**

Source: IMF (2012a, p.13)

As an illustration of the financial impact in any one year, Table 52 sets out the cases that IMF completed in the financial year ending 30 June 2012. The definition of net gain and net income in Table 51 and Table 52 differ in that Table 51 does not include as costs internal overheads and capitalised interest (IMF, 2013b, n.2).

The year ended 30 June 2012 was excellent for IMF because it made its highest ever operating profit (A$61.4m) and increased its net asset value by A$25m (28%) from A$87m to A$112m (IMF, 2012a). The importance of the Centro[403] and the Innovatorone/Collyer Bristow [404] cases to IMF's results are obvious and given the size of the gains and losses with respect to the IMF's net asset value, it is natural to expect the market to show some proportional reaction.

However during the same period the market capitalisation *fell* by A$10m from A$190m to A$180m[405]. The fall took place during the first half year followed by a recovery in the third quarter but not to the opening level (Figure 26). The final quarter is of particular interest as between March and June 2012 the market capitalisation of IMF had increased by AS$12m and during a 2-week period in May 2012 IMF announced both its biggest litigation success/gain to date (net gain A$41.78m) being

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[403] The Centro cases involved the two connected companies of Centro Properties Group ('CNP') and Centro Retail Group ('CER') and their reporting to shareholders for the 2007 financial year. The shareholder class actions alleged that in the 2007 annual report CNP failed to disclose some A$1.5 billion of short-term liabilities by classifying them as non-current liabilities, and failed to disclose guarantees of short-term liabilities of an associated company of about US$1.75 billion that had been given after the balance date. In the case of CER, the 2007 annual reports failed to disclose some A$500 million of short-term liabilities that had been classified as noncurrent (*ASIC v Healey* [2011] FCA 717, §9). The 6,000 claimants were divided into 2 groups and litigated by Australia's two largest legal firms – those which were funded by IMF and represented by Maurice Blackburn ('MB') and those funded by CLF and represented by Slater & Gordon ('SG'). MB group members, which included large financial institutions, received A$150m of the A$200m settlement. The SG group comprised 5,000 mainly small claimants (Maurice Blackburn, 2012; Slater & Gordon, 2012).

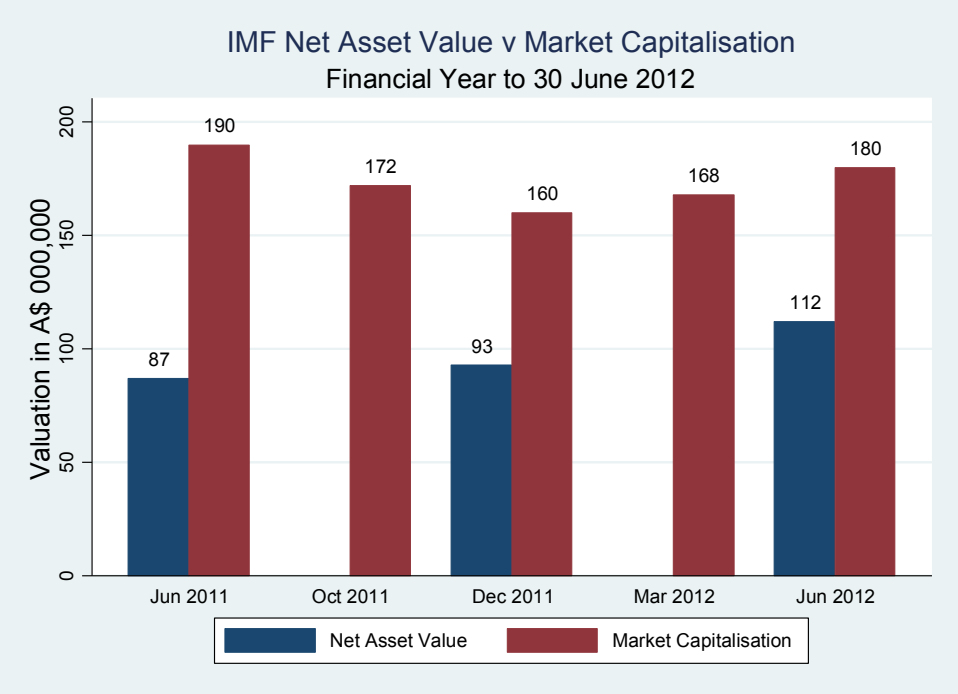
[404] The claimants were investors in the Innovator schemes which were presented as offering fiscally efficient investments in information technology and communications technology. Investors hoped to claim tax relief on sums invested by them (including leveraged amounts) making the investments fiscally efficient. Over 700 investors subscribed to 19 investment schemes and subsequently they claimed that the scheme was a sham and a fraud as they never became members of the investing partnerships and their subscription monies were never paid to the partnership vehicles as intended.

The schemes were promoted by Innovatorone Plc ('Innovator') and others. Collyer Bristow, was a firm of solicitors (now dissolved), that is alleged to have received the claimants' money which was misappropriated and lost. Mr Bailey was an equity partner in Collyer Bristow and is said to have been a director of Innovator. Collyer Bristow were said to be liable for the dishonest conduct of Mr Bailey and a Mr Roper in assisting Innovator to act in breach of trust and fiduciary duties owed to the claimants, and also liable to account for subscription monies paid by claimants, as well as for claims in negligence, breach of contract and breach of fiduciary duty and for other relief.

[405] Market capitalisation based on Bloomberg prices. At the 31 December 2011 the number of shares in issue was 123,201,716 and the net asset value of IMF was A$93m or A$0.7546/share (IMF, 2012b). At that time the share price and market capitalisation was A$1.30/share and A$160m respectively. At 30 June 2012 the net asset value of IMF was A$112m or A$0.9067/share and the share price and market capitalisation was A$1.46 & A$180m.

the 'Centro' cases and its biggest failure to date (net loss A$4.95m) being the Innovatorone/Collyer Bristow case.

Figure 26 IMF net asset value compared to market capitalisation



Growing a business requires working capital. IMF announced in its 2009 annual report that it intended to grow the claim value of its portfolio of claims from A$1 billion to A$2 billion over the next two years (IMF, 2009a, p.8). A year later the Managing Director wrote, in a report published on the same day but separately from the Annual report[406], "*Our liquidity requirements travel almost in tandem with our growth…We have to hold $50m in cash moving up towards $75m as we get closer to $2bn of cases under management.*" He then went onto say that as a result of the liquidity requirement the ability to pay dividends and staff bonus even during profitable periods was inhibited and it also results in a lower overall return on equity and funds invested. Although IMF had grown its portfolio of case value in the year ended 2010 from A$1.06B to A$1.40B its cash proceeds from litigation funding had fallen from A$70.1m to A$48.7m whilst its cash expenditure on litigation funding had

[406] ASX announcement 24 August 2010 "Managing Directors Report".

risen from A$33.5m to A$45.2m. As a result, cash reserves had fallen from A$61.2m to A$43.0.

The risk all funders face is that delays in income as a result of delays in settling winning cases and/or losing cases, coupled with an expanding business, can quickly result in severe cash pressure which can lead to insolvency. A regulator of litigation funders will be concerned to ensure that a funder remains solvent and will therefore revise his opinion on ongoing solvency as cases are won and lost.

In trial cases the court's decision is private information and revelation to corporate insiders and external investors of information pertinent to profits is made at the same time. Although a judgment may not be the final resolution of a case it does provide new information which may impact investors' beliefs and as a result market prices may move. Palmer & Sanders (2010) found that the US market largely ignores blockbuster awards where the ratio of award to market capitalisation is less than 9%. In a litigation funding context, the determination of a single case may impact multiple cases within the funder's portfolio. Losing a case at trial may lead to a substantial loss, not only of the funder's investment and contingent gain, but also additional adverse costs may be incurred in some jurisdictions (including Australia). If the market is be considered as a proxy for a regulator, it is of some concern that neither the *Fostif* positive judgement nor the *Innovatorone/Collyer Bristow* negative judgement appear to have resulted in a detectable and significant market reaction.

The lack of reaction to the positive news in *Fostif* would not be of great concern to a regulator. However, if the market is to act as an adequate proxy for a regulator who is primarily concerned with solvency issues, one would expect decisions such as Innovatorone/ Collyer Bristow to register as some form of a 'red flag'. In the absence of such reaction, I conclude that the market is an inadequate proxy for a concerned regulator. It would be wrong to generalise this result across the litigation funding industry as a whole but, as other research has shown, the markets' reaction to announcements is not always consistent with the entity's fundamental value (Cornell, 2001).

IMF are possibly the most transparent litigation funder in the world. Other litigation funders have a shorter history than IMF and publicly disclose considerably less information on their activities which inhibits similar analysis. As a result, if solvency is to be monitored effectively, alternative methods will need to be employed.

Chapter 5 Conclusions

1 Introduction

Legal services are important as they address issues affecting individual rights and are part of a wider social-political-moral-cultural landscape that makes up 'The Law' that governs society. Litigation funding could be classified as a legal service[407] and therefore any policy decision on the regulation of litigation funding should be considered in this wider context as well as the narrower ones such as economic efficiency and market failure.

Decker & Yarrow (2010) argued that the economic rationale for oversight of legal services related to issues surrounding quality of service in a broad sense and in particular the inability of consumers to assess quality because of issues arising from information asymmetries between supplier and consumer. They also commented:

> *"A commonly observed response to asymmetries of information in markets is via the development of reputation, and self-regulation can be seen as a collective attempt among suppliers to maintain certain reputational standards of conduct/performance. However, well-recognised problems can arise when the remit of self-regulation moves beyond what is necessary to certify quality".*

In Chapter 1 section 1.6, I noted that Jackson LJ was alive to these issues in his review of civil litigation costs and his prime concern was whether the funder was in a position to honour obligations to the client and a winning defendant. In the post Jackson era various issues of concern have arisen with litigation funding (Chapter 1 section 1.7). In chapters 3 and 4 I looked at the information which is available to investors and other litigation funding stakeholders and found that there is inadequate information disclosure to make a fully informed opinion to assuage these concerns.

[407] The Access to Justice Act 1999 section 28 prospectively added section 58B in respect of litigation funding to the Courts and Legal Services Act 1990 but this section has not been promulgated.

In chapter 3, I looked at the accounting rules and treatment of litigation funding contracts and found various issues that led me to conclude that currently the regulation of financial statements does not require disclosure of sufficient information to fulfil stakeholder needs. Of particular significance was the finding that accounting standards permit at least two different ways of representing funding contracts in financial statements. That is undesirable as it means identical assets/liabilities can be portrayed with different values making meaningful comparisons across entities difficult. A further issue is that insufficient information is presented to understand the amount and timing of committed and contingent future cash outflows and that is detrimental to an accurate assessment of solvency.

In chapter 4, I found that very few litigation funders are quoted and concluded, that as a stock exchange market does not always react as predicted to disclosure by a litigation funder and the courts, the markets are an inadequate proxy regulator of all litigation funders. Of particular concern was the finding that whilst the market may react to positive news as expected, it does not appear to react to negative news as expected even where the bad news is a 'shock' as in a court's judgement against the funded party. The lack of reaction to negative news may indicate an over optimistic assessment of solvency.

Currently, litigation funding is regulated through the courts and by the recommendations of the Jackson review. In this chapter I review Jackson's recommendations in the light of my research. I devote section 3 specifically to the key issue of capital adequacy, the lack of which could result in insolvency. In section 4, I explain the form of regulation I consider appropriate before highlighting in section 5 areas for future research.

2 Comments on the Jackson Review

As a result of Jackson's review, costs management has been introduced into the courts. His view was that compulsory costs management was not appropriate for high value cases in the commercial court but should be encouraged at the discretion of

individual judges (Jackson, 2010, p.281). The enacting CPR[408], effective from 1 April 2013, adopted this position, but as large value commercial cases could also be heard in the courts of Chancery, Mercantile and Technology and Construction, a further amendment was announced to exclude high value cases[409] in these courts (Thomas & Etherton, 2013). As the types of commercial cases supported by TPFs are not subject to compulsory costs management by the court, the costs and risks of litigation have not changed.

Jackson (2010, p.124) made three recommendations on third party funding and as a result of this work, I comment on each of these recommendations below.

2.1 Recommendation 1

Jackson's first recommendation - "*A satisfactory voluntary code, to which all litigation funders subscribe, should be drawn up. This code should contain effective capital adequacy requirements and should place appropriate restrictions upon funders' ability to withdraw support for ongoing litigation*" has three arms (2010, p.124).

The first arm is subscription to a code of conduct. The UK is unique in adopting self-regulation of litigation funding and the question as regards full statutory regulation or self-regulation is contentious in Australia and elsewhere (Mulheron, 2014b, pp.578/9). Jackson LJ was satisfied at the time that the ALFEW voluntary code of conduct was practicable and achieved a reasonable balance between the interests of both funders and their clients (Jackson, 2010; 2011).

At 31 December 2013, of the 17 funders listed in Litigation Funding magazine only 8 subscribed to the voluntary code and only one of the specialist three brokers was a member. The litigation funding industry continues to evolve with the launch[410] in the

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[408] SI 2013 262(L.1) Civil Procedure (Amendment) Rules 2013.

[409] Defined as "*where at the date of the first case management conference the sums in dispute in the proceedings exceed £2,000,000, excluding interest and costs, except where the court so orders*" (Thomas & Etherton, 2013).

[410] Examples US: https://www.lexshares.com/; Europe: https://www.invest4justice.com/home/; UK: www.crowdjustice.co.uk.

US and Europe (including the UK) of 'crowd sourcing' as a funding platform. Litigation funding is a global business and the three incidents in Chapter 1 section 1.7 highlight the problems of self-regulation where cases litigated in the UK are funded from abroad or capital raised in the UK is applied overseas. The reality is that not all funders subscribe to the code and join ALFEW and even if they do, incident 1 demonstrates that the sanctions available do not appear to be a deterrent.

The second arm of the recommendation is effective capital adequacy requirements. Earlier versions of the ALFEW code of conduct had extensive wording for describing adequacy of capital but none was really satisfactory. The undertaking in the original code that "*The funder will…maintain the capacity to pay all debts when they become due and payable; and to cover aggregate funding liabilities under all its LFAs for a minimum period of 36 months*" (Code, §7d), may have been appropriate as an intent but as there is no ALFEW mechanism for monitoring compliance and as sanctions for non-compliance were weak, the clause had little value.

The revised code of January 2014 strengthens the solvency regulation by requiring the funder to "*maintain access to a minimum of £2m of capital or such other amount as stipulated by the Association*" and to accept a continuous obligation in respect of its capital adequacy and providing ALFEW with an annual audit opinion (but not the financial statements) (ALFEW, 2014a, §9.4.2). The revised code goes partway to addressing some of the concerns regarding solvency but without any financial statements (let alone useful ones!), a '*going concern for the foreseeable future*' audit opinion which relies heavily on management's input does not provide either ALFEW or any interested party with sufficient information to make an independently informed judgement on long term solvency or even assist in interpreting whether "*maintaining access to £2m of capital*" is adequate. Should the funder fail, then I doubt whether ALFEW or any stakeholder (other than perhaps the litigation funder itself) would be able to bring a successful claim against the auditor[411]. Chapter 3 has shown that a

[411] Successful litigation against auditors is notoriously difficult unless the claimant is the company itself. Even then liability is often restricted within the contract itself. Claims by third parties will only succeed if the a) the claimant has suffered a financial loss and it is difficult to envisage what financial loss ALFEW would suffer; b) the auditor's engagement letter requires them to provide an opinion to ALFEW which ALFEW can rely upon and c;) any damages award is not restricted by

Litigation funder can comply with the accounting regulations and receive a clean audit opinion even though the financial statements themselves are deficient in reporting liquidity and future financial obligations that impact solvency. Further comments on capital adequacy are in Section 3 below.

The third arm concerns funder withdrawal. The voluntary code satisfactorily addressed this issue and subsequently the courts have supported funder withdrawal[412].

2.2 Recommendation 2

Jackson's second recommendation was: "*The question whether there should be statutory regulation of third party funders by the FSA ought to be re-visited if and when the third party funding market expands*" (2010, p.124). Clearly the market has expanded and it is noteworthy that whilst the FCA regulates crowdfunding there is doubt as to whether that applies to litigation funding (Spendlove, 2015).

This work indicates that capital adequacy remains a concern and in accordance with Jackson's recommendations it may be time to reconsider the statutory regulation of litigation funding. Government however remains hesitant as the Minister of State and Deputy Leader of the House of Lords, explained during the passage of the LASPO Bill:

> "*At the moment we are looking at how voluntary regulation is working in the area. However, my right honourable friend the Lord Chancellor is very aware of the situation and is keeping it under review. We do not think that statutory regulation through this bill is either the right place or the right time but we welcome the fact that my noble friend has put this issue on the political radar. Both lawyers and legislators will have to follow the matter closely to see whether we will need to return to it at some future date"* (United Kingdom Parliament, 2012b).

any cap in the original contract. The leading case is *Caparo Industries plc v Dickman* [1990] UKHL 2 and the more recent cases of *Law Society v KPMG Peat Marwick* [2000] 1 WLR 1921 and *Arrowhead Capital Finance Limited (in liquidation) v KPMG LLP* [2012] EWHC 1801 (Comm).

412 *Harcus Sinclair (a firm) v Buttonwood Legal Capital Ltd & Ors* [2013] EWHC 1193 (Ch).

2.3 Recommendation 3

Jackson's third recommendation was that "*Third party funders should potentially be liable for the full amount of adverse costs, subject to the discretion of the judge*" (2010, p.124). Currently litigation funders are offered some protection by the '*Arkin Cap*'[413]. Jackson favours replacement of the '*Arkin Cap'* by judicial discretion (2010, p.123) and Mulheron (2014b) concurs but notes that the MOJ is unlikely to introduce legislation to that effect. *Arkin* can be distinguished from most funding cases as only the experts were funded, making it unusual and less precedential. The court already has both the ability and discretion to decide who pays the loser's costs and to that extent the recommendation may have been unnecessary.

Creating an unbounded liability[414] on a TPF (as opposed to a litigant) introduces more uncertainty and risk into the litigation funding contract and should increase the contract price. The *Arkin* principal should not, in my opinion, be repealed but it could be replaced by resetting an upper bound which is a multiplier (currently one) of the funder's investment in the client's case.

3 Capital adequacy

Determining capital adequacy depends on a number of factors including portfolio size, committed investments, potential gains and losses, time to conclusion etc. For general insurance companies, Daykin & Hey (1990) noted the limitations of assessing the financial strength of the company based on accounting concepts and that even the most informative accounts had severe shortcomings for the external observer. I make similar observations in respect of litigation funding in chapters 2 and 3. Daykin & Hey's proposed solution was modelling using the 'emerging costs paradigm'.

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[413] i.e. a funder's potential liability to pay adverse costs is limited "*to the extent of the funding provided*" to the claimant. *Arkin v Borchard Lines* [2005] EWCA Civ 655 §41. In this instance both solicitor and counsel were self-funding by a CFA agreement and the TPF only funded *part* (i.e. expert fees) of the litigation costs. The three defendants sought recovery of the *whole* of their costs which was a fivefold multiple of the sum provided to the claimant.

[414] Liability is truly unbounded as the funder may be structured as a limited liability entity. However incentivising firms to liquidate in the event of an unexpected and sizeable adverse costs award should be an unintended consequence.

Modelling is used in insurance and banking to explore the outcomes of various scenarios, but it is also recognised that the models are susceptible to the assumptions. Furthermore, where the events being modelled are rare or based on thin empirical evidence, statistical estimates are intrinsically unreliable and the act of modelling with different inputs and outputs enables one to appreciate the exposure to the risk of insolvency[415] (Tsanakas, 2012). Empirical evidence on the litigation funding market is at best only thin and in many cases non-existent.

Unbounded model parameters present a number of actuarial problems[416] and may lead to an increase in the price of funding as a result of the increased risk and/or an increase in capital requirements. A 'reinsurance market' or 'a stop loss insurance product' for litigation funders is at best embryonic so increasing litigation funders' exposure or changing solvency requirements may have unintended consequences such as reducing the availability of funding or deterring investors.

An illustrative example is adverse costs liability. The liability for adverse costs rests with the claimant and a funder will only be drawn in if the claimant is unable to make payment. Consequently, funders will be concerned if their client is impecunious and has failed to make alternative arrangements as they may be held liable for adverse costs. The pricing of that risk changes dramatically if the exposure is unbounded.

The lack of empirical data surrounding solvency model parameters is problematic and an acute issue for new funders. A key parameter is the time period between entering into a contract, liabilities being discharged, and fees being received. Members of ALFEW are required to cover aggregate financial liabilities for a minimum period of 36 months (see section 4.1 of chapter 1). This period was apparently chosen because it is "*regarded as longer than the average life cycle from entering the funding agreement to the conclusion of the litigation*" (Pirozzolo, 2014, p.160). The problem with this assumption is that cash flow is not even over the case life cycle as different

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[415] Insurers often use the expression '*probability of ruin*' but this tends to be a binary measure and ignores degrees of insolvency. From an accounting perspective insolvency results from inadequate cash flow notwithstanding the fact that the company may still have significant economic value.

[416] Meyers & Schenker (1983) and Mango & Mulvey (2000) provide useful insights into these issues.

stages take different amounts of time[417] and effort. Litigation costs escalate closer to and during trial and whilst the US and UK are not exactly comparable[418], Table 53 is a useful indicator of the cost distribution.

Table 53 Proportion of litigation hours at various stages of the case life cycle in US state cases

Litigation Task	Auto	Premises Liability	Real Property	Contract	Employment	Malpractice
Initiate	6%	8%	12%	10%	11%	8%
Discovery	21%	19%	22%	24%	21%	25%
Settlement	8%	9%	8%	7%	7%	6%
Pretrial	10%	14%	15%	14%	15%	11%
Trial	46%	41%	34%	39%	39%	42%
Post-disposition	8%	8%	9%	8%	7%	7%
Total Attorney Hours (Median)	**196**	**218**	**284**	**367**	**374**	**472**

Source: (Hannaford-Agor & Waters, 2013, p.6)

IMF has a target to complete cases within 2.5 years and reports that its average (mean, median or mode?) investment period is 2.4 years (IMF, 2014, p.9). However, from Figure 27 and Appendix 4 it is apparent that appeals and delays on collection result in the deviation from the average to be long tailed and therefore relevant to any discussion on necessary reserves.

IMF used to provide an estimated completion date for each case in its quarterly portfolio case report but final completion dates were hard to predict and were often extended. The relevant dates for a large number of IMF's completed cases are shown in where the line between the vertical markers represents the length of time between the actual funding and completion dates and the line between the circles represents the length of time between public announcement and estimated completion dates[419].

[417] In this context time is calendar time and includes waiting time.

[418] The discovery phase may be more time consuming in the US as it may include taking dispositions. Similarly, the post disposition phase may also be more expensive in the USA.

[419] It is acknowledged that the graph will exhibit some right hand bias i.e. cases that were commenced and not completed are excluded.

Figure 27 Completion time for IMF cases

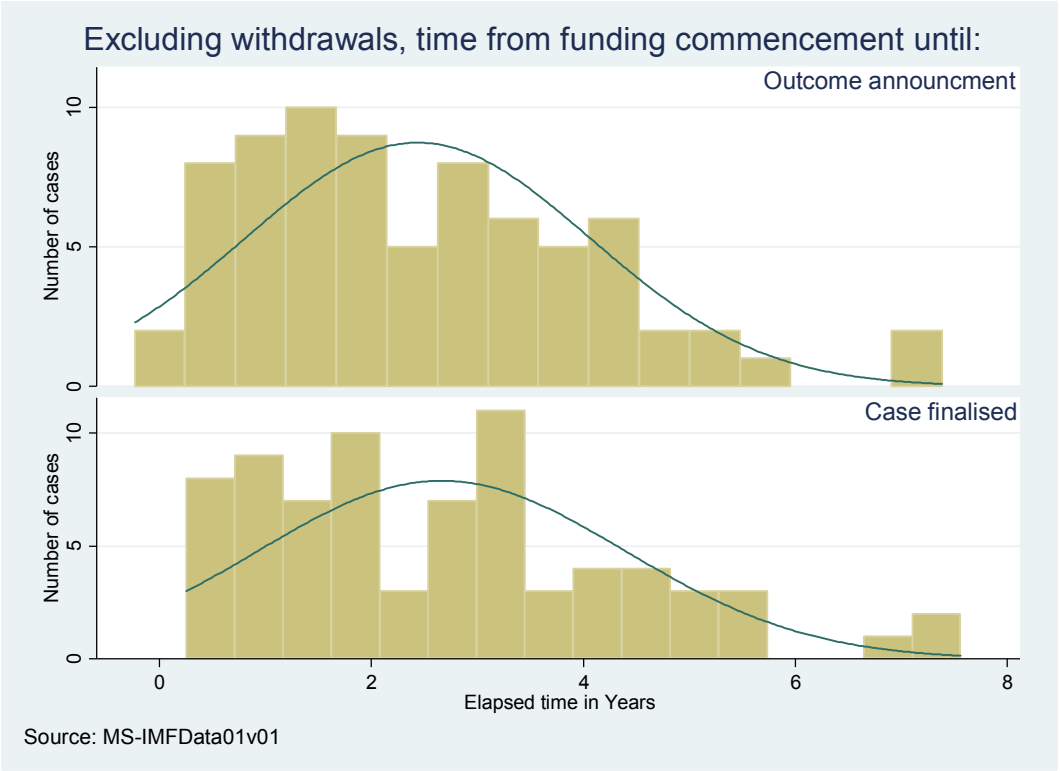
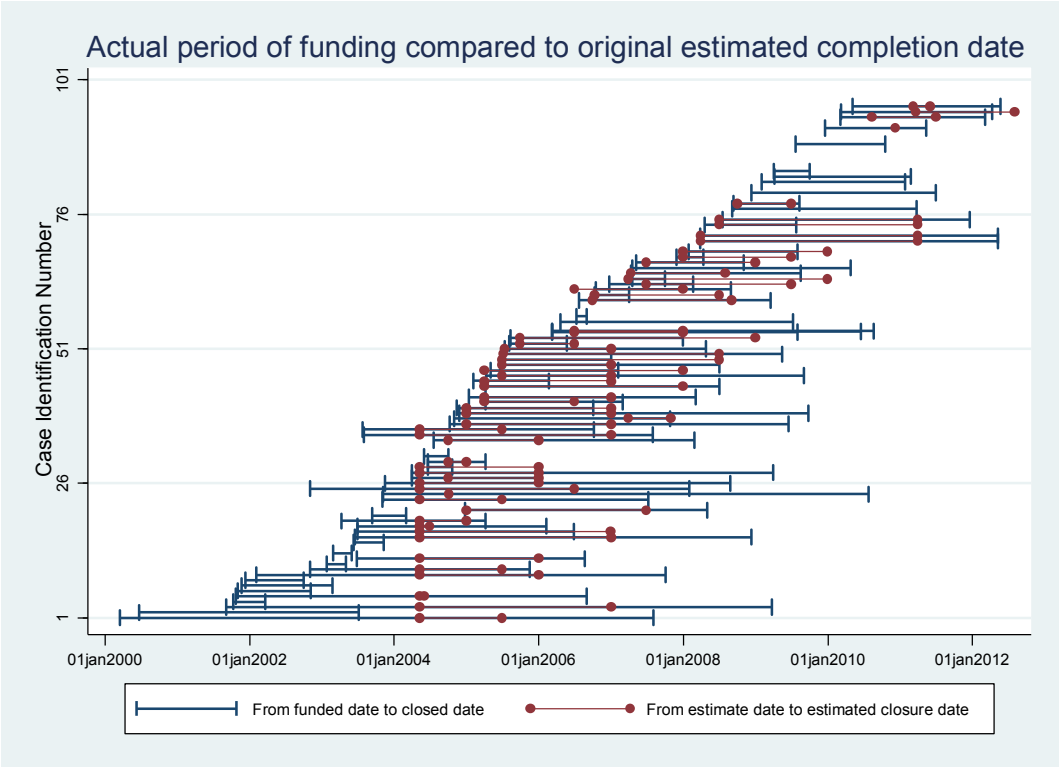


Figure 28 IMF cases - periods of funding



Source: IMF ASX announcements - case investment portfolio

Burford Capital Limited, who in recent annual reports have given shareholders considerable information on their portfolio and its performance, candidly told investors "*There's a truism about litigation – everything takes longer and costs more than anyone expects*". At 31 December 2013 only 56% of the investments made in 2010 and 53% of the 2011 investments were complete (2012c, p.3; 2014b, p.11).

Future event durations tend to be based on the estimates of the duration of past events. However past event estimates are based on memories which systematically underestimate actual duration (Roy et al., 2005). There is a danger that new litigation funders will under-estimate both litigation costs and duration, both of which will adversely impact capital requirements. Furthermore, the type of case is likely to impact on duration and consequently ALFEW's prescriptive 36 months will not be appropriate to all funders. An independent regulatory regime that required periodic returns on cases, their current state and other key data would enable distributions of key parameters to be determined and the opportunity for individual firms to benchmark themselves against the industry as a whole. Models could be 'stress tested' using Markov Chain Monte Carlo methods that incorporate expert opinion (Kiefer, 2007; Peters & Hübner, 2009).

4 On regulation

In addition to my concerns that financial statements as currently regulated do not disclose sufficient information to fulfil stakeholder needs and the markets are an inadequate proxy for a regulator of all litigation funders, chapter 2 section 7, has shown that other stakeholders have concerns[421]. The courts have wide powers to protect themselves but as a regulator they are only able to respond to issues bought before them. The courts are not concerned with proactively 'policing' litigation funders and preventing abuses occurring. They are prepared to reactively sanction inappropriate behaviour once it comes to their attention, but as they do not instigate cases some other party has to initiate that regulatory action. As it is, most litigation is concluded between the parties without the court being required to issue a judgement.

[421] Also see letter from the Chairmen of US Senate Judiciary Committee and the Subcommittee on the Constitution to TPFs active in the USA seeking answers to various questions relating to litigation funding agreements in the United States (Grassley & Cornyn, 2015).

Overall I find the concerns regarding litigation funding are not resolved by the existing regulations and Jackson's recommendations.

In a classic article on market failure Bator (1958) distinguished "*market failure of "real life" market institutions operated by "real life" people in a non-stationary world of uncertainty, miscalculation etc.*" from failure of a competitive pricing system based on unrealistic assumptions and concluded that "*statical market efficiency is neither sufficient nor necessary for market institutions to be the "preferred" mode of social organization".* The economist Garber cautioned that it was unwise to introduce regulations that constrain the development of TPF because there were major unknowns concerning the effects of TPF and how it might develop in the future. Policy evaluation focusses on future social effects and two social objectives in that evaluation being fairness and economic efficiency. In the context of commercial claims Garber suggested that the greatest threat to promoting economic efficiency was entry into the industry by suppliers who did not have the skills or resources to evaluate complex cases. Such entities will suffer losses and disappear from the industry but whether that is an orderly withdrawal or not depends upon the capital base and the capacity for 'run off'. Garber's recommendation was that policymakers search "*for 'robust' policies – that is policies whose outcomes are likely to be satisfactory, or at least not very unsatisfactory, no matter what the truth may be about key unknowns*", the characteristics of 'robust' policies being light-handedness and precision (Garber, 2010, pp. 39-44).

From the above I agree that whilst interesting and useful to explore the implications of Paretian efficiency, in the real world choice is a strategy problem of *'second best*'. Litigation funding institutions impact numerous competing stakeholders and consequently an appropriate form of regulation may be a compromise or 'second best' choice.

In my view further regulation is now appropriate as some earlier unknowns have become apparent and the existing regulations do not adequately resolve stakeholder concerns. Litigation funding is a legal service and as such its success or failure has direct implications for the core values of the legal system and ultimately society.

Thus any regulation of litigation funding may need to extend beyond the regulation of other sectors with similar characteristics e.g. hedge funds. The literature is informative in that no form of regulation is optimal and consequently I advocate light-handedness and precision to address the issues of solvency and inappropriate suppliers of TPF.

It is desirable for regulation to have empirical foundations (Sunstein, 2011) but data is hard to come by. Litigation funding has many similarities with insurance (Sebok, 2015; Walker, 2014) and as the regulators of banks and insurance companies require disclosure of confidential data to test solvency, I see no reason why a regulator of litigation funders could not do the same. Parts of the litigation funding industry publicly support registration/ licencing subject to prudential supervision (Walker, 2014, p.101). In my view that supervision should include funders making annual returns in respect of each case[422] i.e. the expenditure to date, future commitment, contingent liabilities etc.

Couture (2014) has suggested that *"Securities regulation, ..., might be the appropriate tool to regulate the ALF industry, at least until such time as the industry stabilizes"* and the Australian Productivity Commission draft report (2014b, p.546) recommended that:

> *"Third party litigation funding companies should be required to hold a financial services licence, be subject to capital adequacy requirements and be required to meet appropriate ethical and professional standards. Their financial conduct should be regulated by the Australian Securities and Investment Commission (ASIC), while their ethical conduct should be overseen by the courts".*

However the final report did not consider it appropriate to nominate a special financial regulatory because:

> *"on the one hand, ASIC's capital adequacy requirements may fall short of the large long-term commitments made by litigation funders, suggesting that APRA* [Australian Prudential Regulation

[422] Details of the parties could be redacted to maintain confidentiality.

> Authority] *could be the appropriate authority, both because of the long-term promises and that indemnity for adverse costs is akin to a form of insurance. However, a number of other considerations — including the size of the litigation funding market, that it is not integral to the overall stability of the financial system, and the intensity of promises made — together all suggest that litigation funding does not warrant full-scale prudential supervision by APRA".*

The final recommendation was that:

> *"The Australian Government should establish a licence for third party litigation funding companies designed to ensure they hold adequate capital relative to their financial obligations and properly inform clients of relevant obligations and systems for managing risks and conflicts of interest.*
>
> - *Regulation of the ethical conduct of litigation funders should remain a function of the courts.*
> - *The licence should require litigation funders to be members of the Financial Ombudsman Scheme.*
> - *Where there are any remaining concerns relating to categories of funded actions, such as securities class actions, these should be addressed directly, through amendments to underlying laws, rather than through any further restrictions on litigation funding."*
>
> (Australian Government Productivity Commission, 2014a, p.633)

In the UK, securities regulation is the responsibility of the FCA and I think it likely that the commercial litigation funding industry is too small to be a priority for that organisation if ordinary consumers are not involved.

Insurers are subject to solvency regulation by the PRA. Financial returns to the PRA rely heavily on the insurers' financial statements and compliance with IFRS which are known to be deficient[423]. The PRA's focus is maintaining the stability of the UK

[423] "*the accounting for insurance contracts does not provide users with the information they need to*

financial system and ensuring insurance policyholders are appropriately protected (Bank of England, 2014). The solvency concerns in litigation funding are primarily focussed on parties other than the 'policyholder' e.g. winning defendants and potential investors and I am not convinced that the PRA is an appropriate light touch regulator for litigation funding.

On balance I would prefer to see an independent regulator overseen by the Legal Services Board[424] in much the same way as solicitors have the Law Society as an approved regulator and representative of the membership, and the SRA is the independent regulator overseen by the Legal Services Board. The establishment of the CMR (see Chapter 2 section 3.1) was quick and cheap with many more entities to regulate and it follows that a regulator of litigation funding could be achieved in the same way. Whether ALFEW continues as a representative body like the Law Society or fails like the Claims Standards Council will depend upon the benefits to its membership.

5 Future research

During the course of this research (2008-2015), the litigation funding market has undergone many changes and become more mature and more accepted but it is still an evolving industry. Future developments are likely to include crowd sourcing, the funding of smaller claims and the funding of consumer class actions. These areas will provide fertile ground for further research. As litigation funding is an international phenomenon, comparative studies will also be of interest especially when they encompass different forms of civil law.

Lawyers owning funders and vice versa is a reality[425] and an obvious area for further research on its desirability and impact. Another variation of TPF for research will be

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meaningfully understand the insurer's financial position, performance and risk exposure. In addition, IFRS does not address specific insurance issues and it is not obvious how insurers should deal with these issues under current IFRSs. Consequently, great diversity in the accounting practices of the insurance industry has developed over time" (IFRS, 2015).

[424] The Legal Services Board, was established under the Legal Services Act 2007. Under the Act the eight regulatory objectives ensure a clear focus on regulation in the public interest.

[425] Claims Funding Australia is owned by the principals of Australian law firm Maurice Blackburn (Herbert Smith Freehills, 2014).

the recently implemented government funding of Australian insolvency practitioners under the Fair Entitlements Guarantee Recovery Programme[426].

In the UK, state funding of commercial litigation is, to all intents and purposes extinct and virtually non-existent for consumer cases. The current government promotes its vision of a one nation Britain and the Lord Chancellor and Secretary of State for Justice set out a vision for a one nation justice policy as he acknowledges that "*While those with money can secure the finest legal provision in the world, the reality in our courts for many of our citizens is that the justice system is failing them. Badly*" (Gove, 2015). Whether the private provision of litigation funding impacts that inequality will be worthwhile research in the future but there is also the opportunity to investigate how litigation was funded before legal aid in the early 20th century and reflect on whether there are lessons to be learnt from the past.

[426] https://employment.gov.au/FEGRecoveryProgramme [Viewed 26 July 2015].

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The Regulation of Third Party Funding of Commercial Litigation

Malcolm Grant Stewart MBA, FCCA, FRSA

Thesis submitted to the University of Nottingham for the degree of Doctor of Philosophy

Volume 2 of 2

Appendices

August 2016

Appendix 1 - Example of case card & court case history

Example case card

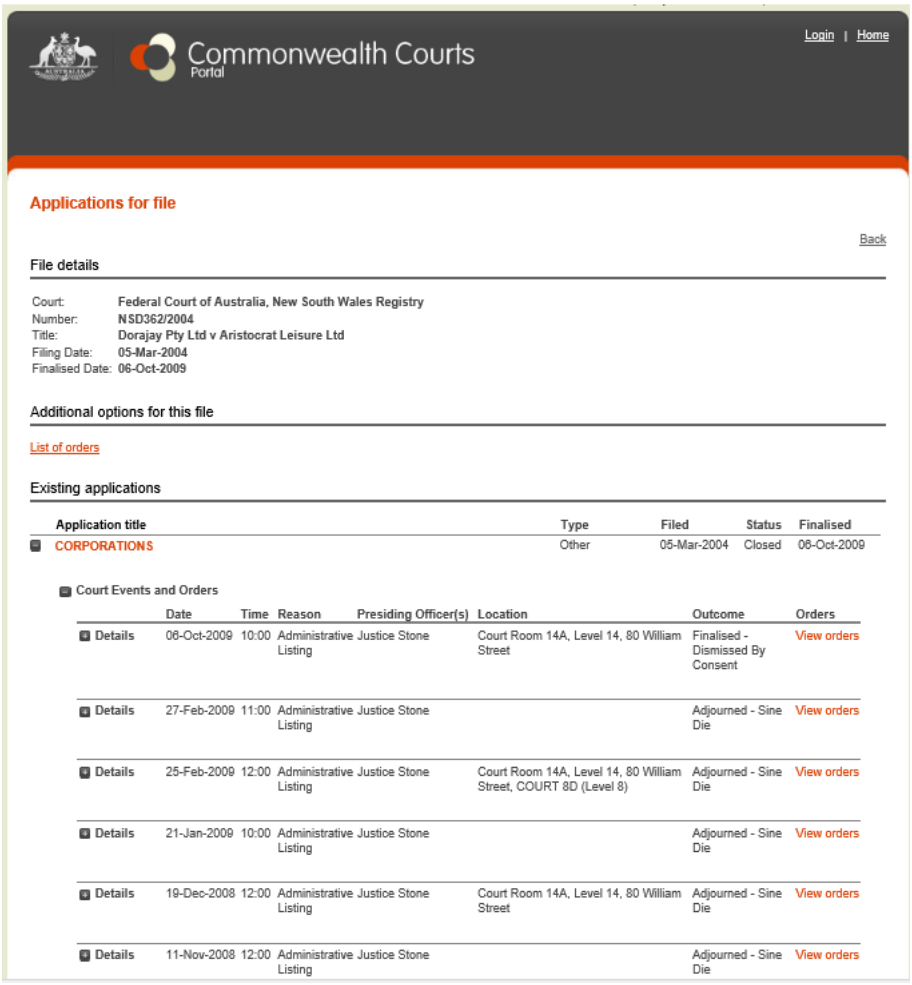
Ref:26	**Doorjay Pty Ltd v Aristocrat Leisure Limited**			**Proceedings Started**		**Source**
Claim by shareholders re misleading and deceptive information Federal Court of Australia				**IMF Diligence Start**		
				IMF Signed Date	16/11/2003	
				IMF End Date	Aug 08	
				Funding Cost	12,700,000 13,407,253 13,582,034	
				Profit	22,000,000 21,849,740 21,674,959	
				Cash inflow	37,000,000 36,500,000 35,256,993	
Date	**Claim Est.**	**IMF Share**		**Anticipated Closure**		
10/5/2004	100,000,000			31/12/2005		
25/8/2004	115,000,000					
30/9/2004	120,000,000			31/12/2005		
31/12/2004	130,000,000			31/12/2005		
31/3/2005	150,000,000			30/6/2006		
30/6/2005	190,000,000			31/12/2006		
21/10/2005			Proceedings to stay action defeated			
10/2/2006			Representative order granted			
30/6/2006	190,000,000			30/6/2007		
3/7/2006			Third further amended statement of claim filed			
29/9/2006	>200,000,000		Period of damage extended by 8 mths			
9/11/2006			Notice to each shareholder of right to opt out ends 8/12/6			
31/12/2006	230,000,000			31/12/2007		
31/3/2007	240,000,000			31/12/2007		
5/10/2007	396,000,000		Hearing commences	30/6/2008		
31/12/2007	240,000,000		Awaiting judgment if appealed unlikely to conclude before 31/7/2010	31/7/2008		
7/5/2008			Press speculation re settlement			
19/5/2008			Conditional settlement, Aristocrat net costs post tax & expenses up to $40m			

Dorajay Pty Ltd v Aristocrat Leisure Limited [2004] FCA 634 (20 May 2004)
Dorajay Pty Ltd v Aristocrat Leisure Limited [2004] FCA 1113 (25 August 2004)
Dorajay Pty Ltd v Aristocrat Leisure Limited [2005] FCA 588 (13 May 2005)
Dorajay Pty Ltd v Aristocrat Leisure Limited [2005] FCA 1483 (20 October 2005)
Dorajay Pty Ltd v Aristocrat Leisure Limited [2006] FCA 335 (31 March 2006) Application dismissed
Dorajay Pty Ltd v Aristocrat Leisure Limited [2007] FCA 1502 (20 September 2007) Application for evidence by video link
Dorajay Pty Ltd v Aristocrat Leisure Limited [2008] FCA 1311 (26 August 2008)
Dorajay Pty Ltd v Aristocrat Leisure Limited [2008] 67 ACSR 569
Dorajay Pty Ltd v Aristocrat Leisure Limited [2009] FCA 19 (21 January 2009)

Was this a pre-existing case at 10 May 2004?	Yes
Closure estimate revisions post 30 June 2003	6
Value estimate revisions post 10 May 2004	10
Original estimate of period to closure in months	30 (Jly 2003 to Dec 2005)
Overall increase in closure estimate in months	31 (Jan 2006 to Jly 2008)
Overall funding period post 1 July 2003 months	59 (Jly 2003 to May 08)

Closed by:	Settlement
Outcome	Win
Appeal	

Extract of court case history



Commonwealth Courts Portal

Login | Home

Applications for file

Back

File details

Court: Federal Court of Australia, New South Wales Registry
Number: NSD362/2004
Title: Dorajay Pty Ltd v Aristocrat Leisure Ltd
Filing Date: 05-Mar-2004
Finalised Date: 06-Oct-2009

Additional options for this file

List of orders

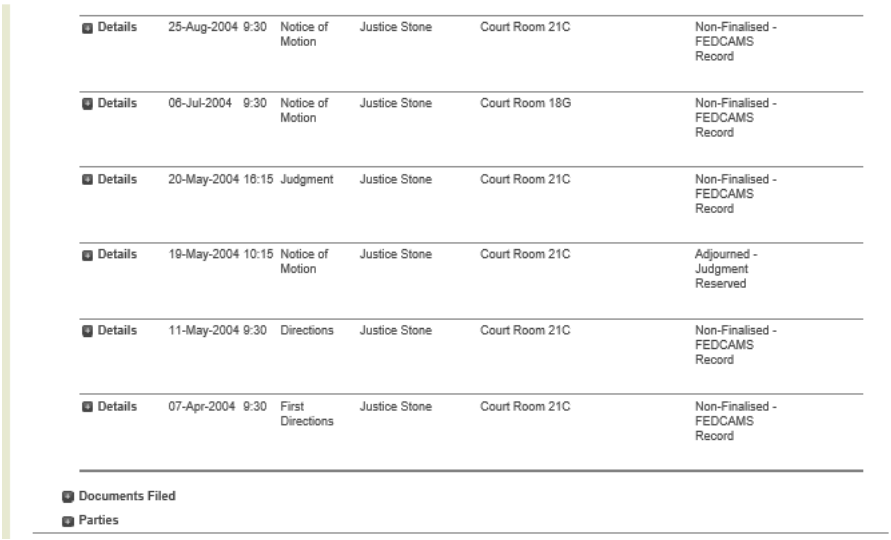
Existing applications

Application title	Type	Filed	Status	Finalised
CORPORATIONS	Other	05-Mar-2004	Closed	06-Oct-2009

Court Events and Orders

	Date	Time	Reason	Presiding Officer(s)	Location	Outcome	Orders
Details	06-Oct-2009	10:00	Administrative Listing	Justice Stone	Court Room 14A, Level 14, 80 William Street	Finalised - Dismissed By Consent	View orders
Details	27-Feb-2009	11:00	Administrative Listing	Justice Stone		Adjourned - Sine Die	View orders
Details	25-Feb-2009	12:00	Administrative Listing	Justice Stone	Court Room 14A, Level 14, 80 William Street, COURT 8D (Level 8)	Adjourned - Sine Die	View orders
Details	21-Jan-2009	10:00	Administrative Listing	Justice Stone		Adjourned - Sine Die	View orders
Details	19-Dec-2008	12:00	Administrative Listing	Justice Stone	Court Room 14A, Level 14, 80 William Street	Adjourned - Sine Die	View orders
Details	11-Nov-2008	12:00	Administrative Listing	Justice Stone		Adjourned - Sine Die	View orders

Further rows omitted



Details	25-Aug-2004	9:30	Notice of Motion	Justice Stone	Court Room 21C	Non-Finalised - FEDCAMS Record
Details	06-Jul-2004	9:30	Notice of Motion	Justice Stone	Court Room 18G	Non-Finalised - FEDCAMS Record
Details	20-May-2004	16:15	Judgment	Justice Stone	Court Room 21C	Non-Finalised - FEDCAMS Record
Details	19-May-2004	10:15	Notice of Motion	Justice Stone	Court Room 21C	Adjourned - Judgment Reserved
Details	11-May-2004	9:30	Directions	Justice Stone	Court Room 21C	Non-Finalised - FEDCAMS Record
Details	07-Apr-2004	9:30	First Directions	Justice Stone	Court Room 21C	Non-Finalised - FEDCAMS Record

Documents Filed
Parties

Source: https://www.comcourts.gov.au/public/esearch [Viewed 2 July 2015]

Appendix 2 - Risk factors extracted from AIM listing documents

Factor	Description of Risk	Juridica	Burford
1	**Risks relating to the company**		
1.1	New company	/	/
1.2	Life of the company	/	/
1.3	Competition	/	/
1.4	Guernsey Law	/	/
1.5	Hedging and currency risk	/	/
1.6	Interest rate risk	o	/
1.7	Additional capital	/	/
1.8	Ownership interest in the Investment Manager	/	o
1.9	The Company may experience fluctuations in its operating results	/	/
1.10	The application of IFRS accounting standards and the lack of current and timely information about individual cases	o	/
1.11	Influence of Invesco	/	/
2	**Risks relating to the Ordinary shares**		
2.1	No prior trading record for the Company or the Ordinary Shares	/	/
2.2	Dividends	/	/
2.3	AIM investments carry a higher risk	/	/
2.4	Lack of liquidity of ordinary shares	o	/
2.5	Market value of ordinary shares	o	/
2.6	The Company may in the future issue new ordinary shares which may dilute Shareholder's equity	o	/
3	**Risks relating to the Company's Investment Strategy**		
3.1	Ethics and legal restrictions	/	/
3.2	Investment in federally-registered intellectual property claims	/	o
3.3	Inability to locate and delay in making investments	/	/
3.4	The Company's business model depends upon referral relationships	/	/
3.5	Bad case selection	/	/
3.6	Liability for costs or damages	/	o
3.7	Evaluation and disclosure of cases and case performance	/	/
3.8	Recovery collection risks	/	/
3.9	The use of debt finance leverage may increase the Company's financial and business risks	o	/

Factor	Description of Risk	Juridica	Burford
3.10	Underwriting errors	/	o
3.11	US securities law	/	o
3.12	Perceptions of lawyers and advisors	/	o
3.13	Enforceability of investment contract provisions	/	o
3.14	Potential commitments in excess of funds raised	/	/
3.15	Reliance on lawyers	/	/
3.16	Concentration risk	/	/
3.17	Calculation of Net Asset Value	/	o
3.18	Expansion	/	/
3.19	Other conflicts	/	/
3.20	Changes in regulation	/	/
3.21	Information systems	/	o
3.22	Maintenance of licences to practise law	/	o
3.23	Professional negligence of FSUS and other law firms	/	o
3.24	Realisation on collateral in the event of default	/	o
3.25	Legal professional duties	o	/
3.26	Legal professional conflicts	/	o
4	**Risks relating to the investment manager and to FSUS**		
4.1	New business	/	/
4.2	Relationship between FSUS and the company	/	o
4.3	Reliance on key personnel	/	/
4.4	Management and performance fees	/	/
4.5	Term of the management agreement	/	o
4.6	Substantial fees payable regardless of profit	/	/
4.7	Protection of intellectual property rights	/	o
5	**Tax risks**		
5.1	Characteristics of investments	/	/
5.2	Tax leakage	/	/
5.3	Changes in taxation legislation or regulation may adversely affect the Company	/	/

Source: (Burford Capital Limited, 2009; Juridica,2007)

Key:
/ Risk heading reported on in AIM admission document
O Risk heading not specifically reported under in AIM admission document

Appendix 3 - Market trading and the Australian Securities Exchange

Screen based equity trading (ASX Trade) commenced on 31 October 1997. The ASX market times are set out Table 54. During the pre-opening phase brokers may enter orders into ASX Trade. Investors may also enter orders online but they are queued and will not trade until the market opens. The market opens at 10:00 hrs in group phases according to ASX code. Group 3, G-M contains both IMF and HLS and opens at 10:04:30 +/- 15 secs.

Table 54 ASX Equity Market Phases (Sydney times)

Sydney time	Market Phase
7:00am - 10:00am	Pre-open
10:00am*	Open
10:00am - 4:00pm	Normal Trading
4:00pm - 4:10pm	Pre CSPA
4:10pm - 4:12pm	Closing Single Price Auction
4:12pm - 5:00pm	Adjust
5:00pm - 6:50pm	Adjust ON
6:50pm - 6:59pm	Purge Orders
6:59pm - 7:00pm	System Maintenance
7:00pm - 9:30pm	Close
9:30pm - 2:25am	System Unavailable
2:25am - 7:00am	Close

Source: ASX website[427]

Normal trading continues until 16:00 hrs when the market stops and brokers enter, change and cancel orders in preparation for market closing. The Closing Single Price Auction then takes place where the outstanding orders which have been matched[428] are transacted. This is followed by the period to 17:00 hrs during which brokers 'tidy up' their orders. Trading during the adjust phase is referred to as overnight trading (ASX, 2013c).

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[427] http://www.asx.com.au/products/ASX-Trading%20hours-Market-phases.htm visited 19 April 2013.

[428] During the Pre CSPA phase, orders can be placed, removed or amended, but no trades actually take place. Orders are 'price' ranked with buyers highest and sellers lowest offers at the front of the queue. Often there is a crossover (e.g. the lowest seller might offer $1.55 and the highest buyer might bid $1.63) and the range between where they cross is called the 'match'.

A random closing time in the range 4:10 p.m. AEST ± 15sec is generated by the ASX. All 'matching' share prices are weighted to find their mid-point, and this becomes the closing price of the share. All trades that take place on the close transact at the same price, regardless of the price an investor bids or offers (http://www.asx300.com/faqs/. Visited 17 December 2013).

Under its operating rules, the "*ASX may take any action it considers necessary to ensure that a market for one or more products is fair, orderly and transparent*". Such action includes halting or suspending trading in a particular equity (ASX, 2013b, 3100). Despite the stated purpose of a trading halt, the empirical evidence is that on both order-driven markets (e.g. the ASX) and quote-driven markets (e.g. the NYSE) trading volume and volatility are abnormally high and market depth is abnormally low following a trading halt which suggests that trading halts are detrimental to market quality (Corwin & Lipson, 2000; Frino et al., 2011; Kim & Rhee, 1997; Kryzanowski & Nemiroff, 2001; Lee et al., 1994).

Under ASX rule 3.1 "*Once an entity is or becomes aware of any information*[429] *concerning it that a reasonable person would expect to have a material effect on the price or value*[430] *of the entities securities, the entity must immediately*[431] *tell ASX that information*". Furthermore under rule 15.7 "*an entity must not release information that is for release to the market to anyone else, unless and until it has been given to ASX and the entity has received acknowledgement from ASX that the information has been released to the market. This includes releasing the information to the media, even on an embargoes basis*". Rules 4.1 to 4.7 prescribe the reporting regime for quarterly, half-yearly and annual financial reports (ASX, 2013a).

The Australian form of 'continuous disclosure' differs from the US where disclosure occurs by quarterly reporting and there is no general requirement to publicly disclose material developments as and when they occur. As a result US private investors have no regulatory mechanism to access price sensitive information until the next quarterly report becomes available. Furthermore, prior to the introduction by the US SEC of

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[429] May include information necessary to prevent or correct a false market (ASX, 2013a, 3.1B).

[430] The term '*material effect on price or value*' is explained in Section 677 of the Australian Corporations Act 2001. The courts examined the obligation to disclose information that has a material effect in *Ker Trust v Jubilee Mines NL* [2006] WASC 199 and the subsequent appeal (*Jubilee Mines NL v Riley* [2009] WASCA 62) which reversed the decision.

[431] In 2012 a draft guidance note was issued proposing that 'immediately' should be interpreted as 'promptly and without delay' (ASX, 2012c).

Regulation FD (Fair Disclosure) ('Reg FD') in October 2000, important information (e.g. advance notice of earnings results) could be selectively disclosed to institutional investors and/or securities analysts before the same information was made available to the general public. Reg FD does not create a continuous disclosure regime but it is intended to ensure that if information is disclosed it must be given to both the general public and industry insiders at the same time (ASIC & ASX, 2000; SEC, 2000). In recent years US quoted companies have been required to make more form 8-K disclosures of significant events but the disclosure obligation is fragmentary and remains periodic specific as opposed to 'continuous'. A December 2013 SEC staff report to Congress recommends that a comprehensive approach should be used to review and revise the disclosure requirements (SEC, 2013b).

Appendix 4 Key dates for each event

Event Id	Case Id	Case Name	Announcement Date	Funded Date	Outcome Date	Closed Date
1	4	Patrick	31-Dec-99	09-Oct-01	20-Mar-02	20-Mar-02
2	8	Tobacco Wholesalers	10-May-02	09-Dec-01	16-Sep-02	01-Oct-02
3	6	Agricultur.Com pty Ltd	31-Dec-99	01-Nov-01	04-Nov-02	04-Nov-02
4	7	Whyalla Airlines	31-Dec-99	22-Nov-01	25-Feb-03	24-Feb-03
5	15	Ezishop	31-Dec-99	11-Jun-03	18-Mar-03	10-Nov-03
6	13	Advanced Communications	27-Jun-03	27-Feb-03	27-Jun-03	01-Jun-03
7	2	NSW Supermarkets Pty Ltd	31-Dec-99	22-Jun-00	10-Jul-03	07-Jul-03
8	5	Sentinel MPA (Financial Wisdom)	31-Dec-99	23-Oct-01	29-Jun-04	31-Aug-06
9	18	Doran Construction	31-Dec-99	01-Jul-03	09-Jul-04	10-Feb-06
10	31	Essington Investments	21-Jun-04	01-Jun-04	19-Oct-04	01-Oct-04
11	30	Bellambi West Colliery	21-Jun-04	21-Jun-04	22-Oct-04	06-Apr-05
12	19	Sit Simplex	31-Dec-99	11-Apr-03	06-Apr-05	06-Apr-05
13	10	Global Market Link Pty Ltd	31-Dec-99	02-Nov-02	17-Nov-05	16-Nov-05
14	27	Bensons	31-Mar-04	31-Mar-04	09-Jan-06	31-Dec-05
15	45	Smart Company Pty Ltd	06-Apr-05	04-Feb-05	21-Feb-06	21-Feb-06
16	52	Westpac	04-Aug-05	04-Aug-05	23-May-06	23-May-06
17	17	Barron Entertainment	31-Dec-99	01-Jul-03	30-Jun-06	29-Jun-06
18	12	Mercury Rising	31-Dec-99	27-Jun-03	14-Sep-06	21-Aug-06
19	57	Australian Coal Technology Pty Ltd	11-Jul-06	11-Jul-06	22-Sep-06	01-Sep-06
20	40	Concept Sports	22-Nov-04	12-Nov-04	04-Oct-06	03-Oct-06
21	36	Geneva Finance	31-Dec-99	25-Jul-03	06-Oct-06	06-Oct-06
22	16	Kingsheath Club of the Clubs	27-Jun-03	18-Jun-03	10-Nov-06	10-Dec-08
23	3	Finance Brokers	31-Dec-99	03-Sep-01	13-Dec-06	24-Mar-09
24	49	Preslands Finance Pty Ltd	01-Jul-05	01-Jul-05	19-Jan-07	31-Dec-06
25	41.1	Lawyers Private Mortgages	06-Apr-05	06-Apr-05	09-Mar-07	01-Mar-07

Event Id	Case Id	Case Name	Announcement Date	Funded Date	Outcome Date	Closed Date
26	61	Ainsworth ats Silk Earl	10-Oct-06	10-Oct-06	03-Apr-07	03-Apr-07
27	23	Meadow Springs & ors	19-Nov-03	03-Nov-03	10-Jul-07	09-Jul-07
28	35	Truckies MPA v Pilbara	31-Dec-99	01-Aug-03	01-Aug-07	01-Aug-07
29	1	Global Finance Group Pty Ltd	31-Dec-99	16-Mar-00	02-Aug-07	02-Aug-07
30	47	Allstate Explorations NL	31-Dec-99	02-May-05	28-Sep-07	06-Feb-07
31	9	Nomad Telecommunications Ltd	31-Dec-99	02-Feb-02	05-Oct-07	05-Oct-07
32	38	Vogue Homes	31-Dec-99	01-Nov-04	26-Oct-07	26-Oct-07
33	64	ACT v Newlands	17-Apr-07	17-Apr-07	31-Oct-07	30-Sep-07
34	28	Reynolds Wines	26-Nov-03	31-Mar-04	26-Nov-07	31-Mar-09
35	53	Multiplex	12-Aug-05	12-Aug-05	31-Jan-08	31-Dec-07
36	63	Eurogold	28-May-07	22-Dec-06	19-Feb-08	19-Feb-08
37	34	SpatialInfo Pty Ltd	19-Jul-04	19-Jul-04	28-Feb-08	27-Feb-08
38	42	QPSX Ltd & Ors	13-Jan-05	13-Jan-05	05-Mar-08	04-Mar-08
39	68	Strange Bedfellows Pty Ltd	01-Nov-07	26-Nov-07	10-Apr-08	10-Apr-08
40	51	Wright	12-Jul-05	12-Jul-05	24-Apr-08	23-Apr-08
41	21	Performance Finance	31-Dec-99	23-Dec-04	30-Apr-08	30-Apr-08
42	26	Aristocrat Leisure Ltd	28-Nov-13	16-Nov-03	20-May-08	26-Aug-08
43	44	Marlor Domestic Appliances	06-Apr-05	06-Apr-05	28-Jul-08	30-Jun-08
44	62	Shenton Park retirement	17-Oct-06	17-Oct-06	05-Aug-08	29-Aug-08
45	67	Downer EDI Ltd	08-May-07	08-May-07	31-Oct-08	31-Oct-08
46	60	Centaur Mining	08-Aug-06	22-Jul-06	20-Feb-09	17-Mar-09
47	50	Village Life Ltd MPA	08-Jul-05	08-Jul-05	30-Mar-09	13-May-09
48	54.1	Westpoint v Masu	10-Mar-06	10-Mar-06	15-Jun-09	01-Aug-09
49	74	Opes Prime	18-Apr-08	18-Apr-08	27-Jul-09	24-Jul-09
50	46	Concept Equity Pty Ltd	11-Apr-05	11-Apr-05	07-Aug-09	03-Sep-09
51	65	Peninsular Shipping Lines	17-Apr-07	12-Apr-07	18-Aug-09	17-Aug-09
52	39	Sons of Gwalia	26-Nov-04	26-Nov-04	24-Aug-09	24-Sep-09
53	84	Arasor	23-Apr-09	01-Apr-09	02-Oct-09	01-Oct-09

Event Id	Case Id	Case Name	Announcement Date	Funded Date	Outcome Date	Closed Date
54	37	NEIB & Ors	02-Dec-04	07-Oct-04	25-Jan-10	15-Jun-09
55	66	John & Kaye Watson v AWB	16-Apr-07	17-Apr-07	15-Feb-10	27-Apr-10
56	54.2	Westpoint v PIS	10-Mar-06	10-Mar-06	18-Jun-10	18-Jun-10
57	79	Kingstream	18-Nov-08	18-Nov-08	1-Jul-10	1-Nov-11
58	24	AM Corp	19-Nov-03	05-Nov-03	27-Jul-10	27-Jul-10
59	54.3	Westpoint v Quantum	10-Mar-06	10-Mar-06	10-Aug-10	19-Aug-10
60	83	Ceramic Fuel	06-Apr-09	06-Apr-09	16-Aug-10	24-Feb-11
61	89	Napier	21-Jul-09	21-Jul-09	21-Oct-10	19-Oct-10
62	77	Pan Pharma V Commonwealth	05-Sep-08	05-Sep-08	24-Nov-10	25-Mar-11
63	99	PCI	27-May-10	27-May-10	10-Dec-10	10-Dec-10
64	82	National Potato v PWC	02-Feb-09	01-Feb-09	25-Jan-11	25-Jan-11
65	100	WDS	03-Jun-10	3-Jun-10	1-Feb-11	31-Dec-99
66	92	Babcock US	18-Dec-09	3-Jun-10	21-Feb-11	13-May-11
67	80	Oz Minerals	09-Dec-08	09-Dec-08	10-May-11	01-Jul-11
68	93	Hydrocool	23-Feb-10	31-Dec-99	16-May-11	31-Dec-99
69	75	Credit Corp Group (CCG)	18-Jul-08	18-Jul-08	22-Aug-11	19-Dec-11
70	105	Funding Liquidators of Babcock & Brown	12-Aug-10	12-Aug-10	19-Sep-11	19-Sep-11
71	116	Koonara Management Pty Ltd v Thomson Playford	17-Jun-11	16-Jun-11	07-Oct-11	07-Oct-11
72	102	Kimberley global v Centrex	08-Jul-10	08-Jul-10	21-Feb-12	21-Feb-12
73	94	Uniloc v Microsoft	05-Mar-10	05-Mar-10	06-Mar-12	06-Mar-12
74	95	Transpacific Industries Group (TPI)	08-Mar-10	08-Mar-10	10-Apr-12	10-Apr-12
75	71	Centro Properties	26-Mar-08	26-Mar-08	09-May-12	09-May-12
76	96	Innovatorone/ Collyer Bristow	06-May-10	06-May-10	21-May-12	21-May-12
77	119	Christie Qld Pty Ltd ('CQ')	03-Feb-12	03-Feb-12	10-Jul-12	10-Jul-12
78	103	Councils v Local Government Financial Services Pty Ltd	27-Jul-10	05-Nov-12	05-Nov-12	27-Jul-10
79	122	US Bentham case 1	17-May-12	12-Apr-13	12-Apr-13	17-May-12

Appendix 5 – Model Descriptions and regression results for single firm multiple event market models

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *a* =1 on announcement day.

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 1	Post Asx300 Model 2	Whole period Model 3	Pre Asx300 Model 4	Post Asx300 Model 5	Whole period Model 6
Mkt Rtn	0.3048***	0.4380***	0.3558***	0.2793**	0.4521***	0.3445***
	(3.66)	(6.96)	(6.31)	(3.24)	(7.34)	(5.96)
a_{t-1}	-0.0044	-0.0023	-0.0035	-0.0056	-0.0016	-0.0039
	(-0.77)	(-0.59)	(-0.95)	(-0.94)	(-0.43)	(-1.03)
a_t	0.0168**	0.0085*	0.0132***	0.0162**	0.0082*	0.0126***
	(2.92)	(2.21)	(3.53)	(2.72)	(2.17)	(3.31)
a_{t+1}	0.0050	0.0010	0.0032	0.0041	0.0013	0.0028
	(0.86)	(0.26)	(0.85)	(0.69)	(0.34)	(0.72)
Constant	-0.0001	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	(-0.12)	(-0.28)	(-0.20)	(-0.04)	(0.06)	(0.03)
N	1661	1163	2824	1661	1163	2824
F	6.0488	13.1970	13.6074	5.0219	14.4265	12.1488
R^2	0.0144	0.0436	0.0189	0.0120	0.0475	0.0169
Adjusted R^2	0.0120	0.0403	0.0176	0.0096	0.0442	0.0156
$Pr(a_{t-1}+ a_t+a_{t+1})$	0.0886	0.2938	0.0529	0.1621	0.2426	0.0905

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note:
These models vary slightly to those used in the examination of funding agreements because in these models a trading day without volume is considered a shoulder day whereas in funding agreement models dummies are not set on zero volume trading days.

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable g =1 is used for a good outcome i.e. a surplus and dummy variable b=1 for a 'bad' outcome i.e. a loss.

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model_9	Post Asx300 Model_10	Whole period Model_11	Pre Asx300 Model_12	Post Asx300 Model_13	Whole period Model_14
Mkt Rtn	0.3080***	0.4249***	0.3545***	0.2821**	0.4384***	0.3429***
	(3.70)	(6.81)	(6.30)	(3.28)	(7.17)	(5.94)
g_{t-1}	-0.0070	-0.0013	-0.0046	-0.0077	-0.0003	-0.0046
	(-1.03)	(-0.29)	(-1.05)	(-1.09)	(-0.08)	(-1.02)
g_t	0.0229***	0.0214***	0.0222***	0.0218**	0.0209***	0.0213***
	(3.37)	(4.71)	(5.05)	(3.10)	(4.71)	(4.73)
g_{t+1}	0.0009	-0.0005	0.0002	0.0009	-0.0005	0.0001
	(0.14)	(-0.11)	(0.03)	(0.13)	(-0.12)	(0.01)
b_{t-1}	0.0024	-0.0046	-0.0007	-0.0002	-0.0046	-0.0022
	(0.22)	(-0.67)	(-0.11)	(-0.01)	(-0.69)	(-0.32)
b_t	0.0017	-0.0213**	-0.0085	0.0024	-0.0212**	-0.0082
	(0.16)	(-3.10)	(-1.26)	(0.22)	(-3.16)	(-1.18)
b_{t+1}	0.0151	0.0044	0.0104	0.0122	0.0054	0.0093
	(1.42)	(0.64)	(1.54)	(1.11)	(0.81)	(1.33)
Constant	-0.0001	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	(-0.13)	(-0.27)	(-0.20)	(-0.04)	(0.07)	(0.03)
N	1661	1163	2824	1661	1163	2824
F	4.1320	11.6762	10.1757	3.3477	12.5154	9.0037
R^2	0.0172	0.0661	0.0247	0.0140	0.0705	0.0219
Adjusted R^2	0.0130	0.0604	0.0222	0.0098	0.0649	0.0195
$Pr(g_{t-1}+g_t+g_{t+1})$	0.1572	0.0149	0.0219	0.2226	0.0109	0.0342
$Pr(b_{t-1}+b_t+b_{t+1})$	0.3013	0.0734	0.9230	0.4510	0.0822	0.9235

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. a surplus, dummy variable *b*=1 for a 'bad' outcome i.e. a loss, dummy variable prepost =0 if before joining ASX300 and dummy variable prepost =1 after joining ASX300.

	Unadjust Return	Adjusted Return
	Model 15	Model 16
Mkt Rtn	0.3547***	0.3430***
	(6.30)	(5.94)
g_{t-1}	-0.0046	-0.0046
	(-1.05)	(-1.02)
g_t	0.0222***	0.0213***
	(5.05)	(4.73)
g_{t+1}	0.0002	0.0001
	(0.04)	(0.01)
b_{t-1}	-0.0007	-0.0022
	(-0.11)	(-0.32)
b_t	-0.0085	-0.0082
	(-1.26)	(-1.18)
b_{t+1}	0.0104	0.0093
	(1.54)	(1.33)
post ASX300	-0.0003	-0.0001
	(-0.26)	(-0.06)
Constant	0.0000	0.0000
	(0.00)	(0.06)
N	2824	2824
F	8.9089	7.8758
R^2	0.0247	0.0219
Adjusted R^2	0.0219	0.0191
$Pr(g_{t-1}+g_t+g_{t+1})$	0.0219	0.0342
$Pr(b_{t-1}+b_t+b_{t+1})$	0.9214	0.9238

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. a surplus, dummy variable *b*=1 for a 'bad' outcome i.e. a loss, dummy variable D22 =1 if regular announcement else 0.

	Unadjust Return	Adjusted Return
	Model 17	Model 18
Mkt Rtn	0.3546***	0.3430***
	(6.30)	(5.94)
g_{t-1}	-0.0046	-0.0046
	(-1.05)	(-1.02)
g_t	0.0222***	0.0214***
	(5.04)	(4.73)
g_{t+1}	0.0002	0.0001
	(0.04)	(0.01)
b_{t-1}	-0.0007	-0.0022
	(-0.11)	(-0.32)
b_t	-0.0086	-0.0082
	(-1.26)	(-1.18)
b_{t+1}	0.0104	0.0093
	(1.54)	(1.33)
post ASX300	-0.0003	-0.0001
	(-0.26)	(-0.06)
Reg. Ann	0.0006	-0.0003
	(0.16)	(-0.06)
Constant	-0.0000	0.0001
	(-0.02)	(0.06)
N	2824	2824
F	7.9190	6.9987
R^2	0.0247	0.0219
Adjusted R^2	0.0216	0.0188
$Pr(g_{t-1}+g_t+g_{t+1})$	0.0218	0.0343
$Pr(b_{t-1}+b_t+b_{t+1})$	0.9239	0.9248

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. a surplus and dummy variable *b*=1 for a 'bad' outcome i.e. a loss (withdrawals =0)

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 19	Post Asx300 Model 20	Whole period Model 21	Pre Asx300 Model 22	Post Asx300 Model 23	Whole period Model 24
Mkt Rtn	0.3125***	0.4293***	0.3577***	0.2863***	0.4421***	0.3461***
	(3.76)	(6.89)	(6.36)	(3.33)	(7.25)	(6.01)
g_{t-1}	-0.0072	-0.0013	-0.0047	-0.0078	-0.0003	-0.0047
	(-1.05)	(-0.29)	(-1.07)	(-1.11)	(-0.08)	(-1.03)
g_t	0.0228***	0.0214***	0.0222***	0.0217**	0.0209***	0.0213***
	(3.35)	(4.72)	(5.03)	(3.08)	(4.71)	(4.72)
g_{t+1}	0.0008	-0.0005	0.0001	0.0008	-0.0005	0.0000
	(0.12)	(-0.11)	(0.02)	(0.11)	(-0.11)	(0.00)
b_{t-1}	-0.0050	-0.0054	-0.0054	-0.0082	-0.0058	-0.0071
	(-0.32)	(-0.65)	(-0.60)	(-0.51)	(-0.72)	(-0.77)
b_t	-0.0007	-0.0275***	-0.0155	-0.0002	-0.0288***	-0.0160
	(-0.04)	(-3.37)	(-1.72)	(-0.01)	(-3.60)	(-1.74)
b_{t+1}	0.0130	0.0037	0.0082	0.0114	0.0060	0.0088
	(0.83)	(0.45)	(0.91)	(0.71)	(0.75)	(0.95)
Constant	0.0000	-0.0002	-0.0001	0.0001	0.0000	0.0001
	(0.01)	(-0.29)	(-0.09)	(0.07)	(0.06)	(0.12)
N	1661	1163	2824	1661	1163	2824
F	3.9463	11.9056	10.2014	3.2727	12.9610	9.1861
R^2	0.0164	0.0673	0.0247	0.0137	0.0728	0.0223
Adjusted R^2	0.0123	0.0616	0.0223	0.0095	0.0672	0.0199
$Pr(g_{t-1}+g_t+g_{t+1})$	0.1674	0.0146	0.0235	0.2330	0.0107	0.0361
$Pr(b_{t-1}+b_t+b_{t+1})$	0.7860	0.0403	0.4160	0.9133	0.0407	0.3699

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. >net mean and dummy variable *b*=1 for a 'bad' outcome i.e. < net mean (withdrawals =0)

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 25	Post Asx300 Model 26	Whole period Model 27	Pre Asx300 Model 28	Post Asx300 Model 29	Whole period Model 30
Mkt Rtn	0.3092***	0.4284***	0.3540***	0.2852***	0.4425***	0.3426***
	(3.72)	(6.83)	(6.29)	(3.32)	(7.21)	(5.94)
g_{t-1}	0.0124	0.0055	0.0086	0.0110	0.0079	0.0093
	(0.97)	(0.84)	(1.19)	(0.83)	(1.23)	(1.25)
g_t	0.0426***	0.0259***	0.0335***	0.0479***	0.0243***	0.0350***
	(3.35)	(3.94)	(4.61)	(3.64)	(3.77)	(4.71)
g_{t+1}	-0.0168	-0.0024	-0.0091	-0.0169	-0.0023	-0.0091
	(-1.32)	(-0.37)	(-1.25)	(-1.28)	(-0.36)	(-1.22)
b_{t-1}	-0.0088	-0.0062	-0.0078	-0.0099	-0.0064	-0.0086
	(-1.37)	(-1.33)	(-1.82)	(-1.49)	(-1.40)	(-1.95)
b_t	0.0103	-0.0002	0.0061	0.0083	0.0001	0.0049
	(1.61)	(-0.05)	(1.43)	(1.25)	(0.02)	(1.12)
b_{t+1}	0.0099	0.0027	0.0072	0.0089	0.0031	0.0066
	(1.54)	(0.57)	(1.67)	(1.34)	(0.68)	(1.50)
Constant	-0.0001	-0.0002	-0.0001	-0.0000	0.0000	0.0000
	(-0.11)	(-0.27)	(-0.19)	(-0.02)	(0.07)	(0.04)
N	1661	1163	2824	1661	1163	2824
F	5.0546	9.4868	10.4354	4.6711	10.2157	9.8472
R^2	0.0210	0.0544	0.0253	0.0194	0.0583	0.0239
Adjusted R^2	0.0168	0.0486	0.0229	0.0152	0.0526	0.0215
$Pr(g_{t-1}+g_t+g_{t+1})$	0.0849	0.0118	0.0091	0.0672	0.0081	0.0067
$Pr(b_{t-1}+b_t+b_{t+1})$	0.3123	0.6509	0.4684	0.5359	0.6923	0.7045

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. >net median and dummy variable *b*=1 for a 'bad' outcome i.e. < net median. (N.B. median includes withdrawals).

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 31	Post Asx300 Model 32	Whole period Model 33	Pre Asx300 Model 34	Post Asx300 Model 35	Whole period Model 36
Mkt Rtn	0.3138***	0.4240***	0.3568***	0.2875***	0.4378***	0.3451***
	(3.78)	(6.78)	(6.35)	(3.34)	(7.15)	(5.99)
g_{t-1}	-0.0076	0.0013	-0.0032	-0.0085	0.0025	-0.0031
	(-0.89)	(0.27)	(-0.61)	(-0.96)	(0.51)	(-0.58)
g_t	0.0370***	0.0225***	0.0299***	0.0362***	0.0221***	0.0293***
	(4.32)	(4.49)	(5.74)	(4.09)	(4.51)	(5.49)
g_{t+1}	-0.0031	-0.0007	-0.0021	-0.0017	-0.0008	-0.0014
	(-0.36)	(-0.14)	(-0.39)	(-0.19)	(-0.16)	(-0.27)
b_{t-1}	-0.0021	-0.0073	-0.0040	-0.0034	-0.0072	-0.0049
	(-0.27)	(-1.25)	(-0.77)	(-0.43)	(-1.27)	(-0.91)
b_t	0.0007	-0.0105	-0.0036	0.0002	-0.0108	-0.0041
	(0.09)	(-1.80)	(-0.69)	(0.02)	(-1.89)	(-0.76)
b_{t+1}	0.0115	0.0032	(1.60)	0.0089	0.0041	0.0069
	(1.50)	(0.56)		(1.12)	(0.73)	(1.30)
Constant	-0.0001	-0.0002	-0.0001	0.0000	0.0000	0.0000
	(-0.12)	(-0.27)	(-0.20)	(-0.04)	(0.07)	(0.03)
N	1661	1163	2824	1661	1163	2824
F	5.1852	10.5470	11.1137	4.3486	11.4516	10.0054
R^2	0.0215	0.0601	0.0269	0.0181	0.0649	0.0243
Adjusted R^2	0.0173	0.0544	0.0245	0.0139	0.0592	0.0218
$Pr(g_{t-1}+g_t+g_{t+1})$	0.0801	0.0088	0.0071	0.0943	0.0060	0.0083
$Pr(b_{t-1}+b_t+b_{t+1})$	0.4570	0.1554	0.9331	0.6883	0.1659	0.8301

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes:
Number of good/bad events = 39/39
Median Value = 756,334

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable g =1 is used for a good outcome i.e. >net median and dummy variable b=1 for a 'bad' outcome i.e. < net median. (N.B median excludes withdrawals).

Regression results of 'good' and 'bad' outcome models of IMF return excluding withdrawals

	Unadjusted Return			Adjusted Return		
Model	Pre Asx300 31A	Post Asx300 32A	Whole period 33A	Pre Asx300 34A	Post Asx300 35A	Whole period 36A
Mkt Rtn	0.3240***	0.4260***	0.3617***	0.2984***	0.4396***	0.3503***
	(3.90)	(6.82)	(6.44)	(3.47)	(7.18)	(6.09)
g_{t-1}	-0.0080	0.0011	-0.0030	-0.0086	0.0022	-0.0027
	(-0.83)	(0.20)	(-0.55)	(-0.87)	(0.44)	(-0.48)
g_t	0.0409***	0.0232***	0.0315***	0.0410***	0.0227***	0.0314***
	(4.28)	(4.51)	(5.65)	(4.15)	(4.52)	(5.49)
g_{t+1}	-0.0116	0.0012	-0.0049	-0.0109	0.0011	-0.0047
	(-1.22)	(0.24)	(-0.89)	(-1.10)	(0.22)	(-0.82)
b_{t-1}	-0.0065	-0.0072	-0.0069	-0.0078	-0.0073	-0.0078
	(-0.80)	(-1.15)	(-1.23)	(-0.93)	(-1.19)	(-1.36)
b_t	0.0032	-0.0098	-0.0016	0.0016	-0.0108	-0.0031
	(0.39)	(-1.56)	(-0.29)	(0.19)	(-1.75)	(-0.54)
b_{t+1}	0.0131	-0.0006	0.0081	0.0121	0.0009	0.0079
	(1.61)	(-0.10)	(1.46)	(1.43)	(0.14)	(1.39)
Constant	0.0000	-0.0002	-0.0001	0.0001	0.0000	0.0001
	(0.02)	(-0.29)	(-0.09)	(0.07)	(0.06)	(0.12)
N	1661	1163	2824	1661	1163	2824
F	5.4774	10.3681	11.0761	4.7925	11.2670	10.2272
R^2	0.0227	0.0591	0.0268	0.0199	0.0639	0.0248
Adjusted R^2	0.0185	0.0534	0.0244	0.0157	0.0582	0.0224
$Pr(g_{t-1}+g_t+g_{t+1})$	0.2023	0.0049	0.0161	0.2115	0.0034	0.0167
$Pr(b_{t-1}+b_t+b_{t+1})$	0.4951	0.1088	0.9712	0.6912	0.1102	0.7721

t statistics in parentheses
Source:MS-Issue04v02.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes:
Number of good/bad events = 34/34
Median Value = 1,031,649

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. >net mean of gains and dummy variable *b*=1 for a 'bad' outcome i.e. < net mean of losses (withdrawals =0).

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 37	Post Asx300 Model 38	Whole period Model 39	Pre Asx300 Model 40	Post Asx300 Model 41	Whole period Model 42
Mkt Rtn	0.3276***	0.4402***	0.3657***	0.3035***	0.4540***	0.3543***
	(3.94)	(7.02)	(6.50)	(3.53)	(7.39)	(6.15)
g_{t-1}	0.0196	0.0035	0.0092	0.0180	0.0066	0.0104
	(1.26)	(0.51)	(1.13)	(1.11)	(0.98)	(1.25)
g_t	0.0504**	0.0281***	0.0364***	0.0557***	0.0263***	0.0372***
	(3.24)	(4.08)	(4.48)	(3.46)	(3.89)	(4.48)
g_{t+1}	-0.0352*	-0.0023	-0.0149	-0.0341*	-0.0021	-0.0144
	(-2.26)	(-0.33)	(-1.84)	(-2.12)	(-0.32)	(-1.74)
b_{t-1}	0.0166	0.0005	0.0081	0.0132	-0.0033	0.0045
	(0.62)	(0.03)	(0.50)	(0.47)	(-0.22)	(0.27)
b_t	-0.0401	-0.0151	-0.0277	-0.0495	-0.0141	-0.0319
	(-1.49)	(-0.99)	(-1.71)	(-1.78)	(-0.94)	(-1.92)
b_{t+1}	0.0120	-0.0080	0.0024	0.0188	-0.0084	0.0057
	(0.44)	(-0.52)	(0.15)	(0.67)	(-0.56)	(0.35)
Constant	0.0002	-0.0002	0.0001	0.0002	0.0000	0.0002
	(0.25)	(-0.30)	(0.12)	(0.25)	(0.07)	(0.28)
N	1661	1163	2824	1661	1163	2824
F	4.9238	9.4490	9.7784	4.7096	10.0771	9.2478
R^2	0.0204	0.0542	0.0237	0.0196	0.0576	0.0225
Adjusted R^2	0.0163	0.0484	0.0213	0.0154	0.0518	0.0200
$Pr(g_{t-1}+g_t+g_{t+1})$	0.1992	0.0148	0.0303	0.1583	0.0093	0.0219
$Pr(b_{t-1}+b_t+b_{t+1})$	0.8041	0.3949	0.5401	0.7169	0.3236	0.4519

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where dummy variable *g* =1 is used for a good outcome i.e. >net median of gains and dummy variable *b*=1 for a 'bad' outcome i.e. < net median of losses (withdrawals =0)

	Unadjusted Return			Adjusted Return		
	Pre Asx300 Model 43	Post Asx300 Model 44	Whole period Model_45	Pre Asx300 Model 46	Post Asx300 Model 47	Whole period Model 48
Mkt Rtn	0.3289***	0.4290***	0.3636***	0.3043***	0.4423***	0.3527***
	(3.95)	(6.88)	(6.46)	(3.54)	(7.24)	(6.12)
g_{t-1}	0.0063	0.0036	0.0050	0.0059	0.0054	0.0057
	(0.62)	(0.63)	(0.81)	(0.56)	(0.96)	(0.91)
g_t	0.0343***	0.0260***	0.0302***	0.0366***	0.0251***	0.0309***
	(3.36)	(4.48)	(4.91)	(3.46)	(4.40)	(4.91)
g_{t+1}	-0.0173	-0.0017	-0.0097	-0.0181	-0.0022	-0.0103
	(-1.69)	(-0.29)	(-1.57)	(-1.71)	(-0.38)	(-1.64)
b_{t-1}	0.0040	-0.0041	0.0005	0.0051	-0.0073	-0.0003
	(0.21)	(-0.32)	(0.04)	(0.26)	(-0.59)	(-0.02)
b_t	-0.0116	-0.0269*	-0.0183	-0.0163	-0.0275*	-0.0213
	(-0.61)	(-2.15)	(-1.49)	(-0.83)	(-2.25)	(-1.70)
b_{t+1}	0.0003	0.0161	0.0073	0.0009	0.0179	0.0085
	(0.01)	(1.29)	(0.60)	(0.04)	(1.47)	(0.68)
Constant	0.0002	-0.0003	-0.0000	0.0002	-0.0000	0.0001
	(0.18)	(-0.43)	(-0.00)	(0.18)	(-0.05)	(0.17)
N	1661	1163	2824	1661	1163	2824
F	4.1973	10.7340	10.0619	3.9142	11.6609	9.6081
R^2	0.0175	0.0611	0.0244	0.0163	0.0660	0.0233
Adjusted R^2	0.0133	0.0554	0.0220	0.0121	0.0603	0.0209
$Pr(g_{t-1}+g_t+g_{t+1})$	0.1921	0.0062	0.0179	0.1862	0.0046	0.0171
$Pr(b_{t-1}+b_t+b_{t+1})$	0.8257	0.4957	0.6218	0.7622	0.4290	0.5482

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Notes:
Number of good events = 28 > Median Value = 1,475,975
Number of bad events = 7 < Median Value = - 502,915

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where variable *n* is the magnitude of the gain or loss arising from the case expressed as a percentage of the net asset value of the company at the end of the last half year end date.

	IMF Unadjusted Return			IMF Adjusted Return		
	Pre Asx300	Post Asx300	Whole period	Pre Asx300	Post Asx300	Whole period
	Model49	Model50	Model51	Model52	Model53	Model54
Mkt Rtn	0.3240***	0.4269***	0.3633***	0.2982***	0.4432***	0.3523***
	(3.92)	(6.85)	(6.49)	(3.49)	(7.27)	(6.14)
n_{t-1}	0.0007	-0.0001	0.0004	0.0007	0.0001	0.0005
	(1.62)	(-0.29)	(1.39)	(1.69)	(0.24)	(1.66)
n_t	0.0013**	0.0017***	0.0015***	0.0014***	0.0017***	0.0015***
	(3.13)	(5.32)	(5.09)	(3.32)	(5.30)	(5.20)
n_{t+1}	-0.0017***	-0.0005	-0.0013***	-0.0016***	-0.0005	-0.0013***
	(-3.98)	(-1.46)	(-4.37)	(-3.78)	(-1.62)	(-4.25)
Constant	0.0003	-0.0002	0.0001	0.0003	0.0001	0.0002
	(0.32)	(-0.24)	(0.21)	(0.28)	(0.12)	(0.34)
N	1661	1163	2824	1661	1163	2824
F	10.7494	19.7726	21.9775	9.9324	21.1699	21.1297
R^2	0.0253	0.0639	0.0302	0.0234	0.0681	0.0291
Adjusted R^2	0.0230	0.0607	0.0289	0.0211	0.0649	0.0277
$Pr(n_{t-1}+n_t+n_{t+1})=0$	0.6579	0.0407	0.2249	0.4824	0.0248	0.1339

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Multiple event study for an event window [-1,0+1] surrounding outcome announcement *t* where variable *c* is the magnitude of the gain or loss arising from the case expressed as a percentage of the capitalised value of the company on trading day c_{t-1}.

	IMF Unadjusted Return			IMF Adjusted Return		
	Pre ASX300	Post ASX300	Whole Period	Pre ASX300	Post ASX300	Whole Period
	Model 55	Model 56	Model 57	Model 58	Model 59	Model 60
Mkt Rtn	0.3267***	0.4296***	0.3662***	0.3005***	0.4455***	0.3551***
	(3.96)	(6.90)	(6.55)	(3.52)	(7.31)	(6.20)
c_{t-1}	0.0010	-0.0003	0.0008	0.0011	0.0000	0.0009*
	(1.77)	(-0.42)	(1.71)	(1.87)	(0.07)	(1.97)
c_t	0.0019**	0.0036***	0.0023***	0.0021***	0.0035***	0.0024***
	(3.23)	(5.37)	(5.02)	(3.36)	(5.35)	(5.12)
c_{t+1}	-0.0028***	-0.0011	-0.0024***	-0.0027***	-0.0011	-0.0024***
	(-4.71)	(-1.58)	(-5.44)	(-4.39)	(-1.75)	(-5.18)
Constant	0.0003	-0.0001	0.0002	0.0003	0.0001	0.0003
	(0.36)	(-0.22)	(0.28)	(0.31)	(0.14)	(0.40)
N	1661	1163	2824	1661	1661	2824
F	12.6178	20.0139	24.6976	11.4227	21.4219	23.4237
R^2	0.0296	0.0647	0.0339	0.0269	0.0689	0.0322
Adjusted R^2	0.0272	0.0614	0.0325	0.0245	0.0657	0.0308
$Pr(c_{t-1}+c_t+c_{t+1=0})$	0.8706	0.0535	0.4582	0.6315	0.0352	0.2739

t statistics in parentheses
Source:MS-Issue04v01.do
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Event Id	Case Id	Case Name	Note	Resolved by	Invested	Revenue	Gain	'Good'/ 'Bad'
1	4	Patrick		Settlement	$500,000	$1,931,094	$1,431,094	Good
2	8	Tobacco Wholesalers		Settlement	$4,000,000	$11,000,000	$7,000,000	Good
3	6	Agricultur.Com pty Ltd		Settlement	$200,000	$650,000	$450,000	Good
4	7	Whyalla Airlines		Settlement	$600,000	$1,050,000	$450,000	Good
5	15	Ezishop		Judgment	$150,000	$841,000	$691,000	Good
6	13	Advanced Communications		Settlement	$750,000	$1,450,000	$700,000	Good
7	2	NSW Supermarkets Pty Ltd		Settlement	$382,000	$1,198,000	$816,000	Good
8	5	Sentinel MPA (Financial Wisdom)		Judgment	$4,600,000	$7,797,000	$3,197,000	Good
9	18	Doran Construction		Judgment	$900,000	$0	-$900,000	Bad
10	31	Essington Investments		Judgment	$60,260	$0	-$60,260	Bad
11	30	Bellambi West Colliery		Settlement	$400,000	$1,400,000	$1,000,000	Good
12	19	Sit Simplex		Settlement	$20,000	$65,000	$45,000	Good
13	10	Global Market Link Pty Ltd		Settlement	$300,000	$1,300,000	$1,000,000	Good
14	27	Bensons	1	Settlement				Bad
15	45	Smart Company Pty Ltd		Withdrawal	$700,000	$0	-$700,000	Bad
16	52	Westpac		Settlement	$538,000	$1,900,000	$1,362,000	Good
17	17	Barron Entertainment		Settlement	$300,000	$161,000	-$139,000	Bad
18	12	Mercury Rising		Settlement	$4,400,000	$4,900,000	$500,000	Good
19	57	Australian Coal Technology Pty Ltd		Settlement	$40,000	$500,000	$460,000	Good
20	40	Concept Sports		Settlement	$550,000	$700,000	$150,000	Good
21	36	Geneva Finance		Settlement	$1,800,000	$5,000,000	$3,200,000	Good
22	16	Kingsheath Club of the Clubs		Judgment	$3,000,625	$2,440,907	-$559,718	Bad
23	3	Finance Brokers		Settlement	$4,930,945	$12,233,412	$7,302,467	Good
24	49	Preslands Finance Pty Ltd		Withdrawal	$90,000	$0	-$90,000	Bad
25	41.1	Lawyers Private Mortgages		Settlement	$400,000	$2,700,000	$2,300,000	Good
26	61	Ainsworth ats Silk Earl		Settlement	$225,000	$1,153,900	$928,900	Good
27	23	Meadow Springs & Ors		Settlement	$1,169,497	$3,410,898	$2,241,401	Good

Event Id	Case Id	Case Name	Note	Resolved by	Invested	Revenue	Gain	'Good'/ 'Bad'
28	35	Truckies MPA v Pilbara		Settlement	$783,056	$1,400,000	$616,944	Good
29	1	Global Finance Group Pty Ltd		Settlement	$1,000,000	$2,600,000	$1,600,000	Good
30	47	Allstate Explorations NL		Withdrawal	$480,000	$0	-$480,000	Bad
31	9	Nomad Telecommunications Ltd		Settlement	$1,130,074	$2,733,382	$1,603,308	Good
32	38	Vogue Homes		Settlement	$330,911	$874,952	$544,041	Good
33	64	ACT v Newlands		Withdrawal	$1	$0	-$1	Bad
34	28	Reynolds Wines		Judgment	$1,712,507	$0	-$1,712,507	Bad
35	53	Multiplex		Withdrawal	$1	$0	-$1	Bad
36	63	Eurogold		Settlement	$1,575,258	$4,256,283	$2,681,025	Good
37	34	SpatialInfo Pty Ltd		Settlement	$3,274,374	$3,863,124	$588,750	Good
38	42	QPSX Ltd & Ors		Settlement	$670,342	$4,444,000	$3,773,658	Good
39	68	Strange Bedfellows Pty Ltd		Withdrawal	$50,000	$0	-$50,000	Bad
40	51	Wright		Settlement	$1,931,267	$21,123,954	$19,192,687	Good
41	21	Performance Finance		Settlement	$1,060,027	$1,234,768	$174,741	Good
42	26	Aristocrat Leisure Ltd		Settlement	$13,582,034	$35,256,993	$21,674,959	Good
43	44	Marlor Domestic Appliances		Withdrawal	$1	$0	-$1	Bad
44	62	Shenton Park retirement		Settlement	$1,120,969	$3,433,909	$2,312,940	Good
45	67	Downer EDI Ltd		Settlement	$979,053	$6,345,197	$5,366,144	Good
46	60	Centaur Mining		Settlement	$1,675,936	$6,770,382	$5,094,446	Good
47	50	Village Life Ltd MPA		Settlement	$1,080,918	$1,434,146	$353,228	Good
48	54.1	Westpoint v Masu		Settlement	$738,646	$1,440,329	$701,683	Good
49	74	Opes prime		Settlement	$5,632,656	$6,175,874	$543,218	Good
50	46	Concept Equity Pty Ltd		Judgment	$525,831	$0	-$525,831	Bad
51	65	Peninsular Shipping Lines		Settlement	$1,043,703	$827,185	-$216,518	Bad
52	39	Sons of Gwalia		Settlement	$1,318,715	$21,698,523	$20,379,808	Good
53	84	Arasor		Withdrawal	$1	$0	-$1	Bad
54	37	NEIB & Ors		Settlement	$1,730,394	$1,956,755	$226,361	Good

Event Id	Case Id	Case Name	Note	Resolved by	Invested	Revenue	Gain	'Good'/ 'Bad'
55	66	John & Kaye Watson v AWB		Settlement	$9,218,305	$16,509,881	$7,291,576	Good
56	54.2	Westpoint v PIS		Settlement	$1,719,595	$3,195,570	$1,475,975	Good
57	79	Kingstream	2	Judgment				Bad
58	24	AM Corp		Settlement	$5,178,337	$4,000,000	-$1,178,337	Bad
59	54.3	Westpoint v Quantum		Settlement	$876,924	$1,940,222	$1,063,298	Good
60	83	Ceramic Fuel		Settlement	$688,532	$2,464,350	$1,775,818	Good
61	89	Napier		Judgment	$295,000	$0	-$295,000	Bad
62	77	Pan Pharma V Commonwealth		Settlement	$6,290,795	$24,380,230	$18,089,435	Good
63	99	PCI		Settlement	$298,973	$1,370,767	$1,071,794	Good
64	82	National Potato v PWC		Judgment	$4,799,000	$14,506,945	$9,707,945	Good
65	100	WDS		Withdrawal	$0	$0	-$1	Bad
66	92	Babcock US		Settlement	$744,490	$1,555,475	$810,985	Good
67	80	Oz Minerals		Settlement	$2,797,396	$15,598,579	$12,801,183	Good
68	93	Hydrocool	3	Judgment		$500,000	-$1	Bad
69	75	Credit Corp Group (CCG)		Settlement	$2,928,186	$4,354,813	$1,426,627	Good
70	105	Funding Liquidators of Babcock & Brown		Settlement	$1,409,396	$7,265,000	$5,855,604	Good
71	116	Koonara Management Pty Ltd v Thomson Playford		Settlement	$1,314,899	$4,593,529	$3,278,630	Good
72	102	Kimberley global v Centrex		Settlement	$499,870	$1,937,788	$1,437,918	Good
73	94	Uniloc v Microsoft		Settlement	$4,949,265	$9,731,231	$4,781,966	Good
74	95	Transpacific Industries Group (TPI)		Settlement	$2,548,979	$13,004,397	$10,455,418	Good
75	71	Centro Properties		Settlement	$20,197,283	$61,976,563	$41,779,280	Good
76	96	Innovatorone/ Collyer Bristow		Judgment	$4,946,215	$0	-$4,946,215	Bad
77	119	Christie Qld Pty Ltd ('CQ')		Withdrawal	$0	$0	-$1	Bad
78	103	Councils v Local Government Financial Services		Judgment	$8,456,596	$16,528,462	$8,071,866	Good
79	122	US Bentham case 1		Judgment	$2,871,783	$5,111,891	$2,240,108	Good

Notes:

1. On 31 March 2004 IMF announced that it had agreed to fund insolvent trading proceedings against the sole director of the Bensons Group Pty Ltd in respect of losses exceeding A$5m in return for up to 30% of recoveries. The amount was revised to A$3m in the case portfolio at September 2004 with an expected completion date of December 2005. The case continued to appear on the quarterly portfolio report until its removal in December 2005. In the Director's report to the half year accounts to 31 December 2005, IMF reported that "*no material cases have been finalised*" and it also stated that "*IMF has implemented a programme of providing ASX with a list of cases funded by IMF in which IMF's potential fee is greater than $500,000*". I conclude that as the Benson case was not 'material' and failed to meet expectations it should be treated as `bad'.

2. The investment and the extent of the loss in Kingstream is not known. The IMF Annual report to June 2010 has a footnote to the other matters litigation cost and expenses of A$6,131,314 which reads "*includes the cost of Kingstream which was written off during 2010, a provision for adverse costs relating to the Kingstream matter of $2,006,487 and…*" I conclude that the loss was somewhere between A$2m and A$6m

3. The investment in Hydrocool has not been determined. On 16 May 2011, IMF announced that judgement had been given and that IMF expected to receive revenue of around $A0.5m. The judgment in *Hydrocool Pty Limited v Hepburn (No 4)* [2011] FCA 495 was not an overwhelming success. In §15 the judges noted that originally there were 10 respondents but now there was only three (see *Hydrocool Pty Limited v Hepburn (No 2)* [2010] FCA 285 of 3 March 2010 which is after IMF announced their interest in this case). The value of the claims against the remaining respondents was approximately A$2.5 – A$4m (§186-196). Although the respondents had contravened the *Corporations Act 2001*, the causal link to the losses claimed was not established (§478). Hydrocool was awarded approximately A$0.4m (§542, 558, 571, 637) but had to pay 3 years of indemnity costs to the respondent company. With interest the amount Hydrocool received approaches the IMF stated revenue figure. As IMF would normally only receive a percentage of damages after their costs had been paid, I conclude that IMF has only been reimbursed part of its costs and that overall this case was a financial loss of an unspecified amount.

Appendix 7 Descriptive statistics for varying lengths of estimation windows

Market model descriptive statistics for estimation Window -100 to -11 trading days before event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	89	-0.0028	0.0029	0.0036	3.7398	0.0600	-0.1818	0.1667
Event3	89	0.0042	-0.3308	0.0041	8.0564	0.0640	-0.2857	0.2000
Event4	89	0.0027	-0.5261	0.0037	9.1072	0.0605	-0.2857	0.2000
Event5	89	-0.0020	-0.2220	0.0016	3.0821	0.0402	-0.1111	0.1000
Event6	89	0.0016	-0.0346	0.0019	3.2878	0.0438	-0.1250	0.1250
Event7	89	0.0020	-0.0941	0.0021	3.3602	0.0457	-0.1250	0.1250
Event8	89	-0.0019	-0.3368	0.0007	5.2313	0.0262	-0.0800	0.0741
Event9	89	-0.0016	-0.2589	0.0007	5.4865	0.0256	-0.0800	0.0741
Event10	89	0.0013	-0.3153	0.0006	4.8926	0.0237	-0.0926	0.0625
Event11	89	0.0012	-0.3021	0.0006	4.5319	0.0243	-0.0926	0.0625
Event12	89	-0.0002	0.7169	0.0005	3.3456	0.0213	-0.0345	0.0615
Event13	89	-0.0037	-1.0859	0.0008	6.2581	0.0284	-0.1136	0.0625
Event14	89	-0.0048	-0.8349	0.0013	4.3552	0.0358	-0.1143	0.0750
Event15	89	-0.0055	-0.6903	0.0014	3.7209	0.0379	-0.1143	0.0750
Event16	89	-0.0001	-0.0887	0.0009	3.2674	0.0297	-0.0690	0.0645
Event17	89	-0.0004	0.0471	0.0008	3.1018	0.0286	-0.0690	0.0645
Event18	89	-0.0001	-0.0072	0.0008	3.9857	0.0289	-0.0882	0.0833
Event19	89	0.0015	0.1035	0.0009	4.0508	0.0294	-0.0882	0.0833
Event20	89	0.0026	0.0935	0.0010	3.6954	0.0309	-0.0882	0.0833
Event21	89	0.0036	0.0287	0.0010	3.6402	0.0310	-0.0882	0.0833
Event22	89	0.0050	0.1771	0.0008	4.0665	0.0291	-0.0882	0.0833
Event23	89	0.0038	-0.0112	0.0009	3.8321	0.0292	-0.0882	0.0769
Event24	89	0.0040	0.3602	0.0008	3.2586	0.0291	-0.0625	0.0769
Event25	89	-0.0003	0.4409	0.0007	3.9697	0.0257	-0.0625	0.0769
Event26	89	-0.0017	0.1418	0.0008	3.6973	0.0289	-0.0800	0.0769
Event27	89	-0.0005	0.1618	0.0010	3.3609	0.0308	-0.0800	0.0816
Event28	89	-0.0012	0.1229	0.0011	3.3147	0.0333	-0.0851	0.0816
Event29	89	-0.0004	0.1767	0.0012	3.2357	0.0344	-0.0851	0.0816
Event30	89	-0.0005	0.3553	0.0015	4.0829	0.0393	-0.0851	0.1373
Event31	89	-0.0010	0.3926	0.0015	4.1612	0.0391	-0.0851	0.1373
Event32	89	0.0017	0.3802	0.0015	4.3712	0.0382	-0.0851	0.1373
Event33	89	0.0015	0.3744	0.0015	4.2706	0.0385	-0.0851	0.1373
Event34	89	0.0000	0.3955	0.0015	4.2733	0.0386	-0.0851	0.1373
Event35	89	-0.0010	0.6620	0.0010	6.2975	0.0320	-0.0851	0.1373
Event36	89	-0.0053	-0.4362	0.0015	8.4971	0.0391	-0.1765	0.1500
Event37	89	-0.0055	-0.9597	0.0020	8.5365	0.0449	-0.1935	0.1500
Event38	89	-0.0043	-0.8956	0.0021	8.1685	0.0458	-0.1935	0.1500
Event39	89	-0.0055	-0.7016	0.0023	6.9972	0.0480	-0.1935	0.1500

Market model descriptive statistics for estimation Window -100 to -11 trading days before event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	89	-0.0033	-0.7476	0.0023	7.0878	0.0482	-0.1935	0.1500
Event41	89	-0.0032	-0.7187	0.0024	6.8058	0.0487	-0.1935	0.1500
Event42	89	-0.0014	-0.3276	0.0027	6.3077	0.0524	-0.1935	0.1633
Event43	89	0.0027	1.3910	0.0014	7.4461	0.0371	-0.0938	0.1633
Event44	89	0.0004	1.3785	0.0014	7.8693	0.0369	-0.0938	0.1633
Event45	89	0.0009	-0.4576	0.0012	4.0201	0.0345	-0.0952	0.0870
Event46	89	0.0023	0.3037	0.0012	4.8068	0.0342	-0.0943	0.1207
Event47	89	0.0041	1.4746	0.0007	7.5805	0.0266	-0.0566	0.1207
Event48	89	0.0064	-0.1868	0.0006	3.3056	0.0238	-0.0654	0.0672
Event49	89	0.0037	-0.5030	0.0009	3.7370	0.0307	-0.0917	0.0682
Event50	89	0.0033	-0.3425	0.0011	3.5550	0.0336	-0.0917	0.0917
Event51	89	0.0020	-0.2596	0.0011	3.5116	0.0337	-0.0917	0.0917
Event52	89	0.0005	-0.1894	0.0012	3.3520	0.0342	-0.0917	0.0917
Event53	89	-0.0009	0.0571	0.0010	3.9471	0.0323	-0.0917	0.0917
Event54	89	0.0024	-0.1760	0.0004	4.2916	0.0206	-0.0635	0.0563
Event55	89	0.0006	-2.6936	0.0008	18.3927	0.0279	-0.1729	0.0563
Event56	89	-0.0014	0.1033	0.0007	5.2259	0.0263	-0.0909	0.0916
Event57	89	0.0001	0.0854	0.0006	6.0483	0.0249	-0.0909	0.0916
Event58	89	-0.0006	0.0123	0.0005	8.3594	0.0232	-0.1008	0.0916
Event59	89	0.0003	-0.0893	0.0006	7.3756	0.0241	-0.1008	0.0916
Event60	89	-0.0004	-0.0394	0.0006	7.5682	0.0239	-0.1008	0.0916
Event61	89	-0.0006	-1.5295	0.0004	11.5185	0.0192	-0.1008	0.0593
Event62	87	-0.0002	-0.5170	0.0002	5.4946	0.0151	-0.0609	0.0348
Event63	85	-0.0007	-0.5809	0.0002	5.8621	0.0145	-0.0609	0.0348
Event64	85	0.0009	0.2831	0.0002	3.9992	0.0148	-0.0336	0.0476
Event65	85	-0.0001	0.2560	0.0002	3.9239	0.0147	-0.0336	0.0476
Event66	85	0.0009	0.5886	0.0003	4.1322	0.0165	-0.0336	0.0560
Event67	89	0.0015	0.7914	0.0004	4.6644	0.0192	-0.0391	0.0725
Event68	89	0.0024	0.6772	0.0004	4.2599	0.0196	-0.0391	0.0725
Event69	89	-0.0009	-0.4785	0.0004	3.8138	0.0188	-0.0530	0.0417
Event70	89	-0.0015	-0.5191	0.0004	3.4955	0.0205	-0.0530	0.0417
Event71	89	-0.0014	-0.5172	0.0004	3.3527	0.0201	-0.0530	0.0417
Event72	89	-0.0005	0.4222	0.0002	4.6632	0.0123	-0.0339	0.0370
Event73	89	-0.0013	0.3294	0.0001	4.5997	0.0114	-0.0339	0.0325
Event74	89	0.0003	0.3778	0.0002	3.5186	0.0135	-0.0339	0.0325
Event75	89	0.0002	-0.0354	0.0002	3.9077	0.0150	-0.0469	0.0325
Event76	89	0.0002	-0.1917	0.0002	3.8391	0.0153	-0.0469	0.0325
Event77	89	0.0006	0.2782	0.0004	5.1353	0.0204	-0.0551	0.0821
Event78	89	0.0020	-0.6694	0.0003	5.4509	0.0170	-0.0634	0.0490
Event79	89	0.0010	-1.0143	0.0006	17.7495	0.0241	-0.1370	0.1098

Market model descriptive statistics for estimation window -150 to -11 trading days before event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	139	-0.0019	0.1503	0.0038	4.9401	0.0613	-0.2000	0.2143
Event3	139	0.0023	-0.3228	0.0047	5.5569	0.0689	-0.2857	0.2000
Event4	139	0.0013	-0.2893	0.0032	8.4127	0.0570	-0.2857	0.2000
Event5	139	0.0010	-0.4446	0.0030	9.1744	0.0547	-0.2857	0.2000
Event6	139	-0.0009	-0.1539	0.0019	3.1175	0.0434	-0.1250	0.1250
Event7	139	-0.0010	-0.1615	0.0020	3.1956	0.0447	-0.1250	0.1250
Event8	139	-0.0031	-0.8270	0.0011	5.8054	0.0333	-0.1231	0.0893
Event9	139	-0.0029	-0.8567	0.0011	6.2103	0.0326	-0.1231	0.0893
Event10	139	-0.0002	-0.2184	0.0006	5.3147	0.0251	-0.0926	0.0741
Event11	139	-0.0002	-0.2095	0.0006	5.0720	0.0255	-0.0926	0.0741
Event12	139	0.0001	0.3599	0.0005	3.0157	0.0213	-0.0500	0.0615
Event13	139	-0.0037	-1.0290	0.0008	6.3967	0.0275	-0.1136	0.0690
Event14	139	-0.0040	-0.9509	0.0012	5.1375	0.0339	-0.1143	0.0750
Event15	139	-0.0040	-0.7640	0.0012	4.3351	0.0352	-0.1143	0.0750
Event16	139	-0.0031	-0.5878	0.0013	3.8123	0.0354	-0.1143	0.0750
Event17	139	-0.0018	-0.4513	0.0012	3.6484	0.0352	-0.1143	0.0750
Event18	139	0.0009	-0.0009	0.0008	3.7985	0.0286	-0.0882	0.0833
Event19	139	0.0019	0.0408	0.0009	3.6711	0.0294	-0.0882	0.0833
Event20	139	0.0024	0.0580	0.0009	3.5507	0.0302	-0.0882	0.0833
Event21	139	0.0031	0.1005	0.0009	3.5612	0.0296	-0.0882	0.0833
Event22	139	0.0024	0.1800	0.0008	3.7755	0.0288	-0.0882	0.0833
Event23	139	0.0023	0.1283	0.0008	3.6988	0.0291	-0.0882	0.0833
Event24	139	0.0022	0.1806	0.0009	3.7652	0.0294	-0.0882	0.0833
Event25	139	0.0027	0.4260	0.0007	3.6509	0.0268	-0.0625	0.0769
Event26	139	0.0021	0.2127	0.0009	3.5596	0.0292	-0.0800	0.0769
Event27	139	-0.0011	0.2860	0.0009	3.5639	0.0293	-0.0800	0.0816
Event28	139	-0.0016	0.2615	0.0009	3.6929	0.0307	-0.0851	0.0816
Event29	139	-0.0009	0.2991	0.0010	3.6499	0.0314	-0.0851	0.0816
Event30	139	-0.0011	0.3142	0.0012	4.5303	0.0353	-0.0851	0.1373
Event31	139	-0.0012	0.3144	0.0013	4.4748	0.0354	-0.0851	0.1373
Event32	139	-0.0005	0.3013	0.0013	4.1916	0.0362	-0.0851	0.1373
Event33	139	-0.0008	0.3120	0.0013	4.1393	0.0364	-0.0851	0.1373
Event34	139	-0.0012	0.3976	0.0012	4.3924	0.0353	-0.0851	0.1373
Event35	139	-0.0004	0.3890	0.0012	4.6703	0.0346	-0.0851	0.1373
Event36	139	-0.0025	-0.0288	0.0017	6.4045	0.0411	-0.1765	0.1500
Event37	139	-0.0031	-0.4782	0.0020	6.7499	0.0453	-0.1935	0.1500
Event38	139	-0.0028	-0.4520	0.0021	6.7912	0.0454	-0.1935	0.1500
Event39	139	-0.0033	-0.4595	0.0020	7.0704	0.0447	-0.1935	0.1500

Market model descriptive statistics for estimation window -150 to -11 trading days before event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	139	-0.0022	-0.4745	0.0020	7.3756	0.0443	-0.1935	0.1500
Event41	139	-0.0020	-0.4579	0.0020	7.0539	0.0448	-0.1935	0.1500
Event42	139	-0.0011	-0.3169	0.0020	7.7180	0.0447	-0.1935	0.1633
Event43	139	-0.0013	-0.1562	0.0020	8.1610	0.0447	-0.1935	0.1633
Event44	139	-0.0017	-0.1512	0.0020	7.8286	0.0453	-0.1935	0.1633
Event45	139	0.0029	0.4785	0.0014	6.1095	0.0374	-0.0952	0.1633
Event46	139	0.0028	0.0527	0.0012	4.6316	0.0341	-0.0952	0.1207
Event47	139	0.0027	0.3314	0.0009	5.9111	0.0292	-0.0943	0.1207
Event48	139	0.0058	0.2840	0.0006	4.0165	0.0252	-0.0654	0.0986
Event49	139	0.0045	-0.1358	0.0008	4.4506	0.0285	-0.0917	0.0986
Event50	139	0.0037	-0.0919	0.0009	4.4183	0.0301	-0.0917	0.0986
Event51	139	0.0038	-0.0750	0.0009	4.2222	0.0306	-0.0917	0.0986
Event52	139	0.0020	-0.2374	0.0009	3.9639	0.0297	-0.0917	0.0917
Event53	139	0.0028	-0.1428	0.0009	3.7914	0.0307	-0.0917	0.0917
Event54	139	0.0013	0.0151	0.0008	4.5724	0.0278	-0.0917	0.0917
Event55	139	0.0001	-1.6920	0.0008	13.2222	0.0278	-0.1729	0.0708
Event56	139	-0.0012	-1.6345	0.0008	13.8689	0.0276	-0.1729	0.0916
Event57	139	-0.0009	-1.7027	0.0007	14.4108	0.0273	-0.1729	0.0916
Event58	139	-0.0018	-1.6549	0.0008	12.8644	0.0287	-0.1729	0.0916
Event59	139	-0.0018	-1.6244	0.0008	12.4246	0.0289	-0.1729	0.0916
Event60	139	-0.0021	-1.5945	0.0008	12.3128	0.0290	-0.1729	0.0916
Event61	139	-0.0005	-0.1540	0.0004	8.9955	0.0208	-0.1008	0.0916
Event62	137	-0.0007	-0.2390	0.0004	9.7504	0.0203	-0.1008	0.0916
Event63	135	-0.0009	-1.2146	0.0004	9.1403	0.0187	-0.1008	0.0593
Event64	135	-0.0009	-1.3791	0.0003	10.3410	0.0178	-0.1008	0.0476
Event65	135	-0.0011	-1.3357	0.0003	10.0039	0.0179	-0.1008	0.0476
Event66	135	-0.0005	0.2159	0.0002	5.6307	0.0155	-0.0609	0.0560
Event67	135	0.0010	0.6424	0.0003	4.6209	0.0179	-0.0391	0.0725
Event68	135	0.0014	0.6096	0.0003	4.4676	0.0181	-0.0391	0.0725
Event69	139	0.0003	0.1373	0.0004	4.4370	0.0196	-0.0530	0.0725
Event70	139	0.0001	-0.1378	0.0004	4.0506	0.0204	-0.0530	0.0725
Event71	139	-0.0008	-0.3749	0.0004	3.2642	0.0198	-0.0530	0.0417
Event72	139	-0.0009	-0.2063	0.0002	4.1747	0.0155	-0.0476	0.0394
Event73	139	-0.0009	-0.1708	0.0002	4.2739	0.0152	-0.0476	0.0394
Event74	139	0.0001	0.3866	0.0002	3.3193	0.0139	-0.0339	0.0370
Event75	139	-0.0002	0.1011	0.0002	4.1477	0.0140	-0.0469	0.0370
Event76	139	-0.0005	-0.0442	0.0002	3.9684	0.0140	-0.0469	0.0325
Event77	139	0.0001	0.3475	0.0003	5.9168	0.0179	-0.0551	0.0821
Event78	139	0.0012	-0.0220	0.0004	5.7429	0.0191	-0.0634	0.0821
Event79	139	0.0010	-1.0172	0.0004	19.9406	0.0210	-0.1370	0.1098

Market Model Descriptive Statistics for Estimation Window -200 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	147	-0.0032	-0.1048	0.0041	4.8854	0.0640	-0.2000	0.2143
Event3	182	0.0003	-0.2587	0.0047	5.6663	0.0683	-0.2857	0.2143
Event4	189	0.0003	-0.3827	0.0038	6.1104	0.0618	-0.2857	0.2000
Event5	189	0.0006	-0.2734	0.0033	6.9758	0.0578	-0.2857	0.2000
Event6	189	0.0017	-0.3616	0.0028	8.0236	0.0533	-0.2857	0.2000
Event7	189	0.0015	-0.3580	0.0030	7.5276	0.0544	-0.2857	0.2000
Event8	189	-0.0020	-0.3877	0.0012	4.8926	0.0344	-0.1231	0.1034
Event9	189	-0.0010	-0.4547	0.0012	5.1406	0.0340	-0.1231	0.1034
Event10	189	-0.0008	-0.3308	0.0006	5.0426	0.0251	-0.0926	0.0741
Event11	189	-0.0006	-0.3400	0.0006	4.9250	0.0253	-0.0926	0.0741
Event12	189	0.0009	0.0511	0.0005	3.9357	0.0229	-0.0926	0.0625
Event13	189	-0.0032	-0.8999	0.0007	6.7158	0.0255	-0.1136	0.0690
Event14	189	-0.0042	-0.9284	0.0010	5.5774	0.0309	-0.1143	0.0750
Event15	189	-0.0037	-0.8489	0.0011	5.0760	0.0324	-0.1143	0.0750
Event16	189	-0.0025	-0.7124	0.0011	4.4729	0.0334	-0.1143	0.0750
Event17	189	-0.0027	-0.5199	0.0011	3.9308	0.0336	-0.1143	0.0750
Event18	189	-0.0010	-0.4334	0.0011	4.0294	0.0333	-0.1143	0.0833
Event19	189	0.0007	-0.2795	0.0011	3.6873	0.0330	-0.0938	0.0833
Event20	189	0.0010	-0.2130	0.0010	3.7426	0.0315	-0.0938	0.0833
Event21	189	0.0011	-0.2192	0.0010	3.7085	0.0316	-0.0938	0.0833
Event22	189	0.0026	0.0905	0.0009	3.5321	0.0295	-0.0882	0.0833
Event23	189	0.0025	0.0664	0.0008	3.5520	0.0290	-0.0882	0.0833
Event24	189	0.0015	0.2043	0.0008	3.7384	0.0285	-0.0882	0.0833
Event25	189	0.0017	0.2226	0.0008	3.8312	0.0281	-0.0882	0.0833
Event26	189	0.0019	0.1232	0.0009	3.8198	0.0292	-0.0882	0.0833
Event27	189	0.0013	0.2802	0.0009	3.3270	0.0298	-0.0800	0.0816
Event28	189	0.0000	0.2121	0.0009	3.5568	0.0301	-0.0851	0.0816
Event29	189	0.0004	0.2500	0.0009	3.5296	0.0306	-0.0851	0.0816
Event30	189	-0.0009	0.3095	0.0011	4.4581	0.0337	-0.0851	0.1373
Event31	189	-0.0012	0.3398	0.0011	4.6193	0.0333	-0.0851	0.1373
Event32	189	-0.0008	0.3595	0.0011	4.4888	0.0337	-0.0851	0.1373
Event33	189	-0.0010	0.3646	0.0011	4.4128	0.0339	-0.0851	0.1373
Event34	189	-0.0009	0.3301	0.0011	4.3978	0.0337	-0.0851	0.1373
Event35	189	-0.0015	0.2936	0.0012	4.3417	0.0340	-0.0851	0.1373
Event36	189	-0.0027	0.0266	0.0015	6.4739	0.0384	-0.1765	0.1500
Event37	189	-0.0030	-0.4180	0.0017	7.1487	0.0416	-0.1935	0.1500
Event38	189	-0.0029	-0.4126	0.0017	7.2504	0.0415	-0.1935	0.1500
Event39	189	-0.0025	-0.3646	0.0018	6.5907	0.0430	-0.1935	0.1500

Market Model Descriptive Statistics for Estimation Window -200 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	189	-0.0014	-0.3739	0.0018	6.7045	0.0429	-0.1935	0.1500
Event41	189	-0.0011	-0.3796	0.0019	6.4872	0.0433	-0.1935	0.1500
Event42	189	-0.0004	-0.1481	0.0020	6.6036	0.0449	-0.1935	0.1633
Event43	189	-0.0014	-0.1535	0.0017	8.5962	0.0412	-0.1935	0.1633
Event44	189	-0.0013	-0.1391	0.0017	8.6050	0.0411	-0.1935	0.1633
Event45	189	0.0003	-0.2804	0.0019	7.0005	0.0441	-0.1935	0.1633
Event46	189	0.0025	0.7904	0.0012	6.7841	0.0347	-0.0952	0.1633
Event47	189	0.0016	0.1389	0.0009	5.3976	0.0305	-0.0952	0.1207
Event48	189	0.0048	0.1156	0.0008	5.1410	0.0288	-0.0943	0.1207
Event49	189	0.0024	0.0819	0.0009	4.8833	0.0303	-0.0943	0.1207
Event50	189	0.0032	0.2411	0.0009	4.8779	0.0301	-0.0917	0.1207
Event51	189	0.0040	0.2413	0.0009	4.8915	0.0300	-0.0917	0.1207
Event52	189	0.0027	-0.0035	0.0009	4.1991	0.0292	-0.0917	0.0986
Event53	189	0.0035	0.0571	0.0008	4.2679	0.0291	-0.0917	0.0986
Event54	189	0.0015	-0.1262	0.0008	4.1845	0.0283	-0.0917	0.0917
Event55	189	0.0002	-1.0405	0.0009	9.0202	0.0299	-0.1729	0.0917
Event56	189	-0.0005	-1.4312	0.0007	12.9261	0.0264	-0.1729	0.0916
Event57	189	0.0001	-1.4959	0.0007	13.1509	0.0263	-0.1729	0.0916
Event58	189	-0.0009	-1.4711	0.0007	12.0786	0.0274	-0.1729	0.0916
Event59	189	-0.0010	-1.4948	0.0008	11.8634	0.0275	-0.1729	0.0916
Event60	189	-0.0008	-1.5125	0.0007	12.3059	0.0272	-0.1729	0.0916
Event61	189	-0.0018	-1.7305	0.0007	14.6138	0.0258	-0.1729	0.0916
Event62	187	-0.0007	-0.3895	0.0004	8.8863	0.0209	-0.1008	0.0916
Event63	185	-0.0004	-0.1224	0.0004	9.0815	0.0194	-0.1008	0.0916
Event64	185	-0.0004	-0.1695	0.0004	9.3258	0.0193	-0.1008	0.0916
Event65	185	-0.0006	-0.1497	0.0004	9.1690	0.0194	-0.1008	0.0916
Event66	185	-0.0001	-0.1114	0.0004	9.2526	0.0195	-0.1008	0.0916
Event67	185	0.0002	0.4264	0.0003	5.4757	0.0169	-0.0609	0.0725
Event68	185	0.0007	0.4038	0.0003	5.3185	0.0171	-0.0609	0.0725
Event69	187	0.0002	0.1648	0.0004	4.4003	0.0189	-0.0530	0.0725
Event70	189	0.0003	0.0478	0.0004	4.1994	0.0196	-0.0530	0.0725
Event71	189	0.0001	0.0377	0.0004	3.9172	0.0201	-0.0530	0.0725
Event72	189	-0.0011	-0.3647	0.0003	4.3508	0.0164	-0.0530	0.0417
Event73	189	-0.0011	-0.3723	0.0003	4.2700	0.0165	-0.0530	0.0417
Event74	189	-0.0002	-0.1012	0.0002	3.8204	0.0153	-0.0476	0.0394
Event75	189	-0.0005	-0.1549	0.0002	4.0568	0.0154	-0.0476	0.0394
Event76	189	-0.0004	-0.2191	0.0003	3.8377	0.0158	-0.0476	0.0394
Event77	189	-0.0003	0.4083	0.0003	6.1629	0.0167	-0.0551	0.0821
Event78	189	0.0008	-0.0171	0.0003	5.4280	0.0184	-0.0634	0.0821
Event79	189	0.0013	-0.9760	0.0004	17.2467	0.0205	-0.1370	0.1098

Market Model Descriptive Statistics for Estimation Window -250 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	147	-0.0032	-0.1048	0.0041	4.8854	0.0640	-0.2000	0.2143
Event3	182	0.0003	-0.2587	0.0047	5.6663	0.0683	-0.2857	0.2143
Event4	239	-0.0002	-0.2129	0.0038	6.2856	0.0619	-0.2857	0.2143
Event5	239	-0.0002	-0.2891	0.0034	6.4821	0.0585	-0.2857	0.2000
Event6	239	0.0009	-0.2442	0.0031	6.6573	0.0559	-0.2857	0.2000
Event7	239	0.0009	-0.2225	0.0029	7.0366	0.0536	-0.2857	0.2000
Event8	239	0.0026	-0.0841	0.0015	4.1139	0.0382	-0.1231	0.1136
Event9	239	0.0024	-0.1047	0.0014	4.2939	0.0375	-0.1231	0.1136
Event10	239	-0.0004	-0.5487	0.0010	5.8261	0.0314	-0.1231	0.1034
Event11	239	-0.0007	-0.7120	0.0009	5.7693	0.0307	-0.1231	0.0893
Event12	239	0.0001	0.0240	0.0005	4.3703	0.0231	-0.0926	0.0741
Event13	239	-0.0020	-0.6956	0.0006	6.2403	0.0252	-0.1136	0.0690
Event14	239	-0.0028	-0.8600	0.0009	5.9139	0.0293	-0.1143	0.0750
Event15	239	-0.0034	-0.7985	0.0009	5.3726	0.0304	-0.1143	0.0750
Event16	239	-0.0027	-0.7091	0.0010	4.8221	0.0320	-0.1143	0.0750
Event17	239	-0.0029	-0.6658	0.0011	4.5230	0.0326	-0.1143	0.0750
Event18	239	-0.0018	-0.4962	0.0010	4.2159	0.0324	-0.1143	0.0833
Event19	239	-0.0007	-0.4450	0.0011	4.1335	0.0329	-0.1143	0.0833
Event20	239	-0.0005	-0.4412	0.0011	4.1138	0.0331	-0.1143	0.0833
Event21	239	-0.0005	-0.4472	0.0011	4.1056	0.0331	-0.1143	0.0833
Event22	239	0.0002	-0.4032	0.0011	4.0981	0.0332	-0.1143	0.0833
Event23	239	0.0015	-0.1700	0.0009	3.7513	0.0305	-0.0938	0.0833
Event24	239	0.0012	0.0605	0.0009	3.4868	0.0297	-0.0882	0.0833
Event25	239	0.0018	0.1678	0.0008	3.6820	0.0283	-0.0882	0.0833
Event26	239	0.0012	0.1663	0.0008	3.7899	0.0285	-0.0882	0.0833
Event27	239	0.0013	0.1925	0.0009	3.6174	0.0297	-0.0882	0.0833
Event28	239	0.0011	0.1677	0.0009	3.6457	0.0304	-0.0882	0.0833
Event29	239	0.0015	0.1954	0.0010	3.6142	0.0308	-0.0882	0.0833
Event30	239	0.0009	0.2822	0.0011	4.2254	0.0331	-0.0851	0.1373
Event31	239	0.0006	0.3084	0.0011	4.3119	0.0328	-0.0851	0.1373
Event32	239	0.0005	0.3096	0.0011	4.4087	0.0325	-0.0851	0.1373
Event33	239	-0.0002	0.3191	0.0010	4.4954	0.0322	-0.0851	0.1373
Event34	239	-0.0009	0.3369	0.0011	4.3750	0.0327	-0.0851	0.1373
Event35	239	-0.0015	0.3349	0.0010	4.5154	0.0324	-0.0851	0.1373
Event36	239	-0.0024	-0.0093	0.0013	6.6723	0.0362	-0.1765	0.1500
Event37	239	-0.0027	-0.4332	0.0015	7.5220	0.0390	-0.1935	0.1500
Event38	239	-0.0023	-0.4056	0.0015	7.4407	0.0392	-0.1935	0.1500
Event39	239	-0.0025	-0.3562	0.0016	6.8713	0.0404	-0.1935	0.1500

Market Model Descriptive Statistics for Estimation Window -250 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	239	-0.0021	-0.3314	0.0017	6.6282	0.0409	-0.1935	0.1500
Event41	239	-0.0019	-0.3288	0.0017	6.4437	0.0412	-0.1935	0.1500
Event42	239	-0.0014	-0.0924	0.0018	6.9672	0.0419	-0.1935	0.1633
Event43	239	-0.0005	-0.0181	0.0017	7.3712	0.0418	-0.1935	0.1633
Event44	239	-0.0009	-0.0093	0.0018	7.2172	0.0421	-0.1935	0.1633
Event45	239	0.0001	-0.2517	0.0017	7.5344	0.0410	-0.1935	0.1633
Event46	239	0.0025	0.0122	0.0014	7.5371	0.0379	-0.1935	0.1633
Event47	239	0.0024	0.6706	0.0011	6.7982	0.0335	-0.0952	0.1633
Event48	239	0.0036	-0.0055	0.0009	4.9152	0.0301	-0.0952	0.1207
Event49	239	0.0035	-0.0637	0.0009	4.7010	0.0306	-0.0943	0.1207
Event50	239	0.0030	0.0019	0.0009	4.8077	0.0305	-0.0943	0.1207
Event51	239	0.0031	0.0031	0.0009	4.6756	0.0307	-0.0943	0.1207
Event52	239	0.0025	0.0193	0.0010	4.6261	0.0309	-0.0943	0.1207
Event53	239	0.0023	0.1623	0.0009	4.6352	0.0305	-0.0943	0.1207
Event54	239	0.0026	-0.1357	0.0007	4.3169	0.0268	-0.0917	0.0917
Event55	239	0.0020	-0.9616	0.0008	8.5723	0.0291	-0.1729	0.0917
Event56	239	-0.0005	-0.7699	0.0008	8.8133	0.0290	-0.1729	0.0917
Event57	239	-0.0005	-0.9233	0.0008	9.5674	0.0282	-0.1729	0.0917
Event58	239	0.0000	-1.1783	0.0007	11.1556	0.0268	-0.1729	0.0916
Event59	239	0.0001	-1.3061	0.0007	11.7726	0.0263	-0.1729	0.0916
Event60	239	0.0001	-1.3080	0.0007	11.8003	0.0262	-0.1729	0.0916
Event61	239	-0.0011	-1.5536	0.0006	13.2824	0.0252	-0.1729	0.0916
Event62	237	-0.0012	-1.7372	0.0006	15.9095	0.0240	-0.1729	0.0916
Event63	235	-0.0011	-1.7310	0.0006	15.5409	0.0242	-0.1729	0.0916
Event64	235	-0.0006	-0.3537	0.0005	7.4954	0.0214	-0.1008	0.0916
Event65	235	-0.0007	-0.3590	0.0004	7.7625	0.0212	-0.1008	0.0916
Event66	235	-0.0005	-0.3202	0.0004	8.8984	0.0199	-0.1008	0.0916
Event67	235	-0.0001	-0.3738	0.0004	7.4707	0.0187	-0.1008	0.0725
Event68	235	0.0004	-0.3519	0.0003	7.7530	0.0185	-0.1008	0.0725
Event69	235	0.0003	0.1848	0.0003	4.5397	0.0179	-0.0530	0.0725
Event70	235	0.0004	0.0153	0.0004	4.2622	0.0188	-0.0530	0.0725
Event71	235	0.0001	0.0336	0.0004	4.0148	0.0192	-0.0530	0.0725
Event72	239	-0.0005	-0.2945	0.0003	3.9127	0.0171	-0.0530	0.0417
Event73	239	-0.0010	-0.2849	0.0003	4.0537	0.0169	-0.0530	0.0417
Event74	239	-0.0003	-0.2877	0.0003	3.9035	0.0170	-0.0530	0.0417
Event75	239	-0.0009	-0.3126	0.0003	4.1416	0.0164	-0.0530	0.0417
Event76	239	-0.0007	-0.3599	0.0003	3.9635	0.0167	-0.0530	0.0417
Event77	239	-0.0005	0.1324	0.0003	5.1857	0.0174	-0.0551	0.0821
Event78	239	0.0003	0.0248	0.0003	5.7554	0.0173	-0.0634	0.0821
Event79	239	0.0010	-0.5984	0.0004	14.0486	0.0209	-0.1370	0.1098

Market Model Descriptive Statistics for Estimation Window -300 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	147	-0.0032	-0.1048	0.0041	4.8854	0.0640	-0.2000	0.2143
Event3	182	0.0003	-0.2587	0.0047	5.6663	0.0683	-0.2857	0.2143
Event4	243	-0.0006	-0.2569	0.0039	6.1643	0.0625	-0.2857	0.2143
Event5	256	-0.0008	-0.2526	0.0037	6.3560	0.0612	-0.2857	0.2143
Event6	289	0.0001	-0.2632	0.0033	6.1316	0.0573	-0.2857	0.2000
Event7	289	0.0009	-0.2728	0.0033	6.0429	0.0576	-0.2857	0.2000
Event8	289	0.0027	-0.0173	0.0017	3.7613	0.0407	-0.1231	0.1250
Event9	289	0.0030	-0.0143	0.0016	3.9243	0.0400	-0.1231	0.1250
Event10	289	0.0008	-0.2662	0.0012	4.8191	0.0341	-0.1231	0.1136
Event11	289	0.0002	-0.3775	0.0011	4.7212	0.0334	-0.1231	0.1034
Event12	289	-0.0001	-0.1508	0.0006	4.5941	0.0240	-0.0926	0.0741
Event13	289	-0.0018	-0.6586	0.0006	6.1509	0.0243	-0.1136	0.0690
Event14	289	-0.0022	-0.8083	0.0008	5.8444	0.0283	-0.1143	0.0750
Event15	289	-0.0026	-0.7313	0.0009	5.5282	0.0292	-0.1143	0.0750
Event16	289	-0.0024	-0.6820	0.0009	5.0643	0.0304	-0.1143	0.0750
Event17	289	-0.0028	-0.6329	0.0010	4.7742	0.0310	-0.1143	0.0750
Event18	289	-0.0020	-0.6334	0.0010	4.7334	0.0318	-0.1143	0.0833
Event19	289	-0.0012	-0.5820	0.0011	4.5644	0.0325	-0.1143	0.0833
Event20	289	-0.0009	-0.4852	0.0011	4.4063	0.0324	-0.1143	0.0833
Event21	289	-0.0007	-0.4913	0.0011	4.3654	0.0325	-0.1143	0.0833
Event22	289	-0.0003	-0.3941	0.0010	4.2632	0.0318	-0.1143	0.0833
Event23	289	0.0000	-0.3879	0.0010	4.1185	0.0322	-0.1143	0.0833
Event24	289	-0.0001	-0.3452	0.0011	4.0478	0.0324	-0.1143	0.0833
Event25	289	0.0009	-0.0853	0.0009	3.8732	0.0296	-0.0938	0.0833
Event26	289	0.0010	0.0575	0.0009	3.6031	0.0294	-0.0882	0.0833
Event27	289	0.0009	0.2066	0.0009	3.5582	0.0293	-0.0882	0.0833
Event28	289	0.0006	0.1757	0.0009	3.6439	0.0299	-0.0882	0.0833
Event29	289	0.0008	0.2022	0.0009	3.6241	0.0302	-0.0882	0.0833
Event30	289	0.0008	0.2386	0.0011	4.3146	0.0324	-0.0882	0.1373
Event31	289	0.0006	0.2521	0.0010	4.3598	0.0323	-0.0882	0.1373
Event32	289	0.0013	0.2481	0.0011	4.2944	0.0324	-0.0882	0.1373
Event33	289	0.0009	0.2672	0.0011	4.2906	0.0325	-0.0882	0.1373
Event34	289	0.0007	0.3003	0.0010	4.2300	0.0321	-0.0851	0.1373
Event35	289	-0.0003	0.2939	0.0010	4.4045	0.0316	-0.0851	0.1373
Event36	289	-0.0020	0.0119	0.0012	6.7135	0.0348	-0.1765	0.1500
Event37	289	-0.0023	-0.3982	0.0014	7.6741	0.0373	-0.1935	0.1500
Event38	289	-0.0021	-0.3620	0.0014	7.5155	0.0376	-0.1935	0.1500
Event39	289	-0.0023	-0.3179	0.0015	7.1164	0.0384	-0.1935	0.1500

Market Model Descriptive Statistics for Estimation Window -300 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	289	-0.0020	-0.2966	0.0015	7.0089	0.0387	-0.1935	0.1500
Event41	289	-0.0018	-0.2929	0.0015	6.8054	0.0390	-0.1935	0.1500
Event42	289	-0.0013	-0.0891	0.0016	7.1870	0.0399	-0.1935	0.1633
Event43	289	-0.0011	0.0358	0.0016	7.4592	0.0400	-0.1935	0.1633
Event44	289	-0.0012	0.0293	0.0016	7.3487	0.0402	-0.1935	0.1633
Event45	289	-0.0001	-0.1304	0.0017	6.8348	0.0414	-0.1935	0.1633
Event46	289	0.0007	-0.1385	0.0015	7.8180	0.0394	-0.1935	0.1633
Event47	289	0.0008	-0.1427	0.0015	8.0646	0.0390	-0.1935	0.1633
Event48	289	0.0042	0.5145	0.0011	6.4669	0.0324	-0.0952	0.1633
Event49	289	0.0025	0.1582	0.0010	5.2768	0.0312	-0.0952	0.1321
Event50	289	0.0022	-0.0435	0.0010	4.6651	0.0312	-0.0952	0.1207
Event51	289	0.0023	-0.0396	0.0010	4.6134	0.0313	-0.0952	0.1207
Event52	289	0.0020	-0.0311	0.0010	4.5347	0.0315	-0.0952	0.1207
Event53	289	0.0028	-0.0463	0.0010	4.6058	0.0311	-0.0952	0.1207
Event54	289	0.0032	0.0303	0.0007	4.4131	0.0270	-0.0917	0.0986
Event55	289	0.0026	-0.7452	0.0008	8.6932	0.0283	-0.1729	0.0986
Event56	289	0.0001	-0.7149	0.0009	7.7510	0.0292	-0.1729	0.0917
Event57	289	0.0002	-0.7329	0.0008	8.1176	0.0288	-0.1729	0.0917
Event58	289	-0.0005	-0.8413	0.0008	8.5378	0.0287	-0.1729	0.0917
Event59	289	-0.0007	-0.8491	0.0008	8.5863	0.0286	-0.1729	0.0917
Event60	289	-0.0010	-0.8305	0.0008	8.6018	0.0285	-0.1729	0.0917
Event61	289	-0.0002	-1.3295	0.0006	12.8252	0.0245	-0.1729	0.0916
Event62	287	-0.0003	-1.4823	0.0006	13.7056	0.0241	-0.1729	0.0916
Event63	285	-0.0006	-1.5158	0.0006	13.9240	0.0240	-0.1729	0.0916
Event64	285	-0.0007	-1.6357	0.0005	15.7377	0.0231	-0.1729	0.0916
Event65	285	-0.0008	-1.6333	0.0005	15.7558	0.0230	-0.1729	0.0916
Event66	285	-0.0008	-1.5559	0.0005	15.5020	0.0232	-0.1729	0.0916
Event67	285	0.0001	0.1604	0.0004	7.7822	0.0192	-0.1008	0.0916
Event68	285	0.0004	0.1334	0.0004	7.6091	0.0193	-0.1008	0.0916
Event69	285	-0.0002	-0.3594	0.0004	6.7636	0.0189	-0.1008	0.0725
Event70	285	0.0000	-0.0565	0.0003	4.5675	0.0183	-0.0609	0.0725
Event71	285	-0.0002	-0.0386	0.0003	4.4515	0.0184	-0.0609	0.0725
Event72	289	-0.0001	0.1040	0.0003	4.5403	0.0178	-0.0530	0.0725
Event73	289	-0.0002	0.1096	0.0003	4.5358	0.0178	-0.0530	0.0725
Event74	289	0.0000	-0.0407	0.0003	4.3580	0.0175	-0.0530	0.0725
Event75	289	-0.0005	-0.2673	0.0003	3.8427	0.0170	-0.0530	0.0417
Event76	289	-0.0007	-0.2943	0.0003	3.8511	0.0170	-0.0530	0.0417
Event77	289	-0.0007	0.0018	0.0003	4.9224	0.0178	-0.0551	0.0821
Event78	289	0.0003	0.0366	0.0003	5.5210	0.0169	-0.0634	0.0821
Event79	289	0.0010	-0.5591	0.0004	13.3396	0.0203	-0.1370	0.1098

Market Model Descriptive Statistics for Estimation Window -350 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	147	-0.0032	-0.1048	0.0041	4.8854	0.0640	-0.2000	0.2143
Event3	182	0.0003	-0.2587	0.0047	5.6663	0.0683	-0.2857	0.2143
Event4	243	-0.0006	-0.2569	0.0039	6.1643	0.0625	-0.2857	0.2143
Event5	256	-0.0008	-0.2526	0.0037	6.3560	0.0612	-0.2857	0.2143
Event6	310	-0.0004	-0.2396	0.0035	6.2085	0.0593	-0.2857	0.2143
Event7	319	-0.0002	-0.2434	0.0035	6.1313	0.0592	-0.2857	0.2143
Event8	339	0.0024	-0.0907	0.0016	3.8795	0.0402	-0.1250	0.1250
Event9	339	0.0024	-0.0895	0.0016	3.9841	0.0398	-0.1250	0.1250
Event10	339	0.0028	-0.0904	0.0013	4.3992	0.0365	-0.1231	0.1136
Event11	339	0.0026	-0.0852	0.0013	4.4813	0.0363	-0.1231	0.1136
Event12	339	-0.0004	-0.6311	0.0008	6.1415	0.0279	-0.1231	0.0893
Event13	339	-0.0010	-0.5865	0.0006	5.7465	0.0249	-0.1136	0.0690
Event14	339	-0.0018	-0.7632	0.0007	6.0429	0.0272	-0.1143	0.0750
Event15	339	-0.0020	-0.7402	0.0008	5.5913	0.0282	-0.1143	0.0750
Event16	339	-0.0020	-0.6135	0.0009	5.1421	0.0294	-0.1143	0.0750
Event17	339	-0.0022	-0.5826	0.0009	4.9577	0.0299	-0.1143	0.0750
Event18	339	-0.0021	-0.5941	0.0009	4.8853	0.0306	-0.1143	0.0833
Event19	339	-0.0014	-0.5427	0.0010	4.7640	0.0311	-0.1143	0.0833
Event20	339	-0.0011	-0.5206	0.0010	4.7010	0.0314	-0.1143	0.0833
Event21	339	-0.0011	-0.5196	0.0010	4.7064	0.0314	-0.1143	0.0833
Event22	339	-0.0006	-0.4953	0.0010	4.6468	0.0317	-0.1143	0.0833
Event23	339	-0.0003	-0.4650	0.0010	4.4827	0.0315	-0.1143	0.0833
Event24	339	-0.0003	-0.3326	0.0010	4.2147	0.0312	-0.1143	0.0833
Event25	339	-0.0001	-0.3291	0.0010	4.2748	0.0310	-0.1143	0.0833
Event26	339	-0.0004	-0.3078	0.0010	4.0361	0.0320	-0.1143	0.0833
Event27	339	0.0011	0.1512	0.0009	3.4395	0.0296	-0.0882	0.0833
Event28	339	0.0009	0.1508	0.0009	3.5722	0.0297	-0.0882	0.0833
Event29	339	0.0011	0.1743	0.0009	3.5594	0.0300	-0.0882	0.0833
Event30	339	0.0005	0.2571	0.0010	4.3400	0.0315	-0.0882	0.1373
Event31	339	0.0004	0.2592	0.0010	4.3147	0.0316	-0.0882	0.1373
Event32	339	0.0007	0.2572	0.0010	4.2630	0.0317	-0.0882	0.1373
Event33	339	0.0004	0.2657	0.0010	4.3062	0.0317	-0.0882	0.1373
Event34	339	0.0005	0.2468	0.0010	4.1964	0.0320	-0.0882	0.1373
Event35	339	0.0005	0.2431	0.0010	4.2940	0.0317	-0.0882	0.1373
Event36	339	-0.0008	-0.0227	0.0012	6.3666	0.0345	-0.1765	0.1500
Event37	339	-0.0008	-0.3902	0.0013	7.6097	0.0362	-0.1935	0.1500
Event38	339	-0.0006	-0.3619	0.0013	7.4630	0.0365	-0.1935	0.1500
Event39	339	-0.0009	-0.3082	0.0014	6.9751	0.0374	-0.1935	0.1500

Market Model Descriptive Statistics for Estimation Window -350 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	339	-0.0009	-0.3085	0.0014	7.1095	0.0372	-0.1935	0.1500
Event41	339	-0.0011	-0.3092	0.0014	7.0717	0.0373	-0.1935	0.1500
Event42	339	-0.0010	-0.0755	0.0015	7.3096	0.0384	-0.1935	0.1633
Event43	339	-0.0011	0.0218	0.0015	7.6848	0.0383	-0.1935	0.1633
Event44	339	-0.0012	0.0167	0.0015	7.5613	0.0385	-0.1935	0.1633
Event45	339	-0.0004	-0.0862	0.0016	6.7742	0.0401	-0.1935	0.1633
Event46	339	0.0006	-0.0198	0.0015	7.7018	0.0388	-0.1935	0.1633
Event47	339	0.0008	-0.1197	0.0014	8.3340	0.0373	-0.1935	0.1633
Event48	339	0.0025	-0.2290	0.0014	8.1186	0.0376	-0.1935	0.1633
Event49	339	0.0028	0.4462	0.0011	5.8895	0.0331	-0.0952	0.1633
Event50	339	0.0026	0.4112	0.0011	5.7741	0.0335	-0.0952	0.1633
Event51	339	0.0028	0.3857	0.0011	5.8358	0.0333	-0.0952	0.1633
Event52	339	0.0027	0.3967	0.0011	5.8510	0.0333	-0.0952	0.1633
Event53	339	0.0023	0.2061	0.0010	5.1104	0.0311	-0.0952	0.1321
Event54	339	0.0028	0.0438	0.0008	4.8476	0.0287	-0.0943	0.1207
Event55	339	0.0020	-0.4915	0.0009	7.3935	0.0301	-0.1729	0.1207
Event56	339	0.0009	-0.7027	0.0008	7.8929	0.0281	-0.1729	0.0917
Event57	339	0.0012	-0.7411	0.0008	8.0943	0.0280	-0.1729	0.0917
Event58	339	0.0010	-0.7835	0.0008	7.8499	0.0286	-0.1729	0.0917
Event59	339	0.0006	-0.7775	0.0008	7.8768	0.0286	-0.1729	0.0917
Event60	339	0.0005	-0.7815	0.0008	7.9306	0.0285	-0.1729	0.0917
Event61	339	-0.0010	-0.8747	0.0007	9.4224	0.0269	-0.1729	0.0917
Event62	337	-0.0001	-0.9642	0.0006	11.1940	0.0252	-0.1729	0.0917
Event63	335	-0.0002	-1.1795	0.0006	12.3729	0.0241	-0.1729	0.0916
Event64	335	-0.0003	-1.4367	0.0005	14.0594	0.0231	-0.1729	0.0916
Event65	335	-0.0003	-1.4403	0.0005	14.1010	0.0231	-0.1729	0.0916
Event66	335	-0.0005	-1.3890	0.0005	14.0662	0.0231	-0.1729	0.0916
Event67	335	-0.0005	-1.3670	0.0005	14.8929	0.0227	-0.1729	0.0916
Event68	335	-0.0003	-1.3758	0.0005	14.8884	0.0227	-0.1729	0.0916
Event69	335	-0.0002	-0.0226	0.0004	7.0438	0.0194	-0.1008	0.0916
Event70	335	0.0002	-0.1208	0.0004	6.6795	0.0199	-0.1008	0.0916
Event71	335	-0.0003	-0.3966	0.0004	6.0291	0.0191	-0.1008	0.0725
Event72	335	-0.0001	0.0863	0.0003	4.4580	0.0174	-0.0530	0.0725
Event73	335	-0.0003	0.1000	0.0003	4.5257	0.0173	-0.0530	0.0725
Event74	337	0.0002	0.0933	0.0003	4.3920	0.0175	-0.0530	0.0725
Event75	339	0.0000	0.0680	0.0003	4.4134	0.0176	-0.0530	0.0725
Event76	339	-0.0001	0.0423	0.0003	4.3124	0.0178	-0.0530	0.0725
Event77	339	-0.0003	0.0958	0.0003	4.8804	0.0184	-0.0551	0.0821
Event78	339	0.0001	-0.0674	0.0003	5.2179	0.0171	-0.0634	0.0821
Event79	339	0.0007	-0.5233	0.0004	14.1242	0.0192	-0.1370	0.1098

Market Model Descriptive Statistics for Estimation Window -400 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event1	63	-0.0051	-0.1604	0.0049	5.2607	0.0703	-0.2000	0.2143
Event2	147	-0.0032	-0.1048	0.0041	4.8854	0.0640	-0.2000	0.2143
Event3	182	0.0003	-0.2587	0.0047	5.6663	0.0683	-0.2857	0.2143
Event4	243	-0.0006	-0.2569	0.0039	6.1643	0.0625	-0.2857	0.2143
Event5	256	-0.0008	-0.2526	0.0037	6.3560	0.0612	-0.2857	0.2143
Event6	310	-0.0004	-0.2396	0.0035	6.2085	0.0593	-0.2857	0.2143
Event7	319	-0.0002	-0.2434	0.0035	6.1313	0.0592	-0.2857	0.2143
Event8	389	0.0014	-0.1442	0.0016	3.7191	0.0405	-0.1250	0.1250
Event9	389	0.0014	-0.1462	0.0016	3.7878	0.0403	-0.1250	0.1250
Event10	389	0.0025	-0.1039	0.0014	4.3139	0.0378	-0.1250	0.1250
Event11	389	0.0023	-0.1015	0.0014	4.3134	0.0378	-0.1250	0.1250
Event12	389	0.0002	-0.2815	0.0009	5.2725	0.0298	-0.1231	0.1034
Event13	389	-0.0012	-0.5028	0.0006	5.7330	0.0252	-0.1136	0.0741
Event14	389	-0.0014	-0.7244	0.0008	5.8066	0.0276	-0.1143	0.0750
Event15	389	-0.0013	-0.7044	0.0008	5.4827	0.0282	-0.1143	0.0750
Event16	389	-0.0018	-0.6068	0.0008	5.2053	0.0284	-0.1143	0.0750
Event17	389	-0.0018	-0.5633	0.0008	4.9415	0.0291	-0.1143	0.0750
Event18	389	-0.0017	-0.5436	0.0009	5.0478	0.0296	-0.1143	0.0833
Event19	389	-0.0012	-0.4958	0.0009	4.9053	0.0301	-0.1143	0.0833
Event20	389	-0.0013	-0.4837	0.0009	4.9025	0.0301	-0.1143	0.0833
Event21	389	-0.0012	-0.4868	0.0009	4.8605	0.0302	-0.1143	0.0833
Event22	389	-0.0011	-0.4664	0.0009	4.7532	0.0305	-0.1143	0.0833
Event23	389	-0.0007	-0.4826	0.0009	4.6760	0.0308	-0.1143	0.0833
Event24	389	-0.0008	-0.4346	0.0010	4.6196	0.0311	-0.1143	0.0833
Event25	389	-0.0004	-0.3802	0.0009	4.5099	0.0308	-0.1143	0.0833
Event26	389	-0.0002	-0.3038	0.0010	4.2326	0.0308	-0.1143	0.0833
Event27	389	0.0001	-0.2238	0.0010	3.9558	0.0318	-0.1143	0.0833
Event28	389	0.0000	-0.1411	0.0010	3.8784	0.0318	-0.1143	0.0833
Event29	389	0.0002	-0.1189	0.0010	3.8554	0.0321	-0.1143	0.0833
Event30	389	0.0005	0.1762	0.0010	4.1014	0.0318	-0.0882	0.1373
Event31	389	0.0005	0.1923	0.0010	4.1048	0.0317	-0.0882	0.1373
Event32	389	0.0009	0.2312	0.0010	4.2100	0.0313	-0.0882	0.1373
Event33	389	0.0007	0.2320	0.0010	4.2172	0.0312	-0.0882	0.1373
Event34	389	0.0008	0.2396	0.0010	4.1785	0.0313	-0.0882	0.1373
Event35	389	0.0000	0.2480	0.0010	4.2534	0.0312	-0.0882	0.1373
Event36	389	-0.0008	0.0076	0.0011	6.2580	0.0338	-0.1765	0.1500
Event37	389	-0.0008	-0.3678	0.0013	7.3997	0.0356	-0.1935	0.1500
Event38	389	-0.0006	-0.3418	0.0013	7.2756	0.0359	-0.1935	0.1500
Event39	389	-0.0007	-0.3131	0.0013	7.0325	0.0364	-0.1935	0.1500

Market Model Descriptive Statistics for Estimation Window -400 to -11 trading days before Event

	Obs	Mean	Skewness	Variance	Kurtosis	Std Dev	Min	Max
Event40	389	-0.0001	-0.3008	0.0013	6.9313	0.0366	-0.1935	0.1500
Event41	389	-0.0002	-0.2906	0.0014	6.8118	0.0368	-0.1935	0.1500
Event42	389	0.0001	-0.0894	0.0014	7.2940	0.0373	-0.1935	0.1633
Event43	389	-0.0010	0.0334	0.0014	7.7954	0.0370	-0.1935	0.1633
Event44	389	-0.0012	0.0350	0.0014	7.6413	0.0373	-0.1935	0.1633
Event45	389	-0.0006	-0.0787	0.0015	7.0408	0.0385	-0.1935	0.1633
Event46	389	0.0007	-0.0101	0.0015	7.1121	0.0388	-0.1935	0.1633
Event47	389	0.0005	-0.0294	0.0015	7.5121	0.0381	-0.1935	0.1633
Event48	389	0.0021	-0.1859	0.0013	8.2324	0.0363	-0.1935	0.1633
Event49	389	0.0014	-0.1978	0.0014	7.9627	0.0368	-0.1935	0.1633
Event50	389	0.0016	-0.1943	0.0014	7.5996	0.0374	-0.1935	0.1633
Event51	389	0.0016	-0.1928	0.0014	7.5325	0.0375	-0.1935	0.1633
Event52	389	0.0014	-0.1824	0.0014	7.4830	0.0376	-0.1935	0.1633
Event53	389	0.0026	0.4543	0.0011	5.7300	0.0328	-0.0952	0.1633
Event54	389	0.0025	-0.0195	0.0009	4.8500	0.0293	-0.0952	0.1207
Event55	389	0.0022	-0.4662	0.0009	6.8401	0.0306	-0.1729	0.1207
Event56	389	0.0015	-0.5237	0.0008	7.5670	0.0281	-0.1729	0.0986
Event57	389	0.0018	-0.5811	0.0008	8.1029	0.0275	-0.1729	0.0986
Event58	389	0.0015	-0.6234	0.0008	7.9111	0.0281	-0.1729	0.0986
Event59	389	0.0014	-0.6490	0.0008	7.9680	0.0280	-0.1729	0.0986
Event60	389	0.0013	-0.6375	0.0008	7.9496	0.0280	-0.1729	0.0986
Event61	389	0.0003	-0.7925	0.0007	8.5489	0.0271	-0.1729	0.0917
Event62	387	-0.0004	-0.8453	0.0007	9.1941	0.0263	-0.1729	0.0917
Event63	385	-0.0003	-0.8715	0.0007	9.5783	0.0261	-0.1729	0.0917
Event64	385	-0.0007	-0.9724	0.0006	10.7210	0.0249	-0.1729	0.0917
Event65	385	-0.0007	-0.9690	0.0006	10.8517	0.0248	-0.1729	0.0917
Event66	385	-0.0001	-1.0436	0.0005	12.2070	0.0234	-0.1729	0.0916
Event67	385	-0.0002	-1.2252	0.0005	13.4544	0.0227	-0.1729	0.0916
Event68	385	-0.0001	-1.2171	0.0005	13.2972	0.0228	-0.1729	0.0916
Event69	385	-0.0003	-0.1889	0.0004	6.4799	0.0208	-0.1008	0.0916
Event70	385	-0.0002	-0.2529	0.0004	6.9394	0.0200	-0.1008	0.0916
Event71	385	-0.0001	-0.0456	0.0004	6.2983	0.0197	-0.1008	0.0916
Event72	385	-0.0003	0.0112	0.0003	4.8072	0.0170	-0.0609	0.0725
Event73	385	-0.0004	0.0194	0.0003	4.7981	0.0170	-0.0609	0.0725
Event74	385	0.0001	0.0923	0.0003	4.4261	0.0170	-0.0530	0.0725
Event75	385	0.0000	0.0552	0.0003	4.3441	0.0173	-0.0530	0.0725
Event76	385	-0.0002	0.0391	0.0003	4.3111	0.0174	-0.0530	0.0725
Event77	389	-0.0001	0.1830	0.0003	4.8691	0.0183	-0.0551	0.0821
Event78	389	-0.0001	-0.1698	0.0003	4.8016	0.0179	-0.0634	0.0821
Event79	389	0.0005	-0.4598	0.0003	14.1327	0.0186	-0.1370	0.1098

Appendix 8 - Regression results for single firm single event market models

Estimation window of -100 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	89	1.1854	0.2793	0.0021	-0.0018	0.9036	1.0888	0.2763
Event3	89	0.2830	0.5961	-0.0082	0.0048	0.4273	0.5319	0.5948
Event4	89	0.6702	0.4152	-0.0038	0.0033	0.6294	0.8186	0.4130
Event5	89	3.3391	0.0711	0.0259	-0.0013	0.8699	1.8273	0.0677
Event6	89	2.6104	0.1098	0.0180	0.0013	0.7742	1.6157	0.1062
Event7	89	1.4307	0.2349	0.0049	0.0021	0.6119	1.1961	0.2316
Event8	89	0.0012	0.9727	-0.0115	-0.0019	0.0218	0.0343	0.9726
Event9	89	0.3267	0.5691	-0.0077	-0.0014	-0.3395	-0.5715	0.5676
Event10	89	0.2022	0.6540	-0.0091	0.0015	-0.3002	-0.4497	0.6529
Event11	89	0.0115	0.9148	-0.0114	0.0013	-0.0723	-0.1073	0.9146
Event12	89	2.7269	0.1023	0.0192	0.0007	-0.8201	-1.6513	0.0987
Event13	89	1.3961	0.2406	0.0045	-0.0034	-0.5150	-1.1816	0.2374
Event14	89	0.0231	0.8796	-0.0112	-0.0049	0.0800	0.1520	0.8792
Event15	89	1.4766	0.2276	0.0054	-0.0062	0.6431	1.2151	0.2243
Event16	89	0.0161	0.8993	-0.0113	-0.0002	0.0587	0.1269	0.8990
Event17	89	4.1145	0.0456	0.0342	-0.0003	0.6694	2.0284*	0.0425
Event18	89	0.6068	0.4381	-0.0045	0.0000	0.2262	0.7789	0.4360
Event19	89	0.9942	0.3215	-0.0001	0.0016	0.2962	0.9971	0.3187
Event20	89	1.6108	0.2078	0.0069	0.0027	0.3940	1.2692	0.2044
Event21	89	1.8822	0.1736	0.0099	0.0040	0.4322	1.3719	0.1701
Event22	89	0.2983	0.5863	-0.0080	0.0052	-0.1929	-0.5462	0.5849
Event23	89	0.9488	0.3327	-0.0006	0.0034	0.4028	0.9741	0.3300
Event24	89	2.8440	0.0953	0.0205	0.0032	0.7042	1.6864	0.0917
Event25	89	0.5054	0.4791	-0.0057	-0.0008	0.2868	0.7109	0.4772
Event26	89	0.2627	0.6096	-0.0084	-0.0015	-0.2139	-0.5125	0.6083
Event27	89	2.8647	0.0941	0.0208	0.0003	-0.7698	-1.6925	0.0905
Event28	89	2.1665	0.1447	0.0131	-0.0007	-0.6816	-1.4719	0.1410
Event29	89	2.2706	0.1355	0.0142	0.0002	-0.7191	-1.5068	0.1319
Event30	89	2.3531	0.1287	0.0151	-0.0006	0.5310	1.5340	0.1250
Event31	89	3.2118	0.0766	0.0245	-0.0009	0.6076	1.7922	0.0731
Event32	89	3.0758	0.0830	0.0230	0.0013	0.5539	1.7538	0.0795
Event33	89	2.9033	0.0920	0.0212	0.0012	0.5455	1.7039	0.0884
Event34	89	3.7966	0.0546	0.0308	-0.0003	0.5819	1.9485	0.0514
Event35	89	2.8220	0.0966	0.0203	-0.0013	0.4109	1.6799	0.0930
Event36	89	17.4667	0.0001	0.1576	-0.0043	0.8672	4.1793***	0.0000
Event37	89	18.7368	0.0000	0.1677	-0.0042	1.0015	4.3286***	0.0000
Event38	89	16.6517	0.0001	0.1510	-0.0031	0.9599	4.0806***	0.0000
Event39	89	12.0246	0.0008	0.1113	-0.0030	0.8239	3.4676***	0.0005

Estimation window of -100 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	89	16.2687	0.0001	0.1479	-0.0010	0.9337	4.0334***	0.0001
Event41	89	15.3925	0.0002	0.1406	-0.0006	0.9217	3.9233***	0.0001
Event42	89	10.6778	0.0016	0.0991	-0.0001	0.8451	3.2677**	0.0011
Event43	89	0.0032	0.9553	-0.0115	0.0027	0.0166	0.0562	0.9551
Event44	89	0.0334	0.8554	-0.0111	0.0005	0.0550	0.1828	0.8550
Event45	89	0.2754	0.6011	-0.0083	0.0005	-0.0882	-0.5248	0.5998
Event46	89	0.4643	0.4974	-0.0061	0.0028	0.0898	0.6814	0.4956
Event47	89	0.8186	0.3681	-0.0021	0.0044	0.1231	0.9047	0.3656
Event48	89	1.3574	0.2472	0.0040	0.0062	0.2021	1.1651	0.2440
Event49	89	4.1007	0.0459	0.0340	0.0028	0.4675	2.0250*	0.0429
Event50	89	2.2274	0.1392	0.0138	0.0026	0.3874	1.4924	0.1356
Event51	89	2.7483	0.1010	0.0195	0.0013	0.4332	1.6578	0.0974
Event52	89	3.5044	0.0646	0.0277	-0.0004	0.4961	1.8720	0.0612
Event53	89	6.7517	0.0110	0.0614	-0.0027	0.7093	2.5984**	0.0094
Event54	89	4.1227	0.0454	0.0343	0.0019	0.4135	2.0305*	0.0423
Event55	89	6.0726	0.0157	0.0545	0.0008	0.6667	2.4643*	0.0137
Event56	89	21.1797	0.0000	0.1865	-0.0004	1.0364	4.6021***	0.0000
Event57	89	17.4514	0.0001	0.1575	0.0001	0.8976	4.1775***	0.0000
Event58	89	20.8865	0.0000	0.1843	0.0001	0.8812	4.5702***	0.0000
Event59	89	20.0738	0.0000	0.1781	0.0012	0.8680	4.4804***	0.0000
Event60	89	19.7726	0.0000	0.1758	0.0005	0.8583	4.4466***	0.0000
Event61	89	7.4959	0.0075	0.0687	-0.0009	0.5174	2.7379**	0.0062
Event62	87	1.8795	0.1740	0.0101	-0.0005	0.2423	1.3709	0.1704
Event63	85	0.5100	0.4772	-0.0059	-0.0007	0.1338	0.7141	0.4752
Event64	85	0.3051	0.5822	-0.0083	0.0010	-0.1264	-0.5524	0.5807
Event65	85	1.0946	0.2985	0.0011	0.0001	-0.2346	-1.0462	0.2955
Event66	85	0.8219	0.3672	-0.0021	0.0010	-0.2339	-0.9066	0.3646
Event67	89	0.0676	0.7955	-0.0107	0.0016	-0.0755	-0.2600	0.7949
Event68	89	0.0990	0.7538	-0.0103	0.0024	-0.0904	-0.3147	0.7530
Event69	89	0.0111	0.9162	-0.0114	-0.0010	-0.0201	-0.1055	0.9159
Event70	89	2.0443	0.1564	0.0117	-0.0011	0.2473	1.4298	0.1528
Event71	89	4.5647	0.0354	0.0389	-0.0007	0.3174	2.1365*	0.0326
Event72	89	9.2139	0.0032	0.0854	-0.0007	0.2956	3.0354**	0.0024
Event73	89	6.5566	0.0122	0.0594	-0.0013	0.2555	2.5606*	0.0104
Event74	89	7.4658	0.0076	0.0684	0.0004	0.3747	2.7324**	0.0063
Event75	89	4.4465	0.0378	0.0377	0.0000	0.3818	2.1087*	0.0350
Event76	89	1.3187	0.2540	0.0036	0.0000	0.2446	1.1484	0.2508
Event77	89	0.3434	0.5594	-0.0075	0.0007	0.1452	0.5860	0.5579
Event78	89	1.8362	0.1789	0.0094	0.0015	0.3817	1.3551	0.1754
Event79	89	4.8273	0.0307	0.0417	-0.0002	0.8245	2.1971*	0.0280

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -150 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	139	1.5766	0.2114	0.0042	-0.0016	0.8593	1.2556	0.2093
Event3	139	1.1421	0.2871	0.0010	0.0030	0.8140	1.0687	0.2852
Event4	139	1.7761	0.1848	0.0056	0.0022	0.7591	1.3327	0.1826
Event5	139	1.4473	0.2310	0.0032	0.0018	0.6185	1.2031	0.2290
Event6	139	4.7983	0.0302	0.0268	-0.0011	0.8533	2.1905*	0.0285
Event7	139	3.8057	0.0531	0.0199	-0.0011	0.8067	1.9508	0.0511
Event8	139	0.0148	0.9034	-0.0072	-0.0030	-0.0756	-0.1215	0.9033
Event9	139	0.0323	0.8577	-0.0071	-0.0028	-0.1087	-0.1797	0.8574
Event10	139	0.3638	0.5474	-0.0046	0.0000	-0.2984	-0.6031	0.5464
Event11	139	0.1343	0.7146	-0.0063	-0.0001	-0.1825	-0.3665	0.7140
Event12	139	2.4993	0.1162	0.0107	0.0010	-0.6702	-1.5809	0.1139
Event13	139	0.4619	0.4979	-0.0039	-0.0036	-0.2227	-0.6796	0.4968
Event14	139	0.0009	0.9756	-0.0073	-0.0040	-0.0132	-0.0306	0.9756
Event15	139	0.4256	0.5153	-0.0042	-0.0043	0.2858	0.6524	0.5142
Event16	139	0.4046	0.5258	-0.0043	-0.0034	0.2562	0.6361	0.5247
Event17	139	5.9746	0.0158	0.0348	-0.0023	0.8756	2.4443*	0.0145
Event18	139	0.7870	0.3766	-0.0015	0.0008	0.2298	0.8871	0.3750
Event19	139	0.4844	0.4876	-0.0038	0.0018	0.1872	0.6960	0.4865
Event20	139	0.6665	0.4157	-0.0024	0.0023	0.2247	0.8164	0.4143
Event21	139	0.3473	0.5566	-0.0048	0.0031	0.1592	0.5893	0.5556
Event22	139	1.2714	0.2615	0.0020	0.0023	0.2908	1.1275	0.2595
Event23	139	2.3359	0.1287	0.0096	0.0022	0.3932	1.5284	0.1264
Event24	139	1.4343	0.2331	0.0031	0.0020	0.3309	1.1976	0.2311
Event25	139	1.0255	0.3130	0.0002	0.0023	0.3195	1.0126	0.3112
Event26	139	0.1567	0.6929	-0.0061	0.0020	0.1321	0.3958	0.6923
Event27	139	0.3798	0.5387	-0.0045	-0.0009	-0.2085	-0.6163	0.5377
Event28	139	0.8161	0.3679	-0.0013	-0.0012	-0.3087	-0.9034	0.3663
Event29	139	1.2289	0.2696	0.0017	-0.0004	-0.3959	-1.1085	0.2676
Event30	139	0.9036	0.3435	-0.0007	-0.0012	0.2726	0.9506	0.3418
Event31	139	1.2844	0.2591	0.0021	-0.0014	0.3209	1.1333	0.2571
Event32	139	1.0439	0.3087	0.0003	-0.0007	0.2820	1.0217	0.3069
Event33	139	1.0039	0.3181	0.0000	-0.0010	0.2781	1.0020	0.3164
Event34	139	2.5901	0.1098	0.0114	-0.0015	0.4119	1.6094	0.1075
Event35	139	3.2080	0.0755	0.0157	-0.0004	0.4148	1.7911	0.0733
Event36	139	17.9653	0.0000	0.1095	-0.0018	0.8197	4.2386***	0.0000
Event37	139	20.7086	0.0000	0.1250	-0.0022	0.9375	4.5507***	0.0000
Event38	139	19.8371	0.0000	0.1201	-0.0021	0.9147	4.4539***	0.0000
Event39	139	17.1053	0.0001	0.1045	-0.0021	0.7916	4.1359***	0.0000

Estimation window of -150 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	139	18.8271	0.0000	0.1144	-0.0016	0.8305	4.3390***	0.0000
Event41	139	18.2492	0.0000	0.1111	-0.0011	0.8405	4.2719***	0.0000
Event42	139	13.4480	0.0003	0.0827	-0.0005	0.7513	3.6672***	0.0002
Event43	139	11.4943	0.0009	0.0707	0.0002	0.7107	3.3903***	0.0007
Event44	139	10.4768	0.0015	0.0643	-0.0001	0.6873	3.2368**	0.0012
Event45	139	0.4534	0.5019	-0.0040	0.0027	-0.1125	-0.6733	0.5007
Event46	139	0.0851	0.7710	-0.0067	0.0029	0.0347	0.2916	0.7706
Event47	139	0.7024	0.4034	-0.0022	0.0030	0.0853	0.8381	0.4020
Event48	139	1.9319	0.1668	0.0067	0.0060	0.1617	1.3899	0.1646
Event49	139	2.6582	0.1053	0.0119	0.0044	0.2674	1.6304	0.1030
Event50	139	2.0083	0.1587	0.0073	0.0035	0.2431	1.4171	0.1564
Event51	139	2.0074	0.1588	0.0072	0.0036	0.2500	1.4168	0.1565
Event52	139	3.2576	0.0733	0.0161	0.0015	0.3243	1.8049	0.0711
Event53	139	5.6725	0.0186	0.0327	0.0015	0.4655	2.3817*	0.0172
Event54	139	7.9507	0.0055	0.0480	0.0003	0.5919	2.8197**	0.0048
Event55	139	9.4659	0.0025	0.0578	-0.0007	0.6608	3.0767**	0.0021
Event56	139	24.5680	0.0000	0.1459	-0.0006	1.0246	4.9566***	0.0000
Event57	139	23.3368	0.0000	0.1393	-0.0006	0.9442	4.8308***	0.0000
Event58	139	26.4247	0.0000	0.1556	-0.0013	1.0478	5.1405***	0.0000
Event59	139	25.0312	0.0000	0.1483	-0.0011	1.0182	5.0031***	0.0000
Event60	139	25.1162	0.0000	0.1488	-0.0013	1.0206	5.0116***	0.0000
Event61	139	21.4526	0.0000	0.1291	-0.0003	0.6890	4.6317***	0.0000
Event62	137	23.1982	0.0000	0.1403	-0.0005	0.6889	4.8164***	0.0000
Event63	135	16.3039	0.0001	0.1025	-0.0008	0.5797	4.0378***	0.0001
Event64	135	2.5529	0.1125	0.0115	-0.0010	0.2876	1.5978	0.1101
Event65	135	1.8607	0.1749	0.0064	-0.0013	0.2519	1.3641	0.1725
Event66	135	0.0601	0.8067	-0.0071	-0.0005	-0.0420	-0.2452	0.8063
Event67	135	0.0081	0.9283	-0.0075	0.0010	-0.0192	-0.0902	0.9282
Event68	135	0.2202	0.6397	-0.0059	0.0014	-0.1014	-0.4692	0.6389
Event69	139	0.7542	0.3867	-0.0018	0.0004	0.1512	0.8684	0.3852
Event70	139	2.0216	0.1573	0.0073	0.0003	0.2205	1.4218	0.1551
Event71	139	2.9774	0.0867	0.0141	-0.0005	0.2308	1.7255	0.0844
Event72	139	11.6071	0.0009	0.0714	-0.0007	0.2914	3.4069***	0.0007
Event73	139	11.3556	0.0010	0.0698	-0.0008	0.2878	3.3698***	0.0008
Event74	139	7.9509	0.0055	0.0480	0.0000	0.2530	2.8197**	0.0048
Event75	139	7.3512	0.0076	0.0440	-0.0004	0.2824	2.7113**	0.0067
Event76	139	4.7347	0.0313	0.0264	-0.0006	0.2501	2.1759*	0.0296
Event77	139	2.5767	0.1107	0.0113	0.0001	0.2555	1.6052	0.1084
Event78	139	1.6457	0.2017	0.0047	0.0011	0.2663	1.2828	0.1995
Event79	139	6.4561	0.0122	0.0380	0.0004	0.6958	2.5409*	0.0111

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -200 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	147	0.3453	0.5577	-0.0045	-0.0031	0.4142	0.5876	0.5568
Event3	182	0.0305	0.8616	-0.0054	0.0003	0.1166	0.1745	0.8614
Event4	189	1.3539	0.2461	0.0019	0.0009	0.6609	1.1636	0.2446
Event5	189	0.8408	0.3604	-0.0008	0.0012	0.4667	0.9169	0.3592
Event6	189	2.3426	0.1276	0.0071	0.0019	0.6306	1.5305	0.1259
Event7	189	2.5876	0.1094	0.0084	0.0017	0.6842	1.6086	0.1077
Event8	189	1.2326	0.2683	0.0012	-0.0022	0.5966	1.1102	0.2669
Event9	189	0.4492	0.5035	-0.0029	-0.0012	0.3552	0.6702	0.5027
Event10	189	0.0248	0.8750	-0.0052	-0.0007	-0.0686	-0.1575	0.8748
Event11	189	0.0078	0.9298	-0.0053	-0.0006	0.0385	0.0882	0.9297
Event12	189	1.3311	0.2501	0.0018	0.0014	-0.4522	-1.1537	0.2486
Event13	189	0.9420	0.3330	-0.0003	-0.0030	-0.2749	-0.9705	0.3318
Event14	189	0.0042	0.9485	-0.0053	-0.0042	0.0215	0.0646	0.9485
Event15	189	0.4294	0.5131	-0.0030	-0.0039	0.2260	0.6553	0.5123
Event16	189	0.0277	0.8681	-0.0052	-0.0025	0.0583	0.1664	0.8679
Event17	189	2.9201	0.0891	0.0101	-0.0029	0.5039	1.7088	0.0875
Event18	189	2.0573	0.1531	0.0056	-0.0012	0.4003	1.4343	0.1515
Event19	189	2.8840	0.0911	0.0099	0.0004	0.4696	1.6982	0.0895
Event20	189	2.6492	0.1053	0.0087	0.0008	0.4246	1.6276	0.1036
Event21	189	2.2254	0.1374	0.0065	0.0010	0.3898	1.4918	0.1358
Event22	189	1.6159	0.2052	0.0033	0.0025	0.3068	1.2712	0.2037
Event23	189	1.4006	0.2381	0.0021	0.0024	0.2836	1.1835	0.2366
Event24	189	2.2383	0.1363	0.0065	0.0013	0.3496	1.4961	0.1346
Event25	189	2.5439	0.1124	0.0081	0.0014	0.3674	1.5949	0.1107
Event26	189	0.1919	0.6619	-0.0043	0.0018	0.1073	0.4380	0.6614
Event27	189	0.0036	0.9525	-0.0053	0.0014	-0.0180	-0.0596	0.9524
Event28	189	0.0967	0.7561	-0.0048	0.0001	-0.0920	-0.3110	0.7558
Event29	189	0.1467	0.7022	-0.0046	0.0006	-0.1166	-0.3830	0.7017
Event30	189	1.8281	0.1780	0.0044	-0.0011	0.3377	1.3521	0.1764
Event31	189	2.5077	0.1150	0.0080	-0.0015	0.3848	1.5836	0.1133
Event32	189	1.3830	0.2411	0.0020	-0.0011	0.2827	1.1760	0.2396
Event33	189	1.2910	0.2573	0.0015	-0.0013	0.2758	1.1362	0.2559
Event34	189	1.4007	0.2381	0.0021	-0.0011	0.2713	1.1835	0.2366
Event35	189	1.2432	0.2663	0.0013	-0.0015	0.2398	1.1150	0.2649
Event36	189	16.2499	0.0001	0.0750	-0.0025	0.7200	4.0311***	0.0001
Event37	189	20.7166	0.0000	0.0949	-0.0027	0.8512	4.5515***	0.0000
Event38	189	19.7790	0.0000	0.0908	-0.0027	0.8242	4.4474***	0.0000
Event39	189	16.9318	0.0001	0.0781	-0.0018	0.7468	4.1148***	0.0000

Estimation window of -200 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	189	19.6856	0.0000	0.0904	-0.0007	0.7923	4.4368***	0.0000
Event41	189	19.3708	0.0000	0.0890	-0.0002	0.7925	4.4012***	0.0000
Event42	189	16.2763	0.0001	0.0752	0.0001	0.7447	4.0344***	0.0001
Event43	189	13.5629	0.0003	0.0626	-0.0006	0.6566	3.6828***	0.0002
Event44	189	12.2530	0.0006	0.0565	-0.0005	0.6280	3.5004***	0.0005
Event45	189	5.1523	0.0244	0.0216	0.0013	0.3513	2.2699*	0.0232
Event46	189	0.0015	0.9688	-0.0053	0.0025	-0.0046	-0.0392	0.9687
Event47	189	0.0558	0.8136	-0.0050	0.0017	0.0240	0.2362	0.8133
Event48	189	1.3691	0.2435	0.0020	0.0050	0.1104	1.1701	0.2420
Event49	189	2.5339	0.1131	0.0081	0.0025	0.1654	1.5918	0.1114
Event50	189	2.7863	0.0967	0.0094	0.0032	0.1956	1.6692	0.0951
Event51	189	2.7957	0.0962	0.0095	0.0039	0.2060	1.6720	0.0945
Event52	189	2.9252	0.0889	0.0101	0.0027	0.2113	1.7103	0.0872
Event53	189	3.7316	0.0549	0.0143	0.0031	0.2921	1.9317	0.0534
Event54	189	13.1721	0.0004	0.0608	0.0007	0.6130	3.6293***	0.0003
Event55	189	14.7604	0.0002	0.0682	-0.0004	0.6936	3.8419***	0.0001
Event56	189	23.8015	0.0000	0.1082	-0.0003	0.8181	4.8787***	0.0000
Event57	189	26.6976	0.0000	0.1203	0.0001	0.8366	5.1670***	0.0000
Event58	189	29.8876	0.0000	0.1332	-0.0005	0.9244	5.4670***	0.0000
Event59	189	29.2495	0.0000	0.1306	-0.0005	0.9046	5.4083***	0.0000
Event60	189	28.9490	0.0000	0.1294	-0.0005	0.9004	5.3804***	0.0000
Event61	189	27.2109	0.0000	0.1224	-0.0016	0.8591	5.2164***	0.0000
Event62	187	25.4087	0.0000	0.1160	-0.0008	0.7009	5.0407***	0.0000
Event63	185	21.1417	0.0000	0.0987	-0.0003	0.6136	4.5980***	0.0000
Event64	185	17.3548	0.0000	0.0816	-0.0002	0.5566	4.1659***	0.0000
Event65	185	16.3835	0.0001	0.0772	-0.0005	0.5451	4.0477***	0.0001
Event66	185	11.8335	0.0007	0.0556	-0.0002	0.4925	3.4400***	0.0006
Event67	185	0.0258	0.8726	-0.0053	0.0002	0.0259	0.1606	0.8724
Event68	185	0.0019	0.9654	-0.0055	0.0007	0.0070	0.0435	0.9653
Event69	187	0.0036	0.9523	-0.0054	0.0003	0.0093	0.0598	0.9523
Event70	189	1.2447	0.2660	0.0013	0.0004	0.1576	1.1157	0.2646
Event71	189	2.4744	0.1174	0.0078	0.0003	0.2056	1.5730	0.1157
Event72	189	10.6881	0.0013	0.0490	-0.0009	0.2784	3.2693**	0.0011
Event73	189	11.8189	0.0007	0.0544	-0.0009	0.2956	3.4379***	0.0006
Event74	189	13.8023	0.0003	0.0638	-0.0001	0.2986	3.7152***	0.0002
Event75	189	11.7213	0.0008	0.0540	-0.0004	0.2831	3.4236***	0.0006
Event76	189	10.5676	0.0014	0.0484	-0.0004	0.2834	3.2508**	0.0012
Event77	189	5.1989	0.0237	0.0218	-0.0003	0.2419	2.2801*	0.0226
Event78	189	2.9464	0.0877	0.0102	0.0007	0.2993	1.7165	0.0861
Event79	189	8.2282	0.0046	0.0370	0.0006	0.6358	2.8685**	0.0041

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -250 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	147	0.3453	0.5577	-0.0045	-0.0031	0.4142	0.5876	0.5568
Event3	182	0.0305	0.8616	-0.0054	0.0003	0.1166	0.1745	0.8614
Event4	239	1.1273	0.2894	0.0005	0.0001	0.5442	1.0617	0.2884
Event5	239	2.7826	0.0966	0.0074	0.0004	0.7833	1.6681	0.0953
Event6	239	1.6903	0.1948	0.0029	0.0012	0.5357	1.3001	0.1936
Event7	239	2.2042	0.1390	0.0050	0.0012	0.5897	1.4847	0.1376
Event8	239	4.7807	0.0298	0.0156	0.0020	1.1885	2.1865*	0.0288
Event9	239	3.7893	0.0528	0.0116	0.0017	1.0339	1.9466	0.0516
Event10	239	0.0002	0.9889	-0.0042	-0.0004	-0.0065	-0.0140	0.9889
Event11	239	0.0560	0.8131	-0.0040	-0.0007	0.1077	0.2367	0.8129
Event12	239	3.0249	0.0833	0.0084	0.0006	-0.5999	-1.7392	0.0820
Event13	239	1.3016	0.2551	0.0013	-0.0018	-0.2977	-1.1409	0.2539
Event14	239	0.0415	0.8388	-0.0040	-0.0027	-0.0609	-0.2036	0.8386
Event15	239	0.3733	0.5418	-0.0026	-0.0036	0.1827	0.6110	0.5412
Event16	239	0.0972	0.7554	-0.0038	-0.0028	0.0936	0.3118	0.7552
Event17	239	2.1012	0.1485	0.0046	-0.0031	0.4001	1.4496	0.1472
Event18	239	0.8418	0.3598	-0.0007	-0.0019	0.2241	0.9175	0.3589
Event19	239	1.0171	0.3142	0.0001	-0.0009	0.2502	1.0085	0.3132
Event20	239	1.6061	0.2063	0.0025	-0.0007	0.3136	1.2673	0.2050
Event21	239	1.5575	0.2133	0.0023	-0.0006	0.3083	1.2480	0.2120
Event22	239	1.4722	0.2262	0.0020	0.0000	0.3062	1.2134	0.2250
Event23	239	4.0701	0.0448	0.0127	0.0012	0.4701	2.0174*	0.0436
Event24	239	2.7520	0.0985	0.0073	0.0010	0.3731	1.6589	0.0971
Event25	239	1.3752	0.2421	0.0016	0.0015	0.2548	1.1727	0.2409
Event26	239	0.3760	0.5404	-0.0026	0.0011	0.1320	0.6132	0.5398
Event27	239	0.0360	0.8497	-0.0041	0.0014	-0.0448	-0.1897	0.8495
Event28	239	0.8101	0.3690	-0.0008	0.0014	-0.2338	-0.9001	0.3681
Event29	239	0.8951	0.3451	-0.0004	0.0017	-0.2490	-0.9461	0.3441
Event30	239	2.7490	0.0986	0.0073	0.0005	0.3798	1.6580	0.0973
Event31	239	3.3365	0.0690	0.0097	0.0002	0.4121	1.8266	0.0678
Event32	239	2.6157	0.1071	0.0067	0.0000	0.3523	1.6173	0.1058
Event33	239	1.9926	0.1594	0.0042	-0.0005	0.3063	1.4116	0.1581
Event34	239	1.9771	0.1610	0.0041	-0.0011	0.2967	1.4061	0.1597
Event35	239	1.5703	0.2114	0.0024	-0.0016	0.2448	1.2531	0.2102
Event36	239	15.8308	0.0001	0.0587	-0.0024	0.6532	3.9788***	0.0001
Event37	239	19.8920	0.0000	0.0735	-0.0027	0.7654	4.4600***	0.0000
Event38	239	18.4796	0.0000	0.0684	-0.0023	0.7394	4.2988***	0.0000
Event39	239	15.1634	0.0001	0.0562	-0.0022	0.6546	3.8940***	0.0001

Estimation window of -250 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	239	16.9392	0.0001	0.0628	-0.0017	0.6910	4.1157***	0.0000
Event41	239	16.7395	0.0001	0.0620	-0.0014	0.6905	4.0914***	0.0000
Event42	239	16.5736	0.0001	0.0614	-0.0012	0.6910	4.0711***	0.0000
Event43	239	16.1213	0.0001	0.0597	0.0003	0.6670	4.0151***	0.0001
Event44	239	15.0011	0.0001	0.0556	-0.0001	0.6461	3.8731***	0.0001
Event45	239	5.2645	0.0226	0.0176	0.0008	0.3172	2.2945*	0.0218
Event46	239	0.6469	0.4220	-0.0015	0.0027	0.0955	0.8043	0.4212
Event47	239	0.0173	0.8954	-0.0041	0.0025	0.0141	0.1316	0.8953
Event48	239	0.4310	0.5122	-0.0024	0.0038	0.0621	0.6565	0.5115
Event49	239	2.1795	0.1412	0.0049	0.0037	0.1410	1.4763	0.1399
Event50	239	2.0790	0.1507	0.0045	0.0031	0.1371	1.4419	0.1493
Event51	239	2.1151	0.1472	0.0047	0.0032	0.1397	1.4543	0.1459
Event52	239	2.0449	0.1540	0.0044	0.0027	0.1383	1.4300	0.1527
Event53	239	2.7673	0.0975	0.0074	0.0023	0.1659	1.6635	0.0962
Event54	239	10.9251	0.0011	0.0400	0.0020	0.4561	3.3053***	0.0009
Event55	239	10.8223	0.0012	0.0396	0.0014	0.4949	3.2897**	0.0010
Event56	239	25.8622	0.0000	0.0946	-0.0010	0.8252	5.0855***	0.0000
Event57	239	22.9499	0.0000	0.0844	-0.0010	0.7512	4.7906***	0.0000
Event58	239	35.6995	0.0000	0.1272	-0.0002	0.8719	5.9749***	0.0000
Event59	239	36.2117	0.0000	0.1289	0.0001	0.8599	6.0176***	0.0000
Event60	239	35.3360	0.0000	0.1261	0.0000	0.8534	5.9444***	0.0000
Event61	239	31.5485	0.0000	0.1138	-0.0009	0.8028	5.6168***	0.0000
Event62	237	29.7369	0.0000	0.1085	-0.0012	0.7843	5.4532***	0.0000
Event63	235	29.0554	0.0000	0.1071	-0.0011	0.7952	5.3903***	0.0000
Event64	235	26.8064	0.0000	0.0993	-0.0007	0.6986	5.1775***	0.0000
Event65	235	22.0873	0.0000	0.0827	-0.0008	0.6369	4.6997***	0.0000
Event66	235	18.7941	0.0000	0.0707	-0.0006	0.5706	4.3352***	0.0000
Event67	235	10.2950	0.0015	0.0382	-0.0001	0.4132	3.2086**	0.0013
Event68	235	6.1207	0.0141	0.0214	0.0003	0.3270	2.4740*	0.0134
Event69	235	0.0012	0.9719	-0.0043	0.0003	0.0047	0.0353	0.9718
Event70	235	1.3487	0.2467	0.0015	0.0005	0.1470	1.1613	0.2455
Event71	235	2.2050	0.1389	0.0051	0.0002	0.1771	1.4849	0.1376
Event72	239	7.6589	0.0061	0.0272	-0.0004	0.2382	2.7675**	0.0056
Event73	239	8.1937	0.0046	0.0293	-0.0008	0.2421	2.8625**	0.0042
Event74	239	7.8823	0.0054	0.0281	-0.0002	0.2415	2.8075**	0.0050
Event75	239	11.5912	0.0008	0.0426	-0.0008	0.2824	3.4046***	0.0007
Event76	239	11.7605	0.0007	0.0433	-0.0006	0.2922	3.4294***	0.0006
Event77	239	9.7598	0.0020	0.0355	-0.0003	0.2746	3.1241**	0.0018
Event78	239	6.2320	0.0132	0.0215	0.0003	0.3142	2.4964*	0.0125
Event79	239	6.3910	0.0121	0.0221	0.0007	0.4565	2.5280*	0.0115

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -300 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	147	0.3453	0.5577	-0.0045	-0.0031	0.4142	0.5876	0.5568
Event3	182	0.0305	0.8616	-0.0054	0.0003	0.1166	0.1745	0.8614
Event4	243	0.6825	0.4095	-0.0013	-0.0004	0.4243	0.8261	0.4087
Event5	256	0.6275	0.4290	-0.0015	-0.0006	0.3792	0.7921	0.4283
Event6	289	3.7674	0.0532	0.0095	0.0004	0.7684	1.9410	0.0523
Event7	289	3.1788	0.0757	0.0075	0.0011	0.7104	1.7829	0.0746
Event8	289	6.3661	0.0122	0.0183	0.0020	1.2270	2.5231*	0.0116
Event9	289	6.6101	0.0106	0.0191	0.0023	1.2716	2.5710*	0.0101
Event10	289	2.2918	0.1312	0.0045	0.0004	0.6988	1.5139	0.1301
Event11	289	2.2337	0.1361	0.0043	-0.0002	0.6727	1.4946	0.1350
Event12	289	0.7916	0.3744	-0.0007	0.0001	-0.2892	-0.8897	0.3736
Event13	289	1.4242	0.2337	0.0015	-0.0015	-0.2924	-1.1934	0.2327
Event14	289	0.0136	0.9074	-0.0034	-0.0022	-0.0322	-0.1165	0.9073
Event15	289	0.1314	0.7173	-0.0030	-0.0027	0.0996	0.3625	0.7170
Event16	289	0.0405	0.8406	-0.0033	-0.0025	0.0535	0.2014	0.8404
Event17	289	2.8021	0.0952	0.0062	-0.0030	0.4001	1.6739	0.0941
Event18	289	0.4894	0.4847	-0.0018	-0.0021	0.1622	0.6996	0.4842
Event19	289	0.5083	0.4765	-0.0017	-0.0014	0.1694	0.7129	0.4759
Event20	289	0.9630	0.3273	-0.0001	-0.0010	0.2295	0.9813	0.3264
Event21	289	0.8177	0.3666	-0.0006	-0.0008	0.2116	0.9043	0.3659
Event22	289	1.4192	0.2345	0.0015	-0.0005	0.2687	1.1913	0.2335
Event23	289	2.1956	0.1395	0.0041	-0.0002	0.3333	1.4818	0.1384
Event24	289	3.2456	0.0727	0.0077	-0.0004	0.4031	1.8016	0.0716
Event25	289	3.6942	0.0556	0.0093	0.0006	0.4065	1.9220	0.0546
Event26	289	0.9405	0.3330	-0.0002	0.0009	0.2014	0.9698	0.3322
Event27	289	0.1454	0.7032	-0.0030	0.0009	0.0786	0.3814	0.7029
Event28	289	0.1559	0.6933	-0.0029	0.0005	0.0819	0.3948	0.6930
Event29	289	0.1224	0.7267	-0.0031	0.0008	0.0735	0.3499	0.7264
Event30	289	2.2542	0.1344	0.0043	0.0006	0.2938	1.5014	0.1333
Event31	289	2.3629	0.1254	0.0047	0.0004	0.3003	1.5372	0.1243
Event32	289	1.0686	0.3021	0.0002	0.0010	0.2090	1.0337	0.3013
Event33	289	0.8755	0.3502	-0.0004	0.0007	0.1904	0.9357	0.3494
Event34	289	2.4950	0.1153	0.0052	0.0004	0.3080	1.5795	0.1142
Event35	289	2.7951	0.0956	0.0062	-0.0006	0.3045	1.6718	0.0946
Event36	289	17.3263	0.0000	0.0536	-0.0022	0.6428	4.1625***	0.0000
Event37	289	22.4572	0.0000	0.0693	-0.0025	0.7606	4.7389***	0.0000
Event38	289	20.5261	0.0000	0.0635	-0.0022	0.7308	4.5306***	0.0000
Event39	289	17.3531	0.0000	0.0537	-0.0022	0.6481	4.1657***	0.0000

Estimation window of -300 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	289	18.7854	0.0000	0.0582	-0.0019	0.6741	4.3342***	0.0000
Event41	289	18.4568	0.0000	0.0571	-0.0017	0.6724	4.2961***	0.0000
Event42	289	15.4805	0.0001	0.0479	-0.0013	0.6243	3.9345***	0.0001
Event43	289	14.7385	0.0002	0.0455	-0.0007	0.6013	3.8391***	0.0001
Event44	289	14.2450	0.0002	0.0440	-0.0008	0.5910	3.7743***	0.0002
Event45	289	7.8238	0.0055	0.0231	0.0006	0.3645	2.7971**	0.0052
Event46	289	5.9161	0.0156	0.0168	0.0013	0.2663	2.4323*	0.0150
Event47	289	5.6591	0.0180	0.0159	0.0015	0.2578	2.3789*	0.0174
Event48	289	0.1236	0.7254	-0.0031	0.0042	0.0346	0.3515	0.7252
Event49	289	0.9462	0.3315	-0.0002	0.0026	0.0924	0.9727	0.3307
Event50	289	0.9822	0.3225	-0.0001	0.0024	0.0933	0.9910	0.3217
Event51	289	1.0586	0.3044	0.0002	0.0025	0.0971	1.0289	0.3035
Event52	289	0.9475	0.3312	-0.0002	0.0021	0.0925	0.9734	0.3303
Event53	289	2.1537	0.1433	0.0040	0.0028	0.1375	1.4675	0.1422
Event54	289	6.8212	0.0095	0.0198	0.0030	0.2787	2.6117**	0.0090
Event55	289	7.5755	0.0063	0.0223	0.0023	0.3450	2.7524**	0.0059
Event56	289	32.0085	0.0000	0.0972	-0.0003	0.7952	5.6576***	0.0000
Event57	289	31.2904	0.0000	0.0952	-0.0003	0.7713	5.5938***	0.0000
Event58	289	32.4118	0.0000	0.0983	-0.0008	0.7990	5.6931***	0.0000
Event59	289	33.4863	0.0000	0.1014	-0.0010	0.8136	5.7867***	0.0000
Event60	289	34.7425	0.0000	0.1049	-0.0013	0.8368	5.8943***	0.0000
Event61	289	37.0055	0.0000	0.1111	-0.0003	0.7706	6.0832***	0.0000
Event62	287	34.2045	0.0000	0.1040	-0.0003	0.7524	5.8485***	0.0000
Event63	285	32.3055	0.0000	0.0993	-0.0006	0.7384	5.6838***	0.0000
Event64	285	29.2283	0.0000	0.0904	-0.0007	0.7181	5.4063***	0.0000
Event65	285	26.5410	0.0000	0.0825	-0.0008	0.6868	5.1518***	0.0000
Event66	285	26.1356	0.0000	0.0813	-0.0009	0.7069	5.1123***	0.0000
Event67	285	14.9846	0.0001	0.0469	0.0000	0.4661	3.8710***	0.0001
Event68	285	14.6008	0.0002	0.0457	0.0004	0.4613	3.8211***	0.0001
Event69	285	2.2493	0.1348	0.0044	-0.0001	0.1846	1.4998	0.1337
Event70	285	2.2534	0.1344	0.0044	0.0000	0.1689	1.5011	0.1333
Event71	285	2.5548	0.1111	0.0054	-0.0001	0.1687	1.5984	0.1100
Event72	289	6.3377	0.0124	0.0182	0.0000	0.2216	2.5175*	0.0118
Event73	289	6.8091	0.0095	0.0198	-0.0001	0.2279	2.6094**	0.0091
Event74	289	9.5880	0.0022	0.0290	0.0001	0.2630	3.0965**	0.0020
Event75	289	8.1579	0.0046	0.0243	-0.0004	0.2362	2.8562**	0.0043
Event76	289	8.4532	0.0039	0.0252	-0.0006	0.2417	2.9074**	0.0036
Event77	289	8.5652	0.0037	0.0256	-0.0005	0.2504	2.9266**	0.0034
Event78	289	8.2655	0.0043	0.0246	0.0002	0.2678	2.8750**	0.0040
Event79	289	7.8970	0.0053	0.0234	0.0008	0.4484	2.8102**	0.0050

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -350 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	147	0.3453	0.5577	-0.0045	-0.0031	0.4142	0.5876	0.5568
Event3	182	0.0305	0.8616	-0.0054	0.0003	0.1166	0.1745	0.8614
Event4	243	0.6825	0.4095	-0.0013	-0.0004	0.4243	0.8261	0.4087
Event5	256	0.6275	0.4290	-0.0015	-0.0006	0.3792	0.7921	0.4283
Event6	310	1.3426	0.2475	0.0011	-0.0003	0.4660	1.1587	0.2466
Event7	319	1.3061	0.2540	0.0010	-0.0002	0.4570	1.1428	0.2531
Event8	339	6.8093	0.0095	0.0169	0.0020	0.8953	2.6095**	0.0091
Event9	339	5.1916	0.0233	0.0122	0.0021	0.7831	2.2785*	0.0227
Event10	339	6.1168	0.0139	0.0149	0.0021	1.0989	2.4732*	0.0134
Event11	339	5.5576	0.0190	0.0133	0.0020	1.0411	2.3574*	0.0184
Event12	339	0.8900	0.3462	-0.0003	-0.0001	-0.3238	-0.9434	0.3455
Event13	339	1.5045	0.2208	0.0015	-0.0008	-0.2955	-1.2266	0.2200
Event14	339	0.0024	0.9608	-0.0030	-0.0018	-0.0126	-0.0492	0.9607
Event15	339	0.1111	0.7391	-0.0026	-0.0021	0.0858	0.3333	0.7389
Event16	339	0.0012	0.9728	-0.0030	-0.0020	-0.0084	-0.0341	0.9728
Event17	339	2.2638	0.1334	0.0037	-0.0024	0.3373	1.5046	0.1324
Event18	339	0.8688	0.3520	-0.0004	-0.0022	0.1945	0.9321	0.3513
Event19	339	0.9995	0.3182	0.0000	-0.0016	0.2119	0.9997	0.3174
Event20	339	0.9215	0.3378	-0.0002	-0.0012	0.2050	0.9600	0.3371
Event21	339	0.7645	0.3825	-0.0007	-0.0012	0.1861	0.8744	0.3819
Event22	339	1.0116	0.3152	0.0000	-0.0007	0.2177	1.0058	0.3145
Event23	339	1.6292	0.2027	0.0019	-0.0005	0.2732	1.2764	0.2018
Event24	339	1.9609	0.1623	0.0028	-0.0005	0.2931	1.4003	0.1614
Event25	339	2.5380	0.1121	0.0045	-0.0004	0.3273	1.5931	0.1111
Event26	339	1.3310	0.2494	0.0010	-0.0006	0.2400	1.1537	0.2486
Event27	339	0.5520	0.4580	-0.0013	0.0010	0.1461	0.7430	0.4575
Event28	339	0.3228	0.5703	-0.0020	0.0008	0.1116	0.5681	0.5699
Event29	339	0.2716	0.6026	-0.0022	0.0010	0.1034	0.5212	0.6023
Event30	339	2.7306	0.0994	0.0051	0.0003	0.2954	1.6524	0.0984
Event31	339	3.4976	0.0623	0.0073	0.0002	0.3326	1.8702	0.0615
Event32	339	3.1120	0.0786	0.0062	0.0004	0.3080	1.7641	0.0777
Event33	339	3.2568	0.0720	0.0066	0.0002	0.3144	1.8047	0.0711
Event34	339	3.8590	0.0503	0.0084	0.0003	0.3366	1.9644*	0.0495
Event35	339	1.3645	0.2436	0.0011	0.0003	0.2021	1.1681	0.2428
Event36	339	17.9690	0.0000	0.0478	-0.0010	0.6290	4.2390***	0.0000
Event37	339	23.7885	0.0000	0.0632	-0.0011	0.7403	4.8773***	0.0000
Event38	339	22.0947	0.0000	0.0587	-0.0008	0.7168	4.7005***	0.0000
Event39	339	19.1554	0.0000	0.0510	-0.0009	0.6513	4.3767***	0.0000

Estimation window of -350 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	339	22.0489	0.0000	0.0586	-0.0010	0.6883	4.6956***	0.0000
Event41	339	20.9281	0.0000	0.0557	-0.0011	0.6703	4.5747***	0.0000
Event42	339	17.3113	0.0000	0.0460	-0.0012	0.6237	4.1607***	0.0000
Event43	339	14.3433	0.0002	0.0380	-0.0009	0.5563	3.7873***	0.0002
Event44	339	13.3838	0.0003	0.0353	-0.0010	0.5387	3.6584***	0.0003
Event45	339	7.5186	0.0064	0.0189	0.0001	0.3417	2.7420**	0.0061
Event46	339	7.5880	0.0062	0.0191	0.0012	0.2850	2.7546**	0.0059
Event47	339	5.9412	0.0153	0.0144	0.0013	0.2457	2.4375*	0.0148
Event48	339	7.5913	0.0062	0.0191	0.0030	0.2760	2.7552**	0.0059
Event49	339	1.0499	0.3063	0.0001	0.0029	0.0976	1.0246	0.3055
Event50	339	1.0793	0.2996	0.0002	0.0027	0.1004	1.0389	0.2988
Event51	339	0.7655	0.3822	-0.0007	0.0029	0.0848	0.8749	0.3816
Event52	339	0.4644	0.4960	-0.0016	0.0027	0.0663	0.6815	0.4956
Event53	339	1.4854	0.2238	0.0014	0.0024	0.1115	1.2188	0.2229
Event54	339	4.8569	0.0282	0.0113	0.0028	0.1861	2.2038*	0.0275
Event55	339	6.0146	0.0147	0.0146	0.0021	0.2235	2.4525*	0.0142
Event56	339	26.4030	0.0000	0.0699	0.0005	0.6331	5.1384***	0.0000
Event57	339	26.3635	0.0000	0.0698	0.0007	0.6221	5.1345***	0.0000
Event58	339	30.6777	0.0000	0.0807	0.0004	0.6891	5.5387***	0.0000
Event59	339	31.1875	0.0000	0.0820	0.0002	0.7049	5.5846***	0.0000
Event60	339	31.5508	0.0000	0.0829	0.0001	0.7081	5.6170***	0.0000
Event61	339	35.7795	0.0000	0.0933	-0.0013	0.7568	5.9816***	0.0000
Event62	337	33.0773	0.0000	0.0871	-0.0005	0.7053	5.7513***	0.0000
Event63	335	37.2093	0.0000	0.0978	-0.0003	0.7276	6.0999***	0.0000
Event64	335	29.3988	0.0000	0.0784	-0.0004	0.6501	5.4221***	0.0000
Event65	335	29.6237	0.0000	0.0789	-0.0003	0.6533	5.4428***	0.0000
Event66	335	29.6839	0.0000	0.0791	-0.0006	0.6642	5.4483***	0.0000
Event67	335	24.9015	0.0000	0.0668	-0.0005	0.6419	4.9901***	0.0000
Event68	335	23.8766	0.0000	0.0641	-0.0004	0.6272	4.8864***	0.0000
Event69	335	12.4820	0.0005	0.0332	0.0000	0.3733	3.5330***	0.0004
Event70	335	13.8225	0.0002	0.0370	0.0003	0.3774	3.7179***	0.0002
Event71	335	9.3572	0.0024	0.0244	-0.0002	0.2983	3.0590**	0.0022
Event72	335	6.4656	0.0115	0.0161	0.0000	0.2126	2.5427*	0.0110
Event73	335	6.2138	0.0132	0.0154	-0.0003	0.2078	2.4928*	0.0127
Event74	337	7.3952	0.0069	0.0187	0.0002	0.2280	2.7194**	0.0065
Event75	339	6.9878	0.0086	0.0174	0.0001	0.2229	2.6435**	0.0082
Event76	339	7.1469	0.0079	0.0179	0.0000	0.2273	2.6734**	0.0075
Event77	339	7.4193	0.0068	0.0186	-0.0001	0.2324	2.7238**	0.0065
Event78	339	11.5762	0.0007	0.0303	0.0001	0.2771	3.4024***	0.0007
Event79	339	10.6430	0.0012	0.0277	0.0005	0.4153	3.2624**	0.0011

*p<0.05, **p<0.01, ***p<0.001

Estimation window of -400 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event1	63	0.0002	0.9877	-0.0164	-0.0051	-0.0202	-0.0154	0.9877
Event2	147	0.3453	0.5577	-0.0045	-0.0031	0.4142	0.5876	0.5568
Event3	182	0.0305	0.8616	-0.0054	0.0003	0.1166	0.1745	0.8614
Event4	243	0.6825	0.4095	-0.0013	-0.0004	0.4243	0.8261	0.4087
Event5	256	0.6275	0.4290	-0.0015	-0.0006	0.3792	0.7921	0.4283
Event6	310	1.3426	0.2475	0.0011	-0.0003	0.4660	1.1587	0.2466
Event7	319	1.3061	0.2540	0.0010	-0.0002	0.4570	1.1428	0.2531
Event8	389	9.2920	0.0025	0.0209	0.0010	0.9279	3.0483**	0.0023
Event9	389	8.2325	0.0043	0.0183	0.0011	0.8857	2.8692**	0.0041
Event10	389	4.8411	0.0284	0.0098	0.0020	0.7342	2.2003*	0.0278
Event11	389	5.2259	0.0228	0.0108	0.0018	0.7695	2.2860*	0.0223
Event12	389	0.3463	0.5566	-0.0017	0.0001	0.2002	0.5884	0.5562
Event13	389	1.6710	0.1969	0.0017	-0.0010	-0.2975	-1.2927	0.1961
Event14	389	0.1626	0.6870	-0.0022	-0.0013	-0.1002	-0.4033	0.6867
Event15	389	0.1199	0.7293	-0.0023	-0.0013	0.0859	0.3463	0.7291
Event16	389	0.0039	0.9504	-0.0026	-0.0018	-0.0146	-0.0623	0.9503
Event17	389	1.6303	0.2024	0.0016	-0.0020	0.2704	1.2768	0.2017
Event18	389	0.5939	0.4414	-0.0010	-0.0018	0.1521	0.7706	0.4409
Event19	389	0.6904	0.4066	-0.0008	-0.0013	0.1667	0.8309	0.4060
Event20	389	0.9677	0.3259	-0.0001	-0.0014	0.1951	0.9837	0.3253
Event21	389	0.8269	0.3637	-0.0004	-0.0013	0.1804	0.9093	0.3632
Event22	389	1.1203	0.2905	0.0003	-0.0012	0.2084	1.0585	0.2898
Event23	389	1.8860	0.1705	0.0023	-0.0009	0.2700	1.3733	0.1697
Event24	389	1.6627	0.1980	0.0017	-0.0010	0.2589	1.2895	0.1972
Event25	389	1.7250	0.1898	0.0019	-0.0006	0.2603	1.3134	0.1891
Event26	389	0.6556	0.4186	-0.0009	-0.0003	0.1580	0.8097	0.4181
Event27	389	0.4061	0.5243	-0.0015	0.0000	0.1275	0.6373	0.5239
Event28	389	1.0296	0.3109	0.0001	-0.0002	0.2032	1.0147	0.3103
Event29	389	0.9351	0.3341	-0.0002	0.0000	0.1952	0.9670	0.3335
Event30	389	3.4848	0.0627	0.0064	0.0003	0.3240	1.8668	0.0619
Event31	389	4.6078	0.0324	0.0092	0.0003	0.3689	2.1466*	0.0318
Event32	389	3.2800	0.0709	0.0058	0.0007	0.3020	1.8111	0.0701
Event33	389	2.9410	0.0872	0.0050	0.0004	0.2861	1.7149	0.0864
Event34	389	2.5920	0.1082	0.0041	0.0006	0.2623	1.6100	0.1074
Event35	389	3.3089	0.0697	0.0059	-0.0001	0.2807	1.8190	0.0689
Event36	389	18.9877	0.0000	0.0443	-0.0009	0.5925	4.3575***	0.0000
Event37	389	25.1223	0.0000	0.0585	-0.0009	0.7023	5.0122***	0.0000
Event38	389	23.5015	0.0000	0.0548	-0.0006	0.6822	4.8478***	0.0000
Event39	389	17.4904	0.0000	0.0408	-0.0007	0.5833	4.1822***	0.0000

Estimation window of -400 to -11 and an event window of -2 to +2 trading days

	Obs	F	Prob>F	Adj R2	constant	Coefficient Mkt Return	t	p>t
Event40	389	19.0076	0.0000	0.0444	-0.0003	0.6157	4.3598***	0.0000
Event41	389	18.4804	0.0000	0.0431	-0.0002	0.6097	4.2989***	0.0000
Event42	389	18.5998	0.0000	0.0434	-0.0001	0.6147	4.3128***	0.0000
Event43	389	15.6011	0.0001	0.0363	-0.0009	0.5517	3.9498***	0.0001
Event44	389	14.6678	0.0001	0.0340	-0.0011	0.5362	3.8299***	0.0001
Event45	389	6.6118	0.0105	0.0143	-0.0003	0.3048	2.5713*	0.0101
Event46	389	8.0791	0.0047	0.0179	0.0012	0.2890	2.8424**	0.0045
Event47	389	8.3153	0.0042	0.0185	0.0010	0.2851	2.8836**	0.0039
Event48	389	7.4537	0.0066	0.0164	0.0025	0.2584	2.7302**	0.0063
Event49	389	9.0955	0.0027	0.0204	0.0019	0.2867	3.0159**	0.0026
Event50	389	8.2287	0.0043	0.0183	0.0020	0.2770	2.8686**	0.0041
Event51	389	8.4262	0.0039	0.0188	0.0020	0.2812	2.9028**	0.0037
Event52	389	8.7170	0.0033	0.0195	0.0018	0.2864	2.9525**	0.0032
Event53	389	1.5585	0.2126	0.0014	0.0026	0.1142	1.2484	0.2119
Event54	389	3.2518	0.0721	0.0058	0.0026	0.1511	1.8033	0.0713
Event55	389	3.8862	0.0494	0.0074	0.0023	0.1726	1.9713*	0.0487
Event56	389	18.0643	0.0000	0.0421	0.0014	0.4274	4.2502***	0.0000
Event57	389	17.3976	0.0000	0.0405	0.0015	0.4302	4.1710***	0.0000
Event58	389	24.2976	0.0000	0.0566	0.0013	0.5447	4.9293***	0.0000
Event59	389	25.1296	0.0000	0.0585	0.0012	0.5539	5.0129***	0.0000
Event60	389	26.0901	0.0000	0.0607	0.0010	0.5746	5.1078***	0.0000
Event61	389	32.9558	0.0000	0.0761	-0.0002	0.6601	5.7407***	0.0000
Event62	387	37.1220	0.0000	0.0856	-0.0007	0.7021	6.0928***	0.0000
Event63	385	37.0586	0.0000	0.0858	-0.0006	0.7129	6.0876***	0.0000
Event64	385	29.6832	0.0000	0.0695	-0.0010	0.6477	5.4482***	0.0000
Event65	385	27.5414	0.0000	0.0646	-0.0010	0.6282	5.2480***	0.0000
Event66	385	34.5540	0.0000	0.0804	-0.0004	0.6717	5.8783***	0.0000
Event67	385	28.6274	0.0000	0.0671	-0.0002	0.6213	5.3505***	0.0000
Event68	385	27.8260	0.0000	0.0653	-0.0001	0.6191	5.2750***	0.0000
Event69	385	19.2732	0.0000	0.0454	-0.0001	0.4637	4.3901***	0.0000
Event70	385	17.9738	0.0000	0.0423	-0.0001	0.4179	4.2396***	0.0000
Event71	385	16.6745	0.0001	0.0392	0.0001	0.3778	4.0834***	0.0000
Event72	385	6.7473	0.0098	0.0147	-0.0003	0.2027	2.5976**	0.0094
Event73	385	6.7473	0.0098	0.0147	-0.0003	0.2019	2.5976**	0.0094
Event74	385	7.2912	0.0072	0.0161	0.0002	0.2130	2.7002**	0.0069
Event75	385	7.0232	0.0084	0.0154	0.0000	0.2136	2.6501**	0.0080
Event76	385	6.5285	0.0110	0.0142	-0.0002	0.2084	2.5551*	0.0106
Event77	389	6.6608	0.0102	0.0144	0.0000	0.2150	2.5808**	0.0099
Event78	389	8.2337	0.0043	0.0183	0.0000	0.2344	2.8694**	0.0041
Event79	389	10.8641	0.0011	0.0248	0.0003	0.3211	3.2961***	0.0010

*p<0.05, **p<0.01, ***p<0.001

Appendix 9 Abnormal Return t-test results for single firm single event market models for varying estimation windows

Market model AR test statistic results for estimation window of -100 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-2.4922	*	1.2473		1.1538		0.0712	
Event2	0.0587		2.8636	**	0.0550		-4.8817	***	0.2030	
Event3	-0.1551		-0.8215		-0.1703		0.7127		-0.1288	
Event4	0.9121		-0.1828		0.1543		-0.1543		0.0587	
Event5	-0.3841		0.1440		-0.8815		0.0649		-1.9297	
Event6	-1.1099		0.1877		-0.1508		-1.0518		-0.1059	
Event7	-1.1064		1.8917		1.6500		2.3021	*	1.2862	
Event8	1.5923		1.5345		0.7892		2.1040	*	1.3809	
Event9	1.3842		-0.5918		-3.5638	***	1.4205		0.6080	
Event10	-0.0762		-0.0969		1.4029		1.2868		-1.4897	
Event11	1.2982		-1.4580		-0.7663		0.6300		1.3282	
Event12	-1.0304		0.8877		-0.1540		0.0446		-0.5161	
Event13	-2.7631	**	-2.9261	**	-0.9167		2.2977	*	0.0565	
Event14	0.1395		-1.7709		1.0446		-0.8157		1.0537	
Event15	-1.5918		0.9206		0.0120		-0.7756		0.0709	
Event16	1.0263		-1.0102		1.9802	*	-0.0039		-2.0597	*
Event17	0.2594		0.8823		-0.3523		0.9995		-1.1272	
Event18	0.1128		0.0836		-1.7471		2.2695	*	0.0537	
Event19	0.7821		1.3373		-0.7377		1.2957		-0.7545	
Event20	-0.1515		-0.1025		0.0138		-0.9123		-0.0940	
Event21	-0.0160		-0.9676		-0.1340		-0.0750		0.3648	
Event22	-0.2176		-1.5317		1.0981		-0.2017		0.4631	
Event23	2.4083	*	-0.1263		-0.8231		0.3344		0.5238	
Event24	0.6571		-0.8906		-0.1160		-0.3394		-0.8318	
Event25	-1.7229		0.8457		0.0148		-0.0827		3.0618	**
Event26	0.0961		-1.3451		0.0724		1.5303		-1.3130	
Event27	-2.5536	*	2.5163	*	-2.9024	**	0.2168		-0.0093	
Event28	-0.8954		-0.8464		-2.5751	*	2.2226	*	0.0517	
Event29	-0.8931		-2.5496	*	2.1425	*	0.0260		-1.0186	
Event30	-0.5549		-0.6846		1.5892		0.0239		-0.7329	
Event31	0.0282		0.7895		0.4759		-0.0884		1.4928	
Event32	1.6093		-0.5545		-1.9248		0.8704		0.5931	
Event33	0.8705		0.5912		-0.5912		0.3484		-0.2981	
Event34	-0.4639		1.2258		-0.3095		0.0988		-0.4040	
Event35	-3.2165	**	-2.5241	*	-0.0303		1.3730		-1.8771	
Event36	-0.3674		0.3313		-0.1339		2.9050	**	-0.4091	
Event37	1.1658		-0.3152		0.5949		-0.1985		0.1959	
Event38	-0.2330		0.1334		1.9834	*	-0.1716		0.1980	
Event39	-0.3449		0.2351		1.4186		1.1446		-0.7106	

Market model AR test statistic results for estimation window of -100 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event40	0.1545		-0.8434		3.9361	***	0.8436		-0.4451	
Event41	0.8208		-0.4483		0.0495		-1.3724		-0.8721	
Event42	-0.4986		-0.0545		0.8611		0.2431		-0.7776	
Event43	1.7090		0.5249		-0.0680		1.0417		-0.0760	
Event44	1.5935		-2.3019	*	-0.0366		1.5994		-0.0146	
Event45	0.5869		0.0844		3.4832	***	0.1083		-0.5243	
Event46	-0.0413		-0.5007		0.7227		1.0665		-0.8224	
Event47	-0.6206		-0.6103		1.1193		0.2583		-0.1614	
Event48	-0.8866		0.2752		-0.1983		-1.2811		-3.6180	***
Event49	-1.2448		-1.0843		1.4218		-0.4857		-0.2825	
Event50	-0.2229		-0.5104		-1.7166		2.0253	*	-0.4179	
Event51	0.3973		-0.3443		-0.5459		-0.2896		-0.8754	
Event52	-0.8149		0.3098		1.3552		-0.7104		0.8653	
Event53	-0.5686		-0.1900		0.0936		0.1632		0.0575	
Event54	1.8762		-1.2423		-1.4778		0.9773		-0.2194	
Event55	1.7405		2.0716	*	0.5945		-0.4135		-0.5528	
Event56	-0.1710		0.3071		2.2741	*	-0.5577		0.8400	
Event57	0.6811		0.0610		-3.8369	***	0.3492		-0.9788	
Event58	-1.1648		0.1051		-1.2548		0.0735		-0.3390	
Event59	-0.4152		0.0608		0.7776		0.3440		0.0745	
Event60	0.1018		-0.5419		0.5232		-0.3645		-0.3678	
Event61	0.4608		0.2375		0.0501		0.3362		-0.7512	
Event62	-0.0362		0.2423		0.5752		2.0815	*	-2.1539	*
Event63	-0.4829		-0.0489		0.5825		0.0086		-0.5572	
Event64	-0.6697		-0.5962		3.6855	***	1.4862		-0.6397	
Event65	-0.6341		-0.6120		0.5057		0.0806		-1.0488	
Event66	0.8624		0.3789		0.3041		-2.5283	*	4.2798	***
Event67	-1.8871		-0.4310		1.9793	*	-0.0359		0.1961	
Event68	0.1361		-0.4483		-0.8725		-0.7891		-0.4632	
Event69	1.6142		-2.4648	*	0.4546		1.6621		-0.7578	
Event70	-0.5165		1.2860		-0.8625		0.1765		-0.4129	
Event71	-0.1834		1.3452		0.4131		-0.1111		-0.0709	
Event72	-0.0256		-0.2957		2.6282	**	2.7306	**	-1.9658	*
Event73	2.1090	*	-1.2349		1.1393		-0.2454		-0.7403	
Event74	-0.6217		0.0746		1.3765		0.2820		0.3459	
Event75	0.7375		-1.0824		5.7531	***	-3.8769	***	2.1404	*
Event76	-0.9837		-1.1190		-0.1051		-1.2393		1.7590	
Event77	0.3448		0.3921		-0.7265		0.6855		-0.3456	
Event78	0.6101		1.0863		-0.5553		0.6452		0.1422	
Event79	0.3018		-0.4953		0.6660		0.3384		0.3762	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -150 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-2.4922	*	1.2473		1.1538		0.0712	
Event2	0.0538		2.8037	**	0.0503		-4.7834	***	0.1884	
Event3	-0.1872		-0.6812		-0.2142		0.7000		-0.1403	
Event4	0.9919		-0.2042		0.2298		-0.1675		0.1067	
Event5	-0.2477		0.0254		-0.5048		-0.0155		-1.3998	
Event6	-1.0667		0.2688		-0.1092		-0.9961		-0.0591	
Event7	-1.0732		2.0292	*	1.7511		2.4411	*	1.3530	
Event8	1.2871		1.2392		0.6562		1.7036		1.1270	
Event9	1.1145		-0.4278		-2.7479	**	1.1731		0.5910	
Event10	-0.0117		-0.0313		1.3894		1.2798		-1.3511	
Event11	1.2800		-1.3361		-0.6747		0.6249		1.3526	
Event12	-1.0127		0.8479		-0.1484		0.0133		-0.5942	
Event13	-2.8244	**	-3.0444	**	-0.9556		2.2781	*	0.1024	
Event14	0.1157		-1.9111		1.0985		-0.8977		1.0970	
Event15	-1.8011		1.0058		0.0483		-0.8696		0.0764	
Event16	0.9731		-0.6802		1.7769		0.0577		-1.5766	
Event17	0.3318		0.7167		-0.3198		0.8499		-0.8666	
Event18	0.0869		0.0568		-1.8001		2.2686	*	0.0261	
Event19	0.7322		1.3263		-0.7520		1.2898		-0.7573	
Event20	-0.1130		-0.0845		-0.0170		-0.8336		-0.0796	
Event21	-0.0598		-0.8402		-0.1049		-0.0824		0.4944	
Event22	-0.0216		-1.3622		1.1922		-0.0459		0.5209	
Event23	2.4758	*	-0.0863		-0.7895		0.3836		0.5701	
Event24	0.6272		-0.7737		-0.0697		-0.1726		-0.7534	
Event25	-1.7835		0.7002		-0.1018		-0.2063		2.8370	**
Event26	-0.0954		-1.5142		-0.0809		1.2356		-1.5338	
Event27	-2.8012	**	2.6917	**	-2.8995	**	0.0945		0.0308	
Event28	-0.7950		-0.3836		-2.4723	*	2.2794	*	0.0555	
Event29	-0.5197		-2.5134	*	2.2359	*	0.0316		-0.9136	
Event30	-0.5947		-0.6752		1.8064		0.0396		-0.6889	
Event31	0.0410		0.7634		0.5767		-0.0262		1.6691	
Event32	1.7063		-0.5316		-1.8660		1.0658		0.6305	
Event33	1.0703		0.6350		-0.5512		0.5055		-0.3949	
Event34	-0.4994		1.3247		-0.2001		0.1132		-0.4496	
Event35	-2.9941	**	-2.3483	*	-0.0544		1.2349		-1.7550	
Event36	-0.4216		0.2311		-0.1759		2.5973	**	-0.4166	
Event37	1.0909		-0.3267		0.4969		-0.2608		0.0951	
Event38	-0.2710		0.0742		1.9341		-0.1837		0.1368	
Event39	-0.3979		0.2227		1.4855		1.2017		-0.7957	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -150 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1632	-0.8487	4.1863 ***	0.9214	-0.4590
Event41	0.8963	-0.4639	0.0629	-1.4557	-0.8804
Event42	-0.5550	-0.0464	0.9952	0.2610	-0.8929
Event43	1.4208	1.0668	0.1562	0.9110	-0.1384
Event44	1.5794	-1.8896	-0.2416	1.3327	-0.0088
Event45	0.4921	0.0441	3.1621 **	0.0722	-0.5443
Event46	-0.0707	-0.4913	0.6976	1.0402	-0.8396
Event47	-0.5049	-0.4996	1.0451	0.2758	-0.1002
Event48	-0.8179	0.2770	-0.1885	-1.2282	-3.4319 ***
Event49	-1.3894	-1.1696	1.5439	-0.5259	-0.4031
Event50	-0.3307	-0.5327	-1.9735 *	2.2306 *	-0.4671
Event51	0.3960	-0.5512	-0.6828	-0.3991	-1.0273
Event52	-0.9933	0.1706	1.6607	-0.9038	0.9874
Event53	-0.7490	-0.4098	-0.2192	0.0009	-0.0711
Event54	1.5135	-0.7575	-0.9938	0.8912	-0.1425
Event55	1.8122	2.1446 *	0.6538	-0.3607	-0.4975
Event56	-0.1462	0.2898	2.1244 *	-0.5051	0.7830
Event57	0.6569	0.1016	-3.3937 ***	0.3416	-0.8447
Event58	-0.9881	0.1002	-0.9576	0.0694	-0.2063
Event59	-0.2544	0.0987	0.7864	0.4731	0.2152
Event60	0.2253	-0.4525	0.5193	-0.2813	-0.2279
Event61	0.3998	0.2533	0.0148	0.2423	-0.8673
Event62	-0.1163	0.4381	0.4611	1.6221	-1.7728
Event63	-0.2491	-0.2544	0.4565	-0.0496	-0.5137
Event64	-0.3264	-0.5406	3.1435 **	1.3817	-0.2821
Event65	-0.2804	-0.3193	0.5032	-0.0838	-0.9185
Event66	0.9775	0.4883	0.4903	-2.4801 *	4.6296 ***
Event67	-2.0041 *	-0.4639	2.1745 *	-0.0806	0.3116
Event68	0.2169	-0.4496	-0.8870	-0.8265	-0.4649
Event69	1.5908	-2.1271 *	0.4096	1.3413	-0.7881
Event70	-0.5645	1.2411	-0.9533	0.0941	-0.4720
Event71	-0.1336	1.4964	0.5045	-0.0807	-0.0514
Event72	-0.0169	-0.2265	2.0727 *	2.1512 *	-1.5452
Event73	1.5525	-0.9682	0.8569	-0.1909	-0.6129
Event74	-0.5802	0.0650	1.2905	0.1996	0.4300
Event75	0.7660	-1.2998	6.1745 ***	-4.1112 ***	2.3142 *
Event76	-1.0454	-1.1851	-0.0755	-1.3339	1.9974 *
Event77	0.4461	0.5442	-0.7725	0.8252	-0.3213
Event78	0.4831	0.9885	-0.4539	0.6077	0.1900
Event79	0.3092	-0.5481	0.7454	0.3023	0.3806

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -200 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-2.4922	*	1.2473		1.1538		0.0712	
Event2	0.0611		2.6702	**	0.0595		-4.4682	***	0.1230	
Event3	-0.0257		-0.7555		-0.0296		0.7277		-0.0190	
Event4	0.9339		-0.1475		0.2001		-0.1181		0.1015	
Event5	-0.1743		0.0202		-0.3575		-0.0089		-1.2775	
Event6	-0.9203		0.1090		-0.1161		-0.8900		-0.0863	
Event7	-0.9244		1.6007		1.3887		1.9425		1.0757	
Event8	1.2486		1.2176		0.6170		1.5675		1.0481	
Event9	0.9868		-0.4747		-2.6740	**	1.1013		0.6510	
Event10	0.0260		0.0215		1.4045		1.3440		-1.3382	
Event11	1.3452		-1.3379		-0.6694		0.7158		1.3298	
Event12	-0.9126		0.7430		-0.1239		-0.0229		-0.6512	
Event13	-3.0725	**	-3.2999	***	-1.0494		2.4552	*	0.0817	
Event14	0.1375		-2.0846	*	1.2057		-0.9736		1.2086	
Event15	-1.9750	*	1.0937		0.0570		-0.9532		0.0811	
Event16	0.9874		-0.8322		1.8396		0.0671		-1.7698	
Event17	0.2463		0.8727		-0.1417		0.9400		-0.8644	
Event18	0.2110		0.1658		-1.5323		1.9635	*	0.1198	
Event19	0.7991		1.2402		-0.6112		1.1956		-0.6428	
Event20	-0.0905		-0.0387		0.0841		-0.8449		-0.0298	
Event21	0.0674		-0.8325		-0.0366		0.0154		0.4629	
Event22	-0.0234		-1.3317		1.1569		-0.0485		0.5011	
Event23	2.4926	*	-0.0882		-0.7820		0.4344		0.5650	
Event24	0.6750		-0.7787		-0.0483		-0.1607		-0.7559	
Event25	-1.6940		0.7007		-0.0706		-0.1857		2.7526	**
Event26	-0.0859		-1.5087		-0.0740		1.2549		-1.5247	
Event27	-2.8870	**	2.5778	**	-2.8953	**	-0.0399		-0.0453	
Event28	-0.7638		-0.1329		-2.3910	*	2.1935	*	0.0004	
Event29	-0.1791		-2.3832	*	2.1498	*	-0.0132		-0.8086	
Event30	-0.6268		-0.7278		1.8833		0.0399		-0.7527	
Event31	0.0469		0.8442		0.6078		-0.0391		1.7786	
Event32	1.8471		-0.5623		-1.9992	*	1.1571		0.6889	
Event33	1.1599		0.6904		-0.5847		0.5523		-0.4179	
Event34	-0.5600		1.3337		-0.1344		0.0805		-0.5212	
Event35	-2.7164	**	-2.4279	*	0.0069		1.4492		-1.7164	
Event36	-0.4614		0.2377		-0.1378		2.6880	**	-0.3599	
Event37	1.1963		-0.2993		0.5004		-0.2965		0.0474	
Event38	-0.3063		0.0262		2.0821	*	-0.1561		0.0903	
Event39	-0.4250		0.2108		1.4998		1.2222		-0.8420	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -200 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1391	-0.8708	4.2288 ***	0.9194	-0.4875
Event41	0.8968	-0.4953	0.0399	-1.5113	-0.8990
Event42	-0.5647	-0.0604	0.9721	0.2421	-0.9011
Event43	1.5684	1.1285	0.1763	1.0108	-0.1184
Event44	1.7197	-2.0689 *	-0.2329	1.4749	0.0005
Event45	0.3094	-0.3410	2.6956 **	-0.4164	-0.4201
Event46	-0.0735	-0.4582	0.6823	1.0169	-0.8181
Event47	-0.4201	-0.4215	1.0028	0.2930	-0.0556
Event48	-0.6703	0.2833	-0.1436	-1.0704	-2.9914 **
Event49	-1.2445	-1.0148	1.5513	-0.4083	-0.3379
Event50	-0.3362	-0.4992	-1.9718 *	2.2437 *	-0.4459
Event51	0.4016	-0.5976	-0.7099	-0.4199	-1.0573
Event52	-1.0474	0.0533	1.7637	-0.9764	1.0041
Event53	-0.8488	-0.5347	-0.4128	-0.0734	-0.1205
Event54	1.4871	-0.7523	-0.9930	0.8773	-0.1614
Event55	1.6683	1.9866 *	0.6029	-0.3531	-0.4995
Event56	-0.0623	0.2302	2.2086 *	-0.4193	0.6927
Event57	0.6061	0.0304	-3.5818 ***	0.3225	-0.9143
Event58	-0.9659	0.0992	-1.0125	0.0717	-0.2534
Event59	-0.2863	0.1104	0.7474	0.3881	0.1489
Event60	0.1466	-0.4466	0.4941	-0.2874	-0.2748
Event61	0.3674	0.3030	0.0642	0.2103	-0.7370
Event62	-0.0958	0.4562	0.4604	1.5628	-1.6704
Event63	-0.2529	-0.2850	0.4109	-0.0768	-0.5216
Event64	-0.2682	-0.6419	2.9014 **	1.2859	-0.2144
Event65	-0.2103	-0.2814	0.4426	-0.2568	-0.9939
Event66	0.7563	0.4034	0.6021	-1.8063	3.8842 ***
Event67	-2.0649 *	-0.4388	2.3675 *	-0.0424	0.4062
Event68	0.3733	-0.4448	-0.8206	-0.8661	-0.4573
Event69	1.5782	-2.4846 *	0.4009	1.5733	-0.8233
Event70	-0.5370	1.3438	-1.0449	0.0623	-0.4685
Event71	-0.1541	1.4713	0.4827	-0.1080	-0.0824
Event72	-0.0004	-0.1874	1.9549	2.0220 *	-1.4315
Event73	1.4258	-0.8735	0.7993	-0.1574	-0.5532
Event74	-0.5152	0.0823	1.2103	0.2273	0.3799
Event75	0.6997	-1.1766	5.6140 ***	-3.7325 ***	2.1062 *
Event76	-0.9434	-1.0132	-0.0952	-1.2300	1.7998
Event77	0.5042	0.6044	-0.8154	0.9158	-0.3292
Event78	0.5506	1.0507	-0.4513	0.6521	0.2099
Event79	0.3004	-0.5507	0.7561	0.2699	0.3669

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -250 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-2.4922 *	1.2473	1.1538	0.0712
Event2	0.0611	2.6702 **	0.0595	-4.4682 ***	0.1230
Event3	-0.0257	-0.7555	-0.0296	0.7277	-0.0190
Event4	0.9464	-0.1100	0.1757	-0.0858	0.0946
Event5	-0.2617	0.0621	-0.5667	0.0136	-1.3233
Event6	-0.8648	0.0957	-0.0863	-0.8467	-0.0622
Event7	-0.9243	1.6261	1.4232	1.9764 *	1.1157
Event8	1.0375	1.0219	0.4512	1.2578	0.8203
Event9	0.7764	-0.5292	-2.4948 *	0.9585	0.6935
Event10	0.0127	0.0124	1.1090	1.0713	-1.0825
Event11	1.1199	-1.1007	-0.5500	0.6098	1.0844
Event12	-0.9037	0.7915	-0.1099	0.0236	-0.5580
Event13	-3.1644 **	-3.3904 ***	-1.1111	2.4474 *	0.0305
Event14	0.0905	-2.2645 *	1.2459	-1.0870	1.2373
Event15	-2.1216 *	1.1667	0.0635	-1.0240	0.0843
Event16	1.0425	-0.8468	1.9332	0.0713	-1.8291
Event17	0.2254	0.9336	-0.0906	0.9825	-0.8774
Event18	0.1597	0.1338	-1.5032	2.0913 *	0.1073
Event19	0.7582	1.2695	-0.5876	1.2342	-0.5983
Event20	-0.0257	0.0106	0.0967	-0.7101	0.0169
Event21	0.0926	-0.7099	0.0141	0.0534	0.5124
Event22	0.0539	-1.1083	1.1026	0.0316	0.5200
Event23	2.3738 *	-0.0494	-0.7242	0.3621	0.5768
Event24	0.6630	-0.7386	-0.0346	-0.1496	-0.7143
Event25	-1.6447	0.6882	-0.0677	-0.1468	2.7064 **
Event26	-0.0675	-1.5240	-0.0526	1.2989	-1.5441
Event27	-2.8872 **	2.5826 **	-2.9080 **	-0.0328	-0.0463
Event28	-0.8571	-0.3695	-2.5211 *	2.1844 *	-0.0341
Event29	-0.3965	-2.5110 *	2.1503 *	-0.0441	-0.9158
Event30	-0.6895	-0.8033	1.8630	-0.0090	-0.8356
Event31	-0.0044	0.8154	0.5596	-0.0979	1.7489
Event32	1.8932	-0.6157	-2.1358 *	1.1391	0.6944
Event33	1.1839	0.7083	-0.6401	0.5469	-0.4452
Event34	-0.5716	1.3850	-0.1533	0.0894	-0.5291
Event35	-2.8604 **	-2.5463 *	0.0090	1.5207	-1.8019
Event36	-0.5145	0.2295	-0.1284	2.7792 **	-0.3401
Event37	1.2788	-0.2785	0.4805	-0.3466	-0.0221
Event38	-0.3631	-0.0532	2.1523 *	-0.1507	0.0107
Event39	-0.4597	0.2094	1.5555	1.2921	-0.9188

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -250 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day		Event Day +1		Event Day +2	
Event40	0.1531	-0.8362	4.3673	***	0.9831		-0.4764	
Event41	0.9673	-0.4796	0.0677		-1.5376		-0.8495	
Event42	-0.5584	-0.0267	1.0575		0.2716		-0.9244	
Event43	1.5181	1.0965	0.1543		0.9712		-0.1400	
Event44	1.6755	-2.0274 *	-0.2437		1.4289		-0.0093	
Event45	0.3554	-0.3223	2.9117	**	-0.3954		-0.4410	
Event46	-0.0349	-0.4541	0.6558		0.9670		-0.7427	
Event47	-0.4020	-0.4042	0.8858		0.2428		-0.0733	
Event48	-0.5915	0.3163	-0.1094		-1.0111		-2.8417	**
Event49	-1.2698	-1.0372	1.5052		-0.4368		-0.3778	
Event50	-0.3490	-0.4625	-1.9543		2.2192	*	-0.4249	
Event51	0.4251	-0.5964	-0.6738		-0.3903		-1.0062	
Event52	-0.9817	0.0043	1.7334		-0.9271		0.9727	
Event53	-0.7913	-0.5199	-0.4572		-0.0580		-0.0835	
Event54	1.4530	-0.9315	-1.1275		0.7737		-0.1814	
Event55	1.6887	1.9598	0.5198		-0.3872		-0.4201	
Event56	-0.0349	0.2338	2.0160	*	-0.3574		0.6524	
Event57	0.5690	0.0384	-3.2823	**	0.3388		-0.8059	
Event58	-0.9574	0.1022	-1.0389		0.0761		-0.2727	
Event59	-0.3270	0.0991	0.7315		0.3429		0.1052	
Event60	0.1049	-0.4591	0.4792		-0.3031		-0.3079	
Event61	0.3487	0.2653	0.0382		0.1993		-0.7457	
Event62	-0.0625	0.4678	0.4404		1.4092		-1.4496	
Event63	-0.1254	-0.2576	0.3611		-0.0432		-0.4024	
Event64	-0.1912	-0.6022	2.6348	**	1.1917		-0.1374	
Event65	-0.1395	-0.2161	0.4275		-0.2613		-0.9174	
Event66	0.7781	0.4327	0.6465		-1.7370		3.8884	***
Event67	-1.8423	-0.4514	2.3458	*	-0.2671		0.7723	
Event68	0.6956	-0.4406	-0.4970		-0.9067		-0.4397	
Event69	1.6607	-2.4428 *	0.4296		1.5565		-0.8382	
Event70	-0.5789	1.3910	-1.1095		0.0500		-0.5068	
Event71	-0.1458	1.5886	0.5343		-0.1036		-0.0802	
Event72	-0.0242	-0.1754	1.8354		1.8809		-1.3886	
Event73	1.3804	-0.8549	0.7192		-0.2050		-0.5179	
Event74	-0.4564	0.0621	1.0483		0.1656		0.3643	
Event75	0.6756	-1.0816	5.2760	***	-3.4730	***	1.9925	*
Event76	-0.8786	-0.9309	-0.0811		-1.1569		1.7214	
Event77	0.4935	0.6037	-0.7739		0.8863		-0.3013	
Event78	0.6258	1.1508	-0.4636		0.7214		0.2427	
Event79	0.2720	-0.4763	0.7408		0.1743		0.3172	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -300 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-2.4922 *	1.2473	1.1538	0.0712
Event2	0.0611	2.6702 **	0.0595	-4.4682 ***	0.1230
Event3	-0.0257	-0.7555	-0.0296	0.7277	-0.0190
Event4	0.9454	-0.0772	0.1433	-0.0585	0.0807
Event5	-0.1077	0.0416	-0.2483	0.0193	-1.1585
Event6	-0.8275	0.1582	-0.0972	-0.7839	-0.0634
Event7	-0.8634	1.5211	1.3180	1.8425	1.0202
Event8	0.9769	0.9630	0.4239	1.1802	0.7702
Event9	0.7009	-0.5186	-2.3548 *	0.8978	0.6965
Event10	0.0108	0.0445	0.9731	1.0500	-1.0587
Event11	1.0848	-1.0610	-0.5475	0.6725	0.8800
Event12	-0.7888	0.7448	-0.0436	0.0181	-0.6291
Event13	-3.2894 **	-3.5246 ***	-1.1629	2.5221 *	0.0209
Event14	0.0759	-2.3578 *	1.2616	-1.1410	1.2569
Event15	-2.2517 *	1.2061	0.0614	-1.0923	0.0732
Event16	1.0840	-0.9212	2.0223 *	0.0721	-1.9532
Event17	0.2327	0.9784	-0.1002	1.0298	-0.9286
Event18	0.1412	0.1221	-1.5084	2.1573 *	0.1026
Event19	0.7552	1.2999	-0.5862	1.2676	-0.5893
Event20	-0.0034	0.0237	0.0880	-0.6763	0.0284
Event21	0.0759	-0.6730	0.0212	0.0485	0.5541
Event22	0.0648	-1.1482	1.1683	0.0444	0.5619
Event23	2.3186 *	-0.0019	-0.6317	0.4480	0.5886
Event24	0.6545	-0.6404	0.0098	-0.1043	-0.6154
Event25	-1.5953	0.6966	-0.0401	-0.1612	2.6540 **
Event26	-0.0714	-1.4825	-0.0494	1.2361	-1.5122
Event27	-2.9588 **	2.6500 **	-2.9217 **	-0.0539	-0.0299
Event28	-0.7090	0.0982	-2.2833 *	2.1311 *	-0.0212
Event29	0.0762	-2.2726 *	2.1003 *	-0.0298	-0.7183
Event30	-0.7073	-0.8007	1.9106	-0.0144	-0.8193
Event31	-0.0113	0.7727	0.5801	-0.0803	1.7774
Event32	1.8435	-0.6524	-2.1156 *	1.1665	0.6362
Event33	1.1821	0.6415	-0.6695	0.5421	-0.5495
Event34	-0.6275	1.3657	-0.2111	0.0454	-0.5831
Event35	-3.0701 **	-2.6138 **	-0.0344	1.4657	-1.8911
Event36	-0.5431	0.2298	-0.1353	2.8689 **	-0.3513
Event37	1.3302	-0.2940	0.4932	-0.3692	-0.0328
Event38	-0.3828	-0.0642	2.2373 *	-0.1559	0.0019
Event39	-0.4840	0.2192	1.6329	1.3581	-0.9679

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -300 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1636	-0.8710	4.6097 ***	1.0440	-0.4977
Event41	1.0289	-0.4988	0.0774	-1.6163	-0.8801
Event42	-0.5700	-0.0213	1.0922	0.2598	-0.9626
Event43	1.6125	1.1045	0.1677	1.0375	-0.1077
Event44	1.7415	-2.0988 *	-0.2147	1.5091	0.0086
Event45	0.3425	-0.3598	2.8926 **	-0.4433	-0.4314
Event46	0.0681	-0.4485	0.7332	1.0419	-0.6590
Event47	-0.3888	-0.3704	0.9100	0.2734	-0.0339
Event48	-0.5568	0.2829	-0.1211	-0.9654	-2.6595 **
Event49	-1.2052	-0.9676	1.5215	-0.3807	-0.3438
Event50	-0.3306	-0.4067	-1.8889	2.1889 *	-0.3809
Event51	0.4491	-0.5824	-0.6381	-0.3596	-0.9602
Event52	-0.9419	-0.0074	1.7582	-0.8960	0.9855
Event53	-0.7919	-0.5327	-0.4831	-0.0761	-0.0967
Event54	1.3338	-1.0598	-1.1909	0.6191	-0.1750
Event55	1.7454	1.9833 *	0.4806	-0.4000	-0.3449
Event56	-0.0454	0.2018	1.9874 *	-0.3648	0.6126
Event57	0.5403	0.0182	-3.2516 **	0.3066	-0.8188
Event58	-0.8057	0.1341	-0.9238	0.1125	-0.2299
Event59	-0.2554	0.1407	0.6816	0.3177	0.1142
Event60	0.1368	-0.3598	0.4816	-0.2209	-0.2309
Event61	0.3345	0.2384	0.0147	0.1871	-0.7716
Event62	-0.0989	0.4018	0.3936	1.3589	-1.4790
Event63	-0.1601	-0.2563	0.3454	-0.0569	-0.4176
Event64	-0.1626	-0.5645	2.4305 *	1.1054	-0.1114
Event65	-0.1093	-0.1852	0.3953	-0.2598	-0.8520
Event66	0.6745	0.3859	0.6104	-1.4428	3.3878 ***
Event67	-1.8070	-0.4601	2.3047 *	-0.3035	0.7957
Event68	0.7639	-0.4532	-0.4181	-0.9280	-0.4486
Event69	1.7111	-2.1130 *	0.4595	1.3678	-0.7998
Event70	-0.5858	1.4396	-1.0924	0.0936	-0.5011
Event71	-0.1320	1.6841	0.5802	-0.0886	-0.0646
Event72	-0.0437	-0.1785	1.7420	1.7785	-1.3552
Event73	1.2636	-0.8504	0.6254	-0.2472	-0.5253
Event74	-0.4608	0.0479	1.0129	0.1579	0.3281
Event75	0.6013	-1.1186	5.0021 ***	-3.3301 ***	1.8744
Event76	-0.8631	-0.9907	-0.0610	-1.0937	1.6344
Event77	0.4860	0.5833	-0.7482	0.8704	-0.2920
Event78	0.6068	1.1815	-0.4626	0.7473	0.2709
Event79	0.2764	-0.4910	0.7608	0.1726	0.3221

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -350 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-2.4922	*	1.2473		1.1538		0.0712	
Event2	0.0611		2.6702	**	0.0595		-4.4682	***	0.1230	
Event3	-0.0257		-0.7555		-0.0296		0.7277		-0.0190	
Event4	0.9454		-0.0772		0.1433		-0.0585		0.0807	
Event5	-0.1077		0.0416		-0.2483		0.0193		-1.1585	
Event6	-0.7905		0.1014		-0.0478		-0.7809		-0.0280	
Event7	-0.8106		1.4887		1.3200		1.8110		1.0538	
Event8	0.9799		0.9592		0.4283		1.2220		0.7898	
Event9	0.7382		-0.5034		-2.3721	*	0.8829		0.5820	
Event10	-0.0246		0.0253		0.8506		0.9822		-1.0578	
Event11	0.9853		-1.0581		-0.5799		0.6392		0.6918	
Event12	-0.6732		0.6534		-0.0313		0.0280		-0.5196	
Event13	-3.2349	**	-3.4635	***	-1.1624		2.4293	*	-0.0095	
Event14	0.0657		-2.4647	*	1.2925		-1.1995		1.2906	
Event15	-2.3550	*	1.2308		0.0464		-1.1517		0.0569	
Event16	1.0977		-0.9994		2.0678	*	0.0693		-2.0618	*
Event17	0.2004		1.0172		-0.0907		1.0572		-0.9798	
Event18	0.1626		0.1388		-1.5778		2.2341	*	0.1145	
Event19	0.8112		1.3658		-0.6028		1.3301		-0.6103	
Event20	0.0059		0.0309		0.0901		-0.6814		0.0352	
Event21	0.0853		-0.6728		0.0353		0.0603		0.5950	
Event22	0.0635		-1.1533		1.1828		0.0470		0.5767	
Event23	2.3938	*	0.0085		-0.6316		0.4957		0.6114	
Event24	0.6656		-0.6422		0.0153		-0.0705		-0.6267	
Event25	-1.4608		0.6916		-0.0032		-0.0958		2.5421	*
Event26	-0.0292		-1.3259		-0.0050		1.1642		-1.3585	
Event27	-2.9543	**	2.6227	**	-2.8861	**	-0.0778		-0.0336	
Event28	-0.7098		0.1315		-2.2819	*	2.1227	*	-0.0322	
Event29	0.1107		-2.2737	*	2.0967	*	-0.0394		-0.7144	
Event30	-0.7162		-0.8127		1.9763	*	-0.0035		-0.8321	
Event31	-0.0034		0.8140		0.5969		-0.0817		1.8265	
Event32	1.9188		-0.6446		-2.1823	*	1.1714		0.6893	
Event33	1.1819		0.7020		-0.6743		0.5332		-0.4704	
Event34	-0.6234		1.3845		-0.2288		0.0536		-0.5759	
Event35	-2.9094	**	-2.6839	**	-0.0447		1.5351		-1.8947	
Event36	-0.5868		0.1940		-0.1660		2.8477	**	-0.3789	
Event37	1.3283		-0.3316		0.4540		-0.4267		-0.0915	
Event38	-0.4384		-0.1179		2.2551	*	-0.1957		-0.0506	
Event39	-0.5305		0.1893		1.6369		1.3546		-1.0250	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -350 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day		Event Day +1		Event Day +2	
Event40	0.1481	-0.9342	4.7650	***	1.0583		-0.5411	
Event41	1.0602	-0.5367	0.0654		-1.7047		-0.9341	
Event42	-0.5948	-0.0251	1.1311		0.2666		-1.0025	
Event43	1.6911	1.1127	0.1678		1.0879		-0.0972	
Event44	1.7951	-2.1797	* -0.1957		1.5778		0.0159	
Event45	0.3737	-0.3354	2.9958	**	-0.4160		-0.4321	
Event46	0.0800	-0.4570	0.7552		1.0695		-0.6632	
Event47	-0.3974	-0.3793	0.9505		0.2893		-0.0302	
Event48	-0.4904	0.2544	-0.0254		-0.6958		-2.1919	*
Event49	-1.1472	-0.9237	1.4273		-0.3693		-0.3324	
Event50	-0.3161	-0.3922	-1.7693		2.0296	*	-0.3666	
Event51	0.4121	-0.5656	-0.6125		-0.3506		-0.9142	
Event52	-0.9094	-0.0415	1.6692		-0.8699		0.9227	
Event53	-0.7772	-0.5242	-0.4855		-0.0641		-0.0808	
Event54	1.2276	-1.0394	-1.1322		0.5350		-0.1383	
Event55	1.6775	1.8704	0.4401		-0.3491		-0.2302	
Event56	-0.0048	0.1375	2.0383	*	-0.3243		0.5277	
Event57	0.4607	-0.0760	-3.4223	***	0.2747		-0.8906	
Event58	-0.7673	0.1151	-0.9491		0.0973		-0.2754	
Event59	-0.2960	0.1218	0.5857		0.1963		0.0213	
Event60	0.0249	-0.3460	0.4036		-0.2296		-0.2831	
Event61	0.3410	0.2499	0.0512		0.2100		-0.6528	
Event62	-0.0612	0.3625	0.3847		1.2854		-1.3457	
Event63	-0.1697	-0.2568	0.3373		-0.0622		-0.4210	
Event64	-0.1898	-0.5471	2.4188	*	1.0875		-0.1418	
Event65	-0.1424	-0.2130	0.3747		-0.2575		-0.8567	
Event66	0.6677	0.3749	0.5874		-1.4750		3.3821	***
Event67	-1.5001	-0.3862	2.0536	*	-0.3164		0.8459	
Event68	0.8189	-0.3819	-0.2292		-0.8202		-0.3727	
Event69	1.7939	-1.7219	0.4902		1.1173		-0.7814	
Event70	-0.7292	1.1406	-0.8591		0.1829		-0.5599	
Event71	-0.2161	1.3995	0.4147		-0.1433		-0.1030	
Event72	-0.0499	-0.1846	1.7709		1.8063		-1.3874	
Event73	1.3016	-0.8694	0.6324		-0.2622		-0.5286	
Event74	-0.4680	0.0334	0.9889		0.1280		0.3365	
Event75	0.5487	-1.1174	4.7844	***	-3.2248	**	1.7778	
Event76	-0.8583	-1.0009	-0.0865		-1.0673		1.5141	
Event77	0.4448	0.5317	-0.7482		0.8177		-0.3101	
Event78	0.6138	1.1767	-0.4563		0.7448		0.2694	
Event79	0.3054	-0.4899	0.8226		0.1819		0.3498	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -400 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-2.4922	*	1.2473		1.1538		0.0712	
Event2	0.0611		2.6702	**	0.0595		-4.4682	***	0.1230	
Event3	-0.0257		-0.7555		-0.0296		0.7277		-0.0190	
Event4	0.9454		-0.0772		0.1433		-0.0585		0.0807	
Event5	-0.1077		0.0416		-0.2483		0.0193		-1.1585	
Event6	-0.7905		0.1014		-0.0478		-0.7809		-0.0280	
Event7	-0.8106		1.4887		1.3200		1.8110		1.0538	
Event8	0.9974		0.9775		0.4491		1.2342		0.8069	
Event9	0.7508		-0.4746		-2.3192	*	0.9051		0.6277	
Event10	-0.0308		0.0013		0.8368		0.9114		-1.0001	
Event11	0.9218		-0.9969		-0.5405		0.5649		0.7138	
Event12	-0.5615		0.5588		0.0193		-0.0151		-0.6505	
Event13	-3.1872	**	-3.4127	***	-1.1390		2.4106	*	-0.0002	
Event14	0.0426		-2.4650	*	1.2846		-1.2112		1.2697	
Event15	-2.3862	*	1.2076		0.0205		-1.1803		0.0311	
Event16	1.1243		-1.0433		2.1260	*	0.0644		-2.1397	*
Event17	0.1662		1.0505		-0.0731		1.0770		-1.0169	
Event18	0.1365		0.1172		-1.6305		2.3140	*	0.0975	
Event19	0.8113		1.4007		-0.6367		1.3659		-0.6398	
Event20	0.0161		0.0409		0.0997		-0.6970		0.0452	
Event21	0.0897		-0.6933		0.0395		0.0646		0.6225	
Event22	0.0793		-1.1837		1.2434		0.0629		0.6148	
Event23	2.4614	*	0.0229		-0.6310		0.5223		0.6391	
Event24	0.6786		-0.6258		0.0303		-0.0459		-0.6134	
Event25	-1.4421		0.7037		0.0086		-0.0656		2.5592	*
Event26	-0.0213		-1.3679		-0.0048		1.2363		-1.3902	
Event27	-2.7147	**	2.4743	*	-2.6592	**	-0.0353		0.0007	
Event28	-0.5961		0.2761		-2.0349	*	1.9850	*	-0.0029	
Event29	0.2569		-2.0314	*	1.9657	*	-0.0090		-0.5883	
Event30	-0.7100		-0.8135		1.9557		-0.0027		-0.8376	
Event31	-0.0062		0.8238		0.5853		-0.0928		1.8130	
Event32	1.9385		-0.6616		-2.2191	*	1.1836		0.6908	
Event33	1.1996		0.6962		-0.6910		0.5406		-0.5032	
Event34	-0.6596		1.3806		-0.1931		0.0308		-0.6186	
Event35	-3.0864	**	-2.6781	**	-0.0462		1.4950		-1.9289	
Event36	-0.6187		0.1823		-0.1631		2.8714	**	-0.3674	
Event37	1.3517		-0.3231		0.4335		-0.4538		-0.1321	
Event38	-0.4647		-0.1556		2.2811	*	-0.1934		-0.0886	
Event39	-0.5653		0.1708		1.6426		1.3771		-1.0875	

*p<0.05, **p<0.01, ***p<0.001

Market model AR test statistic results for estimation window of -400 to -11 trading days before Event
(test statistic=abnormal return/root mean square error of regression)

	Event Day -2	Event Day -1	Event Day		Event Day +1		Event Day +2	
Event40	0.1150	-0.9334	4.7620	***	1.0518		-0.5658	
Event41	1.0445	-0.5641	0.0366		-1.7421		-0.9318	
Event42	-0.6378	-0.0537	1.1310		0.2415		-1.0581	
Event43	1.7470	1.1443	0.1718		1.1235		-0.0996	
Event44	1.8535	-2.2471	* -0.1986		1.6304		0.0187	
Event45	0.4102	-0.3018	3.1236	**	-0.3765		-0.4410	
Event46	0.0809	-0.4585	0.7556		1.0699		-0.6629	
Event47	-0.3941	-0.3729	0.9577		0.2964		-0.0225	
Event48	-0.4892	0.2800	-0.0147		-0.7129		-2.2585	*
Event49	-1.0084	-0.8413	1.2632		-0.3418		-0.2393	
Event50	-0.2152	-0.4010	-1.5482		1.8462		-0.3409	
Event51	0.3622	-0.3951	-0.5153		-0.2833		-0.7999	
Event52	-0.7938	0.1070	1.3390		-0.7281		0.7858	
Event53	-0.7471	-0.5060	-0.4681		-0.0691		-0.0854	
Event54	1.1953	-1.0268	-1.1062		0.5107		-0.1204	
Event55	1.6524	1.8291	0.4196		-0.3384		-0.1945	
Event56	0.0493	0.0510	2.0162	*	-0.2564		0.3975	
Event57	0.3675	-0.1778	-3.5588	***	0.2475		-0.9473	
Event58	-0.7060	0.1157	-0.9741		0.1025		-0.3160	
Event59	-0.3361	0.1199	0.4863		0.0537		-0.0852	
Event60	-0.0678	-0.3146	0.3515		-0.2197		-0.3188	
Event61	0.2944	0.1766	0.0060		0.1817		-0.6380	
Event62	-0.0705	0.3640	0.3688		1.2408		-1.3158	
Event63	-0.1463	-0.2199	0.3220		-0.0441		-0.3734	
Event64	-0.1522	-0.4807	2.2520	*	1.0250		-0.1080	
Event65	-0.1165	-0.1791	0.3680		-0.2048		-0.7623	
Event66	0.6496	0.3627	0.5730		-1.4511		3.3151	***
Event67	-1.5119	-0.3953	2.0295	*	-0.3172		0.8135	
Event68	0.7981	-0.3909	-0.2449		-0.8262		-0.3820	
Event69	1.7564	-1.4741	0.4944		0.9834		-0.7219	
Event70	-0.7298	1.1203	-0.7947		0.2263		-0.5451	
Event71	-0.2775	1.2202	0.3054		-0.1879		-0.1383	
Event72	-0.0285	-0.1572	1.8417		1.8714		-1.4036	
Event73	1.3319	-0.8825	0.6432		-0.2686		-0.5319	
Event74	-0.4802	0.0313	1.0075		0.1240		0.3482	
Event75	0.5528	-1.1425	4.8544	***	-3.2763	**	1.8021	
Event76	-0.8738	-1.0403	-0.0787		-1.0761		1.5389	
Event77	0.4388	0.5195	-0.7646		0.8163		-0.3255	
Event78	0.5614	1.1298	-0.4178		0.7232		0.2824	
Event79	0.3146	-0.4584	0.8631		0.1470		0.3489	

*p<0.05, **p<0.01, ***p<0.001

Appendix 10 Cumulative Abnormal Return t-test results for single firm single event market models for varying estimation windows

Market model CAR test statistic results for estimation window of -100 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-0.1774		0.5753		1.0751		0.9934	
Event2	0.0587		2.0664	*	1.7189		-0.9522		-0.7609	
Event3	-0.1551		-0.6906		-0.6622		-0.2171		-0.2518	
Event4	0.9121		0.5157		0.5102		0.3647		0.3524	
Event5	-0.3841		-0.1698		-0.6476		-0.5283		-1.3355	
Event6	-1.1099		-0.6521		-0.6195		-1.0623		-0.9975	
Event7	-1.1064		0.5553		1.4060		2.3687	*	2.6938	**
Event8	1.5923		2.2110	*	2.2609	*	3.0100	**	3.3098	***
Event9	1.3842		0.5604		-1.6000		-0.6754		-0.3322	
Event10	-0.0762		-0.1224		0.7100		1.2583		0.4593	
Event11	1.2982		-0.1130		-0.5347		-0.1480		0.4616	
Event12	-1.0304		-0.1009		-0.1713		-0.1261		-0.3436	
Event13	-2.7631	**	-4.0228	***	-3.8139	***	-2.1541	*	-1.9014	
Event14	0.1395		-1.1536		-0.3388		-0.7013		-0.1560	
Event15	-1.5918		-0.4746		-0.3806		-0.7174		-0.6100	
Event16	1.0263		0.0114		1.1525		0.9962		-0.0301	
Event17	0.2594		0.8073		0.4557		0.8944		0.2959	
Event18	0.1128		0.1388		-0.8953		0.3594		0.3455	
Event19	0.7821		1.4987		0.7978		1.3387		0.8600	
Event20	-0.1515		-0.1796		-0.1387		-0.5763		-0.5575	
Event21	-0.0160		-0.6955		-0.6453		-0.5963		-0.3702	
Event22	-0.2176		-1.2370		-0.3760		-0.4265		-0.1744	
Event23	2.4083	*	1.6136		0.8423		0.8967		1.0363	
Event24	0.6571		-0.1650		-0.2018		-0.3444		-0.6800	
Event25	-1.7229		-0.6203		-0.4979		-0.4725		0.9467	
Event26	0.0961		-0.8831		-0.6793		0.1769		-0.4290	
Event27	-2.5536	*	-0.0264		-1.6973		-1.3614		-1.2219	
Event28	-0.8954		-1.2316		-2.4923	*	-1.0471		-0.9134	
Event29	-0.8931		-2.4344	*	-0.7507		-0.6371		-1.0254	
Event30	-0.5549		-0.8765		0.2018		0.1868		-0.1607	
Event31	0.0282		0.5782		0.7469		0.6026		1.2066	
Event32	1.6093		0.7459		-0.5023		0.0002		0.2655	
Event33	0.8705		1.0336		0.5026		0.6094		0.4118	
Event34	-0.4639		0.5387		0.2612		0.2756		0.0658	
Event35	-3.2165	**	-4.0592	***	-3.3319	***	-2.1990	*	-2.8063	**
Event36	-0.3674		-0.0255		-0.0982		1.3675		1.0402	
Event37	1.1658		0.6015		0.8346		0.6235		0.6453	
Event38	-0.2330		-0.0705		1.0876		0.8561		0.8543	
Event39	-0.3449		-0.0777		0.7556		1.2267		0.7794	

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -100 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1545	-0.4871	1.8748	2.0454 *	1.6304
Event41	0.8208	0.2634	0.2437	-0.4752	-0.8150
Event42	-0.4986	-0.3911	0.1778	0.2756	-0.1013
Event43	1.7090	1.5796	1.2505	1.6038	1.4005
Event44	1.5935	-0.5009	-0.4301	0.4272	0.3756
Event45	0.5869	0.4747	2.3986 *	2.1314 *	1.6719
Event46	-0.0413	-0.3833	0.1043	0.6236	0.1899
Event47	-0.6206	-0.8704	-0.0644	0.0733	-0.0066
Event48	-0.8866	-0.4323	-0.4674	-1.0454	-2.5530 *
Event49	-1.2448	-1.6470	-0.5239	-0.6965	-0.7493
Event50	-0.2229	-0.5185	-1.4145	-0.2123	-0.3768
Event51	0.3973	0.0375	-0.2846	-0.3912	-0.7414
Event52	-0.8149	-0.3571	0.4908	0.0698	0.4495
Event53	-0.5686	-0.5365	-0.3840	-0.2509	-0.1987
Event54	1.8762	0.4482	-0.4872	0.0667	-0.0385
Event55	1.7405	2.6956 **	2.5442 *	1.9965 *	1.5386
Event56	-0.1710	0.0962	1.3915	0.9262	1.2041
Event57	0.6811	0.5247	-1.7869	-1.3729	-1.6656
Event58	-1.1648	-0.7493	-1.3363	-1.1205	-1.1538
Event59	-0.4152	-0.2506	0.2443	0.3836	0.3764
Event60	0.1018	-0.3112	0.0480	-0.1407	-0.2903
Event61	0.4608	0.4937	0.4321	0.5423	0.1491
Event62	-0.0362	0.1457	0.4511	1.4314	0.3170
Event63	-0.4829	-0.3760	0.0293	0.0297	-0.2226
Event64	-0.6697	-0.8951	1.3969	1.9529	1.4606
Event65	-0.6341	-0.8811	-0.4275	-0.3299	-0.7641
Event66	0.8624	0.8777	0.8922	-0.4914	1.4744
Event67	-1.8871	-1.6391	-0.1956	-0.1873	-0.0799
Event68	0.1361	-0.2207	-0.6839	-0.9868	-1.0898
Event69	1.6142	-0.6014	-0.2286	0.6331	0.2274
Event70	-0.5165	0.5441	-0.0537	0.0417	-0.1473
Event71	-0.1834	0.8215	0.9092	0.7319	0.6229
Event72	-0.0256	-0.2271	1.3319	2.5188 *	1.3737
Event73	2.1090 *	0.6181	1.1624	0.8840	0.4596
Event74	-0.6217	-0.3869	0.4788	0.5557	0.6517
Event75	0.7375	-0.2439	3.1224 **	0.7656	1.6420
Event76	-0.9837	-1.4869	-1.2747	-1.7236	-0.7550
Event77	0.3448	0.5211	0.0060	0.3480	0.1567
Event78	0.6101	1.1995	0.6588	0.8931	0.8624
Event79	0.3018	-0.1369	0.2728	0.4054	0.5309

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -150 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-0.1774	0.5753	1.0751	0.9934
Event2	0.0538	2.0205 *	1.6788	-0.9378	-0.7546
Event3	-0.1872	-0.6141	-0.6251	-0.1913	-0.2338
Event4	0.9919	0.5570	0.5875	0.4250	0.4278
Event5	-0.2477	-0.1571	-0.4198	-0.3713	-0.9581
Event6	-1.0667	-0.5642	-0.5238	-0.9517	-0.8776
Event7	-1.0732	0.6760	1.5629	2.5741 *	2.9074 **
Event8	1.2871	1.7864	1.8374	2.4431 *	2.6892 **
Event9	1.1145	0.4856	-1.1900	-0.4440	-0.1328
Event10	-0.0117	-0.0304	0.7774	1.3131	0.5702
Event11	1.2800	-0.0396	-0.4219	-0.0529	0.5576
Event12	-1.0127	-0.1165	-0.1808	-0.1499	-0.3998
Event13	-2.8244 **	-4.1498 ***	-3.9400 ***	-2.2731 *	-1.9873 *
Event14	0.1157	-1.2695	-0.4023	-0.7973	-0.2225
Event15	-1.8011	-0.5624	-0.4313	-0.8083	-0.6888
Event16	0.9731	0.2071	1.1950	1.0638	0.2464
Event17	0.3318	0.7414	0.4207	0.7893	0.3184
Event18	0.0869	0.1016	-0.9563	0.3061	0.2855
Event19	0.7322	1.4556	0.7543	1.2981	0.8224
Event20	-0.1130	-0.1396	-0.1238	-0.5240	-0.5043
Event21	-0.0598	-0.6364	-0.5802	-0.5436	-0.2651
Event22	-0.0216	-0.9785	-0.1106	-0.1188	0.1267
Event23	2.4758 *	1.6896	0.9237	0.9918	1.1420
Event24	0.6272	-0.1036	-0.1248	-0.1944	-0.5108
Event25	-1.7835	-0.7660	-0.6843	-0.6958	0.6464
Event26	-0.0954	-1.1382	-0.9760	-0.2275	-0.8894
Event27	-2.8012 **	-0.0775	-1.7373	-1.4573	-1.2896
Event28	-0.7950	-0.8334	-2.1078 *	-0.6857	-0.5885
Event29	-0.5197	-2.1447 *	-0.4603	-0.3828	-0.7510
Event30	-0.5947	-0.8979	0.3097	0.2880	-0.0505
Event31	0.0410	0.5688	0.7974	0.6774	1.3524
Event32	1.7063	0.8307	-0.3991	0.1872	0.4495
Event33	1.0703	1.2058	0.6663	0.8297	0.5655
Event34	-0.4994	0.5835	0.3610	0.3692	0.1292
Event35	-2.9941 **	-3.7777 ***	-3.1158 **	-2.0810 *	-2.6461 **
Event36	-0.4216	-0.1347	-0.2115	1.1155	0.8114
Event37	1.0909	0.5403	0.7281	0.5001	0.4898
Event38	-0.2710	-0.1391	1.0031	0.7768	0.7560
Event39	-0.3979	-0.1239	0.7565	1.2560	0.7675

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -150 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1632	-0.4848	2.0212 *	2.2111 *	1.7724
Event41	0.8963	0.3057	0.2860	-0.4802	-0.8233
Event42	-0.5550	-0.4253	0.2273	0.3273	-0.1066
Event43	1.4208	1.7590	1.5264	1.7774	1.5279
Event44	1.5794	-0.2194	-0.3186	0.3904	0.3453
Event45	0.4921	0.3792	2.1352 *	1.8852	1.4428
Event46	-0.0707	-0.3974	0.0783	0.5879	0.1503
Event47	-0.5049	-0.7103	0.0234	0.1582	0.0967
Event48	-0.8179	-0.3825	-0.4212	-0.9788	-2.4103 *
Event49	-1.3894	-1.8095	-0.5860	-0.7705	-0.8694
Event50	-0.3307	-0.6105	-1.6379	-0.3031	-0.4800
Event51	0.3960	-0.1098	-0.4838	-0.6186	-1.0127
Event52	-0.9933	-0.5817	0.4838	-0.0329	0.4121
Event53	-0.7490	-0.8194	-0.7956	-0.6886	-0.6477
Event54	1.5135	0.5346	-0.1373	0.3267	0.2285
Event55	1.8122	2.7979 **	2.6620 **	2.1250 *	1.6782
Event56	-0.1462	0.1016	1.3095	0.8815	1.1386
Event57	0.6569	0.5364	-1.5214	-1.1468	-1.4035
Event58	-0.9881	-0.6279	-1.0655	-0.8881	-0.8866
Event59	-0.2544	-0.1101	0.3641	0.5519	0.5899
Event60	0.2253	-0.1607	0.1686	0.0054	-0.0971
Event61	0.3998	0.4618	0.3856	0.4551	0.0192
Event62	-0.1163	0.2275	0.4520	1.2025	0.2827
Event63	-0.2491	-0.3561	-0.0272	-0.0483	-0.2729
Event64	-0.3264	-0.6130	1.3143	1.8291	1.5099
Event65	-0.2804	-0.4241	-0.0557	-0.0902	-0.4914
Event66	0.9775	1.0364	1.1293	-0.2620	1.8360
Event67	-2.0041 *	-1.7451	-0.1694	-0.1870	-0.0279
Event68	0.2169	-0.1646	-0.6465	-0.9731	-1.0783
Event69	1.5908	-0.3792	-0.0732	0.6073	0.1907
Event70	-0.5645	0.4784	-0.1598	-0.0913	-0.2928
Event71	-0.1336	0.9636	1.0781	0.8933	0.7760
Event72	-0.0169	-0.1721	1.0562	1.9903 *	1.0891
Event73	1.5525	0.4131	0.8321	0.6251	0.2851
Event74	-0.5802	-0.3643	0.4477	0.4875	0.6283
Event75	0.7660	-0.3774	3.2567 **	0.7648	1.7190
Event76	-1.0454	-1.5773	-1.3314	-1.8200	-0.7346
Event77	0.4461	0.7002	0.1257	0.5214	0.3227
Event78	0.4831	1.0406	0.5876	0.8127	0.8119
Event79	0.3092	-0.1689	0.2924	0.4044	0.5320

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -200 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-0.1774	0.5753	1.0751	0.9934
Event2	0.0611	1.9314	1.6113	-0.8387	-0.6951
Event3	-0.0257	-0.5524	-0.4682	-0.0416	-0.0457
Event4	0.9339	0.5561	0.5696	0.4342	0.4337
Event5	-0.1743	-0.1090	-0.2954	-0.2602	-0.8041
Event6	-0.9203	-0.5737	-0.5355	-0.9087	-0.8514
Event7	-0.9244	0.4782	1.1923	2.0038 *	2.2733 *
Event8	1.2486	1.7439	1.7801	2.3254 *	2.5486 *
Event9	0.9868	0.3621	-1.2481	-0.5303	-0.1831
Event10	0.0260	0.0336	0.8383	1.3980	0.6519
Event11	1.3452	0.0052	-0.3823	0.0268	0.6187
Event12	-0.9126	-0.1199	-0.1694	-0.1582	-0.4327
Event13	-3.0725 **	-4.5060 ***	-4.2850 ***	-2.4833 *	-2.1846 *
Event14	0.1375	-1.3768	-0.4281	-0.8575	-0.2265
Event15	-1.9750 *	-0.6232	-0.4759	-0.8888	-0.7587
Event16	0.9874	0.1097	1.1517	1.0310	0.1307
Event17	0.2463	0.7912	0.5642	0.9586	0.4708
Event18	0.2110	0.2665	-0.6671	0.4040	0.4149
Event19	0.7991	1.4420	0.8245	1.3118	0.8859
Event20	-0.0905	-0.0913	-0.0260	-0.4450	-0.4114
Event21	0.0674	-0.5410	-0.4629	-0.3932	-0.1447
Event22	-0.0234	-0.9582	-0.1145	-0.1234	0.1137
Event23	2.4926 *	1.7002	0.9367	1.0284	1.1725
Event24	0.6750	-0.0734	-0.0878	-0.1564	-0.4779
Event25	-1.6940	-0.7024	-0.6143	-0.6248	0.6722
Event26	-0.0859	-1.1276	-0.9634	-0.2069	-0.8669
Event27	-2.8870 **	-0.2186	-1.8501	-1.6222	-1.4712
Event28	-0.7638	-0.6341	-1.8981	-0.5471	-0.4891
Event29	-0.1791	-1.8118	-0.2382	-0.2129	-0.5520
Event30	-0.6268	-0.9579	0.3052	0.2843	-0.0823
Event31	0.0469	0.6301	0.8654	0.7299	1.4482
Event32	1.8471	0.9085	-0.4125	0.2213	0.5061
Event33	1.1599	1.3084	0.7307	0.9090	0.6261
Event34	-0.5600	0.5471	0.3691	0.3599	0.0888
Event35	-2.7164 **	-3.6375 ***	-2.9661 **	-1.8441	-2.4170 *
Event36	-0.4614	-0.1582	-0.2087	1.1632	0.8795
Event37	1.1963	0.6343	0.8067	0.5504	0.5135
Event38	-0.3063	-0.1980	1.0404	0.8230	0.7765
Event39	-0.4250	-0.1515	0.7422	1.2539	0.7450

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -200 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1391	-0.5174	2.0190 *	2.2082 *	1.7570
Event41	0.8968	0.2839	0.2549	-0.5349	-0.8805
Event42	-0.5647	-0.4420	0.2003	0.2945	-0.1396
Event43	1.5684	1.9070	1.6588	1.9420	1.6840
Event44	1.7197	-0.2469	-0.3361	0.4464	0.3995
Event45	0.3094	-0.0224	1.5380	1.1238	0.8173
Event46	-0.0735	-0.3760	0.0869	0.5837	0.1562
Event47	-0.4201	-0.5951	0.0931	0.2272	0.1783
Event48	-0.6703	-0.2736	-0.3063	-0.8005	-2.0538 *
Event49	-1.2445	-1.5976	-0.4088	-0.5582	-0.6504
Event50	-0.3362	-0.5907	-1.6207	-0.2817	-0.4514
Event51	0.4016	-0.1386	-0.5230	-0.6629	-1.0658
Event52	-1.0474	-0.7029	0.4443	-0.1034	0.3566
Event53	-0.8488	-0.9783	-1.0371	-0.9349	-0.8901
Event54	1.4871	0.5196	-0.1491	0.3095	0.2047
Event55	1.6683	2.5844 **	2.4583 *	1.9523	1.5228
Event56	-0.0623	0.1187	1.3721	0.9786	1.1851
Event57	0.6061	0.4501	-1.7005	-1.3114	-1.5818
Event58	-0.9659	-0.6128	-1.0849	-0.9037	-0.9216
Event59	-0.2863	-0.1244	0.3299	0.4798	0.4957
Event60	0.1466	-0.2121	0.1120	-0.0467	-0.1646
Event61	0.3674	0.4740	0.4241	0.4725	0.0930
Event62	-0.0958	0.2548	0.4739	1.1918	0.3190
Event63	-0.2529	-0.3803	-0.0733	-0.1019	-0.3244
Event64	-0.2682	-0.6435	1.1497	1.6386	1.3697
Event65	-0.2103	-0.3477	-0.0283	-0.1529	-0.5813
Event66	0.7563	0.8201	1.0172	-0.0222	1.7172
Event67	-2.0649 *	-1.7704	-0.0787	-0.0893	0.1018
Event68	0.3733	-0.0506	-0.5151	-0.8791	-0.9908
Event69	1.5782	-0.6409	-0.2918	0.5339	0.1093
Event70	-0.5370	0.5705	-0.1375	-0.0879	-0.2882
Event71	-0.1541	0.9314	1.0392	0.8460	0.7198
Event72	-0.0004	-0.1328	1.0202	1.8945	1.0543
Event73	1.4258	0.3906	0.7803	0.5971	0.2866
Event74	-0.5152	-0.3061	0.4488	0.5023	0.6192
Event75	0.6997	-0.3372	2.9659 **	0.7023	1.5701
Event76	-0.9434	-1.3835	-1.1845	-1.6409	-0.6627
Event77	0.5042	0.7839	0.1693	0.6045	0.3935
Event78	0.5506	1.1323	0.6639	0.9011	0.8998
Event79	0.3004	-0.1770	0.2920	0.3878	0.5110

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -250 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-0.1774	0.5753	1.0751	0.9934
Event2	0.0611	1.9314	1.6113	-0.8387	-0.6951
Event3	-0.0257	-0.5524	-0.4682	-0.0416	-0.0457
Event4	0.9464	0.5915	0.5843	0.4631	0.4565
Event5	-0.2617	-0.1412	-0.4424	-0.3763	-0.9284
Event6	-0.8648	-0.5439	-0.4939	-0.8511	-0.7891
Event7	-0.9243	0.4963	1.2269	2.0507 *	2.3332 *
Event8	1.0375	1.4562	1.4495	1.8842	2.0521 *
Event9	0.7764	0.1748	-1.2976	-0.6445	-0.2663
Event10	0.0127	0.0177	0.6547	1.1027	0.5022
Event11	1.1199	0.0135	-0.3065	0.0395	0.5203
Event12	-0.9037	-0.0793	-0.1282	-0.0992	-0.3383
Event13	-3.1644 **	-4.6349 ***	-4.4259 ***	-2.6093 **	-2.3202 *
Event14	0.0905	-1.5373	-0.5359	-1.0076	-0.3479
Event15	-2.1216 *	-0.6752	-0.5147	-0.9577	-0.8189
Event16	1.0425	0.1384	1.2291	1.1001	0.1660
Event17	0.2254	0.8196	0.6169	1.0255	0.5248
Event18	0.1597	0.2075	-0.6984	0.4408	0.4422
Event19	0.7582	1.4338	0.8314	1.3371	0.9284
Event20	-0.0257	-0.0107	0.0471	-0.3142	-0.2735
Event21	0.0926	-0.4365	-0.3482	-0.2749	-0.0167
Event22	0.0539	-0.7456	0.0278	0.0399	0.2682
Event23	2.3738 *	1.6436	0.9239	0.9811	1.1355
Event24	0.6630	-0.0535	-0.0636	-0.1299	-0.4357
Event25	-1.6447	-0.6763	-0.5913	-0.5855	0.6866
Event26	-0.0675	-1.1254	-0.9493	-0.1726	-0.8450
Event27	-2.8872 **	-0.2154	-1.8548	-1.6227	-1.4721
Event28	-0.8571	-0.8673	-2.1637 *	-0.7817	-0.7144
Event29	-0.3965	-2.0559 *	-0.4372	-0.4006	-0.7679
Event30	-0.6895	-1.0555	0.2138	0.1806	-0.2121
Event31	-0.0044	0.5735	0.7913	0.6364	1.3514
Event32	1.8932	0.9034	-0.4955	0.1404	0.4361
Event33	1.1839	1.3380	0.7229	0.8995	0.6054
Event34	-0.5716	0.5752	0.3811	0.3748	0.0986
Event35	-2.8604 **	-3.8231 ***	-3.1164 **	-1.9385	-2.5397 *
Event36	-0.5145	-0.2015	-0.2387	1.1829	0.9059
Event37	1.2788	0.7073	0.8550	0.5671	0.4974
Event38	-0.3631	-0.2943	1.0023	0.7927	0.7138
Event39	-0.4597	-0.1770	0.7536	1.2987	0.7507

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -250 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1531	-0.4830	2.1270 *	2.3336 *	1.8742
Event41	0.9673	0.3448	0.3206	-0.4912	-0.8192
Event42	-0.5584	-0.4138	0.2727	0.3720	-0.0807
Event43	1.5181	1.8488	1.5986	1.8700	1.6100
Event44	1.6755	-0.2488	-0.3439	0.4167	0.3685
Event45	0.3554	0.0234	1.7001	1.2746	0.9429
Event46	-0.0349	-0.3458	0.0963	0.5669	0.1750
Event47	-0.4020	-0.5701	0.0459	0.1612	0.1114
Event48	-0.5915	-0.1946	-0.2220	-0.6979	-1.8950
Event49	-1.2698	-1.6313	-0.4629	-0.6193	-0.7229
Event50	-0.3490	-0.5738	-1.5968	-0.2733	-0.4345
Event51	0.4251	-0.1211	-0.4879	-0.6177	-1.0025
Event52	-0.9817	-0.6912	0.4365	-0.0856	0.3585
Event53	-0.7913	-0.9271	-1.0210	-0.9132	-0.8541
Event54	1.4530	0.3688	-0.3499	0.0838	-0.0061
Event55	1.6887	2.5799 **	2.4066 *	1.8906	1.5031
Event56	-0.0349	0.1407	1.2788	0.9288	1.1225
Event57	0.5690	0.4295	-1.5444	-1.1681	-1.4052
Event58	-0.9574	-0.6047	-1.0936	-0.9090	-0.9350
Event59	-0.3270	-0.1611	0.2908	0.4233	0.4256
Event60	0.1049	-0.2504	0.0722	-0.0890	-0.2173
Event61	0.3487	0.4342	0.3766	0.4258	0.0474
Event62	-0.0625	0.2866	0.4882	1.1274	0.3601
Event63	-0.1254	-0.2708	-0.0127	-0.0325	-0.2091
Event64	-0.1912	-0.5610	1.0632	1.5166	1.2950
Event65	-0.1395	-0.2514	0.0415	-0.0947	-0.4949
Event66	0.7781	0.8561	1.0723	0.0601	1.7927
Event67	-1.8423	-1.6219	0.0300	-0.1075	0.2492
Event68	0.6956	0.1803	-0.1397	-0.5743	-0.7103
Event69	1.6607	-0.5530	-0.2035	0.6020	0.1636
Event70	-0.5789	0.5743	-0.1717	-0.1237	-0.3372
Event71	-0.1458	1.0202	1.1415	0.9368	0.8020
Event72	-0.0242	-0.1411	0.9444	1.7584	0.9517
Event73	1.3804	0.3716	0.7186	0.5199	0.2334
Event74	-0.4564	-0.2789	0.3776	0.4098	0.5294
Event75	0.6756	-0.2871	2.8117 **	0.6985	1.5158
Event76	-0.8786	-1.2796	-1.0916	-1.5238	-0.5931
Event77	0.4935	0.7758	0.1866	0.6048	0.4062
Event78	0.6258	1.2563	0.7581	1.0173	1.0184
Event79	0.2720	-0.1445	0.3097	0.3554	0.4597

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -300 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-0.1774	0.5753	1.0751	0.9934
Event2	0.0611	1.9314	1.6113	-0.8387	-0.6951
Event3	-0.0257	-0.5524	-0.4682	-0.0416	-0.0457
Event4	0.9454	0.6139	0.5840	0.4765	0.4623
Event5	-0.1077	-0.0467	-0.1815	-0.1475	-0.6501
Event6	-0.8275	-0.4732	-0.4425	-0.7752	-0.7217
Event7	-0.8634	0.4650	1.1406	1.9090	2.1637 *
Event8	0.9769	1.3717	1.3648	1.7720	1.9294
Event9	0.7009	0.1289	-1.2543	-0.6373	-0.2586
Event10	0.0108	0.0391	0.5937	1.0392	0.4560
Event11	1.0848	0.0169	-0.3023	0.0744	0.4601
Event12	-0.7888	-0.0311	-0.0505	-0.0347	-0.3124
Event13	-3.2894 **	-4.8183 ***	-4.6055 ***	-2.7274 **	-2.4301 *
Event14	0.0759	-1.6136	-0.5891	-1.0807	-0.4045
Event15	-2.2517 *	-0.7393	-0.5682	-1.0382	-0.8959
Event16	1.0840	0.1151	1.2616	1.1286	0.1360
Event17	0.2327	0.8564	0.6414	1.0704	0.5421
Event18	0.1412	0.1862	-0.7189	0.4561	0.4538
Event19	0.7552	1.4531	0.8481	1.3682	0.9603
Event20	-0.0034	0.0144	0.0625	-0.2840	-0.2413
Event21	0.0759	-0.4223	-0.3326	-0.2637	0.0119
Event22	0.0648	-0.7661	0.0490	0.0646	0.3090
Event23	2.3186 *	1.6381	0.9728	1.0665	1.2171
Event24	0.6545	0.0099	0.0138	-0.0402	-0.3112
Event25	-1.5953	-0.6354	-0.5420	-0.5500	0.6950
Event26	-0.0714	-1.0988	-0.9257	-0.1836	-0.8405
Event27	-2.9588 **	-0.2183	-1.8651	-1.6422	-1.4822
Event28	-0.7090	-0.4319	-1.6709	-0.3815	-0.3507
Event29	0.0762	-1.5531	-0.0555	-0.0630	-0.3776
Event30	-0.7073	-1.0663	0.2325	0.1941	-0.1928
Event31	-0.0113	0.5384	0.7746	0.6306	1.3589
Event32	1.8435	0.8422	-0.5338	0.1210	0.3927
Event33	1.1821	1.2895	0.6663	0.8481	0.5128
Event34	-0.6275	0.5220	0.3043	0.2862	-0.0048
Event35	-3.0701 **	-4.0191 ***	-3.3014 ***	-2.1263 *	-2.7475 **
Event36	-0.5431	-0.2216	-0.2590	1.2101	0.9253
Event37	1.3302	0.7327	0.8830	0.5801	0.5042
Event38	-0.3828	-0.3161	1.0336	0.8172	0.7318
Event39	-0.4840	-0.1873	0.7898	1.3631	0.7863

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -300 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1636	-0.5002	2.2530 *	2.4731 *	1.9894 *
Event41	1.0289	0.3748	0.3507	-0.5044	-0.8448
Event42	-0.5700	-0.4182	0.2892	0.3803	-0.0903
Event43	1.6125	1.9212	1.6655	1.9611 *	1.7059
Event44	1.7415	-0.2526	-0.3303	0.4685	0.4229
Event45	0.3425	-0.0123	1.6600	1.2160	0.8947
Event46	0.0681	-0.2690	0.2037	0.6973	0.3290
Event47	-0.3888	-0.5368	0.0871	0.2121	0.1746
Event48	-0.5568	-0.1937	-0.2281	-0.6803	-1.7978
Event49	-1.2052	-1.5365	-0.3761	-0.5160	-0.6153
Event50	-0.3306	-0.5214	-1.5163	-0.2187	-0.3660
Event51	0.4491	-0.0943	-0.4454	-0.5655	-0.9352
Event52	-0.9419	-0.6713	0.4670	-0.0436	0.4018
Event53	-0.7919	-0.9366	-1.0436	-0.9419	-0.8857
Event54	1.3338	0.1938	-0.5293	-0.1489	-0.2114
Event55	1.7454	2.6366 **	2.4303 *	1.9047	1.5494
Event56	-0.0454	0.1106	1.2377	0.8895	1.0696
Event57	0.5403	0.3949	-1.5549	-1.1933	-1.4334
Event58	-0.8057	-0.4748	-0.9210	-0.7414	-0.7659
Event59	-0.2554	-0.0811	0.3273	0.4423	0.4467
Event60	0.1368	-0.1577	0.1493	0.0189	-0.0864
Event61	0.3345	0.4051	0.3392	0.3874	0.0014
Event62	-0.0989	0.2142	0.4021	1.0277	0.2578
Event63	-0.1601	-0.2945	-0.0410	-0.0640	-0.2440
Event64	-0.1626	-0.5141	0.9835	1.4044	1.2063
Event65	-0.1093	-0.2083	0.0582	-0.0795	-0.4522
Event66	0.6745	0.7498	0.9646	0.1140	1.6170
Event67	-1.8070	-1.6031	0.0217	-0.1330	0.2369
Event68	0.7639	0.2197	-0.0620	-0.5177	-0.6637
Event69	1.7111	-0.2842	0.0332	0.7127	0.2797
Event70	-0.5858	0.6037	-0.1378	-0.0725	-0.2889
Event71	-0.1320	1.0975	1.2311	1.0219	0.8851
Event72	-0.0437	-0.1571	0.8775	1.6492	0.8690
Event73	1.2636	0.2922	0.5996	0.3957	0.1190
Event74	-0.4608	-0.2920	0.3464	0.3789	0.4857
Event75	0.6013	-0.3658	2.5893 **	0.5773	1.3546
Event76	-0.8631	-1.3108	-1.1055	-1.5042	-0.6145
Event77	0.4860	0.7561	0.1854	0.5957	0.4022
Event78	0.6068	1.2645	0.7654	1.0365	1.0482
Event79	0.2764	-0.1518	0.3153	0.3594	0.4655

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -350 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2		Event Day -1		Event Day		Event Day +1		Event Day +2	
Event1	2.2414	*	-0.1774		0.5753		1.0751		0.9934	
Event2	0.0611		1.9314		1.6113		-0.8387		-0.6951	
Event3	-0.0257		-0.5524		-0.4682		-0.0416		-0.0457	
Event4	0.9454		0.6139		0.5840		0.4765		0.4623	
Event5	-0.1077		-0.0467		-0.1815		-0.1475		-0.6501	
Event6	-0.7905		-0.4873		-0.4255		-0.7589		-0.6913	
Event7	-0.8106		0.4795		1.1536		1.9045		2.1747	*
Event8	0.9799		1.3711		1.3668		1.7947		1.9584	
Event9	0.7382		0.1660		-1.2340		-0.6272		-0.3007	
Event10	-0.0246		0.0005		0.4915		0.9167		0.3469	
Event11	0.9853		-0.0515		-0.3768		-0.0067		0.3034	
Event12	-0.6732		-0.0140		-0.0295		-0.0115		-0.2427	
Event13	-3.2349	**	-4.7365	***	-4.5384	***	-2.7157	**	-2.4332	*
Event14	0.0657		-1.6964		-0.6388		-1.1530		-0.4541	
Event15	-2.3550	*	-0.7949		-0.6222		-1.1147		-0.9716	
Event16	1.0977		0.0695		1.2506		1.1177		0.0776	
Event17	0.2004		0.8609		0.6506		1.0920		0.5385	
Event18	0.1626		0.2132		-0.7369		0.4788		0.4795	
Event19	0.8112		1.5394		0.9089		1.4522		1.0259	
Event20	0.0059		0.0260		0.0733		-0.2772		-0.2322	
Event21	0.0853		-0.4155		-0.3188		-0.2459		0.0461	
Event22	0.0635		-0.7706		0.0537		0.0700		0.3205	
Event23	2.3938	*	1.6986		1.0223		1.1332		1.2870	
Event24	0.6656		0.0165		0.0223		-0.0159		-0.2945	
Event25	-1.4608		-0.5439		-0.4460		-0.4341		0.7486	
Event26	-0.0292		-0.9582		-0.7853		-0.0979		-0.6952	
Event27	-2.9543	**	-0.2345		-1.8578		-1.6478		-1.4888	
Event28	-0.7098		-0.4089		-1.6513		-0.3687		-0.3442	
Event29	0.1107		-1.5294		-0.0383		-0.0528		-0.3668	
Event30	-0.7162		-1.0811		0.2583		0.2219		-0.1736	
Event31	-0.0034		0.5732		0.8126		0.6629		1.4097	
Event32	1.9188		0.9010		-0.5243		0.1317		0.4261	
Event33	1.1819		1.3321		0.6984		0.8714		0.5691	
Event34	-0.6234		0.5382		0.3074		0.2930		0.0045	
Event35	-2.9094	**	-3.9551	***	-3.2551	**	-2.0515	*	-2.6822	**
Event36	-0.5868		-0.2777		-0.3226		1.1445		0.8542	
Event37	1.3283		0.7048		0.8376		0.5120		0.4171	
Event38	-0.4384		-0.3934		0.9808		0.7516		0.6496	
Event39	-0.5305		-0.2412		0.7481		1.3252		0.7269	

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -350 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1481	-0.5558	2.2972 *	2.5186 *	2.0107 *
Event41	1.0602	0.3702	0.3400	-0.5579	-0.9168
Event42	-0.5948	-0.4383	0.2952	0.3889	-0.1005
Event43	1.6911	1.9826 *	1.7157	2.0298 *	1.7720
Event44	1.7951	-0.2719	-0.3350	0.4988	0.4532
Event45	0.3737	0.0271	1.7517	1.3090	0.9776
Event46	0.0800	-0.2665	0.2184	0.7239	0.3509
Event47	-0.3974	-0.5492	0.1003	0.2316	0.1936
Event48	-0.4904	-0.1669	-0.1509	-0.4786	-1.4083
Event49	-1.1472	-1.4643	-0.3716	-0.5064	-0.6016
Event50	-0.3161	-0.5009	-1.4305	-0.2240	-0.3643
Event51	0.4121	-0.1085	-0.4423	-0.5583	-0.9082
Event52	-0.9094	-0.6724	0.4147	-0.0758	0.3449
Event53	-0.7772	-0.9202	-1.0317	-0.9255	-0.8640
Event54	1.2276	0.1330	-0.5450	-0.2045	-0.2448
Event55	1.6775	2.5087 *	2.3025 *	1.8195	1.5244
Event56	-0.0048	0.0939	1.2535	0.9234	1.0619
Event57	0.4607	0.2720	-1.7538	-1.3815	-1.6339
Event58	-0.7673	-0.4612	-0.9245	-0.7520	-0.7958
Event59	-0.2960	-0.1232	0.2376	0.3039	0.2813
Event60	0.0249	-0.2270	0.0477	-0.0735	-0.1924
Event61	0.3410	0.4178	0.3707	0.4261	0.0891
Event62	-0.0612	0.2131	0.3961	0.9857	0.2798
Event63	-0.1697	-0.3016	-0.0515	-0.0757	-0.2560
Event64	-0.1898	-0.5210	0.9711	1.3847	1.1751
Event65	-0.1424	-0.2513	0.0112	-0.1191	-0.4896
Event66	0.6677	0.7372	0.9411	0.0775	1.5819
Event67	-1.5001	-1.3339	0.0966	-0.0746	0.3116
Event68	0.8189	0.3090	0.1200	-0.3062	-0.4405
Event69	1.7939	0.0509	0.3245	0.8397	0.4016
Event70	-0.7292	0.2909	-0.2585	-0.1324	-0.3688
Event71	-0.2161	0.8369	0.9227	0.7274	0.6046
Event72	-0.0499	-0.1658	0.8870	1.6714	0.8744
Event73	1.3016	0.3056	0.6146	0.4012	0.1224
Event74	-0.4680	-0.3073	0.3200	0.3412	0.4556
Event75	0.5487	-0.4021	2.4339 *	0.4955	1.2382
Event76	-0.8583	-1.3146	-1.1233	-1.5065	-0.6703
Event77	0.4448	0.6906	0.1319	0.5231	0.3292
Event78	0.6138	1.2661	0.7703	1.0395	1.0502
Event79	0.3054	-0.1305	0.3684	0.4100	0.5231

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -400 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event1	2.2414 *	-0.1774	0.5753	1.0751	0.9934
Event2	0.0611	1.9314	1.6113	-0.8387	-0.6951
Event3	-0.0257	-0.5524	-0.4682	-0.0416	-0.0457
Event4	0.9454	0.6139	0.5840	0.4765	0.4623
Event5	-0.1077	-0.0467	-0.1815	-0.1475	-0.6501
Event6	-0.7905	-0.4873	-0.4255	-0.7589	-0.6913
Event7	-0.8106	0.4795	1.1536	1.9045	2.1747 *
Event8	0.9974	1.3965	1.3995	1.8291	1.9969 *
Event9	0.7508	0.1953	-1.1795	-0.5689	-0.2281
Event10	-0.0308	-0.0209	0.4660	0.8593	0.3213
Event11	0.9218	-0.0531	-0.3554	-0.0253	0.2966
Event12	-0.5615	-0.0019	0.0096	0.0007	-0.2902
Event13	-3.1872 **	-4.6669 ***	-4.4681 ***	-2.6642 **	-2.3830 *
Event14	0.0426	-1.7129	-0.6569	-1.1745	-0.4827
Event15	-2.3862 *	-0.8334	-0.6686	-1.1692	-1.0319
Event16	1.1243	0.0573	1.2742	1.1357	0.0589
Event17	0.1662	0.8603	0.6603	1.1103	0.5383
Event18	0.1365	0.1793	-0.7949	0.4686	0.4627
Event19	0.8113	1.5641	0.9095	1.4706	1.0293
Event20	0.0161	0.0403	0.0905	-0.2701	-0.2214
Event21	0.0897	-0.4268	-0.3256	-0.2497	0.0550
Event22	0.0793	-0.7809	0.0803	0.1010	0.3653
Event23	2.4614 *	1.7567	1.0700	1.1878	1.3482
Event24	0.6786	0.0374	0.0480	0.0187	-0.2576
Event25	-1.4421	-0.5221	-0.4214	-0.3977	0.7888
Event26	-0.0213	-0.9823	-0.8048	-0.0788	-0.6922
Event27	-2.7147 **	-0.1700	-1.6741	-1.4674	-1.3122
Event28	-0.5961	-0.2263	-1.3597	-0.1850	-0.1668
Event29	0.2569	-1.2548	0.1104	0.0911	-0.1816
Event30	-0.7100	-1.0773	0.2495	0.2147	-0.1825
Event31	-0.0062	0.5781	0.8100	0.6551	1.3967
Event32	1.9385	0.9029	-0.5439	0.1207	0.4169
Event33	1.1996	1.3405	0.6955	0.8726	0.5555
Event34	-0.6596	0.5098	0.3048	0.2793	-0.0268
Event35	-3.0864 **	-4.0761 ***	-3.3548 ***	-2.1579 *	-2.7927 **
Event36	-0.6187	-0.3085	-0.3461	1.1360	0.8518
Event37	1.3517	0.7273	0.8441	0.5041	0.3918
Event38	-0.4647	-0.4386	0.9589	0.7337	0.6166
Event39	-0.5653	-0.2790	0.7206	1.3126	0.6877

*p<0.05, **p<0.01, ***p<0.001

Market model CAR test statistic results for estimation window of -400 to -11 trading days pre Event

(test statistic=CAR/root mean square error of regression x square root of days in event window)

	Event Day -2	Event Day -1	Event Day	Event Day +1	Event Day +2
Event40	0.1150	-0.5787	2.2768 *	2.4977 *	1.9810 *
Event41	1.0445	0.3397	0.2985	-0.6125	-0.9646
Event42	-0.6378	-0.4890	0.2537	0.3405	-0.1686
Event43	1.7470	2.0445 *	1.7685	2.0933 *	1.8278
Event44	1.8535	-0.2783	-0.3419	0.5191	0.4726
Event45	0.4102	0.0766	1.8660	1.4278	1.0798
Event46	0.0809	-0.2670	0.2182	0.7240	0.3511
Event47	-0.3941	-0.5423	0.1101	0.2436	0.2078
Event48	-0.4892	-0.1479	-0.1293	-0.4684	-1.4290
Event49	-1.0084	-1.3080	-0.3386	-0.4641	-0.5222
Event50	-0.2152	-0.4357	-1.2496	-0.1591	-0.2947
Event51	0.3622	-0.0233	-0.3165	-0.4158	-0.7296
Event52	-0.7938	-0.4856	0.3766	-0.0379	0.3175
Event53	-0.7471	-0.8861	-0.9937	-0.8952	-0.8388
Event54	1.1953	0.1191	-0.5414	-0.2135	-0.2448
Event55	1.6524	2.4618 *	2.2523 *	1.7814	1.5063
Event56	0.0493	0.0709	1.2219	0.9300	1.0096
Event57	0.3675	0.1341	-1.9452	-1.5608	-1.8197
Event58	-0.7060	-0.4174	-0.9032	-0.7309	-0.7951
Event59	-0.3361	-0.1529	0.1559	0.1619	0.1067
Event60	-0.0678	-0.2703	-0.0178	-0.1253	-0.2546
Event61	0.2944	0.3331	0.2754	0.3294	0.0093
Event62	-0.0705	0.2076	0.3824	0.9515	0.2626
Event63	-0.1463	-0.2590	-0.0255	-0.0442	-0.2065
Event64	-0.1522	-0.4475	0.9348	1.3221	1.1342
Event65	-0.1165	-0.2090	0.0418	-0.0662	-0.4001
Event66	0.6496	0.7158	0.9152	0.0671	1.5425
Event67	-1.5119	-1.3486	0.0706	-0.0974	0.2767
Event68	0.7981	0.2879	0.0937	-0.3319	-0.4677
Event69	1.7564	0.1996	0.4485	0.8800	0.4643
Event70	-0.7298	0.2761	-0.2334	-0.0890	-0.3234
Event71	-0.2775	0.6666	0.7206	0.5301	0.4123
Event72	-0.0285	-0.1313	0.9561	1.7637	0.9498
Event73	1.3319	0.3178	0.6308	0.4120	0.1306
Event74	-0.4802	-0.3174	0.3225	0.3413	0.4610
Event75	0.5528	-0.4170	2.4622 *	0.4942	1.2479
Event76	-0.8738	-1.3535	-1.1505	-1.5344	-0.6842
Event77	0.4388	0.6777	0.1119	0.5051	0.3062
Event78	0.5614	1.1959	0.7352	0.9983	1.0192
Event79	0.3146	-0.1017	0.4153	0.4332	0.5435

*p<0.05, **p<0.01, ***p<0.001

Appendix 11 Abnormal Return t-test results for single firm single event Constant Mean Return model for varying estimation windows

CMR Abnormal Return Test statistic results estimation window of -100 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	90	0.0604	0.0300	2.7907**	0.0300	-4.7028***	0.0300
Event3	90	0.0642	-0.0796	-0.8990	-0.0796	0.6989	-0.0796
Event4	90	0.0602	0.9324	-0.0451	-0.0451	-0.0451	-0.0451
Event5	90	0.0404	0.0356	0.0356	0.0356	0.0356	-1.6135
Event6	90	0.0440	-1.1004	-0.0191	-0.0191	-1.1544	-0.0191
Event7	90	0.0454	-1.0928	1.8713	1.7181	2.3159*	1.4244
Event8	90	0.0266	1.5947	1.5370	0.8017	2.1040*	1.3876
Event9	90	0.0255	1.3727	-0.6015	-3.5715***	1.4662	0.7528
Event10	90	0.0237	-0.0620	-0.0620	1.3946	1.3460	-1.5187
Event11	90	0.0242	1.3277	-1.4764	-0.7760	0.6623	1.3277
Event12	90	0.0213	-0.8046	0.8292	0.0194	0.0194	-0.8046
Event13	90	0.0283	-2.7395**	-2.9920**	-0.9478	2.1378*	0.1215
Event14	90	0.0359	0.1204	-1.8010	1.0490	-0.8403	1.0490
Event15	90	0.0378	-1.6880	1.0203	0.1378	-0.7751	0.1378
Event16	90	0.0297	1.0109	-1.0586	1.9698*	-0.0079	-2.1093*
Event17	90	0.0285	0.0141	1.1117	0.0141	1.0784	-1.0835
Event18	90	0.0288	0.0034	0.0034	-1.6917	2.3726*	0.0034
Event19	90	0.0299	0.6825	1.3369	-0.7277	1.3095	-0.7135
Event20	90	0.0307	-0.0836	-0.0836	-0.0836	-0.7226	-0.0836
Event21	90	0.0308	-0.1162	-0.7527	-0.1162	-0.1162	0.5080
Event22	90	0.0289	-0.1714	-1.5001	1.1081	-0.1714	0.4567
Event23	90	0.0291	2.5000*	-0.1398	-0.8127	0.5202	0.5077
Event24	90	0.0297	0.5240	-0.7576	-0.1107	-0.1107	-0.7703
Event25	90	0.0256	-1.6517	0.8276	0.0127	0.0127	3.0215**
Event26	90	0.0288	0.0511	-1.3952	0.0511	1.4395	-1.3952
Event27	90	0.0307	-2.7457**	2.5737*	-2.7457**	0.0226	0.0226
Event28	90	0.0332	-0.6106	0.0438	-2.0565*	2.0071*	0.0438
Event29	90	0.0342	0.0106	-2.0290*	1.9172	0.0106	-0.6391
Event30	90	0.0393	-0.5404	-0.5533	1.6504	0.0254	-0.5281
Event31	90	0.0390	0.0195	0.5656	0.5543	0.0195	1.5294
Event32	90	0.0380	1.5359	-0.5805	-1.7599	1.0534	0.4938
Event33	90	0.0383	1.0506	0.4950	-0.5828	0.4950	-0.5828
Event34	90	0.0387	-0.5737	1.0642	-0.0122	-0.0122	-0.5618
Event35	90	0.0319	-2.5038*	-2.7282**	0.0395	1.7822	-1.8056
Event36	90	0.0389	-0.6216	0.1352	0.1352	2.2214*	0.1352
Event37	90	0.0447	1.2644	0.1173	0.1173	-0.4714	-0.4873
Event38	90	0.0456	-0.4887	-0.5043	1.7343	0.0887	-0.4739

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -100 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event39	90	0.0479	-0.4279	0.1221	1.1669	1.1172	-0.9228
Event40	90	0.0483	0.0820	-0.4226	3.4596***	0.8933	-0.3318
Event41	90	0.0485	0.8790	-0.3425	0.0701	-1.2465	-0.3783
Event42	90	0.0522	-0.3383	0.0303	0.7401	0.0303	-0.7069
Event43	90	0.0369	1.7332	0.5168	-0.0717	1.0563	-0.0717
Event44	90	0.0367	1.5922	-2.3297*	-0.0107	1.6243	-0.0107
Event45	90	0.0343	0.5469	-0.0248	3.4944***	-0.0248	-0.5364
Event46	90	0.0340	-0.0682	-0.4657	0.7059	1.0489	-0.8323
Event47	90	0.0265	-0.5642	-0.5687	1.0521	0.2441	-0.1536
Event48	90	0.0242	-0.8522	0.2733	-0.2856	-1.4346	-3.7065***
Event49	90	0.0305	-1.2698	-1.0059	1.5587	-0.4031	-0.4055
Event50	90	0.0335	-0.3710	-0.3734	-1.8087	2.0064*	-0.3710
Event51	90	0.0335	0.4537	-0.5759	-0.5851	-0.3232	-0.8784
Event52	90	0.0340	-0.8253	-0.0159	1.7587	-0.7966	0.9895
Event53	90	0.0325	-0.6341	-0.4148	-0.4218	0.0439	0.0439
Event54	90	0.0205	1.6605	-1.5687	-1.6136	0.6304	-0.1100
Event55	90	0.0278	1.9212	2.0696*	0.4887	-0.2885	-0.0282
Event56	90	0.0263	0.3644	0.0651	2.3177*	0.0651	0.3446
Event57	90	0.0254	0.3172	-0.2806	-3.9438***	0.3469	-0.9883
Event58	90	0.0231	-0.3101	0.3693	-1.0086	0.3747	-0.3156
Event59	90	0.0239	-0.3483	0.3172	0.3146	-0.3457	-0.3483
Event60	90	0.0238	-0.3278	0.0080	0.3411	0.0080	-0.3278
Event61	90	0.0193	0.4607	0.0426	0.0426	0.4573	-0.3755
Event62	90	0.0156	-0.0163	-0.0163	0.5138	2.0360*	-2.1364*
Event63	90	0.0146	-0.5403	0.0312	0.5980	0.0312	-0.5403
Event64	90	0.0150	-0.6146	-0.6193	3.6796***	1.5084	-0.5793
Event65	90	0.0147	-0.5546	-0.5589	0.5179	-0.0184	-1.1081
Event66	90	0.0164	0.8596	0.3905	0.3870	-2.4542*	4.3482***
Event67	90	0.0191	-1.9002	-0.4498	2.0221*	-0.0841	0.2646
Event68	90	0.0195	0.2208	-0.4651	-0.8185	-0.8281	-0.4770
Event69	90	0.0188	1.6290	-2.4558*	0.4525	1.6410	-0.7730
Event70	90	0.0204	-0.3038	1.5265	-1.0452	0.0712	-0.3038
Event71	90	0.0200	0.0709	1.9187	0.7992	0.0709	0.0709
Event72	90	0.0122	0.0491	0.0491	2.7119**	2.6280**	-1.9320
Event73	90	0.0118	2.1014*	-1.1897	0.7982	-0.5253	-0.5306
Event74	90	0.0134	-0.6325	-0.0316	1.1513	-0.0316	0.5552
Event75	90	0.0149	0.5220	-1.6475	5.4987***	-3.7098***	2.0387*
Event76	90	0.0155	-1.0311	-1.5686	-0.0277	-1.0716	1.5010
Event77	90	0.0204	0.3386	0.3359	-0.7587	0.6972	-0.3893
Event78	90	0.0172	0.2649	1.0372	-0.5261	0.6418	0.2517
Event79	90	0.0240	0.1927	-0.2740	0.6504	-0.0400	0.1888

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -150 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	140	0.0610	0.0307	2.7613**	0.0307	-4.6503***	0.0307
Event3	140	0.0686	-0.0331	-0.8003	-0.0331	0.6956	-0.0331
Event4	140	0.0568	1.0136	-0.0227	-0.0227	-0.0227	-0.0227
Event5	140	0.0545	-0.0186	-0.0186	-0.0186	-0.0186	-1.2420
Event6	140	0.0441	-1.0759	0.0048	0.0048	-1.1299	0.0048
Event7	140	0.0447	-1.0511	1.9599	1.8042	2.4115*	1.5059
Event8	140	0.0331	1.2996	1.2532	0.6620	1.7091	1.1331
Event9	140	0.0325	1.1111	-0.4354	-2.7620**	1.1843	0.6255
Event10	140	0.0250	0.0018	0.0018	1.3785	1.3326	-1.3748
Event11	140	0.0254	1.3216	-1.3521	-0.6843	0.6872	1.3216
Event12	140	0.0213	-0.8323	0.8042	-0.0069	-0.0069	-0.8323
Event13	140	0.0274	-2.8292**	-3.0905**	-0.9743	2.2201*	0.1327
Event14	140	0.0338	0.1206	-1.9183	1.1060	-0.8988	1.1060
Event15	140	0.0351	-1.8538	1.0624	0.1121	-0.8708	0.1121
Event16	140	0.0353	0.9453	-0.7979	1.7531	0.0871	-1.6830
Event17	140	0.0350	0.0523	0.9439	0.0523	0.9169	-0.8394
Event18	140	0.0286	-0.0396	-0.0396	-1.7430	2.3411*	-0.0396
Event19	140	0.0294	0.6525	1.3162	-0.7778	1.2885	-0.7634
Event20	140	0.0302	-0.0860	-0.0860	-0.0860	-0.7361	-0.0860
Event21	140	0.0297	-0.1113	-0.7726	-0.1113	-0.1113	0.5373
Event22	140	0.0291	-0.0971	-1.4209	1.1777	-0.0971	0.5287
Event23	140	0.0290	2.5777**	-0.0787	-0.7558	0.5854	0.5729
Event24	140	0.0294	0.5606	-0.7353	-0.0812	-0.0812	-0.7482
Event25	140	0.0268	-1.6956	0.6699	-0.1076	-0.1076	2.7631**
Event26	140	0.0292	-0.0656	-1.4915	-0.0656	1.3033	-1.4915
Event27	140	0.0292	-2.8793**	2.7184**	-2.8793**	0.0338	0.0338
Event28	140	0.0306	-0.6626	0.0477	-2.2319*	2.1786*	0.0477
Event29	140	0.0313	0.0329	-2.1961*	2.1165*	0.0329	-0.6771
Event30	140	0.0352	-0.5978	-0.6122	1.8472	0.0336	-0.5841
Event31	140	0.0353	0.0386	0.6405	0.6280	0.0386	1.7029
Event32	140	0.0361	1.6762	-0.5510	-1.7922	1.1684	0.5795
Event33	140	0.0363	1.1739	0.5882	-0.5481	0.5882	-0.5481
Event34	140	0.0353	-0.5893	1.2052	0.0260	0.0260	-0.5762
Event35	140	0.0345	-2.3361*	-2.5434*	0.0125	1.6217	-1.6914
Event36	140	0.0410	-0.6605	0.0572	0.0572	2.0358*	0.0572
Event37	140	0.0451	1.2059	0.0690	0.0690	-0.5145	-0.5302
Event38	140	0.0454	-0.5253	-0.5410	1.7079	0.0547	-0.5105
Event39	140	0.0445	-0.5172	0.0739	1.1969	1.1434	-1.0491

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -150 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	140	0.0441	0.0526	-0.4999	3.7513***	0.9410	-0.4004
Event41	140	0.0447	0.9222	-0.4034	0.0443	-1.3846	-0.4423
Event42	140	0.0446	-0.4023	0.0289	0.8594	0.0289	-0.8336
Event43	140	0.0446	1.5244	0.5166	0.0290	0.9636	0.0290
Event44	140	0.0451	1.3409	-1.8507	0.0365	1.3670	0.0365
Event45	140	0.0376	0.4550	-0.0662	3.1419**	-0.0662	-0.5325
Event46	140	0.0340	-0.0782	-0.4754	0.6955	1.0382	-0.8418
Event47	140	0.0291	-0.4715	-0.4756	0.9986	0.2637	-0.0980
Event48	140	0.0251	-0.7739	0.3088	-0.2288	-1.3341	-3.5197***
Event49	140	0.0284	-1.3871	-1.1036	1.6512	-0.4561	-0.4587
Event50	140	0.0304	-0.4289	-0.4315	-2.0143*	2.1928*	-0.4289
Event51	140	0.0305	0.4334	-0.6983	-0.7084	-0.4206	-1.0308
Event52	140	0.0299	-0.9977	-0.0784	1.9372	-0.9651	1.0636
Event53	140	0.0306	-0.8123	-0.5789	-0.5863	-0.0906	-0.0906
Event54	140	0.0278	1.2623	-1.1186	-1.1517	0.5027	-0.0431
Event55	140	0.0278	1.9413	2.0900*	0.5066	-0.2718	-0.0111
Event56	140	0.0275	0.3279	0.0415	2.1966*	0.0415	0.3089
Event57	140	0.0273	0.3045	-0.2522	-3.6640***	0.3323	-0.9114
Event58	140	0.0286	-0.2160	0.3318	-0.7792	0.3361	-0.2204
Event59	140	0.0288	-0.2160	0.3365	0.3343	-0.2138	-0.2160
Event60	140	0.0289	-0.2063	0.0708	0.3456	0.0708	-0.2063
Event61	140	0.0208	0.4184	0.0301	0.0301	0.4153	-0.3582
Event62	140	0.0205	0.0159	0.0159	0.4185	1.5749	-1.5947
Event63	140	0.0202	-0.4195	-0.0074	0.4014	-0.0074	-0.4195
Event64	140	0.0177	-0.4318	-0.4358	3.2048**	1.3661	-0.4019
Event65	140	0.0178	-0.3981	-0.4016	0.4859	0.0439	-0.8543
Event66	140	0.0159	0.9807	0.4977	0.4941	-2.4311*	4.5726***
Event67	140	0.0178	-2.0224*	-0.4681	2.1811*	-0.0761	0.2976
Event68	140	0.0181	0.2700	-0.4690	-0.8498	-0.8601	-0.4818
Event69	140	0.0198	1.4863	-2.3972*	0.3678	1.4977	-0.7974
Event70	140	0.0204	-0.3845	1.4378	-1.1226	-0.0112	-0.3845
Event71	140	0.0198	0.0341	1.9020	0.7704	0.0341	0.0341
Event72	140	0.0155	0.0504	0.0504	2.1541*	2.0879*	-1.5148
Event73	140	0.0152	1.5866	-0.9678	0.5751	-0.4521	-0.4562
Event74	140	0.0142	-0.5534	0.0146	1.1325	0.0146	0.5691
Event75	140	0.0139	0.5855	-1.7381	5.9154***	-3.9467***	2.2097*
Event76	140	0.0142	-1.0413	-1.6277	0.0533	-1.0855	1.7210
Event77	140	0.0179	0.4108	0.4077	-0.8394	0.8194	-0.4186
Event78	140	0.0193	0.3052	0.9951	-0.4014	0.6419	0.2934
Event79	140	0.0213	0.1980	-0.3280	0.7138	-0.0643	0.1936

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -200 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	147	0.0640	0.0496	2.6538**	0.0496	-4.4147***	0.0496
Event3	182	0.0683	-0.0046	-0.7754	-0.0046	0.7277	-0.0046
Event4	190	0.0628	0.9186	-0.0180	-0.0180	-0.0180	-0.0180
Event5	190	0.0581	-0.0191	-0.0191	-0.0191	-0.0191	-1.1676
Event6	190	0.0536	-0.9121	-0.0235	-0.0235	-0.9565	-0.0235
Event7	190	0.0546	-0.9076	1.5580	1.4306	1.9279	1.1863
Event8	190	0.0345	1.2095	1.1648	0.5965	1.6031	1.0494
Event9	190	0.0340	1.0032	-0.4753	-2.6995**	1.0732	0.5389
Event10	190	0.0251	0.0236	0.0236	1.3957	1.3499	-1.3485
Event11	190	0.0253	1.3472	-1.3385	-0.6677	0.7099	1.3472
Event12	190	0.0229	-0.8076	0.7126	-0.0409	-0.0409	-0.8076
Event13	190	0.0255	-3.0635**	-3.3444***	-1.0696	2.3642*	0.1203
Event14	190	0.0309	0.1386	-2.0969*	1.2191	-0.9791	1.2191
Event15	190	0.0324	-2.0083*	1.1457	0.1180	-0.9452	0.1180
Event16	190	0.0336	0.9653	-0.8658	1.8137	0.0638	-1.7954
Event17	190	0.0335	0.0835	1.0162	0.0835	0.9879	-0.8492
Event18	190	0.0332	0.0291	0.0291	-1.4388	2.0808*	0.0291
Event19	190	0.0339	0.6248	1.2005	-0.6157	1.1764	-0.6031
Event20	190	0.0314	-0.0301	-0.0301	-0.0301	-0.6536	-0.0301
Event21	190	0.0316	-0.0403	-0.6605	-0.0403	-0.0403	0.5680
Event22	190	0.0296	-0.0830	-1.3838	1.1697	-0.0830	0.5319
Event23	190	0.0290	2.5688*	-0.0862	-0.7630	0.5776	0.5650
Event24	190	0.0285	0.6137	-0.7219	-0.0477	-0.0477	-0.7352
Event25	190	0.0280	-1.5783	0.6830	-0.0602	-0.0602	2.6841**
Event26	190	0.0295	-0.0541	-1.4684	-0.0541	1.3036	-1.4684
Event27	190	0.0297	-2.9072**	2.5935**	-2.9072**	-0.0446	-0.0446
Event28	190	0.0300	-0.7201	0.0035	-2.3187*	2.1742*	0.0035
Event29	190	0.0305	-0.0141	-2.2992*	2.1220*	-0.0141	-0.7420
Event30	190	0.0337	-0.6266	-0.6415	1.9239	0.0321	-0.6122
Event31	190	0.0335	0.0267	0.6625	0.6493	0.0267	1.7846
Event32	190	0.0336	1.8088	-0.5847	-1.9185	1.2630	0.6303
Event33	190	0.0338	1.2625	0.6332	-0.5878	0.6332	-0.5878
Event34	190	0.0338	-0.6116	1.2667	0.0324	0.0324	-0.5979
Event35	190	0.0339	-2.3451*	-2.5559*	0.0435	1.6801	-1.6894
Event36	190	0.0383	-0.6961	0.0722	0.0722	2.1900*	0.0722
Event37	190	0.0415	1.3073	0.0719	0.0719	-0.5620	-0.5792
Event38	190	0.0415	-0.5681	-0.5852	1.8722	0.0657	-0.5519
Event39	190	0.0430	-0.5488	0.0635	1.2268	1.1715	-1.0999

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -200 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	190	0.0428	0.0335	-0.5363	3.8476***	0.9496	-0.4338
Event41	190	0.0432	0.9316	-0.4383	0.0244	-1.4523	-0.4785
Event42	190	0.0449	-0.4140	0.0144	0.8395	0.0144	-0.8424
Event43	190	0.0410	1.6580	0.5633	0.0337	1.0489	0.0337
Event44	190	0.0410	1.4693	-2.0412*	0.0346	1.4980	0.0346
Event45	190	0.0441	0.4436	-0.0006	2.7336**	-0.0006	-0.3981
Event46	190	0.0347	-0.0681	-0.4576	0.6904	1.0264	-0.8167
Event47	190	0.0304	-0.4074	-0.4113	0.9981	0.2955	-0.0503
Event48	190	0.0288	-0.6468	0.2975	-0.1715	-1.1354	-3.0415**
Event49	190	0.0304	-1.2409	-0.9754	1.6037	-0.3692	-0.3717
Event50	190	0.0301	-0.3994	-0.4021	-2.0010*	2.2490*	-0.3994
Event51	190	0.0300	0.4413	-0.7090	-0.7193	-0.4267	-1.0470
Event52	190	0.0291	-1.0383	-0.0926	1.9808*	-1.0048	1.0821
Event53	190	0.0290	-0.8800	-0.6343	-0.6421	-0.1203	-0.1203
Event54	190	0.0284	1.2161	-1.1132	-1.1456	0.4730	-0.0610
Event55	190	0.0300	1.8088	1.9464	0.4803	-0.2406	0.0009
Event56	190	0.0263	0.3185	0.0193	2.2710*	0.0193	0.2987
Event57	190	0.0263	0.2848	-0.2944	-3.8439***	0.3137	-0.9801
Event58	190	0.0273	-0.2581	0.3159	-0.8481	0.3204	-0.2627
Event59	190	0.0274	-0.2561	0.3256	0.3233	-0.2538	-0.2561
Event60	190	0.0274	-0.2522	0.0393	0.3286	0.0393	-0.2522
Event61	190	0.0258	0.3801	0.0669	0.0669	0.3776	-0.2463
Event62	190	0.0214	0.0065	0.0065	0.3934	1.5045	-1.5411
Event63	190	0.0195	-0.4276	0.0009	0.4258	0.0009	-0.4276
Event64	190	0.0193	-0.4248	-0.4285	2.9208**	1.2293	-0.3973
Event65	190	0.0193	-0.3910	-0.3943	0.4237	0.0163	-0.8114
Event66	190	0.0196	0.7608	0.3689	0.3660	-2.0073*	3.6750***
Event67	190	0.0169	-2.0774*	-0.4338	2.3676*	-0.0193	0.3759
Event68	190	0.0170	0.3421	-0.4446	-0.8501	-0.8611	-0.4583
Event69	190	0.0188	1.5671	-2.5112*	0.3924	1.5790	-0.8311
Event70	190	0.0196	-0.4072	1.4954	-1.1778	-0.0174	-0.4072
Event71	190	0.0201	-0.0046	1.8395	0.7223	-0.0046	-0.0046
Event72	190	0.0166	0.0535	0.0535	2.0139*	1.9521	-1.4050
Event73	190	0.0164	1.4729	-0.8848	0.5393	-0.4089	-0.4126
Event74	190	0.0153	-0.5165	0.0102	1.0468	0.0102	0.5244
Event75	190	0.0155	0.5383	-1.5482	5.3244***	-3.5314***	1.9968*
Event76	190	0.0158	-0.9479	-1.4724	0.0310	-0.9874	1.5225
Event77	190	0.0166	0.4658	0.4626	-0.8767	0.9046	-0.4248
Event78	190	0.0184	0.3305	1.0525	-0.4090	0.6829	0.3181
Event79	190	0.0204	0.2106	-0.3382	0.7487	-0.0630	0.2061

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -250 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	147	0.0640	0.0496	2.6538**	0.0496	-4.4147***	0.0496
Event3	182	0.0683	-0.0046	-0.7754	-0.0046	0.7277	-0.0046
Event4	240	0.0618	0.9559	0.0035	0.0035	0.0035	0.0035
Event5	240	0.0584	0.0042	0.0042	0.0042	0.0042	-1.1371
Event6	240	0.0561	-0.8589	-0.0100	-0.0100	-0.9013	-0.0100
Event7	240	0.0538	-0.8952	1.6057	1.4764	1.9808*	1.2286
Event8	240	0.0382	0.9795	0.9392	0.4257	1.3351	0.8349
Event9	240	0.0378	0.8092	-0.5201	-2.5199*	0.8722	0.3918
Event10	240	0.0313	0.0130	0.0130	1.1134	1.0767	-1.0874
Event11	240	0.0314	1.0693	-1.0898	-0.5505	0.5570	1.0693
Event12	240	0.0230	-0.7657	0.7436	-0.0045	-0.0045	-0.7657
Event13	240	0.0251	-3.1421**	-3.4266***	-1.1227	2.3551*	0.0825
Event14	240	0.0293	0.0994	-2.2526*	1.2362	-1.0766	1.2362
Event15	240	0.0304	-2.1586*	1.2098	0.1122	-1.0232	0.1122
Event16	240	0.0319	1.0330	-0.8963	1.9270	0.0832	-1.8759
Event17	240	0.0326	0.0877	1.0476	0.0877	1.0185	-0.8723
Event18	240	0.0323	0.0557	0.0557	-1.4529	2.1643*	0.0557
Event19	240	0.0329	0.6690	1.2632	-0.6117	1.2384	-0.5988
Event20	240	0.0331	0.0217	0.0217	0.0217	-0.5700	0.0217
Event21	240	0.0330	0.0137	-0.5796	0.0137	0.0137	0.5956
Event22	240	0.0332	-0.0104	-1.1698	1.1060	-0.0104	0.5377
Event23	240	0.0310	2.4438*	-0.0353	-0.6672	0.5845	0.5728
Event24	240	0.0297	0.5952	-0.6886	-0.0406	-0.0406	-0.7014
Event25	240	0.0283	-1.5712	0.6698	-0.0668	-0.0668	2.6528**
Event26	240	0.0285	-0.0464	-1.5083	-0.0464	1.3570	-1.5083
Event27	240	0.0298	-2.9005**	2.5954**	-2.9005**	-0.0404	-0.0404
Event28	240	0.0304	-0.7536	-0.0375	-2.3357*	2.1108*	-0.0375
Event29	240	0.0308	-0.0476	-2.3154*	2.0723*	-0.0476	-0.7700
Event30	240	0.0331	-0.6980	-0.7132	1.9050	-0.0258	-0.6833
Event31	240	0.0328	-0.0183	0.6310	0.6175	-0.0183	1.7768
Event32	240	0.0326	1.8338	-0.6344	-2.0099*	1.2711	0.6185
Event33	240	0.0323	1.2906	0.6320	-0.6457	0.6320	-0.6457
Event34	240	0.0327	-0.6415	1.3000	0.0241	0.0241	-0.6274
Event35	240	0.0323	-2.4620*	-2.6832**	0.0456	1.7637	-1.7736
Event36	240	0.0361	-0.7468	0.0671	0.0671	2.3106*	0.0671
Event37	240	0.0389	1.3877	0.0692	0.0692	-0.6074	-0.6257
Event38	240	0.0392	-0.6074	-0.6256	1.9756*	0.0635	-0.5902
Event39	240	0.0403	-0.5911	0.0619	1.3026	1.2436	-1.1789

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -250 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	240	0.0408	0.0503	-0.5473	4.0502***	1.0110	-0.4397
Event41	240	0.0412	0.9994	-0.4388	0.0469	-1.5033	-0.4810
Event42	240	0.0421	-0.4314	0.0252	0.9047	0.0252	-0.8881
Event43	240	0.0417	1.6112	0.5349	0.0142	1.0123	0.0142
Event44	240	0.0420	1.4236	-2.0027*	0.0233	1.4516	0.0233
Event45	240	0.0409	0.4760	-0.0032	2.9463**	-0.0032	-0.4320
Event46	240	0.0383	-0.0562	-0.4094	0.6316	0.9364	-0.7351
Event47	240	0.0335	-0.3941	-0.3977	0.8848	0.2455	-0.0692
Event48	240	0.0300	-0.5774	0.3295	-0.1209	-1.0467	-2.8773**
Event49	240	0.0312	-1.2259	-0.9672	1.5465	-0.3763	-0.3788
Event50	240	0.0306	-0.3964	-0.3990	-1.9701*	2.2059*	-0.3964
Event51	240	0.0307	0.4556	-0.6682	-0.6783	-0.3924	-0.9984
Event52	240	0.0309	-0.9763	-0.0870	1.8629	-0.9448	1.0177
Event53	240	0.0304	-0.8005	-0.5659	-0.5734	-0.0750	-0.0750
Event54	240	0.0269	1.2571	-1.1997	-1.2338	0.4734	-0.0899
Event55	240	0.0291	1.7980	1.9399	0.4278	-0.3155	-0.0665
Event56	240	0.0290	0.2918	0.0200	2.0654*	0.0200	0.2738
Event57	240	0.0282	0.2895	-0.2502	-3.5576***	0.3164	-0.8892
Event58	240	0.0268	-0.2890	0.2970	-0.8914	0.3017	-0.2937
Event59	240	0.0262	-0.3120	0.2956	0.2932	-0.3095	-0.3120
Event60	240	0.0262	-0.3074	-0.0020	0.3010	-0.0020	-0.3074
Event61	240	0.0252	0.3620	0.0417	0.0417	0.3594	-0.2786
Event62	240	0.0241	0.0418	0.0418	0.3850	1.3707	-1.3309
Event63	240	0.0240	-0.3060	0.0410	0.3851	0.0410	-0.3060
Event64	240	0.0213	-0.3734	-0.3768	2.6512**	1.1220	-0.3486
Event65	240	0.0211	-0.3440	-0.3469	0.4025	0.0293	-0.7291
Event66	240	0.0199	0.7941	0.4071	0.4042	-1.9397	3.6722***
Event67	240	0.0196	-1.7995	-0.3834	2.0302*	-0.0263	0.3142
Event68	240	0.0186	0.3330	-0.3876	-0.7589	-0.7690	-0.4002
Event69	240	0.0183	1.6258	-2.5758*	0.4156	1.6381	-0.8449
Event70	240	0.0187	-0.4380	1.5523	-1.2441	-0.0302	-0.4380
Event71	240	0.0191	-0.0117	1.9236	0.7511	-0.0117	-0.0117
Event72	240	0.0171	0.0346	0.0346	1.9363	1.8764	-1.3803
Event73	240	0.0169	1.4294	-0.8635	0.5215	-0.4006	-0.4043
Event74	240	0.0170	-0.4554	0.0193	0.9535	0.0193	0.4827
Event75	240	0.0164	0.5354	-1.4386	5.0635***	-3.3149***	1.9153
Event76	240	0.0167	-0.8878	-1.3859	0.0419	-0.9253	1.4585
Event77	240	0.0174	0.4531	0.4499	-0.8320	0.8730	-0.3994
Event78	240	0.0172	0.3779	1.1481	-0.4110	0.7538	0.3647
Event79	240	0.0208	0.2220	-0.3164	0.7499	-0.0465	0.2175

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -300 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	147	0.0640	0.0496	2.6538**	0.0496	-4.4147***	0.0496
Event3	182	0.0683	-0.0046	-0.7754	-0.0046	0.7277	-0.0046
Event4	243	0.0625	0.9512	0.0097	0.0097	0.0097	0.0097
Event5	256	0.0612	0.0134	0.0134	0.0134	0.0134	-1.0758
Event6	290	0.0572	-0.8348	-0.0023	-0.0023	-0.8764	-0.0023
Event7	290	0.0575	-0.8437	1.4960	1.3751	1.8470	1.1433
Event8	290	0.0407	0.9116	0.8738	0.3926	1.2448	0.7761
Event9	290	0.0399	0.7599	-0.4990	-2.3930*	0.8196	0.3646
Event10	290	0.0340	-0.0233	-0.0233	0.9904	0.9566	-1.0369
Event11	290	0.0334	0.9927	-1.0402	-0.5325	0.5103	0.9927
Event12	290	0.0240	-0.7280	0.7242	0.0044	0.0044	-0.7280
Event13	290	0.0243	-3.2649**	-3.5596***	-1.1736	2.4280*	0.0745
Event14	290	0.0283	0.0762	-2.3601*	1.2537	-1.1420	1.2537
Event15	290	0.0293	-2.2601*	1.2321	0.0942	-1.0829	0.0942
Event16	290	0.0303	1.0798	-0.9518	2.0211*	0.0796	-1.9833*
Event17	290	0.0310	0.0870	1.0946	0.0870	1.0641	-0.9205
Event18	290	0.0317	0.0656	0.0656	-1.4709	2.2131*	0.0656
Event19	290	0.0325	0.6953	1.2974	-0.6023	1.2723	-0.5892
Event20	290	0.0324	0.0270	0.0270	0.0270	-0.5790	0.0270
Event21	290	0.0325	0.0203	-0.5835	0.0203	0.0203	0.6125
Event22	290	0.0317	0.0093	-1.2022	1.1759	0.0093	0.5820
Event23	290	0.0322	2.3887*	-0.0036	-0.6134	0.5945	0.5832
Event24	290	0.0324	0.5877	-0.5898	0.0046	0.0046	-0.6015
Event25	290	0.0295	-1.4740	0.6747	-0.0315	-0.0315	2.5760**
Event26	290	0.0294	-0.0341	-1.4527	-0.0341	1.3278	-1.4527
Event27	290	0.0293	-2.9349**	2.6503**	-2.9349**	-0.0283	-0.0283
Event28	290	0.0299	-0.7500	-0.0224	-2.3576*	2.1606*	-0.0224
Event29	290	0.0302	-0.0279	-2.3396*	2.1332*	-0.0279	-0.7642
Event30	290	0.0324	-0.7149	-0.7305	1.9411	-0.0290	-0.7000
Event31	290	0.0323	-0.0224	0.6357	0.6220	-0.0224	1.7970
Event32	290	0.0324	1.8153	-0.6694	-2.0541*	1.2487	0.5918
Event33	290	0.0324	1.2531	0.5979	-0.6732	0.5979	-0.6732
Event34	290	0.0321	-0.6988	1.2783	-0.0209	-0.0209	-0.6844
Event35	290	0.0317	-2.5412*	-2.7668**	0.0159	1.7680	-1.8392
Event36	290	0.0348	-0.7884	0.0576	0.0576	2.3898*	0.0576
Event37	290	0.0372	1.4418	0.0634	0.0634	-0.6439	-0.6630
Event38	290	0.0375	-0.6477	-0.6666	2.0506*	0.0532	-0.6297
Event39	290	0.0383	-0.6262	0.0606	1.3656	1.3035	-1.2443

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -300 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	290	0.0386	0.0506	-0.5815	4.2817***	1.0668	-0.4678
Event41	290	0.0389	1.0535	-0.4680	0.0459	-1.5942	-0.5127
Event42	290	0.0399	-0.4534	0.0288	0.9575	0.0288	-0.9356
Event43	290	0.0402	1.6938	0.5752	0.0339	1.0713	0.0339
Event44	290	0.0401	1.4972	-2.0938*	0.0295	1.5265	0.0295
Event45	290	0.0413	0.4775	0.0031	2.9231**	0.0031	-0.4214
Event46	290	0.0393	-0.0147	-0.3584	0.6546	0.9512	-0.6754
Event47	290	0.0390	-0.3002	-0.3033	0.7982	0.2491	-0.0212
Event48	290	0.0324	-0.5509	0.2896	-0.1278	-0.9857	-2.6822**
Event49	290	0.0312	-1.2045	-0.9461	1.5646	-0.3560	-0.3584
Event50	290	0.0311	-0.3579	-0.3604	-1.9058	2.2017*	-0.3579
Event51	290	0.0313	0.4737	-0.6285	-0.6384	-0.3580	-0.9524
Event52	290	0.0315	-0.9379	-0.0633	1.8542	-0.9069	1.0231
Event53	290	0.0314	-0.7988	-0.5719	-0.5791	-0.0973	-0.0973
Event54	290	0.0271	1.2270	-1.2158	-1.2498	0.4477	-0.1124
Event55	290	0.0282	1.8322	1.9786*	0.4192	-0.3475	-0.0907
Event56	290	0.0292	0.2630	-0.0068	2.0235*	-0.0068	0.2452
Event57	290	0.0287	0.2550	-0.2743	-3.5179***	0.2813	-0.9010
Event58	290	0.0286	-0.2580	0.2899	-0.8211	0.2942	-0.2624
Event59	290	0.0287	-0.2600	0.2952	0.2930	-0.2578	-0.2600
Event60	290	0.0285	-0.2453	0.0354	0.3139	0.0354	-0.2453
Event61	290	0.0245	0.3396	0.0108	0.0108	0.3370	-0.3180
Event62	290	0.0240	0.0069	0.0069	0.3507	1.3379	-1.3681
Event63	290	0.0239	-0.3298	0.0195	0.3660	0.0195	-0.3298
Event64	290	0.0230	-0.3438	-0.3469	2.4569*	1.0408	-0.3208
Event65	290	0.0230	-0.3102	-0.3130	0.3746	0.0322	-0.6636
Event66	290	0.0231	0.6911	0.3576	0.3552	-1.6647	3.1713**
Event67	290	0.0192	-1.8280	-0.3824	2.0813*	-0.0179	0.3296
Event68	290	0.0193	0.3220	-0.3728	-0.7308	-0.7405	-0.3849
Event69	290	0.0188	1.5849	-2.4866*	0.4122	1.5968	-0.8093
Event70	290	0.0183	-0.4285	1.6070	-1.2530	-0.0115	-0.4285
Event71	290	0.0183	0.0017	2.0218*	0.7980	0.0017	0.0017
Event72	290	0.0178	0.0025	0.0025	1.8338	1.7761	-1.3599
Event73	290	0.0178	1.3115	-0.8677	0.4486	-0.4278	-0.4313
Event74	290	0.0174	-0.4642	-0.0020	0.9077	-0.0020	0.4493
Event75	290	0.0170	0.4947	-1.4105	4.8648***	-3.2214**	1.8264
Event76	290	0.0170	-0.8688	-1.3570	0.0427	-0.9055	1.4314
Event77	290	0.0179	0.4481	0.4450	-0.8029	0.8569	-0.3818
Event78	290	0.0169	0.3915	1.1771	-0.4130	0.7749	0.3781
Event79	290	0.0202	0.2283	-0.3257	0.7717	-0.0479	0.2238

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -350 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	147	0.0640	0.0496	2.6538**	0.0496	-4.4147***	0.0496
Event3	182	0.0683	-0.0046	-0.7754	-0.0046	0.7277	-0.0046
Event4	243	0.0625	0.9512	0.0097	0.0097	0.0097	0.0097
Event5	256	0.0612	0.0134	0.0134	0.0134	0.0134	-1.0758
Event6	310	0.0593	-0.7973	0.0061	0.0061	-0.8375	0.0061
Event7	319	0.0592	-0.8002	1.4730	1.3554	1.8139	1.1302
Event8	340	0.0403	0.9393	0.9011	0.4145	1.2763	0.8023
Event9	340	0.0399	0.7796	-0.4817	-2.3790*	0.8393	0.3835
Event10	340	0.0365	-0.0763	-0.0763	0.8696	0.8381	-1.0223
Event11	340	0.0363	0.8495	-1.0165	-0.5504	0.4067	0.8495
Event12	340	0.0279	-0.6154	0.6321	0.0138	0.0138	-0.6154
Event13	340	0.0249	-3.2156**	-3.5028***	-1.1768	2.3342*	0.0399
Event14	340	0.0276	0.0755	-2.4203*	1.2818	-1.1724	1.2818
Event15	340	0.0282	-2.3772*	1.2535	0.0704	-1.1534	0.0704
Event16	340	0.0293	1.1033	-0.9960	2.0759*	0.0698	-2.0618*
Event17	340	0.0298	0.0768	1.1248	0.0768	1.0930	-0.9713
Event18	340	0.0305	0.0674	0.0674	-1.5304	2.3008*	0.0674
Event19	340	0.0311	0.7310	1.3598	-0.6242	1.3336	-0.6105
Event20	340	0.0315	0.0388	0.0388	0.0388	-0.5842	0.0388
Event21	340	0.0314	0.0313	-0.5933	0.0313	0.0313	0.6439
Event22	340	0.0316	0.0174	-1.1990	1.1888	0.0174	0.5924
Event23	340	0.0314	2.4573*	0.0083	-0.6159	0.6206	0.6090
Event24	340	0.0312	0.6144	-0.6070	0.0095	0.0095	-0.6191
Event25	340	0.0311	-1.3618	0.6784	0.0078	0.0078	2.4837*
Event26	340	0.0320	0.0121	-1.2915	0.0121	1.2635	-1.2915
Event27	340	0.0298	-2.8859**	2.6015**	-2.8859**	-0.0302	-0.0302
Event28	340	0.0297	-0.7639	-0.0328	-2.3792*	2.1605*	-0.0328
Event29	340	0.0300	-0.0370	-2.3642*	2.1385*	-0.0370	-0.7783
Event30	340	0.0315	-0.7235	-0.7395	2.0074*	-0.0183	-0.7082
Event31	340	0.0315	-0.0123	0.6622	0.6482	-0.0123	1.8526
Event32	340	0.0317	1.8718	-0.6645	-2.0779*	1.2935	0.6230
Event33	340	0.0317	1.2958	0.6259	-0.6735	0.6259	-0.6735
Event34	340	0.0319	-0.6968	1.2897	-0.0157	-0.0157	-0.6823
Event35	340	0.0317	-2.5746*	-2.8005**	-0.0145	1.7397	-1.8718
Event36	340	0.0344	-0.8319	0.0221	0.0221	2.3763*	0.0221
Event37	340	0.0362	1.4409	0.0229	0.0229	-0.7048	-0.7245
Event38	340	0.0365	-0.7059	-0.7254	2.0724*	0.0158	-0.6874
Event39	340	0.0374	-0.6809	0.0231	1.3605	1.2968	-1.3144

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -350 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	340	0.0373	0.0283	-0.6259	4.4071***	1.0800	-0.5081
Event41	340	0.0373	1.0775	-0.5102	0.0260	-1.6854	-0.5568
Event42	340	0.0383	-0.4749	0.0271	0.9937	0.0271	-0.9768
Event43	340	0.0382	1.7733	0.5975	0.0286	1.1190	0.0286
Event44	340	0.0384	1.5649	-2.1814*	0.0338	1.5955	0.0338
Event45	340	0.0400	0.4990	0.0091	3.0243**	0.0091	-0.4292
Event46	340	0.0387	-0.0167	-0.3656	0.6628	0.9639	-0.6873
Event47	340	0.0373	-0.3109	-0.3141	0.8370	0.2632	-0.0193
Event48	340	0.0375	-0.4309	0.2939	-0.0660	-0.8059	-2.2689*
Event49	340	0.0330	-1.1468	-0.9027	1.4686	-0.3453	-0.3476
Event50	340	0.0334	-0.3443	-0.3467	-1.7864	2.0401*	-0.3443
Event51	340	0.0333	0.4319	-0.6040	-0.6132	-0.3498	-0.9083
Event52	340	0.0332	-0.9082	-0.0802	1.7352	-0.8789	0.9483
Event53	340	0.0311	-0.7826	-0.5533	-0.5605	-0.0733	-0.0733
Event54	340	0.0287	1.1682	-1.1381	-1.1701	0.4325	-0.0963
Event55	340	0.0300	1.7394	1.8769	0.4118	-0.3085	-0.0672
Event56	340	0.0281	0.2488	-0.0316	2.0785*	-0.0316	0.2302
Event57	340	0.0279	0.2283	-0.3165	-3.6553***	0.2554	-0.9616
Event58	340	0.0286	-0.3089	0.2394	-0.8726	0.2438	-0.3133
Event59	340	0.0285	-0.3027	0.2560	0.2538	-0.3005	-0.3027
Event60	340	0.0285	-0.2979	-0.0168	0.2621	-0.0168	-0.2979
Event61	340	0.0269	0.3325	0.0327	0.0327	0.3301	-0.2671
Event62	340	0.0256	0.0135	0.0135	0.3360	1.2620	-1.2762
Event63	340	0.0241	-0.3481	-0.0026	0.3400	-0.0026	-0.3481
Event64	340	0.0230	-0.3562	-0.3592	2.4438*	1.0281	-0.3331
Event65	340	0.0230	-0.3274	-0.3301	0.3563	0.0144	-0.6802
Event66	340	0.0230	0.6874	0.3531	0.3506	-1.6740	3.1734**
Event67	340	0.0226	-1.5201	-0.2923	1.8005	0.0174	0.3126
Event68	340	0.0226	0.3030	-0.2880	-0.5925	-0.6008	-0.2983
Event69	340	0.0196	1.5198	-2.4015*	0.3904	1.5313	-0.7861
Event70	340	0.0198	-0.3926	1.4867	-1.1538	-0.0076	-0.3926
Event71	340	0.0191	0.0083	1.9488	0.7732	0.0083	0.0083
Event72	340	0.0174	-0.0055	-0.0055	1.8614	1.8026	-1.3944
Event73	340	0.0173	1.3455	-0.8894	0.4605	-0.4383	-0.4418
Event74	340	0.0174	-0.4730	-0.0101	0.9011	-0.0101	0.4419
Event75	340	0.0176	0.4534	-1.3852	4.6710***	-3.1329**	1.7387
Event76	340	0.0177	-0.8709	-1.3394	0.0035	-0.9062	1.3357
Event77	340	0.0184	0.4139	0.4109	-0.7986	0.8101	-0.3905
Event78	340	0.0171	0.3962	1.1717	-0.3979	0.7747	0.3830
Event79	340	0.0192	0.2563	-0.3283	0.8296	-0.0352	0.2515

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -400 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-2.5128*	1.2572	1.1661	0.0723
Event2	147	0.0640	0.0496	2.6538**	0.0496	-4.4147***	0.0496
Event3	182	0.0683	-0.0046	-0.7754	-0.0046	0.7277	-0.0046
Event4	243	0.0625	0.9512	0.0097	0.0097	0.0097	0.0097
Event5	256	0.0612	0.0134	0.0134	0.0134	0.0134	-1.0758
Event6	310	0.0593	-0.7973	0.0061	0.0061	-0.8375	0.0061
Event7	319	0.0592	-0.8002	1.4730	1.3554	1.8139	1.1302
Event8	390	0.0408	0.9406	0.9028	0.4226	1.2732	0.8053
Event9	390	0.0402	0.7928	-0.4569	-2.3369*	0.8520	0.4004
Event10	390	0.0377	-0.0649	-0.0649	0.8486	0.8182	-0.9784
Event11	390	0.0378	0.8164	-0.9760	-0.5283	0.3911	0.8164
Event12	390	0.0299	-0.5986	0.5641	-0.0122	-0.0122	-0.5986
Event13	390	0.0252	-3.1677**	-3.4514***	-1.1537	2.3147*	0.0482
Event14	390	0.0276	0.0504	-2.4512*	1.2594	-1.2004	1.2594
Event15	390	0.0281	-2.4072*	1.2271	0.0429	-1.1822	0.0429
Event16	390	0.0284	1.1293	-1.0381	2.1336*	0.0623	-2.1385*
Event17	390	0.0291	0.0622	1.1378	0.0622	1.1052	-1.0134
Event18	390	0.0295	0.0575	0.0575	-1.5941	2.3660*	0.0575
Event19	390	0.0301	0.7463	1.3964	-0.6547	1.3692	-0.6405
Event20	390	0.0301	0.0417	0.0417	0.0417	-0.6091	0.0417
Event21	390	0.0302	0.0389	-0.6107	0.0389	0.0389	0.6761
Event22	390	0.0305	0.0351	-1.2271	1.2507	0.0351	0.6318
Event23	390	0.0308	2.5234*	0.0226	-0.6149	0.6478	0.6360
Event24	390	0.0310	0.6313	-0.5963	0.0234	0.0234	-0.6084
Event25	390	0.0307	-1.3711	0.6915	0.0136	0.0136	2.5167*
Event26	390	0.0308	0.0047	-1.3472	0.0047	1.3024	-1.3472
Event27	390	0.0317	-2.6847**	2.4691*	-2.6847**	-0.0027	-0.0027
Event28	390	0.0322	-0.6665	0.0089	-2.1588*	2.0353*	0.0089
Event29	390	0.0320	-0.0055	-2.1851*	2.0319*	-0.0055	-0.6997
Event30	390	0.0318	-0.7156	-0.7315	1.9935*	-0.0160	-0.7003
Event31	390	0.0319	-0.0107	0.6571	0.6432	-0.0107	1.8356
Event32	390	0.0313	1.8852	-0.6842	-2.1161*	1.2994	0.6201
Event33	390	0.0312	1.3147	0.6332	-0.6888	0.6332	-0.6888
Event34	390	0.0313	-0.7162	1.3066	-0.0227	-0.0227	-0.7014
Event35	390	0.0312	-2.6029**	-2.8324**	-0.0013	1.7813	-1.8887
Event36	390	0.0337	-0.8490	0.0233	0.0233	2.4279*	0.0233
Event37	390	0.0356	1.4658	0.0241	0.0241	-0.7157	-0.7357
Event38	390	0.0358	-0.7191	-0.7390	2.1100*	0.0157	-0.7003
Event39	390	0.0365	-0.7071	0.0139	1.3837	1.3184	-1.3559

*p<0.05, **p<0.01, ***p<0.001

CMR Abnormal Return Test statistic results estimation window of -400 to -11 pre event
(test statistic=abnormal return/standard deviation of abnormal returns)

	Obs	sd of AR	Event Day -2	Event Day -1	Event Day	EventDay+1	EventDay+2
Event40	390	0.0366	0.0039	-0.6625	4.4647 ***	1.0754	-0.5425
Event41	390	0.0368	1.0678	-0.5404	0.0028	-1.7308	-0.5876
Event42	390	0.0373	-0.5181	-0.0022	0.9916	-0.0022	-1.0341
Event43	390	0.0370	1.8230	0.6099	0.0229	1.1480	0.0229
Event44	390	0.0372	1.6129	-2.2559 *	0.0317	1.6445	0.0317
Event45	390	0.0386	0.5190	0.0107	3.1393 **	0.0107	-0.4440
Event46	390	0.0387	-0.0181	-0.3670	0.6614	0.9624	-0.6887
Event47	390	0.0381	-0.2954	-0.2985	0.8264	0.2656	-0.0104
Event48	390	0.0363	-0.4360	0.3141	-0.0584	-0.8240	-2.3381 *
Event49	390	0.0368	-0.9930	-0.7738	1.3559	-0.2732	-0.2752
Event50	390	0.0374	-0.2809	-0.2831	-1.5709	1.8521	-0.2809
Event51	390	0.0375	0.4132	-0.5072	-0.5154	-0.2813	-0.7776
Event52	390	0.0375	-0.7707	-0.0376	1.5699	-0.7448	0.8731
Event53	390	0.0330	-0.7532	-0.5370	-0.5438	-0.0845	-0.0845
Event54	390	0.0293	1.1510	-1.1063	-1.1377	0.4309	-0.0866
Event55	390	0.0306	1.7030	1.8381	0.3992	-0.3082	-0.0713
Event56	390	0.0281	0.2266	-0.0539	2.0574 *	-0.0539	0.2080
Event57	390	0.0275	0.2111	-0.3418	-3.7304 ***	0.2387	-0.9965
Event58	390	0.0281	-0.3351	0.2234	-0.9094	0.2278	-0.3396
Event59	390	0.0280	-0.3353	0.2339	0.2317	-0.3330	-0.3353
Event60	390	0.0280	-0.3325	-0.0467	0.2368	-0.0467	-0.3325
Event61	390	0.0271	0.2842	-0.0133	-0.0133	0.2819	-0.3109
Event62	390	0.0265	0.0047	0.0047	0.3165	1.2121	-1.2425
Event63	390	0.0260	-0.3106	0.0104	0.3287	0.0104	-0.3106
Event64	390	0.0250	-0.3176	-0.3204	2.2536 *	0.9536	-0.2964
Event65	390	0.0247	-0.2954	-0.2979	0.3411	0.0228	-0.6238
Event66	390	0.0234	0.6553	0.3269	0.3245	-1.6646	3.0976 **
Event67	390	0.0226	-1.5301	-0.3052	1.7824	0.0036	0.2981
Event68	390	0.0227	0.2911	-0.2977	-0.6010	-0.6093	-0.3079
Event69	390	0.0225	1.3571	-2.0538 *	0.3747	1.3671	-0.6486
Event70	390	0.0200	-0.3685	1.4928	-1.1225	0.0128	-0.3685
Event71	390	0.0196	0.0036	1.8928	0.7482	0.0036	0.0036
Event72	390	0.0170	0.0144	0.0144	1.9296	1.8693	-1.4104
Event73	390	0.0170	1.3740	-0.9036	0.4721	-0.4439	-0.4475
Event74	390	0.0170	-0.4862	-0.0121	0.9210	-0.0121	0.4508
Event75	390	0.0173	0.4551	-1.4133	4.7411 ***	-3.1894 **	1.7612
Event76	390	0.0173	-0.8886	-1.3673	0.0051	-0.9246	1.3666
Event77	390	0.0183	0.4080	0.4051	-0.8151	0.8078	-0.4034
Event78	390	0.0179	0.3874	1.1311	-0.3743	0.7503	0.3747
Event79	390	0.0185	0.2765	-0.3276	0.8688	-0.0247	0.2715

*p<0.05, **p<0.01, ***p<0.001

Appendix 12 Cumulative Abnormal Return t-test results for single firm single event Constant Mean Return model for varying estimation windows

CMR CAR Test statistic results estimation window of -100 to -11 pre event
(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	90	0.0604	0.0300	1.9945*	1.6458	-0.9261	-0.8149
Event3	90	0.0642	-0.0796	-0.6920	-0.6109	-0.1796	-0.1962
Event4	90	0.0602	0.9324	0.6274	0.4863	0.3986	0.3364
Event5	90	0.0404	0.0356	0.0503	0.0616	0.0712	-0.6579
Event6	90	0.0440	-1.1004	-0.7916	-0.6574	-1.1465	-1.0340
Event7	90	0.0454	-1.0928	0.5505	1.4414	2.4063*	2.7893**
Event8	90	0.0266	1.5947	2.2144*	2.2709*	3.0186**	3.3205***
Event9	90	0.0255	1.3727	0.5453	-1.6168	-0.6671	-0.2600
Event10	90	0.0237	-0.0620	-0.0877	0.7335	1.3083	0.4910
Event11	90	0.0242	1.3277	-0.1051	-0.5338	-0.1312	0.4765
Event12	90	0.0213	-0.8046	0.0174	0.0254	0.0317	-0.3315
Event13	90	0.0283	-2.7395**	-4.0528***	-3.8563***	-2.2708*	-1.9767*
Event14	90	0.0359	0.1204	-1.1884	-0.3647	-0.7360	-0.1891
Event15	90	0.0378	-1.6880	-0.4721	-0.3059	-0.6525	-0.5219
Event16	90	0.0297	1.0109	-0.0337	1.1097	0.9571	-0.0873
Event17	90	0.0285	0.0141	0.7961	0.6581	1.1092	0.5075
Event18	90	0.0288	0.0034	0.0048	-0.9728	0.3438	0.3090
Event19	90	0.0299	0.6825	1.4279	0.7457	1.3006	0.8442
Event20	90	0.0307	-0.0836	-0.1182	-0.1447	-0.4866	-0.4726
Event21	90	0.0308	-0.1162	-0.6144	-0.5687	-0.5506	-0.2653
Event22	90	0.0289	-0.1714	-1.1819	-0.3253	-0.3674	-0.1244
Event23	90	0.0291	2.5000*	1.6689	0.8935	1.0339	1.1518
Event24	90	0.0297	0.5240	-0.1652	-0.1988	-0.2275	-0.5479
Event25	90	0.0256	-1.6517	-0.5827	-0.4684	-0.3993	0.9941
Event26	90	0.0288	0.0511	-0.9505	-0.7466	0.0732	-0.5585
Event27	90	0.0307	-2.7457**	-0.1216	-1.6845	-1.4476	-1.2846
Event28	90	0.0332	-0.6106	-0.4008	-1.5146	-0.3081	-0.2560
Event29	90	0.0342	0.0106	-1.4273	-0.0585	-0.0454	-0.3264
Event30	90	0.0393	-0.5404	-0.7733	0.3215	0.2911	0.0242
Event31	90	0.0390	0.0195	0.4137	0.6578	0.5794	1.2023
Event32	90	0.0380	1.5359	0.6756	-0.4645	0.1244	0.3322
Event33	90	0.0383	1.0506	1.0929	0.5558	0.7288	0.3912
Event34	90	0.0387	-0.5737	0.3468	0.2761	0.2331	-0.0428
Event35	90	0.0319	-2.5038*	-3.6996***	-2.9979**	-1.7051	-2.3326*
Event36	90	0.0389	-0.6216	-0.3439	-0.2028	0.9351	0.8968
Event37	90	0.0447	1.2644	0.9770	0.8654	0.5138	0.2416
Event38	90	0.0456	-0.4887	-0.7021	0.4280	0.4150	0.1593
Event39	90	0.0479	-0.4279	-0.2162	0.4972	0.9892	0.4720

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -100 to -11 pre event
(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	90	0.0483	0.0820	-0.2409	1.8007	2.0061*	1.6459
Event41	90	0.0485	0.8790	0.3794	0.3502	-0.3200	-0.4554
Event42	90	0.0522	-0.3383	-0.2178	0.2494	0.2311	-0.1094
Event43	90	0.0369	1.7332	1.5910	1.2576	1.6173	1.4145
Event44	90	0.0367	1.5922	-0.5215	-0.4320	0.4380	0.3870
Event45	90	0.0343	0.5469	0.3692	2.3190*	1.9959*	1.5453
Event46	90	0.0340	-0.0682	-0.3775	0.0993	0.6105	0.1738
Event47	90	0.0265	-0.5642	-0.8011	-0.0466	0.0817	0.0044
Event48	90	0.0242	-0.8522	-0.4093	-0.4991	-1.1495	-2.6858**
Event49	90	0.0305	-1.2698	-1.6092	-0.4139	-0.5600	-0.6823
Event50	90	0.0335	-0.3710	-0.5263	-1.4740	-0.2733	-0.4104
Event51	90	0.0335	0.4537	-0.0864	-0.4084	-0.5153	-0.8537
Event52	90	0.0340	-0.8253	-0.5948	0.5297	0.0604	0.4966
Event53	90	0.0325	-0.6341	-0.7417	-0.8491	-0.7134	-0.6184
Event54	90	0.0205	1.6605	0.0649	-0.8786	-0.4457	-0.4479
Event55	90	0.0278	1.9212	2.8219**	2.5862**	2.0955*	1.8617
Event56	90	0.0263	0.3644	0.3037	1.5861	1.4062	1.4118
Event57	90	0.0254	0.3172	0.0259	-2.2559*	-1.7802	-2.0342*
Event58	90	0.0231	-0.3101	0.0419	-0.5481	-0.2873	-0.3981
Event59	90	0.0239	-0.3483	-0.0220	0.1637	-0.0311	-0.1836
Event60	90	0.0238	-0.3278	-0.2261	0.0123	0.0147	-0.1334
Event61	90	0.0193	0.4607	0.3559	0.3151	0.5016	0.2807
Event62	90	0.0156	-0.0163	-0.0230	0.2778	1.2586	0.1703
Event63	90	0.0146	-0.5403	-0.3600	0.0513	0.0600	-0.1880
Event64	90	0.0150	-0.6146	-0.8725	1.4120	1.9770*	1.5092
Event65	90	0.0147	-0.5546	-0.7874	-0.3439	-0.3070	-0.7701
Event66	90	0.0164	0.8596	0.8839	0.9452	-0.4085	1.5792
Event67	90	0.0191	-1.9002	-1.6617	-0.1893	-0.2060	-0.0659
Event68	90	0.0195	0.2208	-0.1727	-0.6136	-0.9454	-1.0590
Event69	90	0.0188	1.6290	-0.5846	-0.2161	0.6334	0.2208
Event70	90	0.0204	-0.3038	0.8646	0.1025	0.1243	-0.0246
Event71	90	0.0200	0.0709	1.4068	1.6101	1.4298	1.3105
Event72	90	0.0122	0.0491	0.0694	1.6224	2.7190**	1.5680
Event73	90	0.0118	2.1014*	0.6447	0.9872	0.5923	0.2925
Event74	90	0.0134	-0.6325	-0.4696	0.2813	0.2278	0.4521
Event75	90	0.0149	0.5220	-0.7958	2.5249*	0.3317	1.2084
Event76	90	0.0155	-1.0311	-1.8383	-1.5170	-1.8495	-0.9830
Event77	90	0.0204	0.3386	0.4769	-0.0487	0.3064	0.1000
Event78	90	0.0172	0.2649	0.9207	0.4480	0.7089	0.7466
Event79	90	0.0240	0.1927	-0.0575	0.3285	0.2645	0.3210

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -150 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	140	0.0610	0.0307	1.9742*	1.6296	-0.9138	-0.8036
Event3	140	0.0686	-0.0331	-0.5893	-0.5003	-0.0855	-0.0913
Event4	140	0.0568	1.0136	0.7006	0.5590	0.4727	0.4127
Event5	140	0.0545	-0.0186	-0.0263	-0.0323	-0.0373	-0.5888
Event6	140	0.0441	-1.0759	-0.7574	-0.6156	-1.0981	-0.9800
Event7	140	0.0447	-1.0511	0.6426	1.5663	2.5622*	2.9652**
Event8	140	0.0331	1.2996	1.8051	1.8560	2.4619*	2.7087**
Event9	140	0.0325	1.1111	0.4778	-1.2045	-0.4510	-0.1236
Event10	140	0.0250	0.0018	0.0026	0.7980	1.3574	0.5992
Event11	140	0.0254	1.3216	-0.0216	-0.4127	-0.0138	0.5787
Event12	140	0.0213	-0.8323	-0.0198	-0.0202	-0.0210	-0.3909
Event13	140	0.0274	-2.8292**	-4.1859***	-3.9803***	-2.3370*	-2.0309*
Event14	140	0.0338	0.1206	-1.2711	-0.3993	-0.7952	-0.2166
Event15	140	0.0351	-1.8538	-0.5597	-0.3922	-0.7751	-0.6431
Event16	140	0.0353	0.9453	0.1042	1.0973	0.9938	0.1362
Event17	140	0.0350	0.0523	0.7044	0.6053	0.9827	0.5035
Event18	140	0.0286	-0.0396	-0.0561	-1.0521	0.2595	0.2143
Event19	140	0.0294	0.6525	1.3921	0.6876	1.2397	0.7674
Event20	140	0.0302	-0.0860	-0.1217	-0.1490	-0.4971	-0.4831
Event21	140	0.0297	-0.1113	-0.6250	-0.5746	-0.5533	-0.2546
Event22	140	0.0291	-0.0971	-1.0734	-0.1965	-0.2187	0.0409
Event23	140	0.0290	2.5777**	1.7671	1.0065	1.1644	1.2977
Event24	140	0.0294	0.5606	-0.1236	-0.1478	-0.1686	-0.4854
Event25	140	0.0268	-1.6956	-0.7253	-0.6543	-0.6204	0.6808
Event26	140	0.0292	-0.0656	-1.1010	-0.9368	-0.1597	-0.8099
Event27	140	0.0292	-2.8793**	-0.1138	-1.7553	-1.5032	-1.3294
Event28	140	0.0306	-0.6626	-0.4348	-1.6436	-0.3341	-0.2775
Event29	140	0.0313	0.0329	-1.5296	-0.0270	-0.0069	-0.3090
Event30	140	0.0352	-0.5978	-0.8556	0.3678	0.3353	0.0387
Event31	140	0.0353	0.0386	0.4802	0.7547	0.6728	1.3633
Event32	140	0.0361	1.6762	0.7956	-0.3851	0.2507	0.4834
Event33	140	0.0363	1.1739	1.2460	0.7009	0.9011	0.5609
Event34	140	0.0353	-0.5893	0.4355	0.3706	0.3340	0.0410
Event35	140	0.0345	-2.3361*	-3.4503***	-2.8100**	-1.6227	-2.2078*
Event36	140	0.0410	-0.6605	-0.4266	-0.3153	0.7449	0.6919
Event37	140	0.0451	1.2059	0.9015	0.7759	0.4147	0.1338
Event38	140	0.0454	-0.5253	-0.7540	0.3704	0.3481	0.0831
Event39	140	0.0445	-0.5172	-0.3135	0.4351	0.9485	0.3792

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -150 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	140	0.0441	0.0526	-0.3163	1.9076	2.1225*	1.7194
Event41	140	0.0447	0.9222	0.3669	0.3251	-0.4107	-0.5652
Event42	140	0.0446	-0.4023	-0.2641	0.2805	0.2574	-0.1426
Event43	140	0.0446	1.5244	1.4432	1.1951	1.5168	1.3697
Event44	140	0.0451	1.3409	-0.3605	-0.2733	0.4468	0.4160
Event45	140	0.0376	0.4550	0.2749	2.0384*	1.7322	1.3112
Event46	140	0.0340	-0.0782	-0.3915	0.0819	0.5900	0.1513
Event47	140	0.0291	-0.4715	-0.6697	0.0298	0.1576	0.0972
Event48	140	0.0251	-0.7739	-0.3288	-0.4006	-1.0140	-2.4810*
Event49	140	0.0284	-1.3871	-1.7612	-0.4847	-0.6478	-0.7845
Event50	140	0.0304	-0.4289	-0.6084	-1.6597	-0.3409	-0.4967
Event51	140	0.0305	0.4334	-0.1873	-0.5620	-0.6970	-1.0844
Event52	140	0.0299	-0.9977	-0.7609	0.4972	-0.0520	0.4292
Event53	140	0.0306	-0.8123	-0.9838	-1.1417	-1.0341	-0.9654
Event54	140	0.0278	1.2623	0.1016	-0.5820	-0.2527	-0.2453
Event55	140	0.0278	1.9413	2.8506**	2.6200**	2.1331*	1.9029
Event56	140	0.0275	0.3279	0.2612	1.4815	1.3038	1.3043
Event57	140	0.0273	0.3045	0.0370	-2.0852*	-1.6397	-1.8742
Event58	140	0.0286	-0.2160	0.0819	-0.3830	-0.1636	-0.2449
Event59	140	0.0288	-0.2160	0.0852	0.2626	0.1205	0.0112
Event60	140	0.0289	-0.2063	-0.0958	0.1213	0.1404	0.0334
Event61	140	0.0208	0.4184	0.3172	0.2764	0.4470	0.2396
Event62	140	0.0205	0.0159	0.0225	0.2600	1.0126	0.1925
Event63	140	0.0202	-0.4195	-0.3018	-0.0147	-0.0164	-0.2023
Event64	140	0.0177	-0.4318	-0.6135	1.3494	1.8516	1.4764
Event65	140	0.0178	-0.3981	-0.5655	-0.1812	-0.1350	-0.5028
Event66	140	0.0159	0.9807	1.0454	1.1388	-0.2293	1.8398
Event67	140	0.0178	-2.0224*	-1.7610	-0.1786	-0.1927	-0.0393
Event68	140	0.0181	0.2700	-0.1407	-0.6055	-0.9544	-1.0692
Event69	140	0.0198	1.4863	-0.6441	-0.3136	0.4773	0.0703
Event70	140	0.0204	-0.3845	0.7448	-0.0400	-0.0403	-0.2080
Event71	140	0.0198	0.0341	1.3690	1.5626	1.3703	1.2409
Event72	140	0.0155	0.0504	0.0712	1.3018	2.1714*	1.2647
Event73	140	0.0152	1.5866	0.4376	0.6893	0.3709	0.1277
Event74	140	0.0142	-0.5534	-0.3810	0.3427	0.3041	0.5265
Event75	140	0.0139	0.5855	-0.8150	2.7498**	0.4080	1.3531
Event76	140	0.0142	-1.0413	-1.8873	-1.5102	-1.8506	-0.8856
Event77	140	0.0179	0.4108	0.5788	-0.0121	0.3992	0.1699
Event78	140	0.0193	0.3052	0.9194	0.5190	0.7704	0.8203
Event79	140	0.0213	0.1980	-0.0919	0.3370	0.2597	0.3189

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -200 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	147	0.0640	0.0496	1.9116	1.5894	-0.8309	-0.7210
Event3	182	0.0683	-0.0046	-0.5515	-0.4530	-0.0284	-0.0275
Event4	190	0.0628	0.9186	0.6368	0.5096	0.4323	0.3786
Event5	190	0.0581	-0.0191	-0.0271	-0.0332	-0.0383	-0.5564
Event6	190	0.0536	-0.9121	-0.6616	-0.5537	-0.9578	-0.8672
Event7	190	0.0546	-0.9076	0.4599	1.2015	2.0045*	2.3234*
Event8	190	0.0345	1.2095	1.6789	1.7151	2.2869*	2.5148*
Event9	190	0.0340	1.0032	0.3733	-1.2538	-0.5492	-0.2502
Event10	190	0.0251	0.0236	0.0333	0.8330	1.3964	0.6459
Event11	190	0.0253	1.3472	0.0062	-0.3804	0.0255	0.6253
Event12	190	0.0229	-0.8076	-0.0671	-0.0784	-0.0883	-0.4402
Event13	190	0.0255	-3.0635**	-4.5310***	-4.3171***	-2.5566*	-2.2329*
Event14	190	0.0309	0.1386	-1.3847	-0.4268	-0.8592	-0.2233
Event15	190	0.0324	-2.0083*	-0.6100	-0.4299	-0.8449	-0.7029
Event16	190	0.0336	0.9653	0.0703	1.1046	0.9885	0.0812
Event17	190	0.0335	0.0835	0.7775	0.6831	1.0855	0.5911
Event18	190	0.0332	0.0291	0.0411	-0.7972	0.3500	0.3261
Event19	190	0.0339	0.6248	1.2907	0.6984	1.1930	0.7973
Event20	190	0.0314	-0.0301	-0.0426	-0.0521	-0.3719	-0.3461
Event21	190	0.0316	-0.0403	-0.4955	-0.4278	-0.3906	-0.0954
Event22	190	0.0296	-0.0830	-1.0372	-0.1715	-0.1900	0.0679
Event23	190	0.0290	2.5688*	1.7555	0.9929	1.1486	1.2800
Event24	190	0.0285	0.6137	-0.0765	-0.0900	-0.1019	-0.4199
Event25	190	0.0280	-1.5783	-0.6331	-0.5517	-0.5079	0.7461
Event26	190	0.0295	-0.0541	-1.0766	-0.9102	-0.1365	-0.7788
Event27	190	0.0297	-2.9072**	-0.2218	-1.8596	-1.6328	-1.4804
Event28	190	0.0300	-0.7201	-0.5067	-1.7524	-0.4306	-0.3835
Event29	190	0.0305	-0.0141	-1.6358	-0.1105	-0.1027	-0.4237
Event30	190	0.0337	-0.6266	-0.8967	0.3787	0.3440	0.0338
Event31	190	0.0335	0.0267	0.4874	0.7728	0.6826	1.4087
Event32	190	0.0336	1.8088	0.8655	-0.4009	0.2843	0.5362
Event33	190	0.0338	1.2625	1.3405	0.7551	0.9705	0.6052
Event34	190	0.0338	-0.6116	0.4632	0.3969	0.3599	0.0546
Event35	190	0.0339	-2.3451*	-3.4656***	-2.8045**	-1.5887	-2.1765*
Event36	190	0.0383	-0.6961	-0.4412	-0.3185	0.8191	0.7649
Event37	190	0.0415	1.3073	0.9753	0.8378	0.4446	0.1386
Event38	190	0.0415	-0.5681	-0.8155	0.4150	0.3923	0.1041
Event39	190	0.0430	-0.5488	-0.3432	0.4281	0.9565	0.3636

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -200 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	190	0.0428	0.0335	-0.3556	1.9311	2.1471*	1.7265
Event41	190	0.0432	0.9316	0.3488	0.2988	-0.4673	-0.6320
Event42	190	0.0449	-0.4140	-0.2825	0.2540	0.2272	-0.1735
Event43	190	0.0410	1.6580	1.5707	1.3019	1.6519	1.4926
Event44	190	0.0410	1.4693	-0.4044	-0.3103	0.4803	0.4450
Event45	190	0.0441	0.4436	0.3132	1.8340	1.5880	1.2423
Event46	190	0.0347	-0.0681	-0.3717	0.0951	0.5955	0.1674
Event47	190	0.0304	-0.4074	-0.5789	0.1036	0.2375	0.1899
Event48	190	0.0288	-0.6468	-0.2471	-0.3007	-0.8281	-2.1009*
Event49	190	0.0304	-1.2409	-1.5672	-0.3537	-0.4909	-0.6053
Event50	190	0.0301	-0.3994	-0.5667	-1.6180	-0.2768	-0.4262
Event51	190	0.0300	0.4413	-0.1893	-0.5698	-0.7068	-1.1004
Event52	190	0.0291	-1.0383	-0.7997	0.4907	-0.0775	0.4146
Event53	190	0.0290	-0.8800	-1.0708	-1.2450	-1.1384	-1.0720
Event54	190	0.0284	1.2161	0.0727	-0.6020	-0.2848	-0.2820
Event55	190	0.0300	1.8088	2.6554**	2.4454*	1.9975*	1.7870
Event56	190	0.0263	0.3185	0.2388	1.5061	1.3140	1.3088
Event57	190	0.0263	0.2848	-0.0067	-2.2248*	-1.7699	-2.0213*
Event58	190	0.0273	-0.2581	0.0409	-0.4563	-0.2349	-0.3276
Event59	190	0.0274	-0.2561	0.0492	0.2268	0.0696	-0.0523
Event60	190	0.0274	-0.2522	-0.1506	0.0668	0.0775	-0.0435
Event61	190	0.0258	0.3801	0.3161	0.2967	0.4458	0.2886
Event62	190	0.0214	0.0065	0.0092	0.2346	0.9554	0.1654
Event63	190	0.0195	-0.4276	-0.3017	-0.0005	0.0000	-0.1912
Event64	190	0.0193	-0.4248	-0.6034	1.1937	1.6484	1.2967
Event65	190	0.0193	-0.3910	-0.5553	-0.2088	-0.1726	-0.5173
Event66	190	0.0196	0.7608	0.7988	0.8636	-0.2558	1.4147
Event67	190	0.0169	-2.0774*	-1.7757	-0.0829	-0.0815	0.0952
Event68	190	0.0170	0.3421	-0.0725	-0.5500	-0.9069	-1.0161
Event69	190	0.0188	1.5671	-0.6676	-0.3185	0.5137	0.0877
Event70	190	0.0196	-0.4072	0.7694	-0.0518	-0.0536	-0.2300
Event71	190	0.0201	-0.0046	1.2975	1.4764	1.2763	1.1395
Event72	190	0.0166	0.0535	0.0756	1.2244	2.0365*	1.1931
Event73	190	0.0164	1.4729	0.4158	0.6509	0.3593	0.1368
Event74	190	0.0153	-0.5165	-0.3580	0.3121	0.2753	0.4808
Event75	190	0.0155	0.5383	-0.7141	2.4910*	0.3915	1.2432
Event76	190	0.0158	-0.9479	-1.7114	-1.3795	-1.6884	-0.8293
Event77	190	0.0166	0.4658	0.6565	0.0298	0.4781	0.2377
Event78	190	0.0184	0.3305	0.9779	0.5623	0.8284	0.8832
Event79	190	0.0204	0.2106	-0.0902	0.3586	0.2790	0.3417

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -250 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	147	0.0640	0.0496	1.9116	1.5894	-0.8309	-0.7210
Event3	182	0.0683	-0.0046	-0.5515	-0.4530	-0.0284	-0.0275
Event4	240	0.0618	0.9559	0.6784	0.5559	0.4831	0.4337
Event5	240	0.0584	0.0042	0.0060	0.0073	0.0084	-0.5010
Event6	240	0.0561	-0.8589	-0.6144	-0.5074	-0.8901	-0.8006
Event7	240	0.0538	-0.8952	0.5024	1.2626	2.0839*	2.4133*
Event8	240	0.0382	0.9795	1.3567	1.3535	1.8397	2.0189*
Event9	240	0.0378	0.8092	0.2044	-1.2879	-0.6793	-0.4324
Event10	240	0.0313	0.0130	0.0184	0.6579	1.1081	0.5048
Event11	240	0.0314	1.0693	-0.0145	-0.3296	-0.0070	0.4719
Event12	240	0.0230	-0.7657	-0.0157	-0.0154	-0.0156	-0.3564
Event13	240	0.0251	-3.1421**	-4.6448***	-4.4406***	-2.6682**	-2.3496*
Event14	240	0.0293	0.0994	-1.5226	-0.5294	-0.9968	-0.3387
Event15	240	0.0304	-2.1586*	-0.6709	-0.4830	-0.9299	-0.7815
Event16	240	0.0319	1.0330	0.0967	1.1915	1.0735	0.1212
Event17	240	0.0326	0.0877	0.8028	0.7061	1.1208	0.6123
Event18	240	0.0323	0.0557	0.0787	-0.7745	0.4114	0.3928
Event19	240	0.0329	0.6690	1.3663	0.7624	1.2794	0.8765
Event20	240	0.0331	0.0217	0.0307	0.0376	-0.2524	-0.2160
Event21	240	0.0330	0.0137	-0.4001	-0.3188	-0.2692	0.0256
Event22	240	0.0332	-0.0104	-0.8345	-0.0428	-0.0423	0.2026
Event23	240	0.0310	2.4438*	1.7031	1.0053	1.1629	1.2962
Event24	240	0.0297	0.5952	-0.0661	-0.0774	-0.0874	-0.3918
Event25	240	0.0283	-1.5712	-0.6374	-0.5590	-0.5175	0.7235
Event26	240	0.0285	-0.0464	-1.0993	-0.9244	-0.1221	-0.7837
Event27	240	0.0298	-2.9005**	-0.2157	-1.8508	-1.6230	-1.4697
Event28	240	0.0304	-0.7536	-0.5594	-1.8053	-0.5080	-0.4712
Event29	240	0.0308	-0.0476	-1.6710	-0.1679	-0.1692	-0.4957
Event30	240	0.0331	-0.6980	-0.9979	0.2851	0.2340	-0.0963
Event31	240	0.0328	-0.0183	0.4333	0.7103	0.6060	1.3367
Event32	240	0.0326	1.8338	0.8482	-0.4679	0.2303	0.4826
Event33	240	0.0323	1.2906	1.3594	0.7372	0.9544	0.5649
Event34	240	0.0327	-0.6415	0.4656	0.3941	0.3534	0.0355
Event35	240	0.0323	-2.4620*	-3.6382***	-2.9442**	-1.6679	-2.2850*
Event36	240	0.0361	-0.7468	-0.4806	-0.3537	0.8490	0.7893
Event37	240	0.0389	1.3877	1.0302	0.8811	0.4593	0.1310
Event38	240	0.0392	-0.6074	-0.8719	0.4288	0.4031	0.0966
Event39	240	0.0403	-0.5911	-0.3742	0.4465	1.0085	0.3748

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -250 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	240	0.0408	0.0503	-0.3515	2.0514*	2.2821*	1.8445
Event41	240	0.0412	0.9994	0.3964	0.3507	-0.4479	-0.6157
Event42	240	0.0421	-0.4314	-0.2872	0.2878	0.2619	-0.1629
Event43	240	0.0417	1.6112	1.5175	1.2472	1.5863	1.4251
Event44	240	0.0420	1.4236	-0.4095	-0.3209	0.4479	0.4110
Event45	240	0.0409	0.4760	0.3343	1.9740*	1.7079	1.3344
Event46	240	0.0383	-0.0562	-0.3292	0.0958	0.5512	0.1643
Event47	240	0.0335	-0.3941	-0.5599	0.0537	0.1692	0.1204
Event48	240	0.0300	-0.5774	-0.1753	-0.2130	-0.7078	-1.9198
Event49	240	0.0312	-1.2259	-1.5507	-0.3733	-0.5115	-0.6269
Event50	240	0.0306	-0.3964	-0.5624	-1.5967	-0.2798	-0.4275
Event51	240	0.0307	0.4556	-0.1503	-0.5143	-0.6416	-1.0204
Event52	240	0.0309	-0.9763	-0.7518	0.4617	-0.0726	0.3902
Event53	240	0.0304	-0.8005	-0.9662	-1.1199	-1.0074	-0.9346
Event54	240	0.0269	1.2571	0.0406	-0.6792	-0.3515	-0.3546
Event55	240	0.0291	1.7980	2.6431**	2.4051*	1.9251	1.6921
Event56	240	0.0290	0.2918	0.2205	1.3725	1.1986	1.1945
Event57	240	0.0282	0.2895	0.0278	-2.0313*	-1.6010	-1.8296
Event58	240	0.0268	-0.2890	0.0057	-0.5100	-0.2908	-0.3915
Event59	240	0.0262	-0.3120	-0.0116	0.1598	-0.0164	-0.1542
Event60	240	0.0262	-0.3074	-0.2187	-0.0048	-0.0052	-0.1421
Event61	240	0.0252	0.3620	0.2855	0.2572	0.4024	0.2354
Event62	240	0.0241	0.0418	0.0591	0.2706	0.9197	0.2274
Event63	240	0.0240	-0.3060	-0.1874	0.0693	0.0805	-0.0648
Event64	240	0.0213	-0.3734	-0.5305	1.0976	1.5115	1.1960
Event65	240	0.0211	-0.3440	-0.4885	-0.1665	-0.1295	-0.4419
Event66	240	0.0199	0.7941	0.8494	0.9269	-0.1671	1.4928
Event67	240	0.0196	-1.7995	-1.5436	-0.0882	-0.0896	0.0604
Event68	240	0.0186	0.3330	-0.0386	-0.4697	-0.7913	-0.8867
Event69	240	0.0183	1.6258	-0.6718	-0.3085	0.5519	0.1157
Event70	240	0.0187	-0.4380	0.7880	-0.0749	-0.0800	-0.2674
Event71	240	0.0191	-0.0117	1.3519	1.5375	1.3256	1.1804
Event72	240	0.0171	0.0346	0.0489	1.1578	1.9409	1.1188
Event73	240	0.0169	1.4294	0.4002	0.6278	0.3434	0.1264
Event74	240	0.0170	-0.4554	-0.3084	0.2987	0.2683	0.4559
Event75	240	0.0164	0.5354	-0.6386	2.4020*	0.4227	1.2347
Event76	240	0.0167	-0.8878	-1.6078	-1.2886	-1.5786	-0.7597
Event77	240	0.0174	0.4531	0.6385	0.0410	0.4720	0.2436
Event78	240	0.0172	0.3779	1.0790	0.6437	0.9344	0.9988
Event79	240	0.0208	0.2220	-0.0668	0.3784	0.3045	0.3696

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -300 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	147	0.0640	0.0496	1.9116	1.5894	-0.8309	-0.7210
Event3	182	0.0683	-0.0046	-0.5515	-0.4530	-0.0284	-0.0275
Event4	243	0.0625	0.9512	0.6795	0.5604	0.4901	0.4427
Event5	256	0.0612	0.0134	0.0189	0.0231	0.0267	-0.4572
Event6	290	0.0572	-0.8348	-0.5919	-0.4846	-0.8579	-0.7683
Event7	290	0.0575	-0.8437	0.4613	1.1705	1.9372	2.2440*
Event8	290	0.0407	0.9116	1.2624	1.2575	1.7114	1.8778
Event9	290	0.0399	0.7599	0.1845	-1.2310	-0.6563	-0.4239
Event10	290	0.0340	-0.0233	-0.0329	0.5450	0.9503	0.3862
Event11	290	0.0334	0.9927	-0.0336	-0.3349	-0.0348	0.4128
Event12	290	0.0240	-0.7280	-0.0027	0.0003	0.0025	-0.3233
Event13	290	0.0243	-3.2649**	-4.8256***	-4.6177***	-2.7850**	-2.4577*
Event14	290	0.0283	0.0762	-1.6150	-0.5948	-1.0861	-0.4108
Event15	290	0.0293	-2.2601*	-0.7269	-0.5391	-1.0083	-0.8598
Event16	290	0.0303	1.0798	0.0905	1.2407	1.1143	0.1097
Event17	290	0.0310	0.0870	0.8355	0.7325	1.1664	0.6316
Event18	290	0.0317	0.0656	0.0927	-0.7735	0.4367	0.4199
Event19	290	0.0325	0.6953	1.4091	0.8028	1.3314	0.9273
Event20	290	0.0324	0.0270	0.0381	0.0467	-0.2491	-0.2107
Event21	290	0.0325	0.0203	-0.3983	-0.3135	-0.2613	0.0402
Event22	290	0.0317	0.0093	-0.8436	-0.0099	-0.0039	0.2568
Event23	290	0.0322	2.3887*	1.6865	1.0229	1.1830	1.3189
Event24	290	0.0324	0.5877	-0.0015	0.0014	0.0035	-0.2659
Event25	290	0.0295	-1.4740	-0.5652	-0.4797	-0.4312	0.7663
Event26	290	0.0294	-0.0341	-1.0513	-0.8780	-0.0965	-0.7360
Event27	290	0.0293	-2.9349**	-0.2013	-1.8588	-1.6239	-1.4652
Event28	290	0.0299	-0.7500	-0.5462	-1.8071	-0.4847	-0.4436
Event29	290	0.0302	-0.0279	-1.6741	-0.1353	-0.1311	-0.4590
Event30	290	0.0324	-0.7149	-1.0221	0.2861	0.2333	-0.1044
Event31	290	0.0323	-0.0224	0.4336	0.7131	0.6064	1.3460
Event32	290	0.0324	1.8153	0.8102	-0.5244	0.1702	0.4169
Event33	290	0.0324	1.2531	1.3089	0.6800	0.8879	0.4931
Event34	290	0.0321	-0.6988	0.4098	0.3225	0.2688	-0.0656
Event35	290	0.0317	-2.5412*	-3.7533***	-3.0553**	-1.7620	-2.3985*
Event36	290	0.0348	-0.7884	-0.5168	-0.3887	0.8583	0.7935
Event37	290	0.0372	1.4418	1.0644	0.9057	0.4624	0.1171
Event38	290	0.0375	-0.6477	-0.9293	0.4251	0.3948	0.0715
Event39	290	0.0383	-0.6262	-0.3999	0.4619	1.0518	0.3843

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -300 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	290	0.0386	0.0506	-0.3755	2.1655*	2.4088*	1.9453
Event41	290	0.0389	1.0535	0.4140	0.3646	-0.4814	-0.6598
Event42	290	0.0399	-0.4534	-0.3002	0.3077	0.2809	-0.1672
Event43	290	0.0402	1.6938	1.6044	1.3295	1.6871	1.5241
Event44	290	0.0401	1.4972	-0.4219	-0.3274	0.4797	0.4423
Event45	290	0.0413	0.4775	0.3398	1.9651*	1.7034	1.3351
Event46	290	0.0393	-0.0147	-0.2639	0.1625	0.6163	0.2492
Event47	290	0.0390	-0.3002	-0.4268	0.1124	0.2218	0.1889
Event48	290	0.0324	-0.5509	-0.1848	-0.2246	-0.6874	-1.8143
Event49	290	0.0312	-1.2045	-1.5207	-0.3383	-0.4710	-0.5815
Event50	290	0.0311	-0.3579	-0.5079	-1.5150	-0.2112	-0.3489
Event51	290	0.0313	0.4737	-0.1095	-0.4580	-0.5756	-0.9408
Event52	290	0.0315	-0.9379	-0.7079	0.4925	-0.0269	0.4334
Event53	290	0.0314	-0.7988	-0.9692	-1.1257	-1.0236	-0.9590
Event54	290	0.0271	1.2270	0.0079	-0.7151	-0.3954	-0.4039
Event55	290	0.0282	1.8322	2.6946**	2.4422*	1.9413	1.6958
Event56	290	0.0292	0.2630	0.1812	1.3162	1.1365	1.1261
Event57	290	0.0287	0.2550	-0.0137	-2.0422*	-1.6279	-1.8590
Event58	290	0.0286	-0.2580	0.0226	-0.4557	-0.2475	-0.3387
Event59	290	0.0287	-0.2600	0.0249	0.1895	0.0352	-0.0848
Event60	290	0.0285	-0.2453	-0.1484	0.0601	0.0697	-0.0473
Event61	290	0.0245	0.3396	0.2478	0.2085	0.3491	0.1700
Event62	290	0.0240	0.0069	0.0098	0.2104	0.8512	0.1495
Event63	290	0.0239	-0.3298	-0.2194	0.0321	0.0376	-0.1139
Event64	290	0.0230	-0.3438	-0.4884	1.0197	1.4035	1.1119
Event65	290	0.0230	-0.3102	-0.4407	-0.1435	-0.1082	-0.3936
Event66	290	0.0231	0.6911	0.7416	0.8106	-0.1304	1.3016
Event67	290	0.0192	-1.8280	-1.5630	-0.0745	-0.0735	0.0817
Event68	290	0.0193	0.3220	-0.0359	-0.4512	-0.7610	-0.8528
Event69	290	0.0188	1.5849	-0.6376	-0.2826	0.5537	0.1333
Event70	290	0.0183	-0.4285	0.8333	-0.0430	-0.0430	-0.2300
Event71	290	0.0183	0.0017	1.4309	1.6290	1.4116	1.2633
Event72	290	0.0178	0.0025	0.0035	1.0616	1.8075	1.0085
Event73	290	0.0178	1.3115	0.3138	0.5152	0.2323	0.0149
Event74	290	0.0174	-0.4642	-0.3296	0.2549	0.2198	0.3975
Event75	290	0.0170	0.4947	-0.6476	2.2799*	0.3638	1.1422
Event76	290	0.0170	-0.8688	-1.5739	-1.2604	-1.5443	-0.7411
Event77	290	0.0179	0.4481	0.6315	0.0521	0.4736	0.2529
Event78	290	0.0169	0.3915	1.1092	0.6672	0.9652	1.0324
Event79	290	0.0202	0.2283	-0.0688	0.3893	0.3132	0.3802

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -350 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	147	0.0640	0.0496	1.9116	1.5894	-0.8309	-0.7210
Event3	182	0.0683	-0.0046	-0.5515	-0.4530	-0.0284	-0.0275
Event4	243	0.0625	0.9512	0.6795	0.5604	0.4901	0.4427
Event5	256	0.0612	0.0134	0.0189	0.0231	0.0267	-0.4572
Event6	310	0.0593	-0.7973	-0.5595	-0.4533	-0.8113	-0.7229
Event7	319	0.0592	-0.8002	0.4757	1.1710	1.9211	2.2237*
Event8	340	0.0403	0.9393	1.3014	1.3019	1.7656	1.9380
Event9	340	0.0399	0.7796	0.2106	-1.2015	-0.6209	-0.3838
Event10	340	0.0365	-0.0763	-0.1080	0.4139	0.7775	0.2382
Event11	340	0.0363	0.8495	-0.1181	-0.4142	-0.1554	0.2409
Event12	340	0.0279	-0.6154	0.0118	0.0176	0.0221	-0.2554
Event13	340	0.0249	-3.2156**	-4.7506***	-4.5583***	-2.7805**	-2.4691*
Event14	340	0.0276	0.0755	-1.6581	-0.6138	-1.1178	-0.4265
Event15	340	0.0282	-2.3772*	-0.7946	-0.6081	-1.1034	-0.9554
Event16	340	0.0293	1.1033	0.0758	1.2605	1.1265	0.0855
Event17	340	0.0298	0.0768	0.8496	0.7380	1.1857	0.6261
Event18	340	0.0305	0.0674	0.0954	-0.8057	0.4526	0.4350
Event19	340	0.0311	0.7310	1.4785	0.8468	1.4001	0.9793
Event20	340	0.0315	0.0388	0.0549	0.0672	-0.2339	-0.1918
Event21	340	0.0314	0.0313	-0.3974	-0.3064	-0.2497	0.0646
Event22	340	0.0316	0.0174	-0.8355	0.0041	0.0123	0.2759
Event23	340	0.0314	2.4573*	1.7435	1.0679	1.2351	1.3771
Event24	340	0.0312	0.6144	0.0052	0.0098	0.0132	-0.2651
Event25	340	0.0311	-1.3618	-0.4832	-0.3900	-0.3339	0.8121
Event26	340	0.0320	0.0121	-0.9047	-0.7317	-0.0019	-0.5792
Event27	340	0.0298	-2.8859**	-0.2011	-1.8304	-1.6003	-1.4448
Event28	340	0.0297	-0.7639	-0.5634	-1.8336	-0.5077	-0.4688
Event29	340	0.0300	-0.0370	-1.6979	-0.1517	-0.1499	-0.4821
Event30	340	0.0315	-0.7235	-1.0345	0.3143	0.2631	-0.0814
Event31	340	0.0315	-0.0123	0.4596	0.7494	0.6429	1.4035
Event32	340	0.0317	1.8718	0.8537	-0.5027	0.2114	0.4677
Event33	340	0.0317	1.2958	1.3589	0.7206	0.9371	0.5369
Event34	340	0.0319	-0.6968	0.4192	0.3332	0.2807	-0.0541
Event35	340	0.0317	-2.5746*	-3.8008***	-3.1117**	-1.8249	-2.4694*
Event36	340	0.0344	-0.8319	-0.5726	-0.4548	0.7943	0.7203
Event37	340	0.0362	1.4409	1.0350	0.8583	0.3909	0.0256
Event38	340	0.0365	-0.7059	-1.0121	0.3702	0.3284	-0.0136
Event39	340	0.0374	-0.6809	-0.4652	0.4057	0.9998	0.3064

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -350 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	340	0.0373	0.0283	-0.4226	2.1994*	2.4448*	1.9594
Event41	340	0.0373	1.0775	0.4011	0.3425	-0.5460	-0.7374
Event42	340	0.0383	-0.4749	-0.3166	0.3152	0.2865	-0.1806
Event43	340	0.0382	1.7733	1.6764	1.3852	1.7592	1.5862
Event44	340	0.0384	1.5649	-0.4360	-0.3364	0.5064	0.4680
Event45	340	0.0400	0.4990	0.3593	2.0394*	1.7707	1.3919
Event46	340	0.0387	-0.0167	-0.2703	0.1620	0.6222	0.2491
Event47	340	0.0373	-0.3109	-0.4419	0.1224	0.2376	0.2039
Event48	340	0.0375	-0.4309	-0.0969	-0.1172	-0.5045	-1.4659
Event49	340	0.0330	-1.1468	-1.4492	-0.3354	-0.4631	-0.5696
Event50	340	0.0334	-0.3443	-0.4887	-1.4303	-0.2186	-0.3495
Event51	340	0.0333	0.4319	-0.1217	-0.4534	-0.5675	-0.9138
Event52	340	0.0332	-0.9082	-0.6990	0.4311	-0.0661	0.3650
Event53	340	0.0311	-0.7826	-0.9446	-1.0949	-0.9849	-0.9137
Event54	340	0.0287	1.1682	0.0213	-0.6582	-0.3537	-0.3594
Event55	340	0.0300	1.7394	2.5572*	2.3257*	1.8599	1.6334
Event56	340	0.0281	0.2488	0.1535	1.3254	1.1320	1.1155
Event57	340	0.0279	0.2283	-0.0624	-2.1614*	-1.7441	-1.9900*
Event58	340	0.0286	-0.3089	-0.0491	-0.5439	-0.3492	-0.4524
Event59	340	0.0285	-0.3027	-0.0330	0.1196	-0.0467	-0.1772
Event60	340	0.0285	-0.2979	-0.2226	-0.0304	-0.0347	-0.1643
Event61	340	0.0269	0.3325	0.2582	0.2297	0.3640	0.2061
Event62	340	0.0256	0.0135	0.0191	0.2096	0.8125	0.1560
Event63	340	0.0241	-0.3481	-0.2480	-0.0062	-0.0067	-0.1617
Event64	340	0.0230	-0.3562	-0.5059	0.9979	1.3783	1.0838
Event65	340	0.0230	-0.3274	-0.4650	-0.1740	-0.1434	-0.4325
Event66	340	0.0230	0.6874	0.7357	0.8031	-0.1415	1.2927
Event67	340	0.0226	-1.5201	-1.2816	-0.0069	0.0027	0.1422
Event68	340	0.0226	0.3030	0.0106	-0.3334	-0.5892	-0.6604
Event69	340	0.0196	1.5198	-0.6235	-0.2837	0.5200	0.1135
Event70	340	0.0198	-0.3926	0.7737	-0.0344	-0.0336	-0.2056
Event71	340	0.0191	0.0083	1.3839	1.5763	1.3693	1.2284
Event72	340	0.0174	-0.0055	-0.0078	1.0683	1.8265	1.0101
Event73	340	0.0173	1.3455	0.3225	0.5292	0.2392	0.0163
Event74	340	0.0174	-0.4730	-0.3416	0.2414	0.2040	0.3801
Event75	340	0.0176	0.4534	-0.6589	2.1588*	0.3031	1.0487
Event76	340	0.0177	-0.8709	-1.5629	-1.2741	-1.5565	-0.7949
Event77	340	0.0184	0.4139	0.5832	0.0151	0.4181	0.1993
Event78	340	0.0171	0.3962	1.1087	0.6755	0.9723	1.0410
Event79	340	0.0192	0.2563	-0.0510	0.4374	0.3612	0.4355

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -400 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event1	63	0.0703	2.2598*	-0.1789	0.5797	1.0851	1.0029
Event2	147	0.0640	0.0496	1.9116	1.5894	-0.8309	-0.7210
Event3	182	0.0683	-0.0046	-0.5515	-0.4530	-0.0284	-0.0275
Event4	243	0.0625	0.9512	0.6795	0.5604	0.4901	0.4427
Event5	256	0.0612	0.0134	0.0189	0.0231	0.0267	-0.4572
Event6	310	0.0593	-0.7973	-0.5595	-0.4533	-0.8113	-0.7229
Event7	319	0.0592	-0.8002	0.4757	1.1710	1.9211	2.2237*
Event8	390	0.0408	0.9406	1.3035	1.3083	1.7696	1.9429
Event9	390	0.0402	0.7928	0.2375	-1.1553	-0.5745	-0.3348
Event10	390	0.0377	-0.0649	-0.0917	0.4151	0.7685	0.2499
Event11	390	0.0378	0.8164	-0.1129	-0.3972	-0.1484	0.2323
Event12	390	0.0299	-0.5986	-0.0244	-0.0270	-0.0295	-0.2941
Event13	390	0.0252	-3.1677**	-4.6804***	-4.4876***	-2.7290**	-2.4194*
Event14	390	0.0276	0.0504	-1.6976	-0.6590	-1.1709	-0.4840
Event15	390	0.0281	-2.4072*	-0.8345	-0.6566	-1.1597	-1.0181
Event16	390	0.0284	1.1293	0.0645	1.2845	1.1435	0.0664
Event17	390	0.0291	0.0622	0.8485	0.7287	1.1836	0.6055
Event18	390	0.0295	0.0575	0.0813	-0.8540	0.4434	0.4223
Event19	390	0.0301	0.7463	1.5151	0.8591	1.4286	0.9913
Event20	390	0.0301	0.0417	0.0589	0.0722	-0.2421	-0.1979
Event21	390	0.0302	0.0389	-0.4043	-0.3076	-0.2470	0.0815
Event22	390	0.0305	0.0351	-0.8429	0.0339	0.0469	0.3245
Event23	390	0.0308	2.5234*	1.8003	1.1150	1.2895	1.4378
Event24	390	0.0310	0.6313	0.0248	0.0338	0.0409	-0.2355
Event25	390	0.0307	-1.3711	-0.4805	-0.3845	-0.3262	0.8338
Event26	390	0.0308	0.0047	-0.9493	-0.7724	-0.0177	-0.6183
Event27	390	0.0317	-2.6847**	-0.1525	-1.6746	-1.4515	-1.2995
Event28	390	0.0322	-0.6665	-0.4650	-1.6261	-0.3906	-0.3453
Event29	390	0.0320	-0.0055	-1.5490	-0.0916	-0.0821	-0.3864
Event30	390	0.0318	-0.7156	-1.0232	0.3155	0.2653	-0.0759
Event31	390	0.0319	-0.0107	0.4571	0.7445	0.6394	1.3928
Event32	390	0.0313	1.8852	0.8492	-0.5284	0.1921	0.4491
Event33	390	0.0312	1.3147	1.3774	0.7269	0.9462	0.5382
Event34	390	0.0313	-0.7162	0.4175	0.3278	0.2725	-0.0699
Event35	390	0.0312	-2.6029**	-3.8433***	-3.1388**	-1.8276	-2.4793*
Event36	390	0.0337	-0.8490	-0.5838	-0.4633	0.8127	0.7374
Event37	390	0.0356	1.4658	1.0535	0.8741	0.3991	0.0280
Event38	390	0.0358	-0.7191	-1.0311	0.3764	0.3338	-0.0146
Event39	390	0.0365	-0.7071	-0.4902	0.3986	1.0045	0.2920

*p<0.05, **p<0.01, ***p<0.001

CMR CAR Test statistic results estimation window of -400 to -11 pre event

(test statistic = (CAR/std.dev. AR)x 1/sqrt(days in event window))

	Obs	sd of AR	Event Day-2	Event Day-1	Event Day	EventDay+1	EventDay+2
Event40	390	0.0366	0.0039	-0.4657	2.1975*	2.4408*	1.9405
Event41	390	0.0368	1.0678	0.3729	0.3061	-0.6003	-0.7997
Event42	390	0.0373	-0.5181	-0.3679	0.2721	0.2346	-0.2527
Event43	390	0.0370	1.8230	1.7204	1.4179	1.8020	1.6220
Event44	390	0.0372	1.6129	-0.4547	-0.3529	0.5166	0.4763
Event45	390	0.0386	0.5190	0.3746	2.1183*	1.8399	1.4471
Event46	390	0.0387	-0.0181	-0.2722	0.1596	0.6194	0.2460
Event47	390	0.0381	-0.2954	-0.4199	0.1343	0.2491	0.2181
Event48	390	0.0363	-0.4360	-0.0862	-0.1040	-0.5021	-1.4947
Event49	390	0.0368	-0.9930	-1.2493	-0.2372	-0.3421	-0.4290
Event50	390	0.0374	-0.2809	-0.3988	-1.2326	-0.1414	-0.2521
Event51	390	0.0375	0.4132	-0.0665	-0.3518	-0.4454	-0.7461
Event52	390	0.0375	-0.7707	-0.5715	0.4397	0.0084	0.3980
Event53	390	0.0330	-0.7532	-0.9123	-1.0588	-0.9593	-0.8958
Event54	390	0.0293	1.1510	0.0316	-0.6310	-0.3310	-0.3348
Event55	390	0.0306	1.7030	2.5039*	2.2749*	1.8160	1.5924
Event56	390	0.0281	0.2266	0.1221	1.2875	1.0880	1.0662
Event57	390	0.0275	0.2111	-0.0924	-2.2292*	-1.8112	-2.0656*
Event58	390	0.0281	-0.3351	-0.0790	-0.5895	-0.3966	-0.5066
Event59	390	0.0280	-0.3353	-0.0717	0.0752	-0.1014	-0.2406
Event60	390	0.0280	-0.3325	-0.2681	-0.0822	-0.0945	-0.2332
Event61	390	0.0271	0.2842	0.1916	0.1487	0.2697	0.1022
Event62	390	0.0265	0.0047	0.0067	0.1882	0.7690	0.1322
Event63	390	0.0260	-0.3106	-0.2123	0.0165	0.0194	-0.1215
Event64	390	0.0250	-0.3176	-0.4511	0.9328	1.2846	1.0164
Event65	390	0.0247	-0.2954	-0.4195	-0.1456	-0.1147	-0.3816
Event66	390	0.0234	0.6553	0.6945	0.7544	-0.1789	1.2252
Event67	390	0.0226	-1.5301	-1.2978	-0.0306	-0.0247	0.1113
Event68	390	0.0227	0.2911	-0.0047	-0.3508	-0.6085	-0.6819
Event69	390	0.0225	1.3571	-0.4926	-0.1859	0.5226	0.1773
Event70	390	0.0200	-0.3685	0.7950	0.0010	0.0073	-0.1583
Event71	390	0.0196	0.0036	1.3409	1.5269	1.3241	1.1859
Event72	390	0.0170	0.0144	0.0204	1.1308	1.9139	1.0811
Event73	390	0.0170	1.3740	0.3326	0.5441	0.2493	0.0229
Event74	390	0.0170	-0.4862	-0.3524	0.2440	0.2053	0.3852
Event75	390	0.0173	0.4551	-0.6776	2.1840*	0.2967	1.0531
Event76	390	0.0173	-0.8886	-1.5952	-1.2995	-1.5877	-0.8089
Event77	390	0.0183	0.4080	0.5750	-0.0012	0.4029	0.1800
Event78	390	0.0179	0.3874	1.0737	0.6605	0.9472	1.0148
Event79	390	0.0185	0.2765	-0.0361	0.4721	0.3965	0.4761

*p<0.05, **p<0.01, ***p<0.001

Appendix 13 - Limited Intervention Approach where Event and Shoulder days are represented by dummy variables = 1

Model 1 Estimation window -200 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day 0	Day+1	Day-1	Day 0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.15887***	0.00241	-0.31311***	0.15887***	0.16128***	-0.15183*
3	-0.02617	-0.02112	0.03270	-0.02617	-0.04729	-0.01459
4	-0.01256	0.01467	-0.01039	-0.01256	0.00211	-0.00827
5	-0.04177	-0.03195	0.03543	-0.04177	-0.07372	-0.03829
6	0.00722	-0.00835	-0.03037	0.00722	-0.00112	-0.03149
7	0.08953*	0.07713	0.09692*	0.08953*	0.16666***	0.26357***
8	0.04277	0.02751	0.05928	0.04277	0.07028*	0.12956***
9	-0.01073	-0.08523*	0.03871	-0.01073	-0.09596*	-0.05725
10	0.00151	0.02361	0.03606	0.00151	0.02512	0.06118*
11	-0.03520	-0.01171	0.01500	-0.03520	-0.04691	-0.03191
12	0.01142	-0.00152	-0.00049	0.01142	0.00990	0.00941
13	-0.07581*	-0.01675	0.06326*	-0.07581*	-0.09257*	-0.02930
14	-0.04247	0.02558	-0.01937	-0.04247	-0.01689	-0.03626
15	0.02494	0.00194	-0.02004	0.02494	0.02687	0.00683
16	-0.01718	0.06256*	0.00134	-0.01718	0.04538	0.04671
17	0.01948	-0.00417	0.04191	0.01948	0.01531	0.05723
18	-0.03402	0.05980	0.00261	-0.03402	0.02578	0.02839
19	0.04095	-0.02897	0.05310	0.04095	0.01198	0.06507
20	0.01169	0.00051	-0.03064	0.01169	0.01219	-0.01845
21	-0.03057	-0.00128	-0.00049	-0.03057	-0.03185	-0.03234
22	-0.03894	0.03575	-0.00050	-0.03894	-0.00318	-0.00368
23	0.01145	-0.02862	0.02120	0.01145	-0.01717	0.00403
24	-0.00194	-0.00047	-0.01671	-0.00194	-0.00241	-0.01913
25	0.01326	0.01250	-0.00397	0.01326	0.02576	0.02179
26	-0.00278	-0.00008	0.04082	-0.00278	-0.00286	0.03796
27	0.00163	0.00013	-0.08680***	0.00163	0.00177	-0.08504***
28	0.00214	-0.07147*	0.07707	0.00214	-0.06933*	0.00774
29	-0.07136*	0.07695	0.00098	-0.07136*	0.00560	0.00658
30	0.00102	0.05902	0.00108	0.00102	0.06003	0.06112
31	0.03014	0.01522	0.01500	0.03014	0.04537	0.06037
32	-0.02670	-0.04152	0.03139	-0.02670	-0.06822*	-0.03683
33	0.02857	-0.02720	0.04331	0.02857	0.00137	0.04469
34	-0.01291	0.02970	-0.01269	-0.01291	0.01679	0.00410
35	-0.07470*	0.00045	0.05124	-0.07470*	-0.07425*	-0.02301
36	0.00826	-0.00632	0.10898*	0.00826	0.00193	0.11091*
37	0.00287	0.01853	-0.02263	0.00287	0.02140	-0.00122
38	0.02306	0.03646	-0.00838	0.02306	0.05952	0.05114
39	0.00970	0.06392	0.05191	0.00970	0.07362	0.12553*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day 0	Day+1	Day-1	Day 0	Day+1
40	-0.02626	0.15299***	0.05356	-0.02626	0.12672*	0.18028***
41	-0.02528	0.01789	-0.06844	-0.02528	-0.00739	-0.07583
42	0.00008	0.03419	0.01535	0.00008	0.03427	0.04962
43	0.04505	0.01031	-0.01607	0.04505	0.05536	0.03929
44	-0.08196*	0.01343	-0.02008	-0.08196*	-0.06854	-0.08862*
45	-0.01757	0.13309*	-0.03417	-0.01757	0.11552*	0.08135*
46	-0.01195	0.02031	0.03890	-0.01195	0.00836	0.04726
47	-0.01019	0.03279	0.00737	-0.01019	0.02260	0.02997
48	0.00640	-0.00225	-0.02710	0.00640	0.00415	-0.02295
49	-0.02484	0.04419	-0.01017	-0.02484	0.01936	0.00919
50	-0.01318	-0.05388	0.06181*	-0.01318	-0.06706*	-0.00525
51	-0.01208	-0.02330	-0.00920	-0.01208	-0.03538	-0.04459
52	-0.00444	0.05284	-0.02226	-0.00444	0.04840	0.02614
53	-0.01184	-0.02076	-0.00059	-0.01184	-0.03260	-0.03319
54	-0.02828	-0.02173	0.01984	-0.02828	-0.05001	-0.03017
55	0.05221	0.02012	-0.00825	0.05221	0.07233*	0.06408*
56	0.00582	0.05201*	-0.00325	0.00582	0.05783*	0.05458*
57	0.00173	-0.09314*	0.00694	0.00173	-0.09141*	-0.08447*
58	0.00874	-0.02788	0.00166	0.00874	-0.01914	-0.01748
59	0.00263	0.01012	0.00917	0.00263	0.01274	0.02192
60	-0.00941	0.01077	-0.00597	-0.00941	0.00136	-0.00460
61	0.00008	0.00869	-0.00184	0.00008	0.00877	0.00693
62	0.00084	0.00803	0.02649	0.00084	0.00888	0.03537
63	-0.00387	0.00651	-0.00090	-0.00387	0.00264	0.00174
64	-0.01683	0.05808*	0.01985	-0.01683	0.04126*	0.06110*
65	-0.01112	0.00689	0.00292	-0.01112	-0.00423	-0.00131
66	0.00659	0.00942	-0.03514*	0.00659	0.01601	-0.01914
67	-0.00545	0.04075*	-0.00396	-0.00545	0.03530*	0.03134
68	-0.01164	-0.00810	-0.01744	-0.01164	-0.01975	-0.03719*
69	-0.04317	0.00707	0.02859	-0.04317	-0.03609	-0.00751
70	0.02674	-0.01323	0.00016	0.02674	0.01351	0.01367
71	0.04052	0.01349	0.00035	0.04052	0.05402*	0.05437*
72	-0.00118	0.03691*	0.02998	-0.00118	0.03573*	0.06572***
73	-0.01229	0.01136	-0.00271	-0.01229	-0.00093	-0.00364
74	0.00167	0.01672	0.00306	0.00167	0.01839	0.02145
75	0.00083	0.08505***	-0.04982***	0.00083	0.08588***	0.03605*
76	-0.01593	0.00026	-0.01526	-0.01593	-0.01567	-0.03093
77	0.01025	-0.01124	0.01467	0.01025	-0.00099	0.01368
78	0.01961	-0.00745	0.01233	0.01961	0.01216	0.02449
79	-0.01000	0.01530	0.00540	-0.01000	0.00530	0.01069

Model 2 Estimation window -250 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day 0	Day+1	Day-1	Day 0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.15788***	0.00270	-0.30517***	0.15788***	0.16058***	-0.14459*
3	-0.02517	-0.01800	0.03448	-0.02517	-0.04317	-0.00868
4	-0.00933	0.01261	-0.00758	-0.00933	0.00328	-0.00430
5	-0.04090	-0.02905	0.03678	-0.04090	-0.06995	-0.03317
6	0.00630	-0.00726	-0.03074	0.00630	-0.00095	-0.03169
7	0.08740*	0.07510	0.09483*	0.08740*	0.16250*	0.25733***
8	0.04124	0.02511	0.05513	0.04124	0.06635	0.12148***
9	-0.01325	-0.08677*	0.03736	-0.01325	-0.10003*	-0.06266
10	0.00200	0.02415	0.03654	0.00200	0.02616	0.06270*
11	-0.03454	-0.01110	0.01428	-0.03454	-0.04563	-0.03136
12	0.01220	-0.00019	0.00036	0.01220	0.01201	0.01236
13	-0.07690*	-0.01784	0.06217*	-0.07690*	-0.09475*	-0.03257
14	-0.04302	0.02562	-0.01983	-0.04302	-0.01740	-0.03723
15	0.02513	0.00218	-0.02003	0.02513	0.02732	0.00728
16	-0.01811	0.06246*	0.00190	-0.01811	0.04435	0.04625
17	0.02004	-0.00289	0.04158	0.02004	0.01715	0.05873*
18	-0.03210	0.06192	0.00301	-0.03210	0.02983	0.03284
19	0.04266	-0.02721	0.05478	0.04266	0.01545	0.07023*
20	0.01278	0.00105	-0.02874	0.01278	0.01383	-0.01492
21	-0.02879	-0.00004	0.00058	-0.02879	-0.02883	-0.02824
22	-0.03764	0.03636	0.00059	-0.03764	-0.00128	-0.00069
23	0.01162	-0.02855	0.02060	0.01162	-0.01693	0.00367
24	-0.00244	-0.00091	-0.01728	-0.00244	-0.00335	-0.02062
25	0.01410	0.01334	-0.00313	0.01410	0.02744	0.02431
26	0.00145	-0.00265	0.03873	0.00145	-0.00120	0.03753
27	0.00062	-0.00202	-0.08894*	0.00062	-0.00140	-0.09034*
28	-0.00016	-0.06824*	0.07400	-0.00016	-0.06840*	0.00561
29	-0.06812*	0.07410	-0.00056	-0.06812*	0.00598	0.00542
30	0.00037	0.05859	0.00097	0.00037	0.05896	0.05993
31	0.03092	0.01504	0.01475	0.03092	0.04597	0.06071
32	-0.02695	-0.04351	0.02906	-0.02695	-0.07046*	-0.04140
33	0.02943	-0.02730	0.04182	0.02943	0.00213	0.04395
34	-0.01294	0.02781	-0.01228	-0.01294	0.01487	0.00259
35	-0.07693*	0.00195	0.05721	-0.07693*	-0.07498*	-0.01777
36	0.00763	-0.00359	0.10609*	0.00763	0.00404	0.11013*
37	0.00691	0.01714	-0.02312	0.00691	0.02405	0.00093
38	0.02356	0.03744	-0.00585	0.02356	0.06100	0.05515
39	0.00859	0.06253	0.05132	0.00859	0.07112	0.12245*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day 0	Day+1	Day-1	Day 0	Day+1
40	-0.02584	0.15160***	0.05315	-0.02584	0.12576*	0.17891***
41	-0.02609	0.01690	-0.06940	-0.02609	-0.00919	-0.07859*
42	-0.00076	0.03247	0.01298	-0.00076	0.03171	0.04469
43	0.04365	0.00994	-0.01666	0.04365	0.05359	0.03693
44	-0.08207*	0.01296	-0.01913	-0.08207*	-0.06911	-0.08825*
45	-0.01632	0.13394*	-0.03281	-0.01632	0.11763*	0.08481*
46	-0.01233	0.02068	0.03931	-0.01233	0.00835	0.04766
47	-0.01005	0.03319	0.00764	-0.01005	0.02314	0.03078
48	0.00619	-0.00263	-0.02763	0.00619	0.00356	-0.02407
49	-0.02508	0.04394	-0.01041	-0.02508	0.01886	0.00845
50	-0.01163	-0.05435	0.06209*	-0.01163	-0.06598	-0.00390
51	-0.01294	-0.02300	-0.00886	-0.01294	-0.03594	-0.04480
52	-0.00546	0.05631	-0.02187	-0.00546	0.05086	0.02898
53	-0.01175	-0.02199	-0.00024	-0.01175	-0.03374	-0.03398
54	-0.03072	-0.02332	0.01743	-0.03072	-0.05404	-0.03661
55	0.05097	0.01803	-0.00907	0.05097	0.06900*	0.05993*
56	0.00664	0.05297	-0.00220	0.00664	0.05961*	0.05741*
57	0.00157	-0.09390*	0.00808	0.00157	-0.09232*	-0.08424*
58	0.00868	-0.02820	0.00166	0.00868	-0.01952	-0.01786
59	0.00205	0.00863	0.00733	0.00205	0.01068	0.01801
60	-0.00940	0.01000	-0.00616	-0.00940	0.00060	-0.00556
61	-0.00089	0.00788	-0.00252	-0.00089	0.00699	0.00448
62	0.00244	0.00871	0.02699	0.00244	0.01115	0.03814*
63	-0.00435	0.00739	-0.00023	-0.00435	0.00304	0.00281
64	-0.01668	0.05841*	0.02072	-0.01668	0.04173*	0.06245*
65	-0.00976	0.00780	0.00284	-0.00976	-0.00196	0.00087
66	0.00741	0.01058	-0.03390*	0.00741	0.01799	-0.01591
67	-0.00654	0.04337*	-0.00842	-0.00654	0.03683*	0.02841
68	-0.01232	-0.00386	-0.01933	-0.01232	-0.01618	-0.03551*
69	-0.04142	0.00720	0.02735	-0.04142	-0.03423	-0.00688
70	0.02597	-0.01319	0.00006	0.02597	0.01278	0.01284
71	0.04070*	0.01357	0.00032	0.04070*	0.05427*	0.05460*
72	-0.00065	0.03714*	0.02983	-0.00065	0.03650	0.06633***
73	-0.01234	0.01058	-0.00354	-0.01234	-0.00176	-0.00530
74	0.00138	0.01630	0.00244	0.00138	0.01768	0.02012
75	0.00082	0.08535***	-0.04988*	0.00082	0.08617***	0.03629*
76	-0.01527	0.00003	-0.01562	-0.01527	-0.01524	-0.03086
77	0.00979	-0.01148	0.01464	0.00979	-0.00168	0.01295
78	0.01981	-0.00727	0.01251	0.01981	0.01254	0.02505
79	-0.00963	0.01522	0.00457	-0.00963	0.00559	0.01016

Model 3 Estimation window -300 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day	Day+1	Day-1	Day	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.15788***	0.00270	-0.30517***	0.15788***	0.16058***	-0.14459*
3	-0.02946	-0.01122	0.03428	-0.02946	-0.04069	-0.00641
4	-0.01110	0.01617	-0.00893	-0.01110	0.00507	-0.00386
5	-0.04061	-0.02923	0.03696	-0.04061	-0.06984	-0.03289
6	0.00768	-0.00677	-0.02961	0.00768	0.00091	-0.02870
7	0.08797*	0.07584	0.09546*	0.08797*	0.16381*	0.25926***
8	0.04081	0.02455	0.05430	0.04081	0.06536	0.11966**
9	-0.01487	-0.08784*	0.03641	-0.01487	-0.10271*	-0.06630
10	0.00246	0.02246	0.03770	0.00246	0.02492	0.06262
11	-0.03617	-0.01255	0.01870	-0.03617	-0.04871	-0.03001
12	0.01183	0.00072	0.00015	0.01183	0.01255	0.01270
13	-0.07760*	-0.01841	0.06114*	-0.07760*	-0.09600*	-0.03486
14	-0.04405	0.02546	-0.02076	-0.04405	-0.01860	-0.03936
15	0.02441	0.00150	-0.02091	0.02441	0.02591	0.00500
16	-0.01743	0.06270*	0.00180	-0.01743	0.04527	0.04707
17	0.02098	-0.00171	0.04225	0.02098	0.01928	0.06152*
18	-0.03198	0.06217*	0.00217	-0.03198	0.03019	0.03235
19	0.04279	-0.02719	0.05498	0.04279	0.01560	0.07058*
20	0.01362	0.00227	-0.02845	0.01362	0.01590	-0.01255
21	-0.02835	0.00070	0.00141	-0.02835	-0.02765	-0.02624
22	-0.03684	0.03784	0.00159	-0.03684	0.00100	0.00259
23	0.01254	-0.02752	0.02239	0.01254	-0.01498	0.00741
24	-0.00226	-0.00023	-0.01763	-0.00226	-0.00249	-0.02011
25	0.01402	0.01321	-0.00344	0.01402	0.02723	0.02379
26	0.00141	-0.00311	0.03830	0.00141	-0.00171	0.03660
27	-0.00015	0.00044	-0.08653*	-0.00015	0.00029	-0.08624*
28	-0.00022	-0.06591*	0.07361	-0.00022	-0.06614*	0.00747
29	-0.06590*	0.07361	-0.00046	-0.06590*	0.00771	0.00725
30	-0.00128	0.05710	-0.00031	-0.00128	0.05582	0.05551
31	0.03019	0.01337	0.01299	0.03019	0.04356	0.05655
32	-0.02792	-0.04553	0.02684	-0.02792	-0.07345*	-0.04662
33	0.02857	-0.02869	0.03966	0.02857	-0.00012	0.03954
34	-0.01316	0.02634	-0.01221	-0.01316	0.01317	0.00097
35	-0.07612*	0.00149	0.05523	-0.07612*	-0.07463*	-0.01940
36	0.00732	-0.00409	0.10592*	0.00732	0.00323	0.10915*
37	0.00776	0.01578	-0.02411	0.00776	0.02354	-0.00057
38	0.02340	0.03755	-0.00486	0.02340	0.06095	0.05609
39	0.00800	0.06140	0.05172	0.00800	0.06941	0.12113*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day	Day+1	Day-1	Day	Day+1
40	-0.02327	0.15027***	0.05394	-0.02327	0.12700*	0.18094***
41	-0.02538	0.01722	-0.06902	-0.02538	-0.00816	-0.07718*
42	0.00005	0.03217	0.01187	0.00005	0.03222	0.04408
43	0.03968	0.00805	-0.01901	0.03968	0.04773	0.02871
44	-0.08299*	0.01135	-0.01799	-0.08299*	-0.07164	-0.08963*
45	-0.01538	0.13455**	-0.03179	-0.01538	0.11917*	0.08738*
46	-0.01385	0.02417	0.04311	-0.01385	0.01032	0.05344
47	-0.01101	0.03586	0.00854	-0.01101	0.02485	0.03339
48	0.00684	-0.00189	-0.02683	0.00684	0.00495	-0.02188
49	-0.02418	0.04491	-0.00950	-0.02418	0.02073	0.01123
50	-0.01100	-0.05421	0.06241	-0.01100	-0.06520	-0.00279
51	-0.01328	-0.02297	-0.00882	-0.01328	-0.03625	-0.04507
52	-0.00633	0.05620	-0.02251	-0.00633	0.04987	0.02737
53	-0.01247	-0.02288	-0.00093	-0.01247	-0.03535	-0.03627
54	-0.03591	-0.02618	0.01235	-0.03591	-0.06209*	-0.04974
55	0.05036	0.01665	-0.00932	0.05036	0.06701*	0.05769*
56	0.00553	0.05238*	-0.00246	0.00553	0.05791*	0.05544*
57	0.00132	-0.09398*	0.00745	0.00132	-0.09266*	-0.08521*
58	0.00994	-0.02717	0.00297	0.00994	-0.01723	-0.01426
59	0.00365	0.00962	0.00807	0.00365	0.01327	0.02134
60	-0.00785	0.01157	-0.00460	-0.00785	0.00372	-0.00088
61	-0.00189	0.00716	-0.00300	-0.00189	0.00527	0.00227
62	0.00107	0.00757	0.02589	0.00107	0.00864	0.03453
63	-0.00473	0.00681	-0.00078	-0.00473	0.00208	0.00130
64	-0.01710	0.05808*	0.02065	-0.01710	0.04099*	0.06164*
65	-0.00960	0.00771	0.00223	-0.00960	-0.00189	0.00034
66	0.00776	0.01189	-0.03238	0.00776	0.01965	-0.01273
67	-0.00686	0.04360*	-0.00926	-0.00686	0.03673*	0.02748
68	-0.01297	-0.00216	-0.02056	-0.01297	-0.01512	-0.03568*
69	-0.03922*	0.00742	0.02591	-0.03922*	-0.03180	-0.00589
70	0.02594	-0.01231	0.00077	0.02594	0.01363	0.01440
71	0.04053*	0.01354	0.00044	0.04053*	0.05408*	0.05452*
72	-0.00065	0.03697	0.02945	-0.00065	0.03632	0.06577**
73	-0.01315	0.00944	-0.00470	-0.01315	-0.00370	-0.00840
74	0.00109	0.01601	0.00216	0.00109	0.01710	0.01926
75	0.00078	0.08458***	-0.04982*	0.00078	0.08536***	0.03555*
76	-0.01641	0.00057	-0.01484	-0.01641	-0.01585	-0.03069
77	0.00990	-0.01134	0.01480	0.00990	-0.00144	0.01335
78	0.02013	-0.00662	0.01308	0.02013	0.01350	0.02658
79	-0.00944	0.01536	0.00463	-0.00944	0.00592	0.01055

Model 4 Estimation window -350 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day	Day+1	Day-1	Day	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.15788***	0.00270	-0.30517***	0.15788***	0.16058***	-0.14459*
3	-0.02946	-0.01122	0.03428	-0.02946	-0.04069	-0.00641
4	-0.00571	0.01044	-0.00442	-0.00571	0.00474	0.00032
5	-0.04057	-0.02411	0.03820	-0.04057	-0.06468	-0.02649
6	0.00721	-0.00593	-0.02972	0.00721	0.00128	-0.02844
7	0.08869	0.07705	0.09636	0.08869	0.16575*	0.26211***
8	0.04003	0.02452	0.05579	0.04003	0.06455	0.12034**
9	-0.01383	-0.08778*	0.03627	-0.01383	-0.10162*	-0.06534
10	0.00186	0.02096	0.03740	0.00186	0.02282	0.06022
11	-0.03808	-0.01439	0.01896	-0.03808	-0.05247	-0.03351
12	0.01268	0.00124	0.00096	0.01268	0.01392	0.01487
13	-0.07796*	-0.01866	0.06050*	-0.07796*	-0.09661*	-0.03611
14	-0.04450	0.02454	-0.02127	-0.04450	-0.01996	-0.04123
15	0.02390	0.00100	-0.02144	0.02390	0.02489	0.00345
16	-0.01839	0.06233*	0.00188	-0.01839	0.04394	0.04582
17	0.02147	-0.00115	0.04264	0.02147	0.02031	0.06296*
18	-0.03137	0.06284*	0.00232	-0.03137	0.03147	0.03379
19	0.04288	-0.02717	0.05513	0.04288	0.01572	0.07085*
20	0.01408	0.00233	-0.02742	0.01408	0.01641	-0.01101
21	-0.02729	0.00117	0.00170	-0.02729	-0.02613	-0.02442
22	-0.03742	0.03769	0.00114	-0.03742	0.00028	0.00142
23	0.01334	-0.02677	0.02276	0.01334	-0.01343	0.00933
24	-0.00065	0.00067	-0.01525	-0.00065	0.00003	-0.01523
25	0.01491	0.01413	-0.00244	0.01491	0.02903	0.02660
26	0.00335	-0.00447	0.03718	0.00335	-0.00112	0.03606
27	-0.00041	-0.00047	-0.08743*	-0.00041	-0.00089	-0.08832**
28	-0.00001	-0.06392*	0.07358*	-0.00001	-0.06392*	0.00966
29	-0.06392*	0.07358*	-0.00005	-0.06392*	0.00967	0.00961
30	-0.00114	0.05738	0.00018	-0.00114	0.05624	0.05641
31	0.03076	0.01358	0.01317	0.03076	0.04434	0.05752
32	-0.02813	-0.04413	0.02855	-0.02813	-0.07226*	-0.04371
33	0.02765	-0.02873	0.04090	0.02765	-0.00108	0.03982
34	-0.01460	0.02677	-0.01408	-0.01460	0.01218	-0.00191
35	-0.07572*	0.00051	0.05261	-0.07572*	-0.07521*	-0.02260
36	0.00729	-0.00385	0.10570*	0.00729	0.00344	0.10913*
37	0.00785	0.01564	-0.02421	0.00785	0.02349	-0.00072
38	0.02309	0.03724	-0.00520	0.02309	0.06034	0.05514
39	0.00810	0.06153	0.05175	0.00810	0.06963	0.12138*

Event	Daily Abnormal Returns			Cumulative Abnormal Returns		
	Day-1	Day	Day+1	Day-1	Day	Day+1
40	-0.02373	0.15031***	0.05370	-0.02373	0.12658*	0.18029***
41	-0.02586	0.01679	-0.06946*	-0.02586	-0.00906	-0.07852*
42	0.00035	0.03193	0.01123	0.00035	0.03229	0.04352
43	0.03764	0.00797	-0.01953	0.03764	0.04560	0.02607
44	-0.08264*	0.01092	-0.01532	-0.08264*	-0.07173*	-0.08704*
45	-0.01478	0.13456**	-0.03103	-0.01478	0.11978*	0.08875*
46	-0.01357	0.02442	0.04337	-0.01357	0.01086	0.05422
47	-0.01064	0.03831	0.00997	-0.01064	0.02767	0.03764
48	0.00751	-0.00037	-0.02454	0.00751	0.00714	-0.01740
49	-0.02422	0.04481	-0.00955	-0.02422	0.02059	0.01104
50	-0.01191	-0.05437	0.06197	-0.01191	-0.06628*	-0.00431
51	-0.01284	-0.02272	-0.00857	-0.01284	-0.03556	-0.04413
52	-0.00581	0.05636	-0.02210	-0.00581	0.05055	0.02844
53	-0.01189	-0.02241	-0.00032	-0.01189	-0.03429	-0.03461
54	-0.03502	-0.02538	0.01324	-0.03502	-0.06040	-0.04716
55	0.05123	0.01693	-0.00816	0.05123	0.06816*	0.06000*
56	0.00416	0.05234*	-0.00167	0.00416	0.05651*	0.05483*
57	-0.00048	-0.09621*	0.00661	-0.00048	-0.09668*	-0.09008*
58	0.00916	-0.02824	0.00226	0.00916	-0.01908	-0.01682
59	0.00286	0.00744	0.00533	0.00286	0.01031	0.01563
60	-0.00792	0.00959	-0.00516	-0.00792	0.00167	-0.00349
61	-0.00068	0.00841	-0.00174	-0.00068	0.00773	0.00599
62	0.00048	0.00802	0.02655	0.00048	0.00850	0.03505
63	-0.00473	0.00653	-0.00102	-0.00473	0.00180	0.00078
64	-0.01705	0.05804*	0.02036	-0.01705	0.04099	0.06135*
65	-0.01027	0.00715	0.00190	-0.01027	-0.00312	-0.00122
66	0.00735	0.01139	-0.03290	0.00735	0.01874	-0.01416
67	-0.00660	0.04558*	-0.01056	-0.00660	0.03898*	0.02842
68	-0.01256	0.00109	-0.02085	-0.01256	-0.01147	-0.03232
69	-0.03127	0.00828	0.02078	-0.03127	-0.02299	-0.00221
70	0.02183	-0.00938	0.00241	0.02183	0.01244	0.01485
71	0.03667*	0.01101	-0.00068	0.03667*	0.04768*	0.04701*
72	-0.00088	0.03678*	0.02932	-0.00088	0.03591*	0.06522**
73	-0.01311	0.00938	-0.00477	-0.01311	-0.00373	-0.00850
74	0.00104	0.01584	0.00182	0.00104	0.01688	0.01871
75	0.00048	0.08395***	-0.05007*	0.00048	0.08443***	0.03436
76	-0.01795	0.00019	-0.01504	-0.01795	-0.01776	-0.03280
77	0.00896	-0.01205	0.01431	0.00896	-0.00309	0.01122
78	0.02008	-0.00660	0.01308	0.02008	0.01347	0.02656
79	-0.00900	0.01561	0.00455	-0.00900	0.00660	0.01115

Model 5 Estimation window -400 to -11 days before the event

Event	Daily Abnormal Returns			Cumulative Abnormal Returns		
	Day-1	Day	Day+1	Day-1	Day	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.15788***	0.00270	-0.30517***	0.15788***	0.16058***	-0.14459*
3	-0.02946	-0.01122	0.03428	-0.02946	-0.04069	-0.00641
4	-0.00571	0.01044	-0.00442	-0.00571	0.00474	0.00032
5	-0.04056	-0.01750	0.03977	-0.04056	-0.05806	-0.01829
6	0.00915	-0.00576	-0.02826	0.00915	0.00339	-0.02487
7	0.08904	0.07674	0.09646	0.08904	0.16577**	0.26224***
8	0.04031	0.02485	0.05622	0.04031	0.06517	0.12138**
9	-0.01352	-0.08720*	0.03690	-0.01352	-0.10072*	-0.06382
10	0.00137	0.02101	0.03673	0.00137	0.02238	0.05911
11	-0.03829	-0.01459	0.01891	-0.03829	-0.05288	-0.03397
12	0.01165	0.00239	0.00020	0.01165	0.01404	0.01424
13	-0.07837*	-0.01903	0.05998*	-0.07837*	-0.09740*	-0.03742
14	-0.04484	0.02394	-0.02164	-0.04484	-0.02090	-0.04254
15	0.02350	0.00055	-0.02163	0.02350	0.02405	0.00242
16	-0.01902	0.06178*	0.00139	-0.01902	0.04276	0.04415
17	0.02114	-0.00130	0.04209	0.02114	0.01984	0.06194*
18	-0.03112	0.06307*	0.00274	-0.03112	0.03195	0.03469
19	0.04331	-0.02675	0.05556	0.04331	0.01656	0.07212*
20	0.01420	0.00259	-0.02748	0.01420	0.01679	-0.01069
21	-0.02737	0.00128	0.00187	-0.02737	-0.02610	-0.02423
22	-0.03725	0.03819	0.00141	-0.03725	0.00094	0.00235
23	0.01378	-0.02625	0.02381	0.01378	-0.01247	0.01134
24	-0.00033	0.00081	-0.01474	-0.00033	0.00048	-0.01425
25	0.01520	0.01446	-0.00192	0.01520	0.02966	0.02775
26	0.00300	-0.00224	0.03922	0.00300	0.00076	0.03998
27	-0.00049	0.00029	-0.08668**	-0.00049	-0.00020	-0.08688**
28	-0.00035	-0.06261*	0.07301*	-0.00035	-0.06296*	0.01005
29	-0.06261*	0.07301*	-0.00022	-0.06261*	0.01040	0.01018
30	-0.00098	0.05740	0.00001	-0.00098	0.05641	0.05642
31	0.03064	0.01384	0.01346	0.03064	0.04447	0.05793
32	-0.02758	-0.04494	0.02747	-0.02758	-0.07253*	-0.04505
33	0.02873	-0.02841	0.04010	0.02873	0.00031	0.04042
34	-0.01378	0.02533	-0.01273	-0.01378	0.01155	-0.00118
35	-0.07790*	0.00003	0.05415	-0.07790*	-0.07786*	-0.02371
36	0.00595	-0.00488	0.10416*	0.00595	0.00107	0.10522*
37	0.00680	0.01440	-0.02543	0.00680	0.02120	-0.00423
38	0.02213	0.03631	-0.00605	0.02213	0.05844	0.05238
39	0.00763	0.06113	0.05117	0.00763	0.06876	0.11994*

Event	Daily Abnormal Returns Day-1	Day	Day+1	Cumulative Abnormal Returns Day-1	Day	Day+1
40	-0.02390	0.15018***	0.05356	-0.02390	0.12629*	0.17984***
41	-0.02575	0.01687	-0.06938*	-0.02575	-0.00889	-0.07827*
42	0.00010	0.03173	0.01107	0.00010	0.03183	0.04289
43	0.03626	0.00768	-0.02006	0.03626	0.04395	0.02389
44	-0.08311*	0.00965	-0.01338	-0.08311*	-0.07346*	-0.08684*
45	-0.01367	0.13474**	-0.02966	-0.01367	0.12107*	0.09141*
46	-0.01322	0.02484	0.04379	-0.01322	0.01162	0.05541
47	-0.01032	0.03873	0.01034	-0.01032	0.02840	0.03874
48	0.00763	0.00116	-0.02172	0.00763	0.00880	-0.01292
49	-0.02497	0.04305	-0.01042	-0.02497	0.01808	0.00766
50	-0.01287	-0.05212	0.06303	-0.01287	-0.06499	-0.00196
51	-0.00919	-0.02178	-0.00773	-0.00919	-0.03097	-0.03870
52	-0.00368	0.05492	-0.02109	-0.00368	0.05124	0.03015
53	-0.01172	-0.02206	-0.00018	-0.01172	-0.03378	-0.03396
54	-0.03547	-0.02568	0.01279	-0.03547	-0.06115	-0.04836
55	0.05034	0.01588	-0.00897	0.05034	0.06622*	0.05724
56	0.00134	0.05264	0.00058	0.00134	0.05398	0.05456
57	-0.00331	-0.09995*	0.00575	-0.00331	-0.10327*	-0.09752*
58	0.00914	-0.02868	0.00234	0.00914	-0.01954	-0.01720
59	0.00273	0.00522	0.00226	0.00273	0.00795	0.01021
60	-0.00748	0.00843	-0.00513	-0.00748	0.00095	-0.00418
61	-0.00240	0.00717	-0.00258	-0.00240	0.00477	0.00219
62	0.00121	0.00806	0.02645	0.00121	0.00927	0.03572
63	-0.00420	0.00707	-0.00049	-0.00420	0.00287	0.00238
64	-0.01619	0.05888*	0.02110	-0.01619	0.04269	0.06379*
65	-0.00973	0.00786	0.00298	-0.00973	-0.00186	0.00111
66	0.00713	0.01098	-0.03335	0.00713	0.01811	-0.01524
67	-0.00705	0.04524*	-0.01111	-0.00705	0.03819	0.02708
68	-0.01300	0.00107	-0.02139	-0.01300	-0.01193	-0.03332
69	-0.02846	0.00898	0.01972	-0.02846	-0.01948	0.00024
70	0.02167	-0.00815	0.00339	0.02167	0.01353	0.01691
71	0.03274	0.00842	-0.00187	0.03274	0.04116*	0.03929*
72	-0.00034	0.03720*	0.02958	-0.00034	0.03686*	0.06645**
73	-0.01313	0.00935	-0.00480	-0.01313	-0.00377	-0.00857
74	0.00089	0.01568	0.00163	0.00089	0.01656	0.01819
75	0.00035	0.08389***	-0.05021*	0.00035	0.08424***	0.03402
76	-0.01819	0.00025	-0.01494	-0.01819	-0.01795	-0.03289
77	0.00867	-0.01223	0.01423	0.00867	-0.00356	0.01067
78	0.02018	-0.00642	0.01325	0.02018	0.01376	0.02701
79	-0.00762	0.01612	0.00359	-0.00762	0.00851	0.01210

Appendix 14 - Limited Intervention Approach where Event and Shoulder days are represented by dummy variables = Capitalised Asset Value (CAP)

Model 1 Estimation window -200 to -11 days before the event

	Daily Abnormal returns			**Cumulative Abnormal Returns**		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.80106***	-0.36663***	-0.53468***	0.80106***	0.43443***	-0.10025
3	0.01365	-0.04353	0.02044	0.01365	-0.02988	-0.00943
4	-0.02284	0.01471	0.01041	-0.02284	-0.00813	0.00228
5	-0.05902	-0.03173	0.07014	-0.05902	-0.09075*	-0.02061
6	-0.00569	-0.00822	-0.00430	-0.00569	-0.01391	-0.01821
7	0.11878*	0.09371*	0.06834	0.11878*	0.21248***	0.28082***
8	0.04290	0.02764	0.05939	0.04290	0.07054*	0.12992***
9	-0.01070	-0.08523*	0.03871	-0.01070	-0.09593*	-0.05721
10	0.00271	0.02428	0.03768	0.00271	0.02699	0.06467*
11	-0.04700	-0.01932	-0.00229	-0.04700	-0.06632*	-0.06861*
12	0.01106	-0.00173	-0.00105	0.01106	0.00933	0.00828
13	-0.07597*	-0.01690	0.06307*	-0.07597*	-0.09287*	-0.02980
14	-0.04240	0.02556	-0.01930	-0.04240	-0.01684	-0.03614
15	-0.03352	-0.01155	0.02410	-0.03352	-0.04506	-0.02097
16	0.08366*	0.08648***	-0.07382	0.08366*	0.17013***	0.09632***
17	0.01819	0.00281	0.04196	0.01819	0.02101	0.06296*
18	-0.02916	0.04248	0.00276	-0.02916	0.01332	0.01608
19	0.07179*	-0.12304***	0.05577	0.07179*	-0.05125	0.00452
20	0.01297	-0.00382	-0.00011	0.01297	0.00915	0.00904
21	-0.07081*	-0.09443*	0.00287	-0.07081*	-0.16524***	-0.16237***
22	-0.03232	0.03099	0.00808	-0.03232	-0.00133	0.00675
23	-0.08032*	0.03815	-0.09815*	-0.08032*	-0.04217	-0.14032***
24	-0.00179	-0.00073	-0.01647	-0.00179	-0.00252	-0.01899
25	0.01005	0.02048	-0.00967	0.01005	0.03052	0.02085
26	-0.00409	0.00312	0.03789	-0.00409	-0.00097	0.03691
27	-0.00191	0.00667	-0.09407***	-0.00191	0.00476	-0.08931***
28	0.00107	-0.07227*	0.07971*	0.00107	-0.07120*	0.00851
29	-0.07209*	0.07961*	-0.00508	-0.07209*	0.00752	0.00245
30	0.00185	0.05749	0.00269	0.00185	0.05935	0.06204
31	0.01955	0.00463	0.01443	0.01955	0.02418	0.03861
32	-0.03064	-0.04557	0.03060	-0.03064	-0.07621*	-0.04561
33	0.02856	-0.02720	0.04331	0.02856	0.00136	0.04467
34	-0.00117	0.04128	-0.01155	-0.00117	0.04011	0.02855
35	-0.07469*	0.00033	0.05097	-0.07469*	-0.07436*	-0.02339
36	0.01551	-0.01769	0.25408***	0.01551	-0.00218	0.25190***
37	0.00497	0.01646	0.00492	0.00497	0.02143	0.02635
38	0.01246	0.04635	0.16757***	0.01246	0.05882	0.22639***
39	0.00966	0.06388	0.05188	0.00966	0.07354	0.12542*

	Daily Abnormal returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.12760*	-0.00480	0.07963*	-0.12760*	-0.13240*	-0.05277
41	-0.02611	0.01657	-0.06815	-0.02611	-0.00954	-0.07769*
42	0.02705	-0.12197*	-0.03925	0.02705	-0.09492*	-0.13417*
43	0.04507	0.01027	-0.01609	0.04507	0.05534	0.03925
44	-0.08198*	0.00957	-0.02174	-0.08198*	-0.07241	-0.09415*
45	-0.01708	0.12676*	-0.03547	-0.01708	0.10968*	0.07421
46	-0.01190	0.01581	0.03876	-0.01190	0.00391	0.04267
47	-0.01006	0.02701	0.00809	-0.01006	0.01695	0.02504
48	0.00669	-0.00952	-0.02595	0.00669	-0.00283	-0.02878
49	-0.02400	0.03698	-0.00855	-0.02400	0.01298	0.00443
50	-0.01396	-0.04589	0.06017*	-0.01396	-0.05984	0.00033
51	-0.01254	-0.02025	-0.00983	-0.01254	-0.03279	-0.04262
52	0.03610	-0.00547	-0.13281***	0.03610	0.03062	-0.10219*
53	-0.01188	-0.02080	-0.00064	-0.01188	-0.03268	-0.03332
54	-0.02816	-0.02215	0.02017	-0.02816	-0.05030	-0.03013
55	0.05145	0.00626	-0.00227	0.05145	0.05771*	0.05544*
56	-0.00543	0.04754	-0.00125	-0.00543	0.04211	0.04086
57	0.00160	-0.09331*	0.00688	0.00160	-0.09172*	-0.08484*
58	0.01842	-0.02397	-0.00009	0.01842	-0.00555	-0.00564
59	-0.00607	0.00662	0.01066	-0.00607	0.00056	0.01122
60	-0.02420	0.00520	-0.00354	-0.02420	-0.01900	-0.02254
61	0.00251	0.00966	-0.00224	0.00251	0.01217	0.00993
62	-0.15386***	-0.05180*	0.04997*	-0.15386***	-0.20566***	-0.15569***
63	-0.00390	0.00601	-0.00251	-0.00390	0.00211	-0.00040
64	-0.01600	0.05432*	0.00626	-0.01600	0.03832*	0.04458*
65	-0.01117	0.00684	0.00288	-0.01117	-0.00433	-0.00145
66	0.00653	0.00876	-0.03662*	0.00653	0.01529	-0.02133
67	-0.00037	0.03651*	-0.02064	-0.00037	0.03614*	0.01550
68	-0.01164	-0.00810	-0.01744	-0.01164	-0.01975	-0.03719*
69	-0.04239	0.00639	0.02606	-0.04239	-0.03600	-0.00994
70	0.02971	-0.03446	0.00300	0.02971	-0.00475	-0.00174
71	0.04215*	0.00150	0.00196	0.04215*	0.04365*	0.04561*
72	-0.00783	0.03081	0.03091	-0.00783	0.02298	0.05388***
73	-0.03334	0.01878	-0.00578	-0.03334	-0.01456	-0.02034
74	-0.04481*	0.03484*	-0.00246	-0.04481*	-0.00997	-0.01243
75	-0.00651	0.02118	-0.06180***	-0.00651	0.01467	-0.04712***
76	-0.01510	0.00823	-0.01379	-0.01510	-0.00686	-0.02066
77	0.01035	-0.01117	0.01470	0.01035	-0.00082	0.01389
78	0.01978	-0.02344	0.02197	0.01978	-0.00366	0.01831
79	-0.01437	0.01716	0.00275	-0.01437	0.00280	0.00554

Model 2 Estimation window -250 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.79225***	-0.37413***	-0.50951***	0.79225***	0.41812***	-0.09138
3	0.01405	-0.04060	0.02200	0.01405	-0.02655	-0.00456
4	-0.01931	0.01327	0.00704	-0.01931	-0.00605	0.00100
5	-0.05822	-0.02903	0.07131	-0.05822	-0.08725*	-0.01593
6	-0.00662	-0.00715	-0.00480	-0.00662	-0.01377	-0.01857
7	0.07477	0.07519	0.12022*	0.07477	0.14997*	0.27019***
8	-0.12636*	-0.11296*	-0.12377*	-0.12636*	-0.23931***	-0.36309***
9	-0.01353	-0.08694*	0.03722	-0.01353	-0.10047*	-0.06325
10	0.00270	0.02461	0.03757	0.00270	0.02731	0.06488*
11	-0.04678	-0.01916	-0.00278	-0.04678	-0.06594	-0.06872*
12	0.01186	-0.00034	-0.00017	0.01186	0.01152	0.01135
13	-0.07690*	-0.01784	0.06217*	-0.07690*	-0.09474*	-0.03258
14	-0.04308	0.02557	-0.01990	-0.04308	-0.01751	-0.03741
15	-0.03279	-0.01081	0.02478	-0.03279	-0.04360	-0.01882
16	0.08212*	0.08597**	-0.07435	0.08212*	0.16810***	0.09375***
17	0.01832	0.00382	0.04152	0.01832	0.02214	0.06366*
18	-0.02724	0.04430	0.00272	-0.02724	0.01706	0.01978
19	0.07029*	-0.12409**	0.05497	0.07029*	-0.05380	0.00117
20	0.01444	-0.00292	0.00111	0.01444	0.01151	0.01262
21	-0.07002*	-0.09467*	0.00159	-0.07002*	-0.16469***	-0.16310***
22	-0.03034	0.03224	0.00981	-0.03034	0.00190	0.01171
23	-0.08069*	0.03752	-0.09901**	-0.08069*	-0.04317	-0.14219***
24	-0.00243	-0.00129	-0.01720	-0.00243	-0.00372	-0.02093
25	0.01063	0.02105	-0.00912	0.01063	0.03169	0.02256
26	0.00003	0.00031	0.03592	0.00003	0.00034	0.03626
27	-0.00250	0.00474	-0.09629*	-0.00250	0.00223	-0.09405*
28	-0.00118	-0.06838*	0.07722*	-0.00118	-0.06956*	0.00766
29	-0.06838*	0.07722*	-0.00605	-0.06838*	0.00884	0.00279
30	0.00119	0.05705	0.00251	0.00119	0.05824	0.06075
31	0.02823	0.01993	0.00949	0.02823	0.04817	0.05765
32	-0.02766	-0.04161	0.02739	-0.02766	-0.06928*	-0.04189
33	0.02938	-0.02737	0.04173	0.02938	0.00201	0.04374
34	-0.00977	0.02325	-0.00673	-0.00977	0.01348	0.00675
35	-0.07694*	0.00194	0.05720	-0.07694*	-0.07500*	-0.01780
36	-0.02091	-0.02961	0.11105*	-0.02091	-0.05052	0.06053
37	0.00175	0.01206	-0.02175	0.00175	0.01381	-0.00794
38	0.01300	0.04431	0.00499	0.01300	0.05731	0.06230
39	0.00865	0.06257	0.05142	0.00865	0.07122	0.12263*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.12251*	-0.00267	0.07930	-0.12251*	-0.12518*	-0.04588
41	-0.02715	0.01538	-0.06935	-0.02715	-0.01177	-0.08112*
42	0.02582	-0.12143*	-0.04102	0.02582	-0.09561*	-0.13664*
43	0.04365	0.00994	-0.01666	0.04365	0.05359	0.03693
44	-0.08205*	0.00915	-0.02057	-0.08205*	-0.07290*	-0.09348*
45	-0.01589	0.12747*	-0.03409	-0.01589	0.11158*	0.07748*
46	-0.01235	0.01609	0.03904	-0.01235	0.00374	0.04278
47	-0.00985	0.03308	0.00779	-0.00985	0.02323	0.03102
48	0.00677	-0.00959	-0.02623	0.00677	-0.00282	-0.02905
49	-0.02456	0.03653	-0.00910	-0.02456	0.01198	0.00288
50	-0.01214	-0.04630	0.06077*	-0.01214	-0.05844	0.00233
51	-0.01313	-0.01991	-0.00938	-0.01313	-0.03304	-0.04242
52	0.01108	-0.22637***	0.02430	0.01108	-0.21529***	-0.19098***
53	-0.01146	-0.02147	0.00000	-0.01146	-0.03293	-0.03294
54	-0.03058	-0.02362	0.01778	-0.03058	-0.05419	-0.03642
55	0.05076	0.00409	-0.00310	0.05076	0.05485*	0.05175
56	0.00595	0.05036	-0.00107	0.00595	0.05631*	0.05524*
57	0.00228	-0.09303*	0.00843	0.00228	-0.09075*	-0.08231*
58	0.00935	-0.02576	0.00096	0.00935	-0.01640	-0.01544
59	0.00171	0.00665	0.00820	0.00171	0.00836	0.01656
60	-0.00999	0.00666	-0.00468	-0.00999	-0.00333	-0.00801
61	0.00155	0.00885	-0.00291	0.00155	0.01039	0.00748
62	-0.15369**	-0.05374*	0.04976*	-0.15369**	-0.20743***	-0.15768**
63	-0.00446	0.00691	-0.00180	-0.00446	0.00246	0.00066
64	-0.01695	0.05419*	0.00680	-0.01695	0.03724*	0.04404*
65	-0.00975	0.00781	0.00287	-0.00975	-0.00194	0.00093
66	0.00748	0.01030	-0.03495*	0.00748	0.01778	-0.01717
67	-0.00478	0.03884*	-0.02514	-0.00478	0.03406*	0.00892
68	-0.01244	-0.00398	-0.01946	-0.01244	-0.01642	-0.03588*
69	-0.04091	0.00663	0.02524	-0.04091	-0.03428	-0.00905
70	0.02810	-0.01526	-0.00819	0.02810	0.01284	0.00465
71	0.04182*	0.01231	-0.00440	0.04182*	0.05413*	0.04973*
72	0.00011	0.03112	0.03072	0.00011	0.03123	0.06195***
73	-0.01010	-0.00877	-0.00080	-0.01010	-0.01887	-0.01968
74	0.00703	-0.02646	0.00905	0.00703	-0.01943	-0.01038
75	-0.00687	0.02085	-0.06275***	-0.00687	0.01398	-0.04877*
76	-0.01410	0.00816	-0.01396	-0.01410	-0.00594	-0.01990
77	0.00982	-0.01145	0.01466	0.00982	-0.00164	0.01302
78	0.01994	-0.02333	0.02212	0.01994	-0.00339	0.01873
79	-0.00956	0.01156	0.00680	-0.00956	0.00201	0.00880

Model 3 Estimation window -300 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.79225***	-0.37413***	-0.50951***	0.79225***	0.41812***	-0.09138
3	0.00954	-0.03407	0.02253	0.00954	-0.02453	-0.00200
4	-0.02003	0.01677	0.00674	-0.02003	-0.00326	0.00348
5	-0.05028	-0.03877	0.06553	-0.05028	-0.08906	-0.02352
6	-0.00531	-0.00673	-0.00368	-0.00531	-0.01204	-0.01573
7	0.07530	0.07590	0.12079*	0.07530	0.15120*	0.27199***
8	0.01246	0.04394	0.09960*	0.01246	0.05641	0.15601***
9	-0.00681	-0.09287*	0.02441	-0.00681	-0.09968*	-0.07527
10	0.00352	0.02318	0.03907	0.00352	0.02670	0.06577*
11	-0.04837	-0.02030	0.00178	-0.04837	-0.06867*	-0.06688*
12	0.01153	0.00087	-0.00030	0.01153	0.01240	0.01210
13	-0.03577	-0.00585	0.04635	-0.03577	-0.04162	0.00473
14	-0.04414	0.02537	-0.02085	-0.04414	-0.01877	-0.03962
15	-0.03407	-0.01209	0.02349	-0.03407	-0.04616	-0.02267
16	0.08287*	0.08618**	-0.07412*	0.08287*	0.16905***	0.09493***
17	0.01928	0.00507	0.04229	0.01928	0.02435	0.06664*
18	-0.02667	0.04479	0.00184	-0.02667	0.01813	0.01997
19	0.07196*	-0.12383***	0.05446	0.07196*	-0.05187	0.00259
20	0.01495	-0.00210	-0.00043	0.01495	0.01285	0.01242
21	-0.07070*	-0.09543*	0.00156	-0.07070*	-0.16613***	-0.16457***
22	-0.03001	0.03327	0.01038	-0.03001	0.00326	0.01364
23	-0.08214*	0.03641	-0.09982*	-0.08214*	-0.04573	-0.14555***
24	-0.00167	-0.00013	-0.01689	-0.00167	-0.00181	-0.01869
25	0.01058	0.02097	-0.00932	0.01058	0.03156	0.02224
26	0.00009	-0.00050	0.03521	0.00009	-0.00040	0.03481
27	-0.00345	0.00729	-0.09299**	-0.00345	0.00384	-0.08915*
28	-0.00126	-0.06448*	0.07664*	-0.00126	-0.06574*	0.01090
29	-0.06614*	0.07685*	-0.00574	-0.06614*	0.01071	0.00497
30	-0.00052	0.05548	0.00112	-0.00052	0.05496	0.05609
31	0.02772	0.01870	0.00829	0.02772	0.04643	0.05472
32	-0.02880	-0.04369	0.02519	-0.02880	-0.07249*	-0.04730
33	0.02857	-0.02868	0.03967	0.02857	-0.00011	0.03955
34	-0.01035	0.02111	-0.00716	-0.01035	0.01076	0.00360
35	-0.07612*	0.00148	0.05522	-0.07612*	-0.07464*	-0.01942
36	0.00056	0.00785	0.09707*	0.00056	0.00840	0.10548*
37	0.00252	0.01114	-0.02252	0.00252	0.01366	-0.00886
38	0.01340	0.04323	0.00407	0.01340	0.05663	0.06070
39	0.00801	0.06140	0.05173	0.00801	0.06941	0.12114*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.11937*	-0.00556	0.07142	-0.11937*	-0.12493*	-0.05351
41	-0.02619	0.01590	-0.06883	-0.02619	-0.01029	-0.07911*
42	0.02470	-0.12099*	-0.04261	0.02470	-0.09629*	-0.13890*
43	0.03954	0.00795	-0.01912	0.03954	0.04749	0.02837
44	-0.08310*	0.00742	-0.01920	-0.08310*	-0.07568*	-0.09488*
45	-0.01524	0.12788*	-0.03333	-0.01524	0.11264*	0.07930*
46	-0.01352	0.01947	0.04245	-0.01352	0.00594	0.04840
47	-0.01129	0.03766	0.00940	-0.01129	0.02636	0.03577
48	0.00695	-0.00210	-0.02672	0.00695	0.00485	-0.02188
49	-0.02375	0.03743	-0.00951	-0.02375	0.01369	0.00417
50	-0.01144	-0.04621	0.06113	-0.01144	-0.05765	0.00348
51	-0.01349	-0.01993	-0.00936	-0.01349	-0.03342	-0.04278
52	0.00980	-0.22571***	0.02296	0.00980	-0.21591***	-0.19296***
53	-0.01262	-0.02287	-0.00111	-0.01262	-0.03550	-0.03661
54	-0.03555	-0.02652	0.01287	-0.03555	-0.06207*	-0.04920
55	0.05115	0.00163	-0.00296	0.05115	0.05278	0.04982
56	0.00501	0.04966	-0.00152	0.00501	0.05467*	0.05314*
57	0.00123	-0.09409*	0.00740	0.00123	-0.09286*	-0.08546*
58	0.01037	-0.02478	0.00205	0.01037	-0.01441	-0.01236
59	0.00300	0.00763	0.00909	0.00300	0.01063	0.01972
60	-0.00833	0.00808	-0.00308	-0.00833	-0.00024	-0.00332
61	-0.00181	0.00776	-0.00325	-0.00181	0.00595	0.00270
62	-0.15214**	-0.05175*	0.05139*	-0.15214**	-0.20389***	-0.15250**
63	-0.00482	0.00634	-0.00234	-0.00482	0.00152	-0.00082
64	-0.01767	0.05385*	0.00677	-0.01767	0.03618	0.04295*
65	-0.00960	0.00771	0.00223	-0.00960	-0.00189	0.00034
66	0.00768	0.01151	-0.03352	0.00768	0.01918	-0.01433
67	-0.00507	0.03916*	-0.02544	-0.00507	0.03410	0.00866
68	-0.01293	-0.00214	-0.02052	-0.01293	-0.01507	-0.03559*
69	-0.03878*	0.00684	0.02378	-0.03878*	-0.03194	-0.00816
70	0.02793	-0.01476	-0.00779	0.02793	0.01316	0.00537
71	0.04159*	0.01224	-0.00431	0.04159*	0.05383*	0.04951*
72	0.00015	0.03102	0.03033	0.00015	0.03117	0.06150**
73	-0.01068	-0.00960	-0.00193	-0.01068	-0.02027	-0.02220
74	0.00704	-0.02646	0.00909	0.00704	-0.01943	-0.01034
75	0.02076	-0.07774***	-0.02661	0.02076	-0.05698*	-0.08359***
76	-0.01899	0.02102	-0.01766	-0.01899	0.00202	-0.01564
77	0.00977	-0.01144	0.01472	0.00977	-0.00167	0.01305
78	0.02014	-0.02243	0.02253	0.02014	-0.00229	0.02024
79	-0.00938	0.01170	0.00685	-0.00938	0.00232	0.00917

Model 4 Estimation window -350 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.79225***	-0.37413***	-0.50951***	0.79225***	0.41812***	-0.09138
3	0.00954	-0.03407	0.02253	0.00954	-0.02453	-0.00200
4	-0.01429	0.01074	0.01132	-0.01429	-0.00355	0.00778
5	-0.05040	-0.03030	0.06722	-0.05040	-0.08070	-0.01348
6	0.00189	-0.00999	-0.00634	0.00189	-0.00811	-0.01444
7	0.08109	0.07336	0.11738*	0.08109	0.15445*	0.27183***
8	0.09426*	0.07190	0.00612	0.09426*	0.16616***	0.17228***
9	-0.02901	-0.09952*	0.04989	-0.02901	-0.12853*	-0.07865
10	0.00243	0.02117	0.03826	0.00243	0.02360	0.06185
11	-0.04983	-0.02158	0.00279	-0.04983	-0.07141*	-0.06862
12	0.01229	0.00097	0.00038	0.01229	0.01327	0.01364
13	-0.03581	-0.00579	0.04532	-0.03581	-0.04160	0.00372
14	-0.04450	0.02453	-0.02127	-0.04450	-0.01997	-0.04124
15	-0.03496	-0.01299	0.02259	-0.03496	-0.04795	-0.02536
16	0.08213*	0.08602**	-0.07430*	0.08213*	0.16815***	0.09385***
17	0.01969	0.00565	0.04259	0.01969	0.02534	0.06793*
18	-0.02614	0.04530	0.00185	-0.02614	0.01916	0.02101
19	0.07219*	-0.12394***	0.05417	0.07219*	-0.05175	0.00242
20	0.01547	-0.00215	0.00140	0.01547	0.01331	0.01472
21	-0.07011	-0.09544*	0.00081	-0.07011	-0.16555***	-0.16473***
22	-0.03051	0.03319	0.01002	-0.03051	0.00268	0.01270
23	-0.08294*	0.03549	-0.10084*	-0.08294*	-0.04745	-0.14829***
24	-0.00018	0.00060	-0.01453	-0.00018	0.00043	-0.01410
25	0.01120	0.02162	-0.00859	0.01120	0.03282	0.02423
26	0.00194	-0.00158	0.03449	0.00194	0.00036	0.03485
27	-0.00357	0.00664	-0.09375**	-0.00357	0.00306	-0.09069**
28	-0.00097	-0.06461*	0.07692*	-0.00097	-0.06558*	0.01133
29	-0.06428*	0.07677*	-0.00529	-0.06428*	0.01249	0.00720
30	-0.00036	0.05577	0.00159	-0.00036	0.05541	0.05700
31	0.02824	0.01886	0.00847	0.02824	0.04710	0.05557
32	-0.02891	-0.04245	0.02660	-0.02891	-0.07136*	-0.04476
33	0.02765	-0.02873	0.04090	0.02765	-0.00108	0.03983
34	-0.01179	0.02151	-0.00879	-0.01179	0.00972	0.00094
35	-0.07575*	0.00051	0.05263	-0.07575*	-0.07524*	-0.02261
36	0.00050	0.00799	0.09680*	0.00050	0.00849	0.10529*
37	0.00643	0.01795	-0.02577	0.00643	0.02438	-0.00138
38	0.01501	0.05191	-0.01512	0.01501	0.06692	0.05179
39	0.00807	0.06151	0.05171	0.00807	0.06958	0.12129*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.05775	0.21059***	0.01053	-0.05775	0.15284***	0.16337***
41	-0.02614	0.01733	-0.06982*	-0.02614	-0.00881	-0.07863*
42	0.02405	-0.12073*	-0.04353	0.02405	-0.09667*	-0.14020**
43	0.03764	0.00797	-0.01953	0.03764	0.04560	0.02607
44	-0.08269*	0.00720	-0.01659	-0.08269*	-0.07549*	-0.09208*
45	-0.01513	0.12764*	-0.03308	-0.01513	0.11250*	0.07943
46	-0.01332	0.01961	0.04259	-0.01332	0.00630	0.04889
47	-0.01060	0.03817	0.01000	-0.01060	0.02756	0.03757
48	0.00758	-0.00067	-0.02456	0.00758	0.00692	-0.01764
49	-0.02418	0.04448	-0.00955	-0.02418	0.02031	0.01076
50	-0.01193	-0.05414	0.06191	-0.01193	-0.06607	-0.00416
51	-0.01285	-0.02262	-0.00860	-0.01285	-0.03547	-0.04407
52	-0.00478	0.04423	-0.02241	-0.00478	0.03945	0.01704
53	-0.01189	-0.02241	-0.00032	-0.01189	-0.03429	-0.03461
54	-0.03499	-0.02590	0.01344	-0.03499	-0.06089	-0.04746
55	0.05242	0.00096	-0.00186	0.05242	0.05338	0.05152
56	0.00384	0.04953	-0.00052	0.00384	0.05336*	0.05285*
57	-0.00049	-0.09622*	0.00660	-0.00049	-0.09671*	-0.09011*
58	0.00945	-0.02578	0.00127	0.00945	-0.01633	-0.01505
59	0.00276	0.00520	0.00606	0.00276	0.00796	0.01401
60	-0.00834	0.00598	-0.00364	-0.00834	-0.00236	-0.00601
61	-0.00062	0.00893	-0.00209	-0.00062	0.00831	0.00622
62	-0.00350	-0.03202	0.04219	-0.00350	-0.03552	0.00667
63	-0.00500	0.00426	-0.00009	-0.00500	-0.00075	-0.00083
64	-0.01725	0.05394*	0.00658	-0.01725	0.03669	0.04327
65	-0.01023	0.00723	0.00206	-0.01023	-0.00300	-0.00094
66	0.00739	0.01113	-0.03391	0.00739	0.01852	-0.01539
67	-0.00656	0.04057*	-0.02697	-0.00656	0.03402	0.00705
68	-0.01254	0.00113	-0.02083	-0.01254	-0.01140	-0.03224
69	-0.03149	0.00755	0.01883	-0.03149	-0.02394	-0.00511
70	0.02308	-0.01147	-0.00570	0.02308	0.01162	0.00592
71	0.03754*	0.00974	-0.00536	0.03754*	0.04728*	0.04192*
72	-0.00041	0.03614*	0.02697	-0.00041	0.03573*	0.06270**
73	-0.01182	0.00727	-0.01218	-0.01182	-0.00455	-0.01673
74	0.00404	0.01125	-0.01462	0.00404	0.01529	0.00067
75	0.02172	-0.07619***	-0.02644	0.02172	-0.05448*	-0.08091***
76	-0.02066	0.02022	-0.01807	-0.02066	-0.00045	-0.01852
77	0.00896	-0.01205	0.01431	0.00896	-0.00309	0.01122
78	0.02009	-0.02235	0.02251	0.02009	-0.00226	0.02025
79	-0.00895	0.01195	0.00675	-0.00895	0.00300	0.00975

Model 5 Estimation window -400 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18327*	0.11534	0.05486	-0.18327*	-0.06792	-0.01306
2	0.79225***	-0.37413***	-0.50951***	0.79225***	0.41812***	-0.09138
3	0.00954	-0.03407	0.02253	0.00954	-0.02453	-0.00200
4	-0.01429	0.01074	0.01132	-0.01429	-0.00355	0.00778
5	-0.05054	-0.02602	0.06801	-0.05054	-0.07656	-0.00855
6	0.00265	-0.00970	-0.00568	0.00265	-0.00705	-0.01273
7	0.08148	0.07319	0.11764*	0.08148	0.15467*	0.27231***
8	0.09448*	0.06911	0.00592	0.09448*	0.16360***	0.16952***
9	-0.02823	-0.10047*	0.05057	-0.02823	-0.12870*	-0.07814
10	0.00206	0.02143	0.03769	0.00206	0.02349	0.06118
11	-0.05002	-0.02174	0.00284	-0.05002	-0.07176	-0.06892
12	0.01120	0.00190	-0.00046	0.01120	0.01309	0.01264
13	-0.09307*	-0.02878	0.03747	-0.09307*	-0.12185***	-0.08439*
14	-0.04497	0.02383	-0.02177	-0.04497	-0.02114	-0.04290
15	-0.03555	-0.01358	0.02207	-0.03555	-0.04913	-0.02707
16	0.08190*	0.08602**	-0.07430*	0.08190*	0.16792***	0.09362***
17	0.01946	0.00560	0.04224	0.01946	0.02507	0.06731*
18	-0.02604	0.04541	0.00220	-0.02604	0.01937	0.02157
19	0.07203*	-0.12419***	0.05387	0.07203*	-0.05215	0.00172
20	0.01550	-0.00183	0.00024	0.01550	0.01367	0.01391
21	-0.07032*	-0.09562*	0.00088	-0.07032*	-0.16594***	-0.16506***
22	-0.02990	0.03386	0.01066	-0.02990	0.00396	0.01462
23	-0.08336*	0.03540	-0.10065*	-0.08336*	-0.04796	-0.14861***
24	-0.00013	0.00062	-0.01446	-0.00013	0.00050	-0.01396
25	0.01143	0.02186	-0.00826	0.01143	0.03329	0.02503
26	0.00121	0.00082	0.03650	0.00121	0.00203	0.03854
27	-0.00379	0.00715	-0.09308**	-0.00379	0.00337	-0.08971**
28	-0.00142	-0.06293*	0.07630*	-0.00142	-0.06435*	0.01195
29	-0.06293*	0.07630*	-0.00531	-0.06293*	0.01337	0.00806
30	-0.00020	0.05577	0.00138	-0.00020	0.05557	0.05695
31	0.02801	0.01904	0.00863	0.02801	0.04705	0.05568
32	-0.02855	-0.04319	0.02573	-0.02855	-0.07173*	-0.04600
33	0.02873	-0.02841	0.04011	0.02873	0.00032	0.04043
34	-0.01101	0.01987	-0.00776	-0.01101	0.00886	0.00110
35	-0.07790*	0.00003	0.05415	-0.07790*	-0.07787*	-0.02372
36	-0.00025	0.00753	0.09576*	-0.00025	0.00728	0.10304*
37	0.00562	0.01677	-0.02690	0.00562	0.02239	-0.00450
38	0.01452	0.05144	-0.01557	0.01452	0.06596	0.05038
39	0.00768	0.06117	0.05121	0.00768	0.06885	0.12006*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.05764	0.21079***	0.01078	-0.05764	0.15315***	0.16393***
41	-0.02615	0.01733	-0.06982*	-0.02615	-0.00882	-0.07864*
42	0.02410	-0.12074*	-0.04347	0.02410	-0.09664*	-0.14011**
43	0.03624	0.00759	-0.02013	0.03624	0.04383	0.02369
44	-0.08304*	0.00620	-0.01460	-0.08304*	-0.07684*	-0.09144*
45	-0.01355	0.12815*	-0.03105	-0.01355	0.11460*	0.08355*
46	-0.01306	0.01995	0.04293	-0.01306	0.00689	0.04982
47	-0.01026	0.03848	0.01033	-0.01026	0.02822	0.03855
48	0.00762	0.00078	-0.02184	0.00762	0.00840	-0.01344
49	-0.02473	0.04294	-0.01026	-0.02473	0.01821	0.00795
50	-0.01290	-0.05175	0.06309	-0.01290	-0.06465	-0.00157
51	-0.00914	-0.02159	-0.00766	-0.00914	-0.03073	-0.03840
52	-0.00296	0.04230	-0.02224	-0.00296	0.03934	0.01710
53	-0.01172	-0.02206	-0.00018	-0.01172	-0.03378	-0.03396
54	-0.03541	-0.02620	0.01301	-0.03541	-0.06161	-0.04860
55	0.05201	0.00001	-0.00231	0.05201	0.05203	0.04971
56	0.00136	0.04927	0.00166	0.00136	0.05063	0.05228
57	-0.00332	-0.09995*	0.00573	-0.00332	-0.10327*	-0.09754*
58	0.00922	-0.02612	0.00124	0.00922	-0.01690	-0.01566
59	0.00274	0.00295	0.00320	0.00274	0.00570	0.00890
60	-0.00750	0.00446	-0.00343	-0.00750	-0.00304	-0.00646
61	-0.00240	0.00769	-0.00296	-0.00240	0.00530	0.00234
62	-0.00384	-0.03041	0.04186	-0.00384	-0.03425	0.00761
63	-0.00439	0.00481	0.00049	-0.00439	0.00042	0.00090
64	-0.01873	0.03759	0.02895	-0.01873	0.01885	0.04781*
65	-0.00970	0.00789	0.00301	-0.00970	-0.00180	0.00121
66	0.00695	0.00931	-0.03273	0.00695	0.01626	-0.01647
67	-0.00686	0.04048*	-0.02727	-0.00686	0.03362	0.00635
68	-0.01300	0.00106	-0.02140	-0.01300	-0.01194	-0.03334
69	-0.02612	0.00906	0.01703	-0.02612	-0.01706	-0.00002
70	0.02279	-0.01060	-0.00500	0.02279	0.01219	0.00720
71	0.03348	0.00719	-0.00647	0.03348	0.04067*	0.03420
72	0.00009	0.03655*	0.02727	0.00009	0.03663*	0.06390**
73	-0.01183	0.00723	-0.01223	-0.01183	-0.00461	-0.01684
74	0.00402	0.01117	-0.01473	0.00402	0.01518	0.00046
75	0.01158	0.06650**	-0.11232***	0.01158	0.07808***	-0.03425
76	-0.01959	0.00248	-0.00711	-0.01959	-0.01711	-0.02422
77	0.00871	-0.01220	0.01426	0.00871	-0.00349	0.01078
78	0.02015	-0.02211	0.02263	0.02015	-0.00196	0.02066
79	-0.00742	0.01248	0.00536	-0.00742	0.00506	0.01042

Appendix 15 - Comprehensive Intervention Approach where Event and Shoulder days are represented by dummy variables = 1

Model 1 Estimation window -200 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264 *	0.11597	0.05770	-0.18264 *	-0.06667	-0.00897
2	0.16143 ***	0.00492	-0.31085 ***	0.16143 ***	0.16635 ***	-0.14450 *
3	-0.02110	-0.02070	0.03605	-0.02110	-0.04180	-0.00574
4	-0.01151	0.01764	-0.00918	-0.01151	0.00613	-0.00305
5	-0.03971	-0.03095	0.03724	-0.03971	-0.07067	-0.03343
6	0.01002	-0.00769	-0.02816	0.01002	0.00233	-0.02583
7	0.09112 *	0.07856	0.09845 *	0.09112 *	0.16968 ***	0.26813 ***
8	0.04230	0.02687	0.05829	0.04230	0.06917 *	0.12745 ***
9	-0.01129	-0.08573 *	0.03823	-0.01129	-0.09702 *	-0.05880
10	-0.00069	0.02165	0.03379	-0.00069	0.02096	0.05475
11	-0.03739	-0.01392	0.01232	-0.03739	-0.05131 *	-0.03899 *
12	0.01047	-0.00213	-0.00140	0.01047	0.00835	0.00695
13	-0.07746 *	-0.01816	0.06099 *	-0.07746 *	-0.09561 *	-0.03462
14	-0.04258	0.02279	-0.01980	-0.04258	-0.01979	-0.03960
15	0.02294	-0.00028	-0.02124	0.02294	0.02266	0.00142
16	-0.01297	0.06397 *	0.00054	-0.01297	0.05101	0.05155
17	0.01934	-0.00506	0.04268	0.01934	0.01428	0.05696
18	-0.03277	0.06090 *	0.00490	-0.03277	0.02813	0.03303
19	0.04327	-0.02668	0.05544	0.04327	0.01658	0.07202 *
20	0.01424	0.00273	-0.02760	0.01424	0.01698	-0.01062
21	-0.02745	0.00127	0.00188	-0.02745	-0.02619	-0.02431
22	-0.03758	0.03752	0.00097	-0.03758	-0.00007	0.00091
23	0.01300	-0.02702	0.02322	0.01300	-0.01402	0.00920
24	-0.00090	0.00053	-0.01562	-0.00090	-0.00038	-0.01600
25	0.01415	0.01349	-0.00253	0.01415	0.02764	0.02511
26	-0.00118	-0.00010	0.04092	-0.00118	-0.00128	0.03963
27	0.00026	0.00161	-0.08537 ***	0.00026	0.00186	-0.08350 ***
28	0.00120	-0.06139 *	0.07461 *	0.00120	-0.06019 *	0.01441
29	-0.06145 *	0.07461 *	0.00129	-0.06145 *	0.01316	0.01445
30	-0.00084	0.05829	0.00195	-0.00084	0.05745	0.05940
31	0.03453	0.01465	0.01402	0.03453	0.04917	0.06319
32	-0.02597	-0.04382	0.02851	-0.02597	-0.06979 *	-0.04128
33	0.03037	-0.02709	0.04096	0.03037	0.00328	0.04424
34	-0.01340	0.02412	-0.01197	-0.01340	0.01073	-0.00125
35	-0.07248 *	-0.00137	0.04458	-0.07248 *	-0.07386 *	-0.02928
36	0.00783	-0.01077	0.11127 *	0.00783	-0.00294	0.10833 *
37	-0.00315	0.02064	-0.02186	-0.00315	0.01749	-0.00438
38	0.02179	0.03441	-0.01295	0.02179	0.05619	0.04325
39	0.00867	0.06326	0.05021	0.00867	0.07193	0.12214 *

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.02954	0.15188 ***	0.05128	-0.02954	0.12234 *	0.17362 ***
41	-0.02753	0.01587	-0.07050	-0.02753	-0.01166	-0.08216 *
42	-0.00214	0.03259	0.01421	-0.00214	0.03045	0.04466
43	0.04650	0.01094	-0.01525	0.04650	0.05744	0.04219
44	-0.08173 *	0.01424	-0.02160	-0.08173 *	-0.06749	-0.08909 *
45	-0.01417	0.13632 *	-0.03073	-0.01417	0.12215 *	0.09143 *
46	-0.00936	0.02224	0.04079	-0.00936	0.01289	0.05368
47	-0.00772	0.03449	0.00944	-0.00772	0.02677	0.03621
48	0.00779	-0.00119	-0.02635	0.00779	0.00660	-0.01975
49	-0.02412	0.04540	-0.00939	-0.02412	0.02128	0.01189
50	-0.01064	-0.05376 *	0.06282 ***	-0.01064	-0.06440 *	-0.00158
51	-0.01333	-0.02273	-0.00856	-0.01333	-0.03606	-0.04462
52	-0.00591	0.05707 *	-0.02195	-0.00591	0.05116	0.02922
53	-0.01142	-0.02235	0.00023	-0.01142	-0.03376	-0.03353
54	-0.02672	-0.02010	0.02140	-0.02672	-0.04682	-0.02542
55	0.05277 *	0.02026	-0.00748	0.05277 *	0.07303 ***	0.06555 ***
56	0.00553	0.05174 *	-0.00349	0.00553	0.05727 ***	0.05378 ***
57	0.00134	-0.09344 ***	0.00634	0.00134	-0.09210 ***	-0.08576 ***
58	0.00737	-0.02931	0.00030	0.00737	-0.02193	-0.02163
59	0.00134	0.00823	0.00705	0.00134	0.00957	0.01662
60	-0.01046	0.00903	-0.00720	-0.01046	-0.00143	-0.00863
61	-0.00329	0.00703	-0.00211	-0.00329	0.00374	0.00163
62	-0.00011	0.00818	0.02687	-0.00011	0.00807	0.03494 *
63	-0.00203	0.00762	0.00033	-0.00203	0.00559	0.00592
64	-0.01457	0.06014 ***	0.02131	-0.01457	0.04556 ***	0.06687 ***
65	-0.01016	0.00839	0.00561	-0.01016	-0.00177	0.00384
66	0.00795	0.00994	-0.03481 ***	0.00795	0.01789	-0.01692
67	-0.00447	0.04232 *	-0.00351	-0.00447	0.03786 *	0.03434 *
68	-0.01031	-0.00565	-0.01639	-0.01031	-0.01596	-0.03235 *
69	-0.03688	0.00820	0.02536	-0.03688	-0.02868	-0.00332
70	0.02289	-0.00830	0.00348	0.02289	0.01459	0.01807
71	0.03324 *	0.00899	-0.00122	0.03324 *	0.04222 ***	0.04100 ***
72	-0.00283	0.03577 *	0.02950 *	-0.00283	0.03295 *	0.06245 ***
73	-0.01245	0.01218	-0.00182	-0.01245	-0.00027	-0.00209
74	0.00133	0.01663	0.00334	0.00133	0.01797	0.02131
75	0.00027	0.08558 ***	-0.05054 ***	0.00027	0.08585 ***	0.03531 ***
76	-0.01398	-0.00069	-0.01664	-0.01398	-0.01468	-0.03132
77	0.01002	-0.01152	0.01433	0.01002	-0.00150	0.01282
78	0.02002	-0.00682	0.01290	0.02002	0.01320	0.02610
79	-0.01094	0.01482	0.00569	-0.01094	0.00389	0.00958

Model 2 Estimation window -250 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264 *	0.11597	0.05770	-0.18264 *	-0.06667	-0.00897
2	0.16003 ***	0.00486	-0.30297 ***	0.16003 ***	0.16489 ***	-0.13808 *
3	-0.02069	-0.01807	0.03728	-0.02069	-0.03876	-0.00148
4	-0.01222	0.02153	-0.00953	-0.01222	0.00931	-0.00023
5	-0.03856	-0.02870	0.03865	-0.03856	-0.06726 *	-0.02861
6	0.00856	-0.00681	-0.02898	0.00856	0.00175	-0.02723
7	0.08871 *	0.07574	0.09589 *	0.08871 *	0.16445 *	0.26034 ***
8	0.04052	0.02422	0.05390	0.04052	0.06474	0.11864 ***
9	-0.01356	-0.08701 *	0.03714	-0.01356	-0.10057 *	-0.06342
10	0.00090	0.02271	0.03556	0.00090	0.02361	0.05917
11	-0.03660	-0.01312	0.01374	-0.03660	-0.04972	-0.03598
12	0.01162	-0.00154	-0.00031	0.01162	0.01009	0.00977
13	-0.07780 *	-0.01855	0.06076 *	-0.07780 *	-0.09635 *	-0.03559
14	-0.04310	0.02288	-0.02025	-0.04310	-0.02021	-0.04046
15	0.02329	0.00001	-0.02066	0.02329	0.02330	0.00265
16	-0.01538	0.06322 *	0.00109	-0.01538	0.04784	0.04893
17	0.01893	-0.00495	0.04163	0.01893	0.01398	0.05561
18	-0.03237	0.06144 *	0.00430	-0.03237	0.02907	0.03337
19	0.04371	-0.02609	0.05577	0.04371	0.01762	0.07339 *
20	0.01398	0.00300	-0.02863	0.01398	0.01698	-0.01165
21	-0.02867	0.00123	0.00220	-0.02867	-0.02743	-0.02523
22	-0.03586	0.03824	0.00239	-0.03586	0.00237	0.00477
23	0.01388	-0.02628	0.02300	0.01388	-0.01240	0.01061
24	-0.00070	0.00084	-0.01555	-0.00070	0.00014	-0.01541
25	0.01508	0.01432	-0.00214	0.01508	0.02941	0.02727
26	0.00343	-0.00249	0.03902	0.00343	0.00094	0.03997
27	0.00092	-0.00135	-0.08827 *	0.00092	-0.00043	-0.08870 *
28	0.00018	-0.06530 *	0.07398 *	0.00018	-0.06512 *	0.00886
29	-0.06522 *	0.07409 *	0.00007	-0.06522 *	0.00888	0.00895
30	-0.00099	0.05829	0.00216	-0.00099	0.05730	0.05946
31	0.03580	0.01416	0.01338	0.03580	0.04996	0.06334
32	-0.02596	-0.04578	0.02617	-0.02596	-0.07174 *	-0.04556
33	0.03121	-0.02727	0.03930	0.03121	0.00394	0.04324
34	-0.01321	0.02225	-0.01130	-0.01321	0.00903	-0.00226
35	-0.07414 *	0.00051	0.05071	-0.07414 *	-0.07363 *	-0.02292
36	0.00814	-0.00762	0.10966 *	0.00814	0.00052	0.11018 *
37	0.00185	0.01975	-0.02177	0.00185	0.02160	-0.00017
38	0.02305	0.03617	-0.00956	0.02305	0.05922	0.04965
39	0.00767	0.06201	0.04967	0.00767	0.06968	0.11935 *

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.02886	0.15061 ***	0.05106	-0.02886	0.12175 *	0.17281 ***
41	-0.02808	0.01513	-0.07121	-0.02808	-0.01295	-0.08416 *
42	-0.00237	0.03172	0.01287	-0.00237	0.02934	0.04221
43	0.04533	0.01001	-0.01623	0.04533	0.05534	0.03911
44	-0.08254 *	0.01337	-0.02221	-0.08254 *	-0.06917	-0.09138 *
45	-0.01346	0.13655 **	-0.02989	-0.01346	0.12308 *	0.09319 *
46	-0.00831	0.02401	0.04261	-0.00831	0.01571	0.05831 *
47	-0.00645	0.03613	0.01090	-0.00645	0.02968	0.04059
48	0.00839	-0.00105	-0.02662	0.00839	0.00735	-0.01927
49	-0.02346	0.04601	-0.00873	-0.02346	0.02255	0.01382
50	-0.00940	-0.05325	0.06360 ***	-0.00940	-0.06265 *	0.00095
51	-0.01226	-0.02147	-0.00729	-0.01226	-0.03373	-0.04102
52	-0.00504	0.05911 *	-0.02071	-0.00504	0.05407 *	0.03335
53	-0.01101	-0.02209	0.00067	-0.01101	-0.03310	-0.03243
54	-0.02950	-0.02173	0.01867	-0.02950	-0.05122 *	-0.03255
55	0.05189 *	0.01835	-0.00787	0.05189 *	0.07024 ***	0.06237 ***
56	0.00712	0.05377 *	-0.00121	0.00712	0.06089 ***	0.05968 ***
57	0.00223	-0.09316 *	0.00855	0.00223	-0.09094 *	-0.08238 *
58	0.00847	-0.02848	0.00147	0.00847	-0.02001	-0.01854
59	0.00157	0.00809	0.00676	0.00157	0.00966	0.01641
60	-0.00983	0.00943	-0.00663	-0.00983	-0.00040	-0.00703
61	-0.00281	0.00669	-0.00311	-0.00281	0.00388	0.00077
62	-0.00091	0.00768	0.02644	-0.00091	0.00677	0.03321
63	-0.00347	0.00665	-0.00071	-0.00347	0.00319	0.00247
64	-0.01556	0.05931 ***	0.02095	-0.01556	0.04376 *	0.06470 ***
65	-0.00993	0.00822	0.00455	-0.00993	-0.00171	0.00284
66	0.00825	0.01055	-0.03413 *	0.00825	0.01880	-0.01533
67	-0.00575	0.04454 ***	-0.00799	-0.00575	0.03878 ***	0.03079 *
68	-0.01130	-0.00217	-0.01848	-0.01130	-0.01347	-0.03196 *
69	-0.03848 *	0.00826	0.02683	-0.03848 *	-0.03021	-0.00339
70	0.02359	-0.00862	0.00335	0.02359	0.01497	0.01833
71	0.03437 *	0.00984	-0.00067	0.03437 *	0.04421 ***	0.04354 ***
72	-0.00259	0.03588 *	0.02943 *	-0.00259	0.03329 *	0.06272 ***
73	-0.01243	0.01182	-0.00220	-0.01243	-0.00061	-0.00281
74	0.00142	0.01666	0.00327	0.00142	0.01808	0.02135
75	-0.00003	0.08568 ***	-0.05090 *	-0.00003	0.08565 ***	0.03475 *
76	-0.01345	-0.00131	-0.01742	-0.01345	-0.01475	-0.03217
77	0.01007	-0.01154	0.01423	0.01007	-0.00147	0.01276
78	0.02011	-0.00672	0.01300	0.02011	0.01339	0.02639
79	-0.01040	0.01472	0.00451	-0.01040	0.00432	0.00884

Model 3 Estimation window -300 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264 *	0.11597	0.05770	-0.18264 *	-0.06667	-0.00897
2	0.16003 ***	0.00486	-0.30297 ***	0.16003 ***	0.16489 ***	-0.13808 *
3	-0.02559	-0.01079	0.03688	-0.02559	-0.03639	0.00049
4	-0.01458	0.02596	-0.01135	-0.01458	0.01138	0.00004
5	-0.03727	-0.03958	0.03707	-0.03727	-0.07685	-0.03978
6	0.01006	-0.00560	-0.02756	0.01006	0.00446	-0.02309
7	0.08966 *	0.07713	0.09700 *	0.08966 *	0.16679 *	0.26380 ***
8	0.04022	0.02380	0.05324	0.04022	0.06402	0.11726 **
9	-0.01570	-0.08852 *	0.03576	-0.01570	-0.10421 *	-0.06845 *
10	0.00176	0.02124	0.03718	0.00176	0.02300	0.06018
11	-0.03753	-0.01387	0.01856	-0.03753	-0.05139	-0.03283
12	0.01077	-0.00023	-0.00090	0.01077	0.01055	0.00965
13	-0.07839 *	-0.01908	0.06004 *	-0.07839 *	-0.09747 **	-0.03743
14	-0.04348	0.02343	-0.02052	-0.04348	-0.02005	-0.04057
15	0.02315	-0.00006	-0.02104	0.02315	0.02308	0.00204
16	-0.01393	0.06401 *	0.00137	-0.01393	0.05009	0.05146
17	0.02015	-0.00333	0.04236	0.02015	0.01682	0.05918 *
18	-0.03284	0.06105 *	0.00322	-0.03284	0.02821	0.03142
19	0.04347	-0.02638	0.05557	0.04347	0.01710	0.07267 *
20	0.01417	0.00334	-0.02868	0.01417	0.01751	-0.01117
21	-0.02856	0.00127	0.00222	-0.02856	-0.02729	-0.02506
22	-0.03610	0.03845	0.00229	-0.03610	0.00235	0.00465
23	0.01375	-0.02647	0.02236	0.01375	-0.01273	0.00963
24	-0.00031	0.00180	-0.01577	-0.00031	0.00149	-0.01428
25	0.01597	0.01512	-0.00171	0.01597	0.03109	0.02938
26	0.00403	-0.00237	0.03918	0.00403	0.00166	0.04084
27	-0.00006	0.00132	-0.08566 *	-0.00006	0.00126	-0.08441 *
28	0.00005	-0.06365 *	0.07361 *	0.00005	-0.06361 *	0.01000
29	-0.06366 *	0.07361 *	0.00003	-0.06366 *	0.00995	0.00998
30	-0.00189	0.05717	0.00073	-0.00189	0.05528	0.05601
31	0.03354	0.01333	0.01268	0.03354	0.04687	0.05955
32	-0.02689	-0.04679	0.02514	-0.02689	-0.07369 *	-0.04855
33	0.03044	-0.02810	0.03839	0.03044	0.00234	0.04073
34	-0.01315	0.02139	-0.01101	-0.01315	0.00825	-0.00277
35	-0.07313 *	0.00014	0.04867	-0.07313 *	-0.07299 *	-0.02432
36	0.00819	-0.00763	0.10975 *	0.00819	0.00056	0.11031 *
37	0.00287	0.01916	-0.02210	0.00287	0.02204	-0.00007
38	0.02334	0.03670	-0.00827	0.02334	0.06004	0.05177
39	0.00770	0.06158	0.05052	0.00770	0.06927	0.11980 *

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.02635	0.15015 ***	0.05221	-0.02635	0.12380 *	0.17601 ***
41	-0.02689	0.01602	-0.07028 *	-0.02689	-0.01087	-0.08115 *
42	-0.00112	0.03194	0.01233	-0.00112	0.03082	0.04316
43	0.04241	0.00864	-0.01795	0.04241	0.05105	0.03310
44	-0.08289 *	0.01250	-0.02103	-0.08289 *	-0.07039 *	-0.09143 *
45	-0.01403	0.13590 **	-0.03044	-0.01403	0.12187 **	0.09143 *
46	-0.01177	0.02606	0.04500	-0.01177	0.01429	0.05929
47	-0.00872	0.03781	0.01065	-0.00872	0.02909	0.03974
48	0.01012	0.00085	-0.02458	0.01012	0.01097	-0.01361
49	-0.02176	0.04780	-0.00702	-0.02176	0.02604	0.01903
50	-0.00802	-0.05259	0.06453 *	-0.00802	-0.06061	0.00392
51	-0.01250	-0.02120	-0.00701	-0.01250	-0.03369	-0.04070
52	-0.00577	0.06025 *	-0.02086	-0.00577	0.05448	0.03362
53	-0.01117	-0.02237	0.00054	-0.01117	-0.03354	-0.03300
54	-0.03545	-0.02517	0.01283	-0.03545	-0.06062 *	-0.04778
55	0.05151 *	0.01726	-0.00791	0.05151 *	0.06877 ***	0.06087 ***
56	0.00511	0.05326 *	-0.00078	0.00511	0.05837 ***	0.05758 **
57	0.00044	-0.09547 **	0.00792	0.00044	-0.09503 **	-0.08711 *
58	0.01038	-0.02701	0.00348	0.01038	-0.01663	-0.01315
59	0.00374	0.00873	0.00677	0.00374	0.01247	0.01924
60	-0.00743	0.01114	-0.00440	-0.00743	0.00371	-0.00068
61	-0.00280	0.00678	-0.00296	-0.00280	0.00398	0.00102
62	0.00004	0.00725	0.02572	0.00004	0.00730	0.03302
63	-0.00455	0.00630	-0.00119	-0.00455	0.00175	0.00056
64	-0.01658	0.05831 ***	0.02001	-0.01658	0.04174 *	0.06175 ***
65	-0.01098	0.00714	0.00341	-0.01098	-0.00384	-0.00043
66	0.00716	0.00983	-0.03476 *	0.00716	0.01699	-0.01777
67	-0.00554	0.04486 ***	-0.00788	-0.00554	0.03932 ***	0.03144 *
68	-0.01148	-0.00062	-0.01909	-0.01148	-0.01210	-0.03119 *
69	-0.03709 *	0.00792	0.02502	-0.03709 *	-0.02917	-0.00415
70	0.02414	-0.00919	0.00299	0.02414	0.01495	0.01794
71	0.03649 *	0.01122	-0.00006	0.03649 *	0.04771 ***	0.04765 ***
72	-0.00211	0.03628 *	0.02973 *	-0.00211	0.03417 *	0.06390 ***
73	-0.01254	0.01149	-0.00255	-0.01254	-0.00105	-0.00360
74	0.00136	0.01666	0.00337	0.00136	0.01801	0.02138
75	-0.00009	0.08521 ***	-0.05090 *	-0.00009	0.08512 ***	0.03423 *
76	-0.01397	-0.00090	-0.01687	-0.01397	-0.01487	-0.03174
77	0.01007	-0.01154	0.01423	0.01007	-0.00147	0.01276
78	0.02015	-0.00658	0.01312	0.02015	0.01357	0.02669
79	-0.01000	0.01493	0.00441	-0.01000	0.00494	0.00935

Model 4 Estimation window -350 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264 *	0.11597	0.05770	-0.18264 *	-0.06667	-0.00897
2	0.16003 ***	0.00486	-0.30297 ***	0.16003 ***	0.16489 ***	-0.13808 *
3	-0.02559	-0.01079	0.03688	-0.02559	-0.03639	0.00049
4	-0.00833	0.01872	-0.00618	-0.00833	0.01039	0.00421
5	-0.03761	-0.03317	0.03832	-0.03761	-0.07078	-0.03247
6	0.01289	-0.00683	-0.02584	0.01289	0.00607	-0.01977
7	0.09087	0.07698	0.09771 *	0.09087	0.16786 *	0.26557 ***
8	0.03976	0.02416	0.05523	0.03976	0.06393	0.11916 **
9	-0.01417	-0.08803 *	0.03604	-0.01417	-0.10221 *	-0.06617
10	0.00115	0.01978	0.03685	0.00115	0.02093	0.05778
11	-0.03944	-0.01572	0.01872	-0.03944	-0.05515	-0.03644
12	0.01113	0.00057	-0.00048	0.01113	0.01170	0.01122
13	-0.07896 *	-0.01949	0.05904 *	-0.07896 *	-0.09845 **	-0.03942
14	-0.04427	0.02286	-0.02128	-0.04427	-0.02141	-0.04269
15	0.02271	-0.00042	-0.02174	0.02271	0.02229	0.00055
16	-0.01492	0.06352 *	0.00127	-0.01492	0.04860	0.04987
17	0.02032	-0.00323	0.04262	0.02032	0.01709	0.05972 *
18	-0.03203	0.06196 *	0.00331	-0.03203	0.02993	0.03324
19	0.04344	-0.02649	0.05561	0.04344	0.01695	0.07256 *
20	0.01435	0.00295	-0.02765	0.01435	0.01731	-0.01034
21	-0.02750	0.00147	0.00215	-0.02750	-0.02604	-0.02388
22	-0.03715	0.03763	0.00131	-0.03715	0.00048	0.00179
23	0.01395	-0.02628	0.02244	0.01395	-0.01233	0.01011
24	-0.00006	0.00150	-0.01491	-0.00006	0.00144	-0.01347
25	0.01618	0.01517	-0.00236	0.01618	0.03135	0.02899
26	0.00644	-0.00399	0.03785	0.00644	0.00246	0.04030
27	-0.00002	0.00091	-0.08606 **	-0.00002	0.00089	-0.08517 **
28	0.00022	-0.06066 *	0.07339 *	0.00022	-0.06043 *	0.01296
29	-0.06067 *	0.07340 *	0.00051	-0.06067 *	0.01273	0.01323
30	-0.00160	0.05751	0.00113	-0.00160	0.05590	0.05703
31	0.03351	0.01362	0.01299	0.03351	0.04713	0.06012
32	-0.02747	-0.04540	0.02691	-0.02747	-0.07287 *	-0.04597
33	0.02899	-0.02847	0.03959	0.02899	0.00052	0.04011
34	-0.01423	0.02403	-0.01298	-0.01423	0.00979	-0.00319
35	-0.07270 *	-0.00044	0.04689	-0.07270 *	-0.07314 *	-0.02625
36	0.00852	-0.00678	0.10972 *	0.00852	0.00174	0.11146 *
37	0.00292	0.01949	-0.02182	0.00292	0.02241	0.00059
38	0.02344	0.03676	-0.00833	0.02344	0.06020	0.05187
39	0.00806	0.06198	0.05083	0.00806	0.07004	0.12087 *

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.02652	0.15050 ***	0.05228	-0.02652	0.12398 *	0.17627 ***
41	-0.02708	0.01588	-0.07042 *	-0.02708	-0.01120	-0.08162 *
42	-0.00063	0.03205	0.01215	-0.00063	0.03142	0.04357
43	0.04087	0.00890	-0.01809	0.04087	0.04977	0.03168
44	-0.08271 *	0.01196	-0.01866	-0.08271 *	-0.07075 *	-0.08941 *
45	-0.01456	0.13588 **	-0.03111	-0.01456	0.12133 *	0.09022 *
46	-0.01215	0.02572	0.04465	-0.01215	0.01357	0.05823
47	-0.00862	0.04013	0.01189	-0.00862	0.03152	0.04341
48	0.00992	0.00158	-0.02300	0.00992	0.01150	-0.01149
49	-0.02085	0.04863	-0.00613	-0.02085	0.02777	0.02164
50	-0.00812	-0.05184	0.06496 *	-0.00812	-0.05997	0.00500
51	-0.01098	-0.02002	-0.00584	-0.01098	-0.03100	-0.03684
52	-0.00414	0.06106 *	-0.01948	-0.00414	0.05692 *	0.03744
53	-0.01009	-0.02148	0.00165	-0.01009	-0.03157	-0.02992
54	-0.03379	-0.02393	0.01448	-0.03379	-0.05772 *	-0.04324
55	0.05237 *	0.01782	-0.00689	0.05237 *	0.07020 ***	0.06330 *
56	0.00389	0.05349 *	0.00037	0.00389	0.05738 *	0.05775 *
57	-0.00104	-0.09731 **	0.00722	-0.00104	-0.09835 **	-0.09113 **
58	0.01000	-0.02784	0.00320	0.01000	-0.01784	-0.01464
59	0.00347	0.00612	0.00323	0.00347	0.00959	0.01282
60	-0.00660	0.00904	-0.00431	-0.00660	0.00244	-0.00187
61	-0.00157	0.00818	-0.00143	-0.00157	0.00661	0.00518
62	0.00066	0.00856	0.02717	0.00066	0.00922	0.03639
63	-0.00401	0.00670	-0.00076	-0.00401	0.00270	0.00194
64	-0.01668	0.05832 ***	0.02037	-0.01668	0.04164 *	0.06201 ***
65	-0.01049	0.00717	0.00246	-0.01049	-0.00332	-0.00086
66	0.00714	0.01051	-0.03392 *	0.00714	0.01765	-0.01627
67	-0.00638	0.04459 *	-0.00925	-0.00638	0.03821 *	0.02896
68	-0.01219	-0.00043	-0.02002	-0.01219	-0.01262	-0.03264 *
69	-0.03067	0.00911	0.02180	-0.03067	-0.02156	0.00024
70	0.02190	-0.00773	0.00377	0.02190	0.01417	0.01794
71	0.03375 *	0.00932	-0.00108	0.03375 *	0.04307 ***	0.04199 ***
72	-0.00171	0.03662 *	0.02999 *	-0.00171	0.03490 *	0.06490 ***
73	-0.01235	0.01151	-0.00254	-0.01235	-0.00084	-0.00338
74	0.00156	0.01676	0.00333	0.00156	0.01832	0.02165
75	0.00022	0.08538 ***	-0.05057 *	0.00022	0.08560 ***	0.03503 *
76	-0.01442	-0.00067	-0.01655	-0.01442	-0.01509	-0.03164
77	0.01001	-0.01155	0.01428	0.01001	-0.00154	0.01274
78	0.02000	-0.00677	0.01294	0.02000	0.01324	0.02617
79	-0.00918	0.01528	0.00397	-0.00918	0.00611	0.01008

Model 5 Estimation window -400 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264 *	0.11597	0.05770	-0.18264 *	-0.06667	-0.00897
2	0.16003 ***	0.00486	-0.30297 ***	0.16003 ***	0.16489 ***	-0.13808 *
3	-0.02559	-0.01079	0.03688	-0.02559	-0.03639	0.00049
4	-0.00833	0.01872	-0.00618	-0.00833	0.01039	0.00421
5	-0.03761	-0.02590	0.04004	-0.03761	-0.06351	-0.02347
6	0.01465	-0.00673	-0.02453	0.01465	0.00793	-0.01661
7	0.09102	0.07649	0.09762	0.09102	0.16751 **	0.26514 ***
8	0.04045	0.02484	0.05590	0.04045	0.06529	0.12120 **
9	-0.01358	-0.08709 *	0.03705	-0.01358	-0.10066 *	-0.06361
10	0.00082	0.02012	0.03629	0.00082	0.02093	0.05722
11	-0.03939	-0.01567	0.01874	-0.03939	-0.05506	-0.03632
12	0.01088	0.00220	-0.00050	0.01088	0.01309	0.01259
13	-0.07942 *	-0.02002	0.05877 *	-0.07942 *	-0.09944 **	-0.04067
14	-0.04496	0.02198	-0.02199	-0.04496	-0.02298	-0.04497
15	0.02220	-0.00103	-0.02194	0.02220	0.02117	-0.00076
16	-0.01584	0.06303 *	0.00113	-0.01584	0.04719	0.04832
17	0.02024	-0.00310	0.04230	0.02024	0.01715	0.05944 *
18	-0.03197	0.06195 *	0.00385	-0.03197	0.02999	0.03383
19	0.04383	-0.02607	0.05597	0.04383	0.01777	0.07374 *
20	0.01476	0.00367	-0.02769	0.01476	0.01843	-0.00927
21	-0.02756	0.00186	0.00269	-0.02756	-0.02569	-0.02301
22	-0.03674	0.03842	0.00183	-0.03674	0.00167	0.00350
23	0.01414	-0.02598	0.02350	0.01414	-0.01184	0.01166
24	-0.00040	0.00107	-0.01517	-0.00040	0.00067	-0.01450
25	0.01589	0.01498	-0.00211	0.01589	0.03087	0.02876
26	0.00524	-0.00281	0.03886	0.00524	0.00244	0.04129
27	0.00024	0.00202	-0.08496 **	0.00024	0.00226	-0.08270 **
28	0.00058	-0.05838 *	0.07349 *	0.00058	-0.05780 *	0.01569
29	-0.05841 *	0.07349 *	0.00107	-0.05841 *	0.01509	0.01616
30	-0.00125	0.05771	0.00114	-0.00125	0.05646	0.05760
31	0.03350	0.01390	0.01330	0.03350	0.04740	0.06070 *
32	-0.02679	-0.04590	0.02618	-0.02679	-0.07269 *	-0.04651
33	0.03014	-0.02798	0.03913	0.03014	0.00216	0.04130
34	-0.01346	0.02280	-0.01174	-0.01346	0.00934	-0.00240
35	-0.07552 *	-0.00032	0.05054	-0.07552 *	-0.07584 *	-0.02530
36	0.00699	-0.00713	0.10741 *	0.00699	-0.00014	0.10727 *
37	0.00322	0.01742	-0.02349	0.00322	0.02064	-0.00285
38	0.02243	0.03596	-0.00846	0.02243	0.05839	0.04993
39	0.00782	0.06176	0.05056	0.00782	0.06958 *	0.12014 *

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.02636	0.15056 ***	0.05239	-0.02636	0.12419 **	0.17659 ***
41	-0.02654	0.01637	-0.06992 *	-0.02654	-0.01017	-0.08010 *
42	-0.00073	0.03210	0.01232	-0.00073	0.03137	0.04369
43	0.04008	0.00882	-0.01833	0.04008	0.04889	0.03057
44	-0.08273 *	0.01127	-0.01673	-0.08273 *	-0.07147 *	-0.08820 *
45	-0.01418	0.13556 **	-0.03054	-0.01418	0.12138 *	0.09084 *
46	-0.01236	0.02617	0.04515	-0.01236	0.01381	0.05896
47	-0.00916	0.03983	0.01147	-0.00916	0.03067	0.04214
48	0.00973	0.00300	-0.02012	0.00973	0.01273	-0.00740
49	-0.02298	0.04529	-0.00841	-0.02298	0.02231	0.01390
50	-0.01051	-0.05041	0.06498 *	-0.01051	-0.06092	0.00407
51	-0.00770	-0.01981	-0.00574	-0.00770	-0.02751	-0.03325
52	-0.00259	0.05867 *	-0.01917	-0.00259	0.05608	0.03691
53	-0.00908	-0.02024	0.00261	-0.00908	-0.02932	-0.02671
54	-0.03399	-0.02381	0.01429	-0.03399	-0.05781	-0.04352
55	0.05210	0.01734	-0.00707	0.05210	0.06944 ***	0.06237 *
56	0.00113	0.05379 *	0.00256	0.00113	0.05492 *	0.05748 *
57	-0.00379	-0.10094 **	0.00638	-0.00379	-0.10472 **	-0.09834 **
58	0.01026	-0.02799	0.00356	0.01026	-0.01773	-0.01417
59	0.00400	0.00426	0.00040	0.00400	0.00825	0.00865
60	-0.00537	0.00837	-0.00357	-0.00537	0.00300	-0.00057
61	-0.00341	0.00711	-0.00187	-0.00341	0.00370	0.00183
62	-0.00017	0.00829	0.02702	-0.00017	0.00812	0.03514
63	-0.00323	0.00731	-0.00012	-0.00323	0.00408	0.00395
64	-0.01550	0.05951 ***	0.02155	-0.01550	0.04401 *	0.06556 ***
65	-0.00924	0.00843	0.00373	-0.00924	-0.00080	0.00293
66	0.00758	0.01088	-0.03357 *	0.00758	0.01847	-0.01511
67	-0.00688	0.04503 *	-0.01058	-0.00688	0.03815 *	0.02757
68	-0.01276	0.00091	-0.02105	-0.01276	-0.01185	-0.03290
69	-0.02941	0.00907	0.02068	-0.02941	-0.02034	0.00033
70	0.02170	-0.00687	0.00444	0.02170	0.01484	0.01927
71	0.03163 *	0.00803	-0.00149	0.03163 *	0.03966 **	0.03816 **
72	-0.00107	0.03699 *	0.03002 *	-0.00107	0.03591 *	0.06593 ***
73	-0.01240	0.01104	-0.00304	-0.01240	-0.00136	-0.00440
74	0.00180	0.01692	0.00337	0.00180	0.01872	0.02209
75	0.00047	0.08548 ***	-0.05030 *	0.00047	0.08595 ***	0.03565 *
76	-0.01463	-0.00041	-0.01622	-0.01463	-0.01504	-0.03126
77	0.00995	-0.01152	0.01440	0.00995	-0.00157	0.01283
78	0.02016	-0.00658	0.01312	0.02016	0.01358	0.02670
79	-0.00822	0.01568	0.00344	-0.00822	0.00746	0.01090

Appendix 16 - Comprehensive Intervention Approach where Event and Shoulder days are represented by dummy variables = Capitalised Asset Value (CAP)

Model 1 Estimation window -200 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264*	0.11597	0.05770	-0.18264*	-0.06667	-0.00897
2	0.79845***	-0.36954***	-0.54529***	0.79845***	0.42892***	-0.11638
3	-0.02476	-0.02103	0.02384	-0.02476	-0.04579	-0.02195
4	-0.02160	0.01952	0.01191	-0.02160	-0.00208	0.00983
5	-0.05577	-0.03155	0.05300	-0.05577	-0.08732*	-0.03432
6	-0.00063	-0.00674	-0.04425	-0.00063	-0.00737	-0.05162
7	0.11663*	0.09698*	0.07906	0.11663*	0.21361***	0.29267***
8	0.04245	0.02701	0.05842	0.04245	0.06947*	0.12788***
9	-0.01125	-0.08572*	0.03823	-0.01125	-0.09697*	-0.05874*
10	0.00093	0.02274	0.03559	0.00093	0.02367	0.05926*
11	-0.04834*	-0.02055	-0.00041	-0.04834*	-0.06889*	-0.06930*
12	0.01070	-0.00175	-0.00133	0.01070	0.00895	0.00762
13	-0.07762*	-0.01831	-0.02090	-0.07762*	-0.09593*	-0.11683***
14	-0.04280	0.02291	-0.01998	-0.04280	-0.01989	-0.03988
15	-0.03603	-0.01407	0.02185	-0.03603	-0.05010	-0.02826
16	0.08792***	0.08772***	-0.07250*	0.08792***	0.17564***	0.10313***
17	0.01514	0.00307	0.04583	0.01514	0.01822	0.06404*
18	-0.02795	0.04315	0.00567	-0.02795	0.01520	0.02087
19	0.07475*	-0.12415***	0.06128*	0.07475*	-0.04940*	0.01187
20	0.01598	-0.00215	0.01541	0.01598	0.01383	0.02924
21	0.01605	-0.09529*	0.00652	0.01605	-0.07925*	-0.07272*
22	-0.04300	0.03297	0.00456	-0.04300	-0.01003	-0.00547
23	0.07954*	0.03630	-0.02495	0.07954*	0.11583***	0.09088*
24	-0.00038	0.00066	-0.01458	-0.00038	0.00028	-0.01430
25	0.01461	0.02146	-0.01088	0.01461	0.03607	0.02518
26	-0.00179	0.00415	0.03825	-0.00179	0.00237	0.04062
27	-0.00084	0.00821	-0.09422***	-0.00084	0.00737	-0.08685***
28	0.00024	-0.06453*	0.07833*	0.00024	-0.06429*	0.01405
29	-0.06458*	0.07834*	-0.00359	-0.06458*	0.01376	0.01017
30	0.00147	0.01624	0.00319	0.00147	0.01771	0.02090
31	0.02650	0.16247***	0.01394	0.02650	0.18898***	0.20291***
32	-0.03015	0.02099	0.02876	-0.03015	-0.00916	0.01960
33	0.02976	-0.02663	0.04297	0.02976	0.00313	0.04611
34	-0.00285	-0.15400***	-0.00575	-0.00285	-0.15685***	-0.16260***
35	-0.07439*	-0.00044	0.04892	-0.07439*	-0.07483*	-0.02591
36	-0.02132	0.29314***	0.09572*	-0.02132	0.27182***	0.36755***
37	-0.00739	0.07392	-0.02460	-0.00739	0.06653	0.04194
38	-0.01372	0.38266***	-0.02716	-0.01372	0.36894***	0.34178***
39	0.00920	0.06359	0.05110	0.00920	0.07279	0.12389*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.17075***	1.69501***	-0.12258*	-0.17075***	1.52426***	1.40169***
41	-0.02774	0.03021	-0.07108	-0.02774	0.00247	-0.06861
42	0.01643	2.21728***	-0.15916***	0.01643	2.23371***	2.07455***
43	0.04721	0.01118	-0.01491	0.04721	0.05838	0.04347
44	-0.08042*	0.01066	-0.02560	-0.08042*	-0.06976	-0.09536*
45	-0.01274	0.12933*	-0.03624	-0.01274	0.11659*	0.08035*
46	-0.00953	0.01745	0.04095	-0.00953	0.00792	0.04887
47	-0.00794	0.02863	0.00975	-0.00794	0.02069	0.03044
48	0.00801	-0.00855	-0.02515	0.00801	-0.00054	-0.02569
49	-0.02357	0.03766	-0.00824	-0.02357	0.01410	0.00586
50	-0.01224	-0.04583	0.06099***	-0.01224	-0.05807*	0.00292
51	-0.01365	-0.01991	-0.00939	-0.01365	-0.03356	-0.04295
52	0.03191	0.00123	0.64761***	0.03191	0.03314	0.68075***
53	-0.01186	-0.02291	-0.00019	-0.01186	-0.03478	-0.03496
54	-0.02666	-0.02063	0.02167	-0.02666	-0.04730	-0.02563
55	0.05248*	0.00535	-0.00136	0.05248*	0.05783*	0.05647*
56	-0.00527	0.04763*	-0.00130	-0.00527	0.04237*	0.04107*
57	0.00161	-0.09319***	0.00664	0.00161	-0.09157***	-0.08493***
58	0.01685	-0.02523	-0.00119	0.01685	-0.00838	-0.00957
59	-0.00609	0.00531	0.00906	-0.00609	-0.00078	0.00828
60	-0.02345	0.00423	-0.00439	-0.02345	-0.01922	-0.02361
61	-0.00086	0.00822	-0.00213	-0.00086	0.00736	0.00523
62	-0.14017***	-0.05174***	0.04497*	-0.14017***	-0.19191***	-0.14694***
63	-0.00184	0.00726	-0.00114	-0.00184	0.00542	0.00428
64	-0.01353	0.05576***	0.00705	-0.01353	0.04222***	0.04928***
65	-0.01004	0.00855	0.00585	-0.01004	-0.00149	0.00435
66	0.00836	0.00940	-0.03631***	0.00836	0.01776	-0.01856
67	0.00171	0.03733*	-0.02120	0.00171	0.03904*	0.01784
68	-0.01005	-0.00549	-0.01611	-0.01005	-0.01554	-0.03165*
69	-0.03607	0.00758	0.02303	-0.03607	-0.02849	-0.00546
70	0.02922*	-0.03075	-0.00887	0.02922*	-0.00154	-0.01041
71	0.03464*	-0.00355	-0.00677	0.03464*	0.03109*	0.02432
72	-0.00882	0.03024*	0.02815*	-0.00882	0.02142	0.04957***
73	-0.03221	0.01876	-0.00776	-0.03221	-0.01345	-0.02121
74	-0.01612	0.03322*	-0.00821	-0.01612	0.01710	0.00890
75	-0.03236	0.01999	-0.07881***	-0.03236	-0.01237	-0.09118***
76	-0.00976	0.00774	-0.01293	-0.00976	-0.00202	-0.01495
77	0.01031	-0.01127	0.01453	0.01031	-0.00096	0.01357
78	0.01941	-0.02275	0.00528	0.01941	-0.00334	0.00194
79	-0.01512	0.01692	0.00327	-0.01512	0.00179	0.00507

Model 2 Estimation window -250 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264*	0.11597	0.05770	-0.18264*	-0.06667	-0.00897
2	0.78959***	-0.37699***	-0.51732***	0.78959***	0.41260***	-0.10472
3	-0.02491	-0.01851	0.02471	-0.02491	-0.04342	-0.01871
4	-0.01918	0.02320	-0.02440	-0.01918	0.00402	-0.02039
5	-0.05492	-0.02881	0.01777	-0.05492	-0.08372*	-0.06595*
6	-0.00248	-0.00603	-0.04599	-0.00248	-0.00850	-0.05449
7	0.07773	0.07655	0.07953	0.07773	0.15429*	0.23382***
8	-0.12621*	-0.11169*	-0.12370*	-0.12621*	-0.23790***	-0.36160***
9	-0.01390	-0.08721*	0.03697	-0.01390	-0.10111*	-0.06414
10	0.00187	0.02349	0.03659	0.00187	0.02536	0.06195*
11	-0.04791	-0.02013	0.00079	-0.04791	-0.06803*	-0.06725*
12	0.01178	-0.00122	-0.00031	0.01178	0.01056	0.01025
13	-0.07779*	-0.01854	-0.01211	-0.07779*	-0.09633*	-0.10844***
14	-0.04344	0.02299	-0.02054	-0.04344	-0.02045	-0.04099
15	-0.03538	-0.01342	0.02256	-0.03538	-0.04879	-0.02623
16	0.08507**	0.08688***	-0.07339*	0.08507**	0.17195***	0.09856***
17	0.01432	0.00277	0.04457	0.01432	0.01709	0.06166*
18	-0.01817	0.04409	-0.00373	-0.01817	0.02593	0.02220
19	0.12213***	-0.12447***	0.01546	0.12213***	-0.00234	0.01312
20	0.01790	-0.00177	0.05420	0.01790	0.01613	0.07033*
21	0.05511	-0.09536*	-0.03609	0.05511	-0.04025	-0.07634*
22	-0.04374	0.03436	0.00808	-0.04374	-0.00939	-0.00130
23	0.07857*	0.03445	-0.02732	0.07857*	0.11303***	0.08570*
24	-0.00031	0.00088	-0.01467	-0.00031	0.00058	-0.01410
25	0.01631	0.02199	-0.01033	0.01631	0.03830	0.02797
26	0.00336	0.00115	0.03615	0.00336	0.00450	0.04066
27	0.00033	0.00546	-0.09729**	0.00033	0.00579	-0.09150*
28	0.00047	-0.06541*	0.07729*	0.00047	-0.06493*	0.01236
29	-0.06541*	0.07729*	-0.00657	-0.06541*	0.01189	0.00531
30	0.00048	0.01911	0.00313	0.00048	0.01959	0.02272
31	0.03033	0.14918***	0.01005	0.03033	0.17951***	0.18956***
32	-0.02738	0.01234	0.02695	-0.02738	-0.01504	0.01191
33	0.03055	-0.02690	0.04117	0.03055	0.00364	0.04481
34	-0.00846	-0.14180***	-0.00641	-0.00846	-0.15025***	-0.15666***
35	-0.07578*	0.00142	0.05468	-0.07578*	-0.07435*	-0.01968
36	-0.02155	0.31815***	0.10088*	-0.02155	0.29660***	0.39748***
37	-0.00259	0.07687*	-0.02338	-0.00259	0.07428*	0.05090
38	-0.01555	0.40867***	-0.01451	-0.01555	0.39312***	0.37861***
39	0.00804	0.06220	0.05037	0.00804	0.07024	0.12061*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.13931*	1.70080***	-0.11881*	-0.13931*	1.56149***	1.44268***
41	-0.02848	0.02900	-0.07219	-0.02848	0.00052	-0.07167
42	0.01485	1.38114***	-0.15519***	0.01485	1.39599***	1.24081***
43	0.04544	0.01023	-0.01604	0.04544	0.05567	0.03963
44	-0.08111*	0.27280***	-0.02545	-0.08111*	0.19170***	0.16624***
45	-0.01210	0.12955*	-0.03537	-0.01210	0.11745*	0.08207*
46	-0.00808	0.01873	0.04253	-0.00808	0.01065	0.05318
47	-0.00630	0.03596	0.01099	-0.00630	0.02965	0.04065
48	0.00872	-0.00822	-0.02543	0.00872	0.00050	-0.02493
49	-0.02331	0.03801	-0.00811	-0.02331	0.01470	0.00658
50	-0.01047	-0.04533	0.06208*	-0.01047	-0.05581	0.00627
51	-0.01245	-0.01857	-0.00801	-0.01245	-0.03102	-0.03904
52	0.01463	-0.22711***	0.02267	0.01463	-0.21247***	-0.18980***
53	-0.01092	-0.02164	0.00069	-0.01092	-0.03256	-0.03187
54	-0.02975	-0.02244	0.01858	-0.02975	-0.05219*	-0.03361
55	0.05352*	0.00303	-0.00181	0.05352*	0.05655*	0.05474*
56	0.00572	0.05105*	-0.00027	0.00572	0.05677**	0.05650*
57	0.00333	-0.09176*	0.00901	0.00333	-0.08843*	-0.07942*
58	0.00985	-0.02602	0.00066	0.00985	-0.01617	-0.01550
59	0.00050	0.00635	0.00803	0.00050	0.00685	0.01488
60	-0.01168	0.00628	-0.00516	-0.01168	-0.00539	-0.01055
61	-0.00045	0.00783	-0.00325	-0.00045	0.00739	0.00413
62	-0.13687***	-0.05023*	0.04453*	-0.13687***	-0.18709***	-0.14256***
63	-0.00409	0.00648	-0.00170	-0.00409	0.00239	0.00069
64	-0.02337	0.05512***	0.00954	-0.02337	0.03175*	0.04129*
65	-0.00956	0.00856	0.00483	-0.00956	-0.00101	0.00382
66	0.00875	0.01035	-0.03523*	0.00875	0.01910	-0.01613
67	-0.00103	0.03950***	-0.02546	-0.00103	0.03847***	0.01301
68	-0.01123	-0.00220	-0.01838	-0.01123	-0.01343	-0.03181*
69	-0.03791	0.00772	0.02483	-0.03791	-0.03019	-0.00536
70	0.02694	-0.01122	-0.00609	0.02694	0.01571	0.00962
71	0.03548*	0.00864	-0.00552	0.03548*	0.04412***	0.03860*
72	-0.00351	0.02997*	0.02793	-0.00351	0.02646	0.05439***
73	-0.01598	-0.00768	-0.00785	-0.01598	-0.02365	-0.03150
74	-0.00114	-0.02645	-0.00834	-0.00114	-0.02759	-0.03592
75	-0.03002	0.02048	-0.07846***	-0.03002	-0.00954	-0.08800***
76	-0.00944	0.00707	-0.01381	-0.00944	-0.00237	-0.01618
77	0.01032	-0.01130	0.01448	0.01032	-0.00098	0.01350
78	0.01940	-0.02265	0.00543	0.01940	-0.00326	0.00217
79	-0.01413	0.01099	-0.00299	-0.01413	-0.00314	-0.00613

Model 3 Estimation window -300 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264*	0.11597	0.05770	-0.18264*	-0.06667	-0.00897
2	0.78959***	-0.37699***	-0.51732***	0.78959***	0.41260***	-0.10472
3	-0.02967	-0.01130	0.02512	-0.02967	-0.04097	-0.01586
4	-0.02099	0.02767	-0.02615	-0.02099	0.00668	-0.01947
5	-0.04633	-0.04071	0.01545	-0.04633	-0.08704*	-0.07159
6	-0.00130	-0.00505	-0.04571	-0.00130	-0.00635	-0.05206
7	0.07843	0.07775	0.07928	0.07843	0.15618*	0.23546***
8	0.00925	0.04640	-0.01065	0.00925	0.05565	0.04501
9	-0.00652	-0.09373*	0.05430	-0.00652	-0.10025*	-0.04595
10	0.00310	0.02226	0.03856	0.00310	0.02536	0.06391*
11	-0.04944	-0.02112	0.00611	-0.04944	-0.07056*	-0.06445*
12	0.01081	-0.00011	-0.00102	0.01081	0.01070	0.00968
13	-0.03585	-0.00570	0.04773*	-0.03585	-0.04155	0.00617
14	-0.04373	0.02358	-0.02071	-0.04373	-0.02015	-0.04086
15	-0.03566	-0.01370	0.02224	-0.03566	-0.04937	-0.02713
16	0.08618***	0.08710***	-0.07317*	0.08618***	0.17328***	0.10010***
17	0.01554	0.00439	0.04545	0.01554	0.01993	0.06538*
18	-0.01834	0.04395	-0.00461	-0.01834	0.02561	0.02100
19	0.12290***	-0.12408***	0.01528	0.12290***	-0.00118	0.01410
20	0.01785	-0.00172	0.05396	0.01785	0.01614	0.07010*
21	0.05428	-0.09566*	-0.03600	0.05428	-0.04138	-0.07738*
22	-0.04468	0.03389	0.00727	-0.04468	-0.01079	-0.00352
23	0.12281***	0.03394	-0.04762	0.12281***	0.15675***	0.10913***
24	-0.00007	0.00178	-0.01483	-0.00007	0.00171	-0.01313
25	0.01690	0.02255	-0.01017	0.01690	0.03945	0.02928
26	0.00399	0.00070	0.03582	0.00399	0.00469	0.04051
27	0.00038	0.00812	-0.09357**	0.00038	0.00849	-0.08508*
28	0.00022	-0.06124*	0.07651*	0.00022	-0.06102*	0.01549
29	-0.06306*	0.07677*	-0.00633	-0.06306*	0.01370	0.00737
30	-0.00042	0.01649	0.00267	-0.00042	0.01607	0.01874
31	0.03115	0.14982***	0.00742	0.03115	0.18096***	0.18838***
32	-0.02747	0.00955	0.02518	-0.02747	-0.01793	0.00726
33	0.02988	-0.02762	0.04037	0.02988	0.00226	0.04263
34	-0.01069	-0.13627***	-0.00457	-0.01069	-0.14696***	-0.15153***
35	-0.07486*	0.00107	0.05280	-0.07486*	-0.07379*	-0.02099
36	-0.00312	0.28681***	0.10132*	-0.00312	0.28369***	0.38500***
37	-0.00185	0.07744*	-0.02356	-0.00185	0.07559*	0.05203
38	-0.01355	0.41640***	-0.01582	-0.01355	0.40286***	0.38703***
39	0.00806	0.06176	0.05123	0.00806	0.06982	0.12105*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.14495**	1.78539***	-0.09891*	-0.14495**	1.64045***	1.54153***
41	-0.02709	0.03096	-0.07085*	-0.02709	0.00387	-0.06698*
42	0.01302	1.44369***	-0.13774*	0.01302	1.45670***	1.31897***
43	0.04141	0.00836	-0.01839	0.04141	0.04976	0.03137
44	-0.08214*	0.17745***	-0.02340	-0.08214*	0.09531*	0.07191*
45	-0.01252	0.66814***	-0.03574	-0.01252	0.65562***	0.61988***
46	-0.01034	0.02107	0.04263	-0.01034	0.01073	0.05336
47	-0.00897	0.03980	0.01151	-0.00897	0.03083	0.04234
48	0.01016	0.00050	-0.02451	0.01016	0.01066	-0.01385
49	-0.02149	0.04007	-0.00710	-0.02149	0.01859	0.01149
50	-0.00888	-0.04458	0.06337*	-0.00888	-0.05346	0.00992
51	-0.01269	-0.01833	-0.00765	-0.01269	-0.03101	-0.03867
52	0.01153	-0.22660***	0.01315	0.01153	-0.21507***	-0.20191***
53	-0.01159	-0.02252	0.00005	-0.01159	-0.03411	-0.03406
54	-0.03528	-0.02572	0.01313	-0.03528	-0.06100*	-0.04786
55	0.05377*	0.00088	-0.00162	0.05377*	0.05465*	0.05303*
56	0.00393	0.05024*	0.00001	0.00393	0.05417*	0.05419*
57	0.00046	-0.09542**	0.00786	0.00046	-0.09496**	-0.08711*
58	0.01143	-0.02454	0.00242	0.01143	-0.01310	-0.01069
59	0.00268	0.00676	0.00795	0.00268	0.00944	0.01739
60	-0.00904	0.00766	-0.00284	-0.00904	-0.00138	-0.00421
61	-0.00244	0.00740	-0.00331	-0.00244	0.00495	0.00164
62	-0.13452***	-0.05093*	0.04746*	-0.13452***	-0.18545***	-0.13799***
63	-0.00526	0.00607	-0.00219	-0.00526	0.00081	-0.00139
64	-0.02367	0.05454***	0.00913	-0.02367	0.03087	0.04000*
65	-0.01072	0.00738	0.00361	-0.01072	-0.00333	0.00028
66	0.00720	0.00976	-0.03556*	0.00720	0.01695	-0.01861
67	-0.00113	0.03968***	-0.02563	-0.00113	0.03855***	0.01292
68	-0.01125	-0.00050	-0.01884	-0.01125	-0.01175	-0.03059*
69	-0.03647*	0.00739	0.02306	-0.03647*	-0.02908	-0.00602
70	0.02766*	-0.01198	-0.00649	0.02766*	0.01568	0.00919
71	0.03750*	0.00997	-0.00490	0.03750*	0.04747***	0.04257***
72	-0.00197	0.03030*	0.02734	-0.00197	0.02833	0.05567***
73	-0.01243	-0.00797	-0.01061	-0.01243	-0.02040	-0.03101
74	-0.00097	-0.02644	-0.00384	-0.00097	-0.02741	-0.03125
75	-0.00925	-0.07840***	-0.07606***	-0.00925	-0.08765***	-0.16371***
76	-0.01260	0.01980	-0.01348	-0.01260	0.00719	-0.00629
77	0.01011	-0.01149	0.01429	0.01011	-0.00138	0.01291
78	0.01097	-0.02219	0.00733	0.01097	-0.01122	-0.00389
79	-0.01094	0.01137	0.00254	-0.01094	0.00043	0.00297

Model 4 Estimation window -350 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264*	0.11597	0.05770	-0.18264*	-0.06667	-0.00897
2	0.78959***	-0.37699***	-0.51732***	0.78959***	0.41260***	-0.10472
3	-0.02967	-0.01130	0.02512	-0.02967	-0.04097	-0.01586
4	-0.01478	0.02031	-0.02043	-0.01478	0.00553	-0.01490
5	-0.04698	-0.03159	0.01744	-0.04698	-0.07857	-0.06113
6	0.00789	-0.00658	-0.04214	0.00789	0.00131	-0.04083
7	0.08453*	0.07734	0.08084	0.08453*	0.16186*	0.24270***
8	0.06825	0.07307	0.01181	0.06825	0.14132***	0.15313***
9	-0.02204	-0.09978*	0.04803	-0.02204	-0.12181*	-0.07379
10	0.00235	0.02036	0.03836	0.00235	0.02272	0.06108
11	-0.04996	-0.02229	0.00557	-0.04996	-0.07225*	-0.06668*
12	0.01112	0.00062	-0.00065	0.01112	0.01174	0.01108
13	-0.06282*	-0.00567	0.07548***	-0.06282*	-0.06848*	0.00699
14	-0.04431	0.02255	-0.02136	-0.04431	-0.02177	-0.04312
15	-0.02634	-0.01510	0.00910	-0.02634	-0.04143	-0.03233
16	0.08540**	0.08692***	-0.07336*	0.08540**	0.17232***	0.09896***
17	0.01564	0.00446	0.04558	0.01564	0.02010	0.06568*
18	-0.01756	0.04476	-0.00468	-0.01756	0.02719	0.02251
19	0.12300***	-0.12414***	0.01493	0.12300***	-0.00114	0.01379
20	0.01812	-0.00216	0.05564	0.01812	0.01596	0.07160*
21	0.05552	-0.09541*	-0.03693	0.05552	-0.03989	-0.07682*
22	-0.04577	0.03306	0.00626	-0.04577	-0.01271	-0.00645
23	0.12282***	0.03401	-0.04754	0.12282***	0.15682***	0.10929***
24	0.00013	0.00145	-0.01403	0.00013	0.00159	-0.01244
25	0.02065	0.02256	-0.01261	0.02065	0.04321	0.03060
26	0.00753	-0.00033	0.03429	0.00753	0.00721	0.04150
27	0.00040	0.00786	-0.09384**	0.00040	0.00826	-0.08558**
28	0.00073	-0.05960*	0.07666*	0.00073	-0.05887*	0.01779
29	-0.05924*	0.07650*	-0.00560	-0.05924*	0.01726	0.01166
30	-0.00065	0.01845	0.00291	-0.00065	0.01780	0.02071
31	0.03245	0.14569***	0.00792	0.03245	0.17814***	0.18606***
32	-0.02794	0.01290	0.02643	-0.02794	-0.01504	0.01140
33	0.02847	-0.02807	0.04132	0.02847	0.00039	0.04171
34	-0.01215	-0.14253***	-0.00612	-0.01215	-0.15468***	-0.16080***
35	-0.07442*	0.00054	0.05110	-0.07442*	-0.07388*	-0.02278
36	0.00250	0.28200***	0.10158*	0.00250	0.28450***	0.38608***
37	0.00174	0.07202*	-0.02355	0.00174	0.07376*	0.05021
38	0.00868	0.38051***	-0.01560	0.00868	0.38919***	0.37358***
39	0.00816	0.06185	0.05134	0.00816	0.07001	0.12135*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.08963*	1.69126***	-0.03426	-0.08963*	1.60163***	1.56738***
41	-0.02700	0.02974	-0.07066*	-0.02700	0.00274	-0.06792*
42	0.01058	1.47125***	-0.14018**	0.01058	1.48183***	1.34165***
43	0.03990	0.00866	-0.01849	0.03990	0.04856	0.03007
44	-0.08194*	0.18188***	-0.02111	-0.08194*	0.09994*	0.07883*
45	-0.01310	0.51380***	-0.03618	-0.01310	0.50070***	0.46452***
46	-0.01093	0.02072	0.04193	-0.01093	0.00980	0.05173
47	-0.00850	0.04003	0.01185	-0.00850	0.03153	0.04338
48	0.01004	0.00127	-0.02311	0.01004	0.01131	-0.01180
49	-0.02084	0.04814	-0.00620	-0.02084	0.02731	0.02111
50	-0.00840	-0.05171	0.06473*	-0.00840	-0.06010	0.00463
51	-0.01108	-0.01997	-0.00595	-0.01108	-0.03106	-0.03701
52	0.00015	0.04757	-0.01855	0.00015	0.04772	0.02917
53	-0.01021	-0.02159	0.00153	-0.01021	-0.03179	-0.03026
54	-0.03385	-0.02466	0.01458	-0.03385	-0.05851*	-0.04392
55	0.05486*	0.00105	0.00045	0.05486*	0.05591*	0.05636*
56	0.00321	0.05039*	0.00153	0.00321	0.05360*	0.05514*
57	-0.00106	-0.09733**	0.00718	-0.00106	-0.09839**	-0.09121**
58	0.01086	-0.02522	0.00207	0.01086	-0.01436	-0.01228
59	0.00278	0.00379	0.00414	0.00278	0.00657	0.01071
60	-0.00797	0.00524	-0.00270	-0.00797	-0.00273	-0.00544
61	-0.00128	0.00872	-0.00189	-0.00128	0.00744	0.00555
62	-0.01485	-0.03256	0.04257*	-0.01485	-0.04741*	-0.00483
63	-0.00457	0.00441	-0.00075	-0.00457	-0.00016	-0.00090
64	-0.02444	0.05434***	0.00940	-0.02444	0.02991	0.03930*
65	-0.01021	0.00748	0.00282	-0.01021	-0.00273	0.00009
66	0.00713	0.01042	-0.03472*	0.00713	0.01755	-0.01716
67	-0.00975	0.03983*	-0.02409	-0.00975	0.03008	0.00599
68	-0.01194	-0.00018	-0.01977	-0.01194	-0.01212	-0.03188
69	-0.03007	0.00858	0.01981	-0.03007	-0.02150	-0.00169
70	0.02520	-0.01013	-0.00531	0.02520	0.01507	0.00976
71	0.03492*	0.00814	-0.00584	0.03492*	0.04305***	0.03721*
72	-0.00135	0.03611*	0.02771	-0.00135	0.03476*	0.06247***
73	-0.01187	0.00939	-0.01013	-0.01187	-0.00248	-0.01261
74	0.00419	0.01216	-0.01307	0.00419	0.01635	0.00328
75	0.00569	-0.07894***	-0.09350***	0.00569	-0.07325***	-0.16676***
76	-0.01496	0.01988	-0.01127	-0.01496	0.00492	-0.00636
77	0.01012	-0.01144	0.01438	0.01012	-0.00132	0.01307
78	0.01289	-0.02245	0.00591	0.01289	-0.00955	-0.00364
79	-0.01019	0.01173	0.00219	-0.01019	0.00154	0.00373

Model 5 Estimation window -400 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18264*	0.11597	0.05770	-0.18264*	-0.06667	-0.00897
2	0.78959***	-0.37699***	-0.51732***	0.78959***	0.41260***	-0.10472
3	-0.02967	-0.01130	0.02512	-0.02967	-0.04097	-0.01586
4	-0.01478	0.02031	-0.02043	-0.01478	0.00553	-0.01490
5	-0.04717	-0.02700	0.01851	-0.04717	-0.07416	-0.05566
6	0.00831	-0.00658	-0.04191	0.00831	0.00172	-0.04018
7	0.08459	0.07679	0.08062	0.08459	0.16137**	0.24199***
8	0.06798	0.07180	0.01146	0.06798	0.13978***	0.15123***
9	-0.02081	-0.10080*	0.04939	-0.02081	-0.12161*	-0.07222
10	0.00202	0.02090	0.03778	0.00202	0.02292	0.06071
11	-0.04996	-0.02231	0.00546	-0.04996	-0.07227*	-0.06681*
12	0.01076	0.00192	-0.00080	0.01076	0.01269	0.01189
13	-0.08944**	-0.02928	0.04211	-0.08944**	-0.11872***	-0.07660*
14	-0.04496	0.02231	-0.02195	-0.04496	-0.02266	-0.04461
15	-0.02703	-0.01582	0.00877	-0.02703	-0.04284	-0.03407
16	0.06707*	0.08700***	-0.05275*	0.06707*	0.15407***	0.10132***
17	0.01566	0.00463	0.04548	0.01566	0.02029	0.06578*
18	-0.01770	0.04459	-0.00412	-0.01770	0.02689	0.02277
19	0.12248***	-0.12447***	0.01485	0.12248***	-0.00199	0.01286
20	0.01844	-0.00131	0.05391	0.01844	0.01712	0.07103*
21	0.05417	-0.09594*	-0.03687	0.05417	-0.04177	-0.07864*
22	-0.04473	0.03412	0.00730	-0.04473	-0.01061	-0.00331
23	0.12166***	0.03441	-0.04693	0.12166***	0.15607***	0.10914***
24	-0.00026	0.00099	-0.01435	-0.00026	0.00073	-0.01362
25	0.02044	0.02241	-0.01248	0.02044	0.04285	0.03037
26	0.00606	0.00083	0.03518	0.00606	0.00689	0.04207
27	0.00033	0.00862	-0.09305**	0.00033	0.00895	-0.08409**
28	0.00085	-0.05711*	0.07642*	0.00085	-0.05626*	0.02015
29	-0.05715*	0.07642*	-0.00514	-0.05715*	0.01927	0.01414
30	-0.00039	0.01757	0.00284	-0.00039	0.01719	0.02003
31	0.03223	0.14723***	0.00804	0.03223	0.17946***	0.18750***
32	-0.02717	0.00966	0.02559	-0.02717	-0.01751	0.00808
33	0.02977	-0.02763	0.04051	0.02977	0.00214	0.04265
34	-0.01231	-0.13561***	-0.00552	-0.01231	-0.14792***	-0.15344***
35	-0.07710*	0.00059	0.05442	-0.07710*	-0.07651*	-0.02208
36	0.00262	0.28883***	0.09334*	0.00262	0.29145***	0.38479***
37	0.00376	0.06934*	-0.02638	0.00376	0.07309*	0.04671
38	0.01756	0.37527***	-0.02257	0.01756	0.39283***	0.37026***
39	0.00797	0.06167	0.05113	0.00797	0.06964*	0.12077*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.06583*	1.65549***	-0.04590	-0.06583*	1.58966***	1.54376***
41	-0.02649	0.02973	-0.07030*	-0.02649	0.00324	-0.06706*
42	0.00335	1.47932***	-0.07518*	0.00335	1.48267***	1.40749***
43	0.03917	0.00854	-0.01875	0.03917	0.04771	0.02896
44	-0.08205*	0.18593***	-0.01912	-0.08205*	0.10388*	0.08475*
45	-0.01212	0.51849***	-0.03482	-0.01212	0.50637***	0.47155***
46	-0.01106	0.32569***	0.04212	-0.01106	0.31463***	0.35675***
47	-0.00880	0.06273*	0.01157	-0.00880	0.05393	0.06550*
48	0.00978	0.00258	-0.02035	0.00978	0.01236	-0.00799
49	-0.02265	0.04516	-0.00836	-0.02265	0.02251	0.01415
50	-0.01068	-0.05002	0.06515*	-0.01068	-0.06070	0.00445
51	-0.00766	-0.01961	-0.00563	-0.00766	-0.02727	-0.03290
52	0.00082	0.04508	-0.02561	0.00082	0.04590	0.02029
53	-0.00921	-0.02034	0.00248	-0.00921	-0.02955	-0.02707
54	-0.03401	-0.02454	0.01443	-0.03401	-0.05855	-0.04412
55	0.05474*	0.00040	0.00023	0.05474*	0.05514*	0.05537*
56	0.00063	0.05006*	0.00355	0.00063	0.05069*	0.05424*
57	-0.00385	-0.10098**	0.00629	-0.00385	-0.10483**	-0.09855**
58	0.01060	-0.02528	0.00233	0.01060	-0.01468	-0.01235
59	0.00370	0.00174	0.00134	0.00370	0.00544	0.00678
60	-0.00590	0.00402	-0.00185	-0.00590	-0.00188	-0.00373
61	-0.00325	0.00764	-0.00237	-0.00325	0.00438	0.00201
62	-0.01480	-0.03403	0.04313*	-0.01480	-0.04883*	-0.00571
63	-0.00366	0.00500	-0.00006	-0.00366	0.00134	0.00128
64	-0.02100	0.03771*	0.02035	-0.02100	0.01671	0.03706*
65	-0.00903	0.00859	0.00377	-0.00903	-0.00044	0.00333
66	0.00750	0.00930	-0.03363*	0.00750	0.01680	-0.01682
67	-0.01042	0.04032*	-0.02510	-0.01042	0.02991	0.00481
68	-0.01255	0.00111	-0.02084	-0.01255	-0.01144	-0.03228
69	-0.02950	0.00863	0.01903	-0.02950	-0.02087	-0.00184
70	0.02478	-0.00948	-0.00485	0.02478	0.01530	0.01046
71	0.03271*	0.00678	-0.00633	0.03271*	0.03950**	0.03317*
72	-0.00075	0.03647*	0.02781	-0.00075	0.03572*	0.06353***
73	-0.01203	0.00889	-0.01059	-0.01203	-0.00313	-0.01372
74	0.00405	0.01214	-0.01332	0.00405	0.01619	0.00287
75	0.00534	0.06657***	-0.10477***	0.00534	0.07191***	-0.03286
76	-0.01493	0.00213	-0.00929	-0.01493	-0.01280	-0.02209
77	0.01020	-0.01130	0.01459	0.01020	-0.00110	0.01348
78	0.01704	-0.02232	0.00603	0.01704	-0.00528	0.00075
79	-0.01015	0.01222	0.00169	-0.01015	0.00208	0.00376

Appendix 17 - Comprehensive Intervention Approach where only significant announcement days are represented by dummy variables = 1 or Capitalised Asset Value (CAP).

Model 1 Estimation window -200 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18261*	0.11600	0.05578	-0.18261*	-0.06662	-0.01084
2	0.80047***	-0.36727***	-0.53658***	0.80047***	0.43320***	-0.10339
3	-0.03014	-0.02009	0.02161	-0.03014	-0.05023	-0.02862
4	-0.02197	0.01586	0.01117	-0.02197	-0.00611	0.00506
5	-0.05790	-0.02931	0.05282	-0.05790	-0.08721*	-0.03439
6	-0.00472	-0.00553	-0.04777	-0.00472	-0.01025	-0.05802
7	0.11646*	0.08592*	0.07787	0.11646*	0.20239***	0.28026***
8	0.04286	0.02777	0.05986	0.04286	0.07063*	0.13049***
9	-0.01073	-0.08552*	0.03836	-0.01073	-0.09625*	-0.05789
10	0.00170	0.02384	0.03626	0.00170	0.02553	0.06179*
11	-0.04719*	-0.01958	-0.00006	-0.04719*	-0.06677*	-0.06683*
12	0.01107	-0.00211	-0.00105	0.01107	0.00897	0.00792
13	-0.07593*	-0.12167***	-0.08044*	-0.07593*	-0.19760***	-0.27804***
14	-0.04152	0.02345	-0.01880	-0.04152	-0.01807	-0.03686
15	-0.03604	-0.01409	0.02213	-0.03604	-0.05014	-0.02800
16	0.06462*	0.07860*	-0.07282*	0.06462*	0.14323***	0.07041*
17	0.01363	-0.00322	0.04457	0.01363	0.01041	0.05498
18	-0.02783	0.05864	0.00511	-0.02783	0.03082	0.03592
19	0.07862*	-0.03671	0.06271	0.07862*	0.04191	0.10462***
20	0.01439	-0.00145	0.01541	0.01439	0.01294	0.02835
21	-0.04033	-0.06844*	0.00894	-0.04033	-0.10877***	-0.09983***
22	-0.03944	0.03797	0.00335	-0.03944	-0.00147	0.00188
23	0.01437	0.38847***	-0.02293	0.01437	0.40284***	0.37991***
24	-0.00134	-0.00037	-0.01576	-0.00134	-0.00171	-0.01746
25	0.01030	0.12603***	-0.01129	0.01030	0.13633***	0.12504***
26	-0.00538	-0.00010	0.03826	-0.00538	-0.00549	0.03277
27	-0.00330	0.03536	-0.09573***	-0.00330	0.03206	-0.06367*
28	0.00055	-0.06857*	0.08138*	0.00055	-0.06801*	0.01336
29	-0.06842*	0.08132*	0.00005	-0.06842*	0.01290	0.01295
30	0.00037	0.06337	0.00320	0.00037	0.06374	0.06694
31	0.04050	-0.00141	0.00649	0.04050	0.03909	0.04558
32	-0.02611	-0.04713	0.02555	-0.02611	-0.07324*	-0.04769
33	0.02923	-0.02751	0.04158	0.02923	0.00172	0.04331
34	-0.01608	0.03511	-0.00057	-0.01608	0.01903	0.01847
35	-0.07221*	-0.00161	0.04372	-0.07221*	-0.07382*	-0.03010
36	0.00587	-0.02578	0.08261*	0.00587	-0.01991	0.06269
37	-0.00227	0.01730	-0.02656	-0.00227	0.01503	-0.01153
38	0.01450	0.03423	-0.04714	0.01450	0.04873	0.00159
39	0.00866	0.06321	0.05026	0.00866	0.07188	0.12214*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.09688*	0.01810	-0.13272*	-0.09688*	-0.07877*	-0.21149***
41	-0.02794	0.01535	-0.07195	-0.02794	-0.01260	-0.08455*
42	0.01361	0.30029***	-0.15836***	0.01361	0.31390***	0.15555***
43	0.04545	0.01058	-0.01576	0.04545	0.05603	0.04027
44	-0.08072*	0.03040	-0.02359	-0.08072*	-0.05032	-0.07391*
45	-0.01248	0.11835*	-0.03529	-0.01248	0.10587*	0.07058
46	-0.00972	0.01887	0.04083	-0.00972	0.00915	0.04998
47	-0.00780	0.03320	0.00871	-0.00780	0.02540	0.03411
48	0.00799	-0.00290	-0.02694	0.00799	0.00509	-0.02185
49	-0.02329	0.04395	-0.00946	-0.02329	0.02066	0.01119
50	-0.01180	-0.05142	0.06332***	-0.01180	-0.06322*	0.00010
51	-0.01315	-0.02226	-0.00878	-0.01315	-0.03542	-0.04419
52	0.03389	-0.01623	-0.12703***	0.03389	0.01766	-0.10937***
53	-0.01157	-0.02155	-0.00012	-0.01157	-0.03312	-0.03324
54	-0.02623	-0.02042	0.02210	-0.02623	-0.04665	-0.02455
55	0.05178*	0.63406***	-0.00195	0.05178*	0.68583***	0.68389***
56	-0.00645	0.04751*	-0.00095	-0.00645	0.04107	0.04012
57	-0.00017	-0.09547***	0.00595	-0.00017	-0.09564***	-0.08969***
58	0.01681	-0.02567	-0.00103	0.01681	-0.00885	-0.00988
59	-0.00586	0.00404	0.00704	-0.00586	-0.00181	0.00523
60	-0.02284	-0.03469	-0.00427	-0.02284	-0.05753*	-0.06180***
61	-0.00062	0.00785	-0.00308	-0.00062	0.00723	0.00415
62	-0.13747***	0.44951***	0.04934*	-0.13747***	0.31204***	0.36139***
63	-0.00357	0.00628	-0.00218	-0.00357	0.00271	0.00053
64	-0.01530	0.30089***	0.00702	-0.01530	0.28559***	0.29261***
65	-0.01072	0.00740	0.00367	-0.01072	-0.00332	0.00034
66	0.00757	0.00518	-0.03601*	0.00757	0.01275	-0.02326
67	0.00126	0.35550***	-0.02157	0.00126	0.35675***	0.33518***
68	-0.01068	-0.00539	-0.01691	-0.01068	-0.01607	-0.03298
69	-0.03950	0.00780	0.02695	-0.03950	-0.03169	-0.00474
70	0.03071	-0.04446	-0.00070	0.03071	-0.01375	-0.01445
71	0.03731*	0.01471	-0.00212	0.03731*	0.05202***	0.04990***
72	-0.00910	0.02632	0.02986	-0.00910	0.01722	0.04707***
73	-0.03198	-0.02003	-0.00762	-0.03198	-0.05201*	-0.05963***
74	-0.01561	-0.04862*	-0.00775	-0.01561	-0.06422***	-0.07198***
75	-0.02964	-0.17604***	-0.07660***	-0.02964	-0.20568***	-0.28228***
76	-0.01015	0.03187*	-0.01364	-0.01015	0.02172	0.00808
77	0.01009	-0.01152	0.01426	0.01009	-0.00143	0.01283
78	0.01948	-0.02315	0.00460	0.01948	-0.00367	0.00093
79	-0.01388	0.01759	0.00307	-0.01388	0.00371	0.00678

Model 2 Estimation window -250 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18261*	0.11600	0.05578	-0.18261*	-0.06662	-0.01084
2	0.79102***	-0.37540***	-0.51180***	0.79102***	0.41563***	-0.09617
3	-0.02956	-0.01728	0.02294	-0.02956	-0.04683	-0.02390
4	-0.01918	0.01916	-0.02426	-0.01918	-0.00001	-0.02427
5	-0.05701	-0.02641	0.01756	-0.05701	-0.08342*	-0.06586
6	-0.00543	-0.00523	-0.04846	-0.00543	-0.01066	-0.05912
7	0.07668	0.07702	0.07839	0.07668	0.15369*	0.23208***
8	-0.12626*	-0.11337*	-0.12364*	-0.12626*	-0.23962***	-0.36327***
9	-0.01369	-0.08726*	0.03687	-0.01369	-0.10096*	-0.06409
10	0.00216	0.02460	0.03663	0.00216	0.02676	0.06339*
11	-0.04664	-0.01912	-0.00008	-0.04664	-0.06576	-0.06583
12	0.01195	-0.00102	-0.00014	0.01195	0.01093	0.01079
13	-0.07673*	-0.08477*	-0.04849	-0.07673*	-0.16150***	-0.20999***
14	-0.04235	0.02330	-0.01954	-0.04235	-0.01905	-0.03859
15	-0.03533	-0.01328	0.02277	-0.03533	-0.04862	-0.02585
16	0.06359*	0.07866*	-0.07334	0.06359*	0.14224***	0.06891*
17	0.01366	-0.00241	0.04390	0.01366	0.01125	0.05515
18	-0.01972	0.06494*	-0.00314	-0.01972	0.04522	0.04208
19	0.11733***	-0.00367	0.01739	0.11733***	0.11366***	0.13104***
20	0.01693	0.00244	0.04841	0.01693	0.01938	0.06779*
21	-0.01879	-0.00327	-0.03407	-0.01879	-0.02207	-0.05614
22	-0.03918	0.03411	0.00705	-0.03918	-0.00507	0.00199
23	0.02112	0.03358	-0.02448	0.02112	0.05470	0.03022
24	-0.00193	-0.00079	-0.01648	-0.00193	-0.00272	-0.01920
25	0.01220	0.13026***	-0.01066	0.01220	0.14246***	0.13180***
26	0.00025	-0.00383	0.03586	0.00025	-0.00358	0.03228
27	-0.00253	0.02981	-0.09788**	-0.00253	0.02728	-0.07060*
28	-0.00060	-0.06884*	0.07994*	-0.00060	-0.06943*	0.01051
29	-0.06884*	0.07994*	-0.00364	-0.06884*	0.01111	0.00747
30	-0.00093	0.06126	0.00251	-0.00093	0.06033	0.06284
31	0.03180	0.00370	0.00861	0.03180	0.03550	0.04411
32	-0.02757	-0.04774	0.02503	-0.02757	-0.07531*	-0.05029
33	0.03008	-0.02774	0.03980	0.03008	0.00234	0.04214
34	-0.01109	0.03466	-0.00575	-0.01109	0.02357	0.01782
35	-0.07488*	0.00041	0.05137	-0.07488*	-0.07447*	-0.02310
36	-0.00192	-0.01556	0.09010*	-0.00192	-0.01749	0.07262
37	0.00102	0.01719	-0.02486	0.00102	0.01821	-0.00665
38	0.01402	0.03587	-0.02838	0.01402	0.04989	0.02151
39	0.00827	0.06252	0.05042	0.00827	0.07079	0.12121*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.07966*	0.03172	-0.13095*	-0.07966*	-0.04795	-0.17890***
41	-0.02844	0.01466	-0.07273	-0.02844	-0.01379	-0.08651*
42	0.01703	-0.04338	-0.16845***	0.01703	-0.02635	-0.19480***
43	0.04586	0.01001	-0.01612	0.04586	0.05587	0.03975
44	-0.08152*	0.04768	-0.02387	-0.08152*	-0.03384	-0.05772
45	-0.01210	0.14519***	-0.03480	-0.01210	0.13309**	0.09829*
46	-0.00887	0.01661	0.04215	-0.00887	0.00774	0.04989
47	-0.00681	0.03465	0.01039	-0.00681	0.02785	0.03824
48	0.00883	-0.00193	-0.02670	0.00883	0.00690	-0.01980
49	-0.02336	0.04427	-0.00942	-0.02336	0.02090	0.01148
50	-0.01002	-0.05121	0.06420***	-0.01002	-0.06123	0.00296
51	-0.01249	-0.02113	-0.00758	-0.01249	-0.03362	-0.04120
52	0.01490	-0.01316	-0.03473	0.01490	0.00174	-0.03299
53	-0.01103	-0.02166	0.00056	-0.01103	-0.03268	-0.03212
54	-0.02997	-0.02298	0.01819	-0.02997	-0.05295*	-0.03476
55	0.05319*	-0.00113	-0.00697	0.05319*	0.05207*	0.04510
56	0.00489	0.05048*	-0.00054	0.00489	0.05537*	0.05483*
57	0.00184	-0.09354*	0.00815	0.00184	-0.09169*	-0.08354*
58	0.00962	-0.02632	0.00055	0.00962	-0.01670	-0.01615
59	0.00061	0.00497	0.00623	0.00061	0.00558	0.01181
60	-0.01131	-0.03503	-0.00512	-0.01131	-0.04633*	-0.05145*
61	-0.00079	0.00743	-0.00373	-0.00079	0.00664	0.00290
62	-0.13473***	0.42616***	0.04809*	-0.13473***	0.29143***	0.33951***
63	-0.00531	0.00581	-0.00241	-0.00531	0.00050	-0.00191
64	-0.02434	0.29452***	0.00954	-0.02434	0.27018***	0.27972***
65	-0.01060	0.00732	0.00317	-0.01060	-0.00328	-0.00011
66	0.00788	0.00580	-0.03533*	0.00788	0.01368	-0.02165
67	-0.00116	0.34447***	-0.02534	-0.00116	0.34330***	0.31796***
68	-0.01176	-0.00247	-0.01898	-0.01176	-0.01423	-0.03321*
69	-0.03826	0.04933***	0.02613	-0.03826	0.01107	0.03720*
70	0.02785	-0.03653	-0.00410	0.02785	-0.00868	-0.01278
71	0.03802*	0.01585	-0.00351	0.03802*	0.05387***	0.05036***
72	-0.00324	0.02667	0.02988	-0.00324	0.02342	0.05331***
73	-0.01622	-0.02095	-0.00167	-0.01622	-0.03717	-0.03884
74	-0.00144	-0.04916*	0.00393	-0.00144	-0.05060*	-0.04667*
75	-0.02952	-0.17700***	-0.07690***	-0.02952	-0.20652***	-0.28342***
76	-0.00987	0.03164*	-0.01393	-0.00987	0.02178	0.00785
77	0.00995	-0.01167	0.01409	0.00995	-0.00172	0.01237
78	0.01945	-0.02307	0.00475	0.01945	-0.00362	0.00114
79	-0.01310	0.01185	-0.00224	-0.01310	-0.00126	-0.00350

Model 3 Estimation window 300 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18261*	0.11600	0.05578	-0.18261*	-0.06662	-0.01084
2	0.79102***	-0.37540***	-0.51180***	0.79102***	0.41563***	-0.09617
3	-0.03357	-0.01026	0.02363	-0.03357	-0.04383	-0.02020
4	-0.02009	0.02234	-0.02518	-0.02009	0.00225	-0.02292
5	-0.04871	-0.03570	0.01575	-0.04871	-0.08441	-0.06866
6	-0.00405	-0.00486	-0.04769	-0.00405	-0.00891	-0.05660
7	0.07720	0.07761	0.07841	0.07720	0.15480*	0.23322***
8	0.01160	-0.11158*	-0.00973	0.01160	-0.09999*	-0.10972*
9	-0.00695	-0.05039	0.05409	-0.00695	-0.05734	-0.00325
10	0.00311	0.02312	0.03831	0.00311	0.02623	0.06453*
11	-0.04838	-0.02031	0.00489	-0.04838	-0.06869*	-0.06380*
12	0.01157	-0.00009	-0.00035	0.01157	0.01148	0.01113
13	-0.03592	0.38557***	0.04831*	-0.03592	0.34965***	0.39796***
14	-0.04321	0.02370	-0.02025	-0.04321	-0.01951	-0.03976
15	-0.03603	-0.01399	0.02200	-0.03603	-0.05001	-0.02802
16	0.06429*	0.07888*	-0.07329*	0.06429*	0.14317***	0.06988*
17	0.01502	-0.00078	0.04509	0.01502	0.01424	0.05934*
18	-0.01942	0.06525*	-0.00416	-0.01942	0.04583	0.04167
19	0.11838***	-0.00325	0.01660	0.11838***	0.11512***	0.13173***
20	0.01738	0.00307	0.04790	0.01738	0.02045	0.06835*
21	-0.01935	-0.00303	-0.03438	-0.01935	-0.02238	-0.05676
22	-0.03915	0.03426	0.00714	-0.03915	-0.00489	0.00225
23	0.05213	0.05563	-0.04505	0.05213	0.10776***	0.06271
24	-0.00110	0.00062	-0.01601	-0.00110	-0.00047	-0.01648
25	0.01298	0.03215	-0.01113	0.01298	0.04513	0.03400
26	0.00084	-0.00470	0.03507	0.00084	-0.00386	0.03120
27	-0.00264	0.03716	-0.09420**	-0.00264	0.03452	-0.05968*
28	-0.00108	-0.06443*	0.07877*	-0.00108	-0.06551*	0.01326
29	-0.06595*	0.07916*	-0.00351	-0.06595*	0.01321	0.00970
30	-0.00109	0.06002	0.00222	-0.00109	0.05894	0.06116
31	0.03042	0.00403	0.00625	0.03042	0.03446	0.04071
32	-0.02845	-0.04846	0.02350	-0.02845	-0.07691*	-0.05341
33	0.02911	-0.02869	0.03887	0.02911	0.00042	0.03928
34	-0.01126	0.02764	-0.00474	-0.01126	0.01638	0.01165
35	-0.07408*	0.00018	0.04990	-0.07408*	-0.07390*	-0.02400
36	0.00090	-0.01698	0.09940*	0.00090	-0.01608	0.08332*
37	0.00239	0.01635	-0.02579	0.00239	0.01875	-0.00704
38	0.01118	0.03597	-0.02986	0.01118	0.04715	0.01729
39	0.00771	0.06139	0.05090	0.00771	0.06910	0.11999*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.08612*	0.04007	-0.11020*	-0.08612*	-0.04606	-0.15626***
41	-0.02709	0.01592	-0.07149	-0.02709	-0.01117	-0.08266*
42	0.01531	-0.01910	-0.15063***	0.01531	-0.00379	-0.15442***
43	0.04163	0.00804	-0.01859	0.04163	0.04966	0.03107
44	-0.08243*	0.00173	-0.02442	-0.08243*	-0.08070*	-0.10512*
45	-0.01276	0.15981***	-0.03552	-0.01276	0.14705***	0.11152*
46	-0.01057	0.01502	0.04223	-0.01057	0.00445	0.04668
47	-0.00927	0.03816	0.01092	-0.00927	0.02889	0.03982
48	0.00979	-0.00062	-0.02487	0.00979	0.00917	-0.01570
49	-0.02190	0.04586	-0.00769	-0.02190	0.02396	0.01627
50	-0.00857	-0.05106	0.06505*	-0.00857	-0.05963	0.00542
51	-0.01257	-0.02097	-0.00722	-0.01257	-0.03354	-0.04077
52	0.01192	0.00781	-0.03289	0.01192	0.01973	-0.01316
53	-0.01166	-0.02232	-0.00007	-0.01166	-0.03398	-0.03404
54	-0.03491	-0.02573	0.01333	-0.03491	-0.06064*	-0.04731
55	0.05338*	-0.00045	-0.00665	0.05338*	0.05292*	0.04627
56	0.00359	0.04983*	-0.00047	0.00359	0.05342*	0.05294*
57	0.00018	-0.09555**	0.00726	0.00018	-0.09537**	-0.08811*
58	0.01088	-0.02509	0.00186	0.01088	-0.01421	-0.01235
59	0.00226	0.00623	0.00739	0.00226	0.00849	0.01589
60	-0.00919	-0.02998	-0.00308	-0.00919	-0.03918	-0.04226
61	-0.00280	0.00694	-0.00384	-0.00280	0.00414	0.00031
62	-0.13309***	0.40161***	0.04978*	-0.13309***	0.26852***	0.31829***
63	-0.00604	0.00535	-0.00290	-0.00604	-0.00069	-0.00358
64	-0.02443	0.26808***	0.00921	-0.02443	0.24365***	0.25286***
65	-0.01125	0.00664	0.00240	-0.01125	-0.00461	-0.00221
66	0.00658	0.00538	-0.03554*	0.00658	0.01196	-0.02358
67	-0.00146	0.34109***	-0.02579	-0.00146	0.33963***	0.31384***
68	-0.01210	-0.00096	-0.01977	-0.01210	-0.01306	-0.03283*
69	-0.03631	0.04636***	0.02421	-0.03631	0.01005	0.03426*
70	0.02780	-0.03674	-0.00377	0.02780	-0.00894	-0.01271
71	0.03800*	0.01584	-0.00343	0.03800*	0.05384***	0.05040***
72	-0.00176	0.02679	0.02890	-0.00176	0.02503	0.05393***
73	-0.01266	-0.02031	-0.00563	-0.01266	-0.03297	-0.03859
74	-0.00168	-0.05029*	0.00549	-0.00168	-0.05197*	-0.04648*
75	-0.01035	-0.17171***	-0.05437*	-0.01035	-0.18206***	-0.23643***
76	-0.01318	0.03301*	-0.01538	-0.01318	0.01982	0.00444
77	0.00991	-0.01160	0.01429	0.00991	-0.00169	0.01260
78	0.01120	-0.02255	0.00692	0.01120	-0.01135	-0.00443
79	-0.01012	0.01199	0.00269	-0.01012	0.00187	0.00456

Model 4 Estimation window 350 to -11 days before the event

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18261*	0.11600	0.05578	-0.18261*	-0.06662	-0.01084
2	0.79102***	-0.37540***	-0.51180***	0.79102***	0.41563***	-0.09617
3	-0.03357	-0.01026	0.02363	-0.03357	-0.04383	-0.02020
4	-0.01420	0.01627	-0.01979	-0.01420	0.00207	-0.01772
5	-0.04884	-0.02740	0.01776	-0.04884	-0.07624	-0.05848
6	0.00399	-0.00598	-0.04428	0.00399	-0.00199	-0.04627
7	0.08296	0.07732	0.08033	0.08296	0.16028*	0.24061***
8	0.06885	-0.00175	0.01188	0.06885	0.06710	0.07898
9	-0.02235	-0.08090	0.04759	-0.02235	-0.10325*	-0.05567
10	0.00229	0.02126	0.03814	0.00229	0.02355	0.06169
11	-0.04923	-0.02927	0.00488	-0.04923	-0.07849*	-0.07361*
12	0.01263	0.00035	0.00062	0.01263	0.01297	0.01360
13	-0.06192*	0.38028***	0.07686***	-0.06192*	0.31836***	0.39522***
14	-0.04376	0.02268	-0.02086	-0.04376	-0.02109	-0.04194
15	-0.02645	-0.01604	0.00933	-0.02645	-0.04250	-0.03317
16	0.06340*	0.07859*	-0.07344*	0.06340*	0.14200***	0.06855*
17	0.01524	-0.00045	0.04522	0.01524	0.01479	0.06001*
18	-0.01866	0.06612*	-0.00396	-0.01866	0.04747	0.04351
19	0.11853***	-0.00279	0.01623	0.11853***	0.11573***	0.13196***
20	0.01778	0.00298	0.04919	0.01778	0.02075	0.06995*
21	-0.01863	-0.00271	-0.03516	-0.01863	-0.02134	-0.05650
22	-0.03984	0.03392	0.00656	-0.03984	-0.00592	0.00064
23	0.05164	0.05616	-0.04587	0.05164	0.10780***	0.06193*
24	-0.00045	0.00082	-0.01487	-0.00045	0.00036	-0.01451
25	0.01660	0.03732	-0.01314	0.01660	0.05392	0.04078
26	0.00436	-0.00212	0.03355	0.00436	0.00224	0.03578
27	-0.00208	0.01567	-0.09453**	-0.00208	0.01359	-0.08094*
28	-0.00052	-0.06251*	0.07865*	-0.00052	-0.06303*	0.01562
29	-0.06219*	0.07852*	-0.00291	-0.06219*	0.01633	0.01342
30	-0.00143	0.06016	0.00227	-0.00143	0.05873	0.06100
31	0.03149	0.00369	0.00671	0.03149	0.03518	0.04188
32	-0.02869	-0.04733	0.02485	-0.02869	-0.07603*	-0.05118
33	0.02799	-0.02891	0.03995	0.02799	-0.00092	0.03903
34	-0.01262	0.02930	-0.00605	-0.01262	0.01668	0.01063
35	-0.07423*	-0.00062	0.04832	-0.07423*	-0.07485*	-0.02653
36	0.00571	-0.00955	0.09964*	0.00571	-0.00384	0.09579*
37	0.00282	0.01727	-0.02441	0.00282	0.02009	-0.00432
38	0.01297	0.03930	-0.01810	0.01297	0.05227	0.03417
39	0.00772	0.06139	0.05094	0.00772	0.06911	0.12006*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.07012*	0.03740	-0.03932	-0.07012*	-0.03272	-0.07203*
41	-0.02729	0.01551	-0.07120*	-0.02729	-0.01178	-0.08298*
42	0.01296	-0.01579	-0.15356***	0.01296	-0.00283	-0.15639***
43	0.03981	0.00828	-0.01880	0.03981	0.04810	0.02929
44	-0.08185*	0.00441	-0.02152	-0.08185*	-0.07744*	-0.09896*
45	-0.01414	0.12180*	-0.03826	-0.01414	0.10766*	0.06939
46	-0.01122	0.03516	0.04161	-0.01122	0.02394	0.06555
47	-0.00899	0.03890	0.01116	-0.00899	0.02991	0.04106
48	0.00963	0.00001	-0.02355	0.00963	0.00964	-0.01391
49	-0.02184	0.04599	-0.00733	-0.02184	0.02415	0.01682
50	-0.00908	-0.05085	0.06449*	-0.00908	-0.05993	0.00456
51	-0.01113	-0.01998	-0.00639	-0.01113	-0.03110	-0.03749
52	0.00070	0.00361	-0.02183	0.00070	0.00430	-0.01752
53	-0.01042	-0.02148	0.00125	-0.01042	-0.03191	-0.03066
54	-0.03398	-0.02491	0.01431	-0.03398	-0.05890*	-0.04459
55	0.05474*	0.00010	-0.00364	0.05474*	0.05485*	0.05120
56	0.00259	0.04800	-0.00027	0.00259	0.05059*	0.05032*
57	-0.00177	-0.09803**	0.00645	-0.00177	-0.09980**	-0.09335**
58	0.01041	-0.02564	0.00160	0.01041	-0.01523	-0.01363
59	0.00247	0.00389	0.00434	0.00247	0.00636	0.01070
60	-0.00854	-0.03307	-0.00314	-0.00854	-0.04161	-0.04474
61	-0.00138	0.00839	-0.00238	-0.00138	0.00701	0.00463
62	-0.01486	0.46315***	0.04277*	-0.01486	0.44829***	0.49106***
63	-0.00531	0.00566	-0.00142	-0.00531	0.00034	-0.00108
64	-0.02461	0.27626***	0.00933	-0.02461	0.25165***	0.26097***
65	-0.01110	0.00662	0.00202	-0.01110	-0.00448	-0.00247
66	0.00643	0.00559	-0.03528*	0.00643	0.01202	-0.02326
67	-0.00994	0.32694***	-0.02413	-0.00994	0.31700***	0.29287***
68	-0.01258	-0.00058	-0.02047	-0.01258	-0.01317	-0.03363*
69	-0.02996	0.04701***	0.02038	-0.02996	0.01705	0.03743*
70	0.02473	-0.03676	-0.00213	0.02473	-0.01203	-0.01416
71	0.03501*	0.01323	-0.00435	0.03501*	0.04824***	0.04389***
72	-0.00152	0.02893	0.02801	-0.00152	0.02742	0.05543***
73	-0.01213	-0.01375	-0.00846	-0.01213	-0.02589	-0.03435
74	0.00401	-0.05136*	-0.00868	0.00401	-0.04735*	-0.05602*
75	0.00508	-0.17356***	-0.07106***	0.00508	-0.16848***	-0.23954***
76	-0.01563	0.03235*	-0.01341	-0.01563	0.01672	0.00331
77	0.00980	-0.01158	0.01443	0.00980	-0.00177	0.01266
78	0.01297	-0.05348*	0.00567	0.01297	-0.04051*	-0.03484*
79	-0.00967	0.01216	0.00238	-0.00967	0.00250	0.00487

Model 5 Estimation window 400 to -11 days before the event

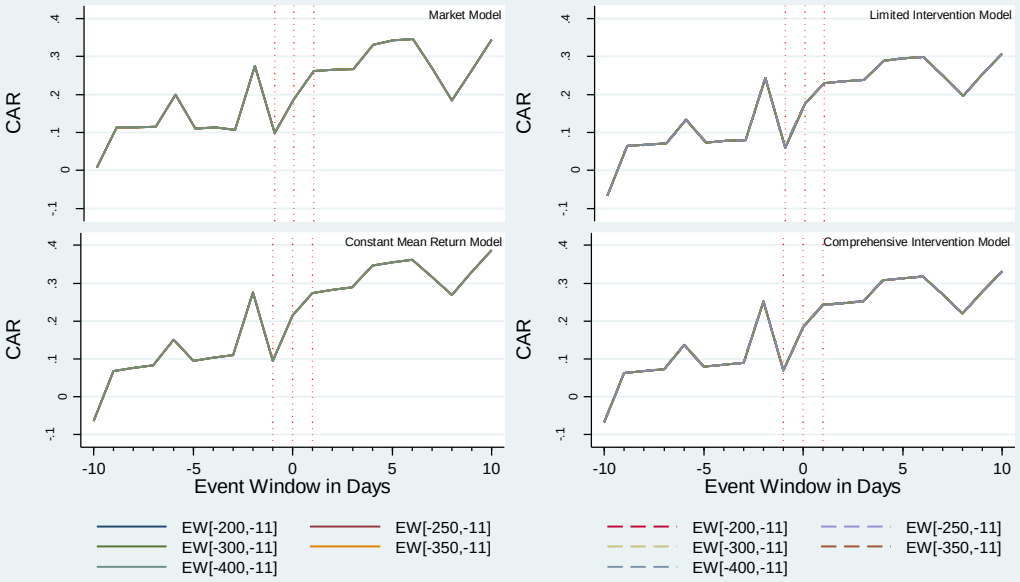
	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
1	-0.18261*	0.11600	0.05578	-0.18261*	-0.06662	-0.01084
2	0.79102***	-0.37540***	-0.51180***	0.79102***	0.41563***	-0.09617
3	-0.03357	-0.01026	0.02363	-0.03357	-0.04383	-0.02020
4	-0.01420	0.01627	-0.01979	-0.01420	0.00207	-0.01772
5	-0.04897	-0.02324	0.01873	-0.04897	-0.07221	-0.05347
6	0.00460	-0.00588	-0.04393	0.00460	-0.00128	-0.04520
7	0.08316	0.07700	0.08024	0.08316	0.16016*	0.24040***
8	0.06866	-0.00229	0.01164	0.06866	0.06637	0.07801
9	-0.02133	-0.08052*	0.04871	-0.02133	-0.10186*	-0.05314
10	0.00191	0.02156	0.03757	0.00191	0.02347	0.06104
11	-0.04944	-0.02941	0.00491	-0.04944	-0.07885*	-0.07394
12	0.01144	0.00140	-0.00027	0.01144	0.01284	0.01257
13	-0.08886*	-0.02860	0.04273	-0.08886*	-0.11746**	-0.07473*
14	-0.04433	0.02255	-0.02137	-0.04433	-0.02178	-0.04315
15	-0.02698	-0.01659	0.00904	-0.02698	-0.04357	-0.03453
16	0.05564*	0.07913**	-0.05262	0.05564*	0.13477***	0.08215**
17	0.01519	-0.00028	0.04497	0.01519	0.01491	0.05989*
18	-0.01864	0.06613*	-0.00361	-0.01864	0.04750	0.04389
19	0.11856***	-0.00257	0.01599	0.11856***	0.11599***	0.13198***
20	0.01805	0.00355	0.04835	0.01805	0.02161	0.06995*
21	-0.01890	-0.00265	-0.03535	-0.01890	-0.02155	-0.05690
22	-0.03896	0.03473	0.00748	-0.03896	-0.00423	0.00325
23	0.05108	0.05783	-0.04580	0.05108	0.10891***	0.06312*
24	-0.00058	0.00068	-0.01499	-0.00058	0.00010	-0.01489
25	0.01670	0.03774	-0.01285	0.01670	0.05444	0.04159
26	0.00400	-0.00100	0.03444	0.00400	0.00299	0.03744
27	-0.00237	0.01666	-0.09373**	-0.00237	0.01428	-0.07945*
28	-0.00072	-0.06006*	0.07628*	-0.00072	-0.06078*	0.01551
29	-0.06007*	0.07629*	-0.00283	-0.06007*	0.01622	0.01339
30	-0.00105	0.06040	0.00236	-0.00105	0.05934	0.06170
31	0.03140	0.00385	0.00691	0.03140	0.03525	0.04216
32	-0.02797	-0.04817	0.02408	-0.02797	-0.07614*	-0.05206
33	0.02926	-0.02847	0.03921	0.02926	0.00079	0.04000
34	-0.01270	0.02808	-0.00567	-0.01270	0.01538	0.00971
35	-0.07662*	-0.00055	0.05136	-0.07662*	-0.07717*	-0.02581
36	0.00091	-0.00751	0.09193*	0.00091	-0.00660	0.08533*
37	0.00365	0.01568	-0.02690	0.00365	0.01933	-0.00757
38	0.01480	0.03948	-0.02422	0.01480	0.05428	0.03007
39	0.00722	0.06088	0.05045	0.00722	0.06810	0.11855*

	Daily Abnormal Returns			Cumulative Abnormal Returns		
Event	Day-1	Day0	Day+1	Day-1	Day0	Day+1
40	-0.05017	0.05176	-0.04910	-0.05017	0.00159	-0.04751
41	-0.02711	0.01581	-0.07113*	-0.02711	-0.01130	-0.08243*
42	0.00575	0.01696	-0.08167*	0.00575	0.02271	-0.05897
43	0.03830	0.00795	-0.01940	0.03830	0.04625	0.02685
44	-0.08229*	0.00395	-0.01912	-0.08229*	-0.07834*	-0.09746*
45	-0.01258	0.12265*	-0.03630	-0.01258	0.11007*	0.07377
46	-0.01126	0.01594	0.04175	-0.01126	0.00469	0.04644
47	-0.00940	0.03894	0.01083	-0.00940	0.02954	0.04037
48	0.00932	0.00166	-0.02107	0.00932	0.01098	-0.01009
49	-0.02306	0.04362	-0.00885	-0.02306	0.02056	0.01171
50	-0.01070	-0.04887	0.06518*	-0.01070	-0.05958	0.00560
51	-0.00802	-0.01950	-0.00601	-0.00802	-0.02752	-0.03353
52	0.00103	-0.00152	-0.02853	0.00103	-0.00048	-0.02902
53	-0.00977	-0.02048	0.00184	-0.00977	-0.03025	-0.02841
54	-0.03408	-0.02459	0.01423	-0.03408	-0.05866	-0.04443
55	0.05463*	0.00487	-0.00360	0.05463*	0.05950*	0.05590*
56	0.00034	0.04879	0.00165	0.00034	0.04914	0.05079*
57	-0.00407	-0.10105**	0.00574	-0.00407	-0.10512**	-0.09938**
58	0.01002	-0.02483	0.00257	0.01002	-0.01480	-0.01224
59	0.00311	0.00072	0.00061	0.00311	0.00383	0.00444
60	-0.00663	0.00139	-0.00370	-0.00663	-0.00524	-0.00895
61	-0.00296	0.00748	-0.00284	-0.00296	0.00452	0.00168
62	-0.01503	0.46675***	0.04307*	-0.01503	0.45172***	0.49479***
63	-0.00464	0.00632	-0.00075	-0.00464	0.00168	0.00093
64	-0.02148	0.30914***	0.02008	-0.02148	0.28765***	0.30774***
65	-0.00998	0.00766	0.00290	-0.00998	-0.00231	0.00058
66	0.00670	0.00578	-0.03428	0.00670	0.01248	-0.02180
67	-0.01035	0.31176***	-0.02473	-0.01035	0.30141***	0.27668***
68	-0.01312	-0.00005	-0.02127	-0.01312	-0.01316	-0.03443
69	-0.02942	0.04658*	0.01960	-0.02942	0.01716	0.03676*
70	0.02453	-0.03700*	-0.00192	0.02453	-0.01247	-0.01438
71	0.03234*	0.01087	-0.00504	0.03234*	0.04321*	0.03817*
72	-0.00113	0.02915	0.02823	-0.00113	0.02802	0.05624***
73	-0.01220	-0.01378	-0.00852	-0.01220	-0.02598	-0.03450
74	0.00392	-0.03633*	-0.00885	0.00392	-0.03241	-0.04125*
75	0.00635	-0.12034***	-0.08993***	0.00635	-0.11398***	-0.20391***
76	-0.01604	0.02569	-0.01079	-0.01604	0.00965	-0.00114
77	0.00979	-0.01152	0.01454	0.00979	-0.00173	0.01281
78	0.01692	-0.05367*	0.01065	0.01692	-0.03675	-0.02610
79	-0.00981	0.01256	0.00189	-0.00981	0.00275	0.00464

Appendix 18 - Charts comparing various estimation windows and models by event.

Event 1 - Case 4 Patrick Corporation

Cumulative Abnormal Return (CAR) either side of ASX announcement

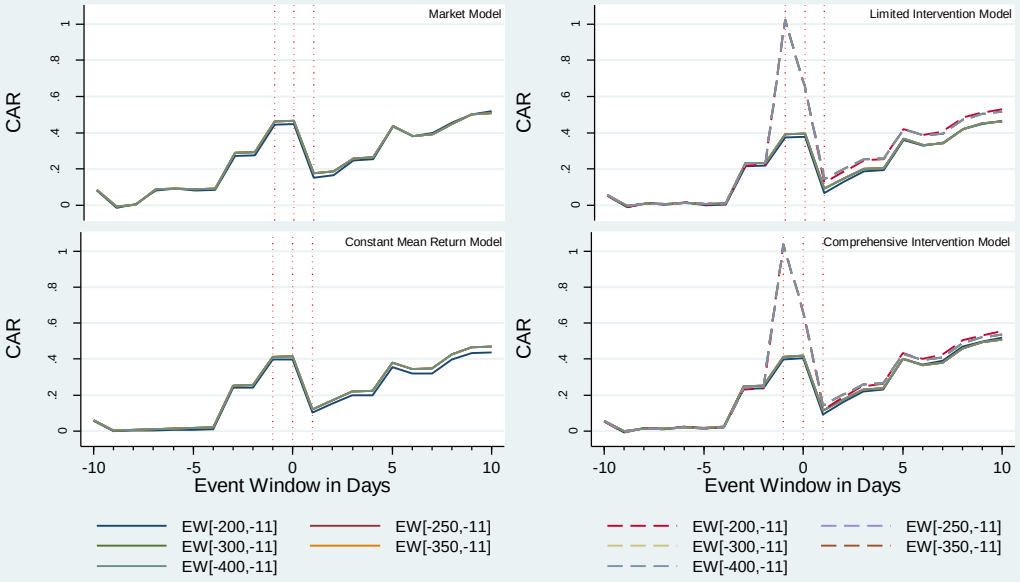


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 2 - Case 8 Tobacco Wholesalers

Cumulative Abnormal Return (CAR) either side of ASX announcement

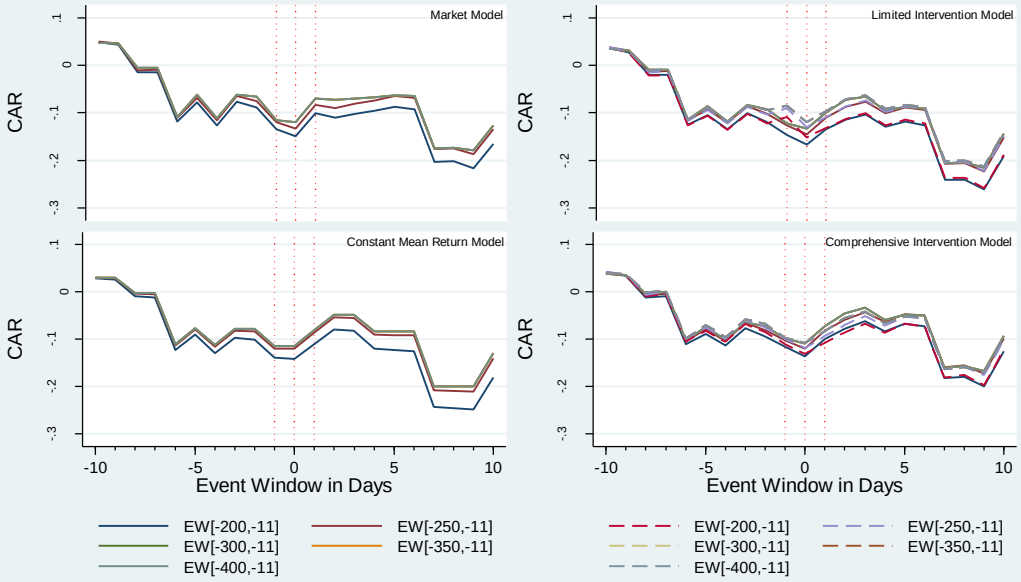


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 3 - Case 6 Agricultur

Cumulative Abnormal Return (CAR) either side of ASX announcement

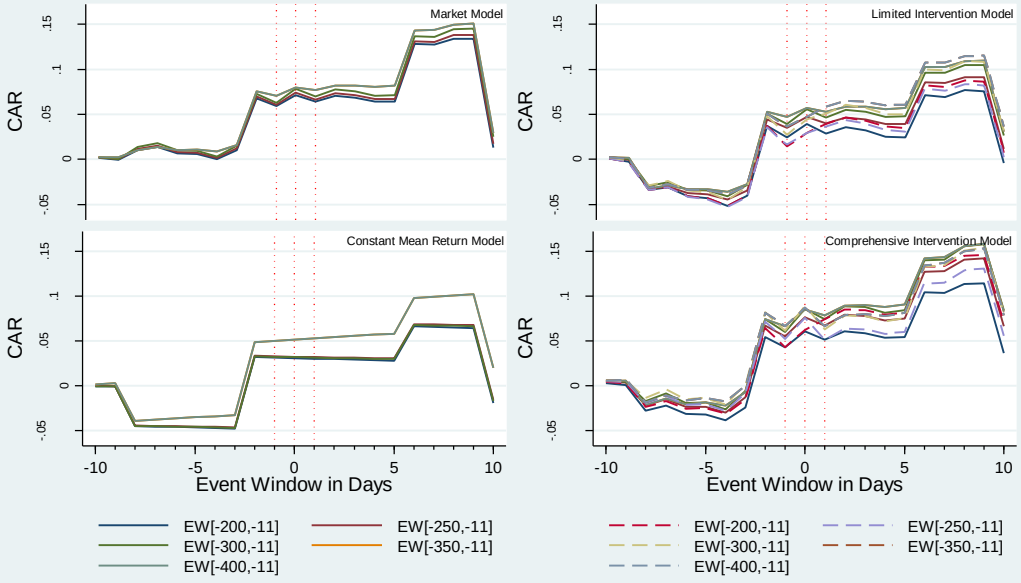


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 4 - Case 7 Whyalla Airlines

Cumulative Abnormal Return (CAR) either side of ASX announcement

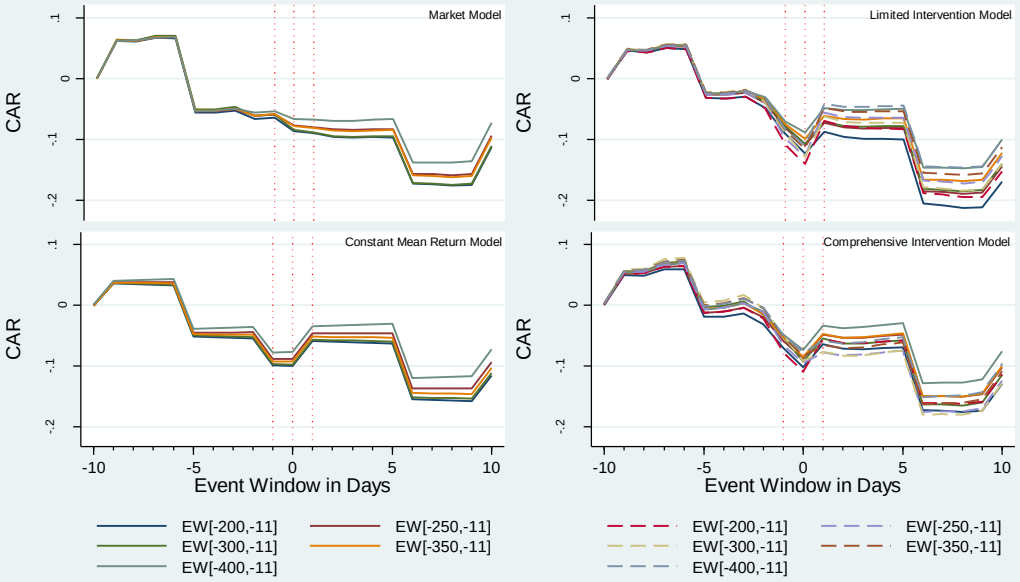


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 5 - Case 15 Ezishop

Cumulative Abnormal Return (CAR) either side of ASX announcement

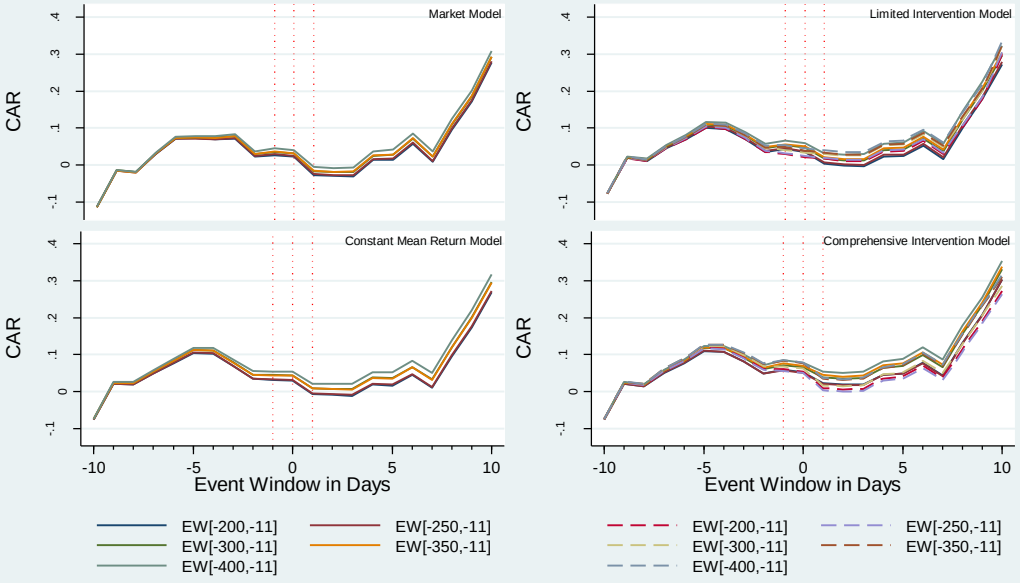


case was resolved by a judgement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 6 - Case 13 Advanced communCIA2tions

Cumulative Abnormal Return (CAR) either side of ASX announcement

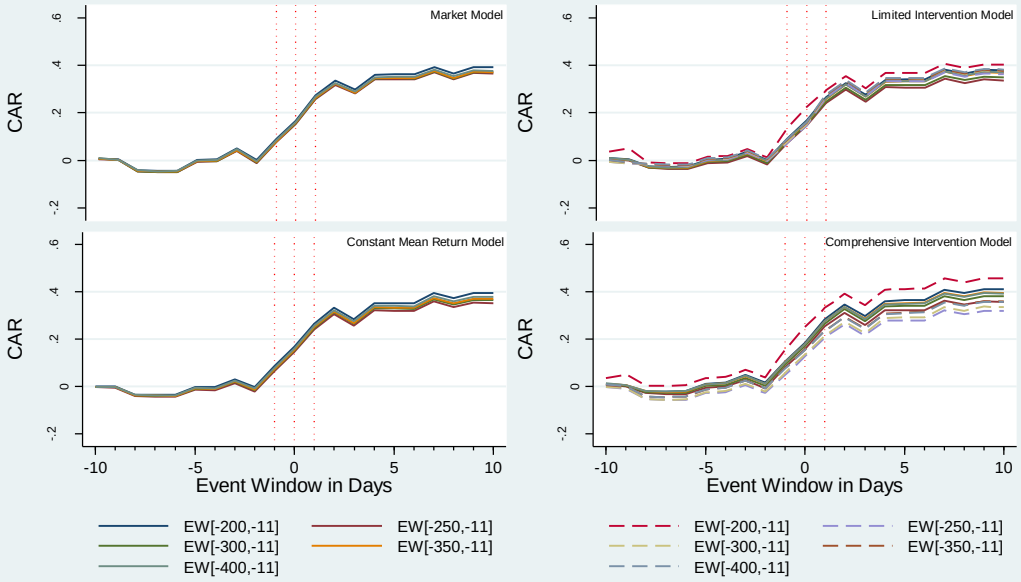


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 7 - Case 2 NSW Supermarkets

Cumulative Abnormal Return (CAR) either side of ASX announcement

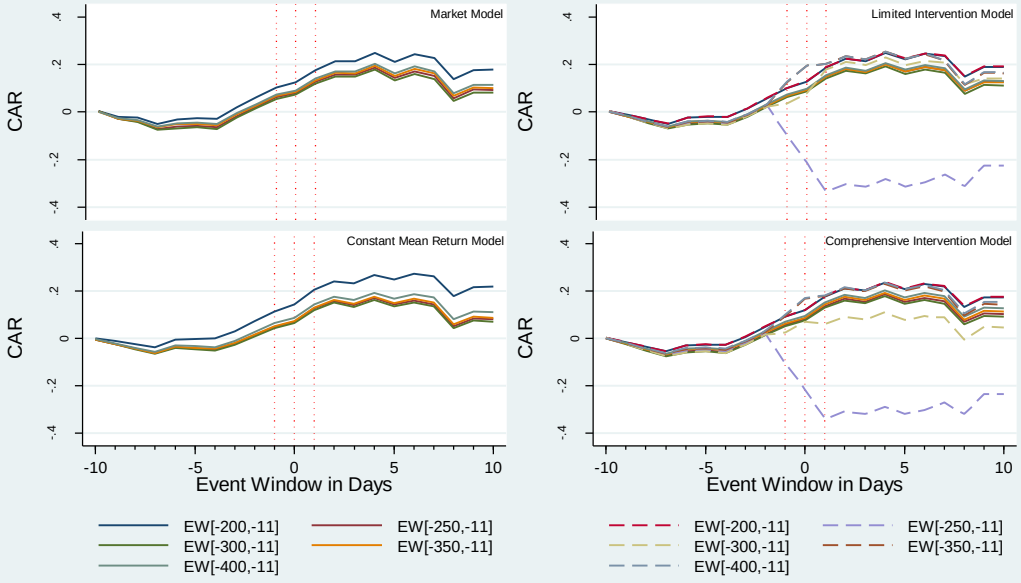


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 8 - Case 5 Sentinel

Cumulative Abnormal Return (CAR) either side of ASX announcement

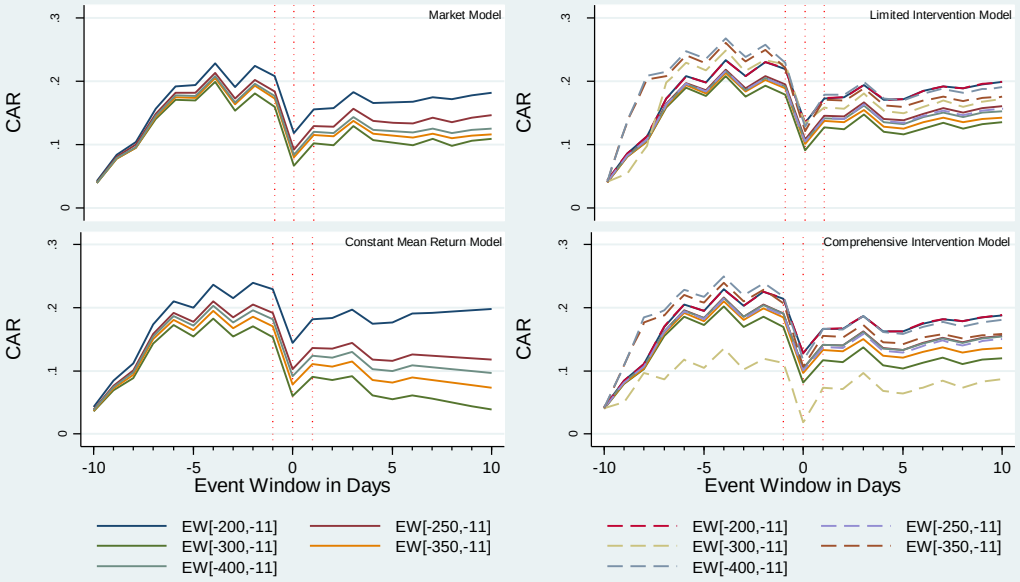


case was resolved by a judgement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 9 - Case 18 Doran Construction

Cumulative Abnormal Return (CAR) either side of ASX announcement

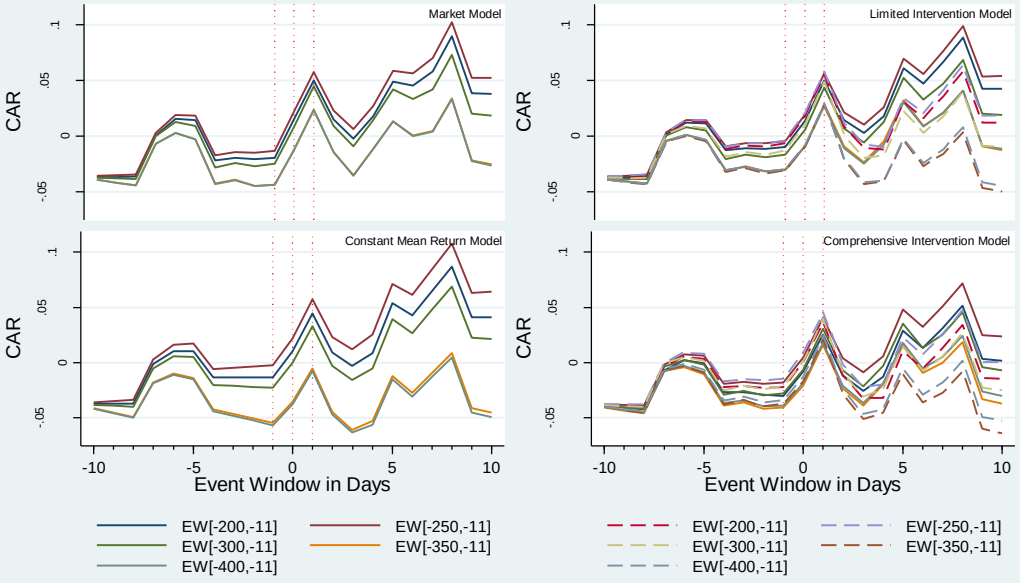


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 10 - Case 31 Essington investments

Cumulative Abnormal Return (CAR) either side of ASX announcement

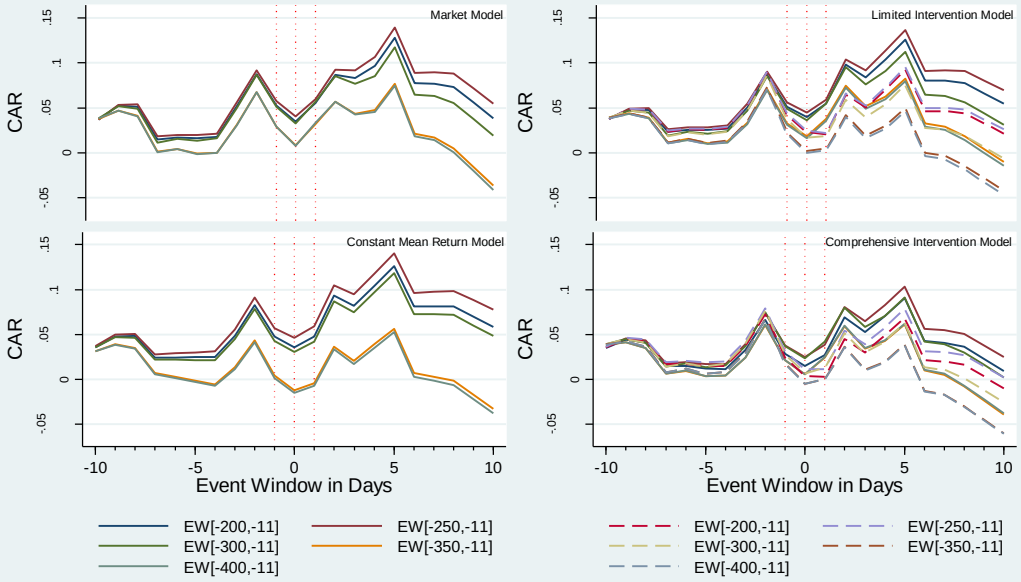


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 11 - Case 30 Bellambi Colliery & Case 29 CMC

Cumulative Abnormal Return (CAR) either side of ASX announcement

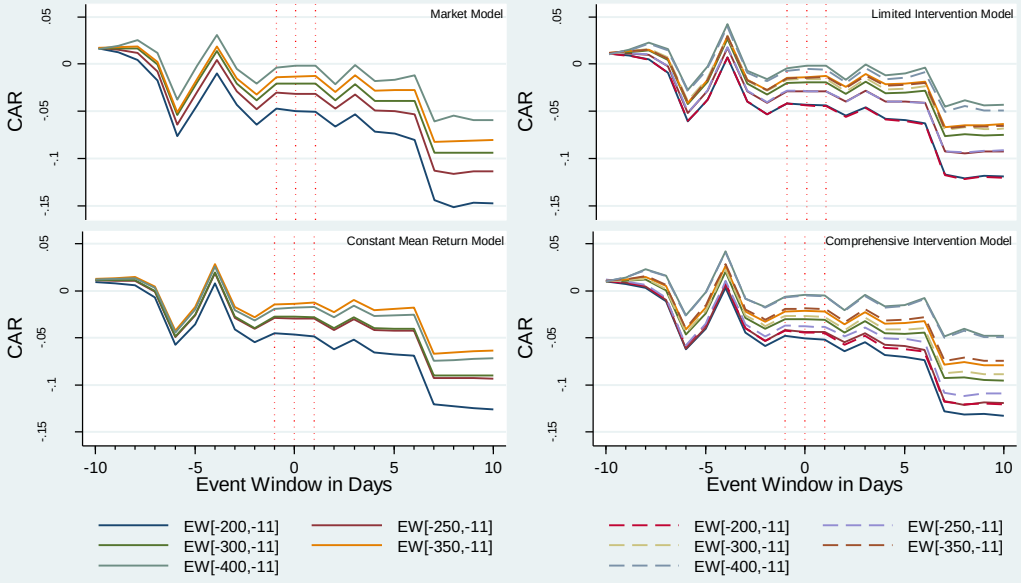


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 12 - Case 19 Sit Simplex & Case 30 Edesssa

Cumulative Abnormal Return (CAR) either side of ASX announcement

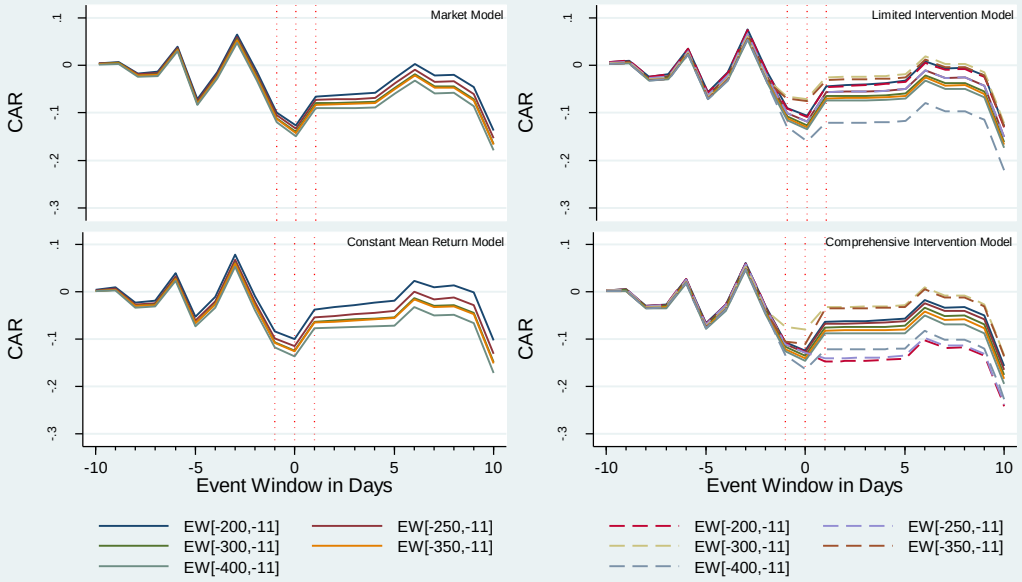


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 13 - Case 10 Global Market Link v Ord Minet

Cumulative Abnormal Return (CAR) either side of ASX announcement

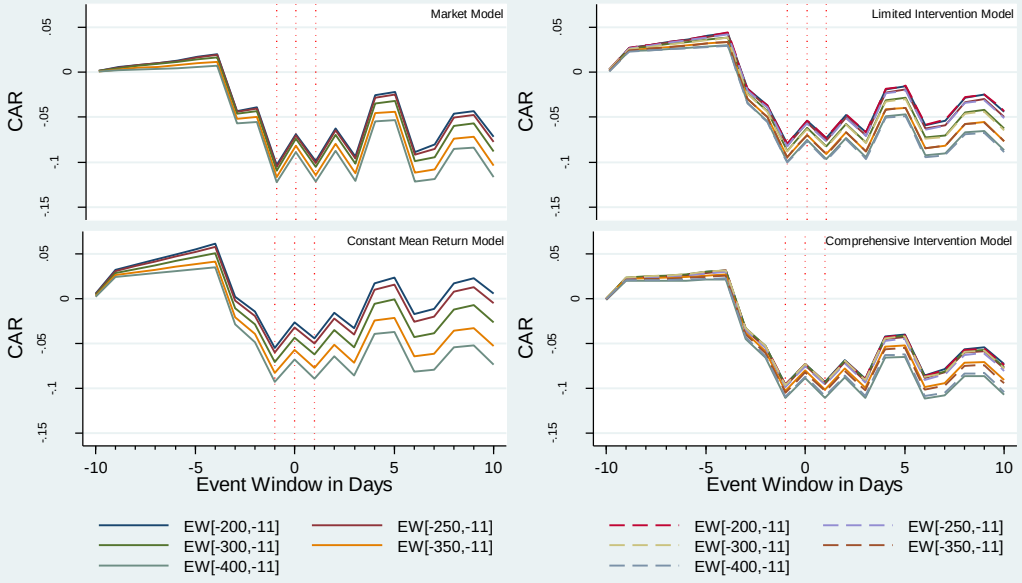


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 14 - Case 27 Bensons

Cumulative Abnormal Return (CAR) either side of ASX announcement

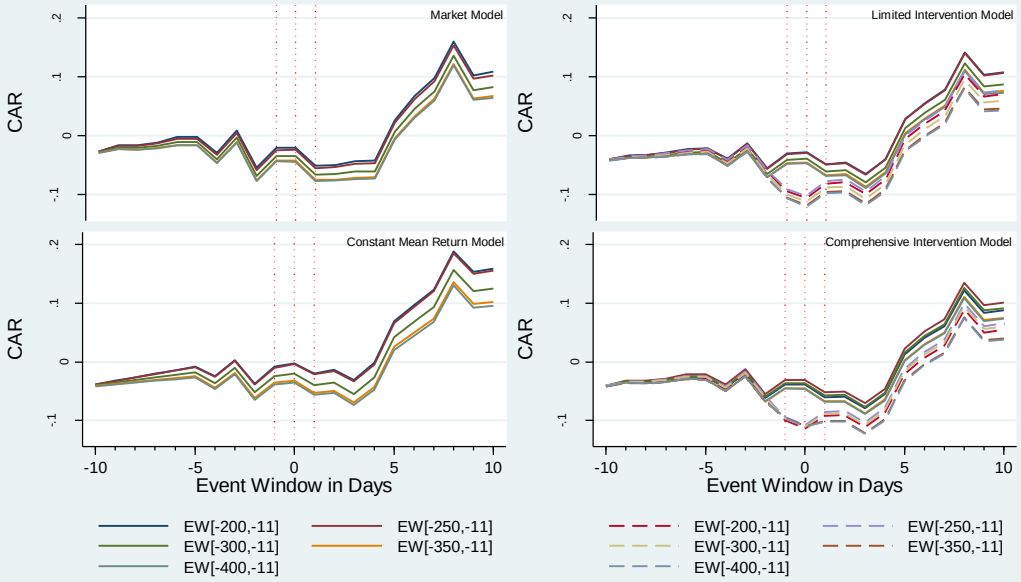


case was resolved by a settlement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 15 - Case 45 Smart v Clipsal

Cumulative Abnormal Return (CAR) either side of ASX announcement

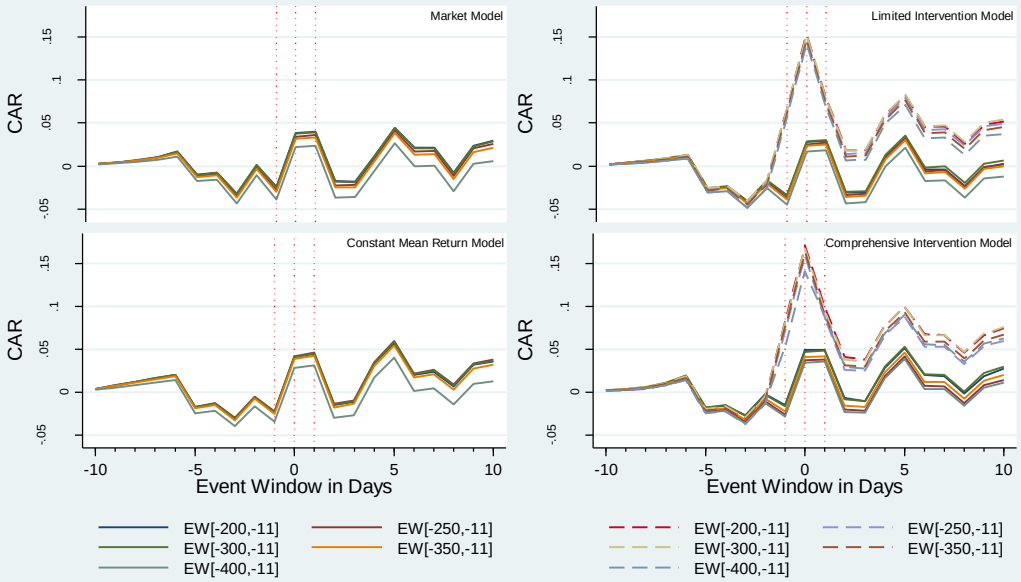


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 16 - Case 52 Westpac

Cumulative Abnormal Return (CAR) either side of ASX announcement

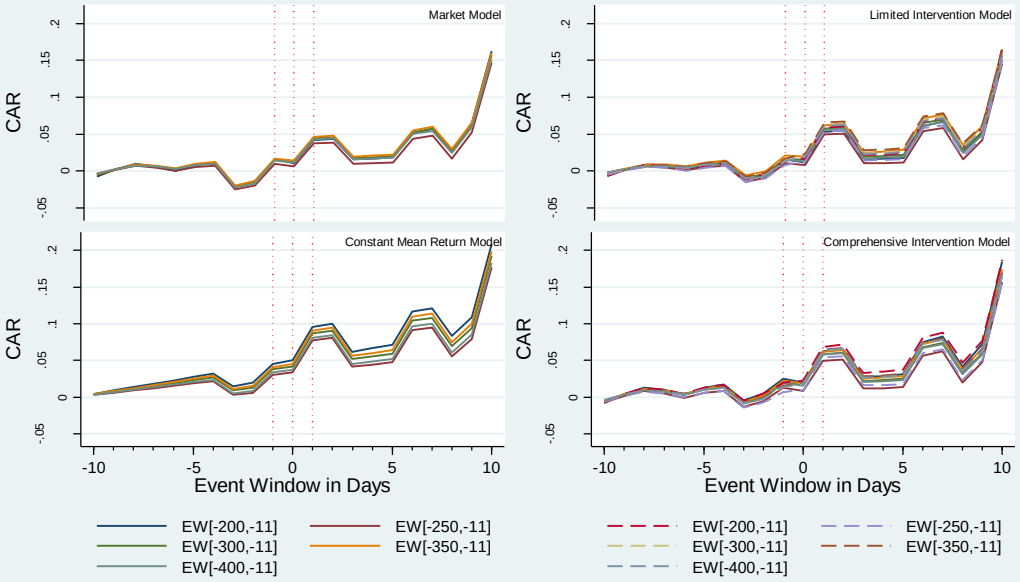


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 17 - Case 17 Barron

Cumulative Abnormal Return (CAR) either side of ASX announcement

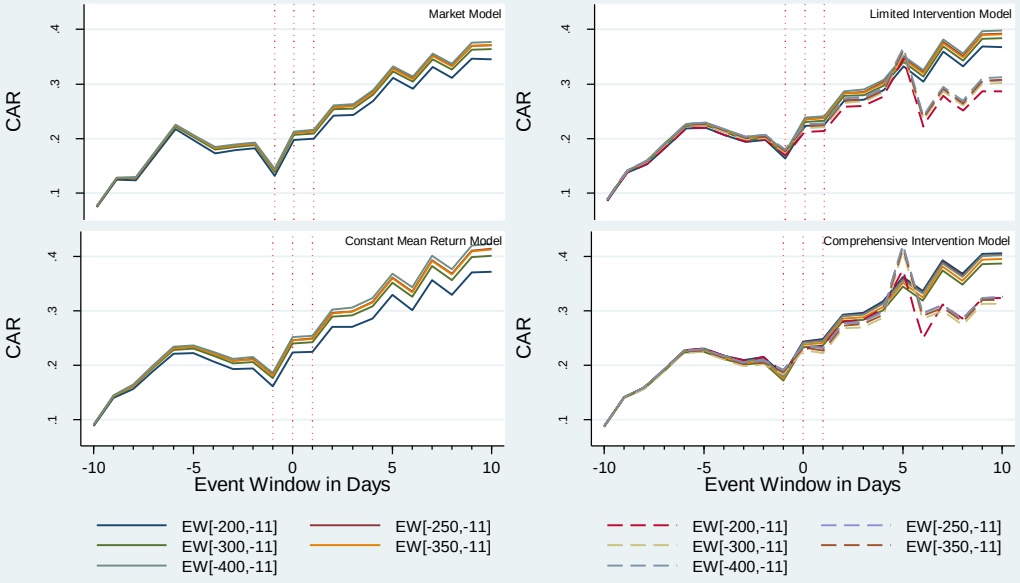


case was resolved by a settlement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 18 - Case 12 Mercury Rising

Cumulative Abnormal Return (CAR) either side of ASX announcement

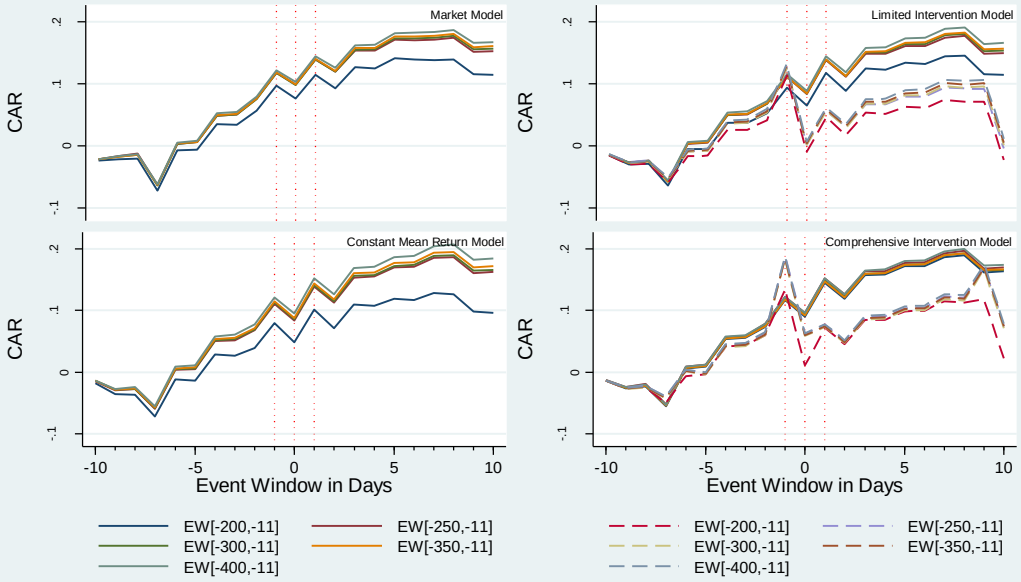


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 19 - Case 57 Australian Coal

Cumulative Abnormal Return (CAR) either side of ASX announcement

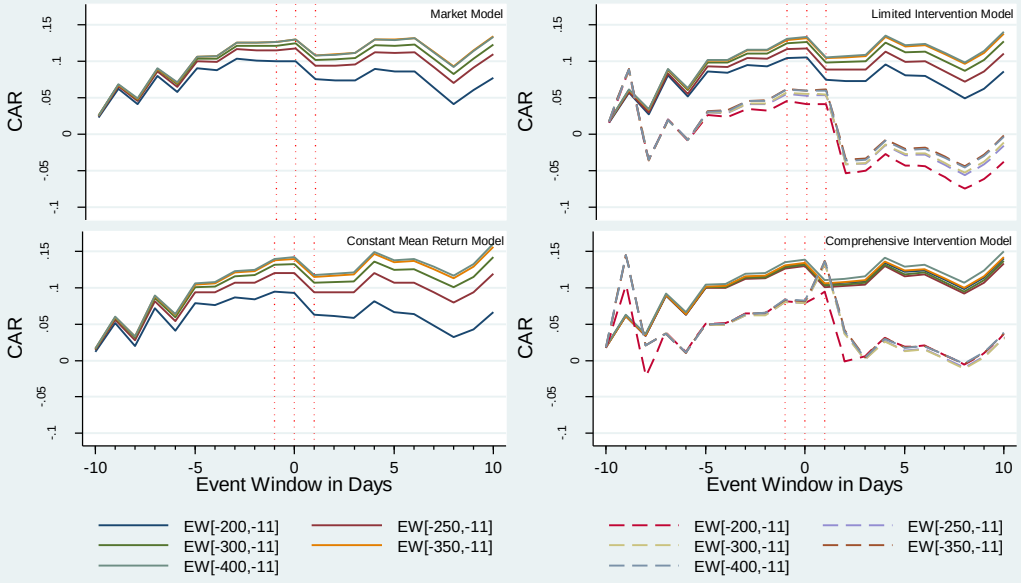


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 20 - Case 40 Concept Sports

Cumulative Abnormal Return (CAR) either side of ASX announcement

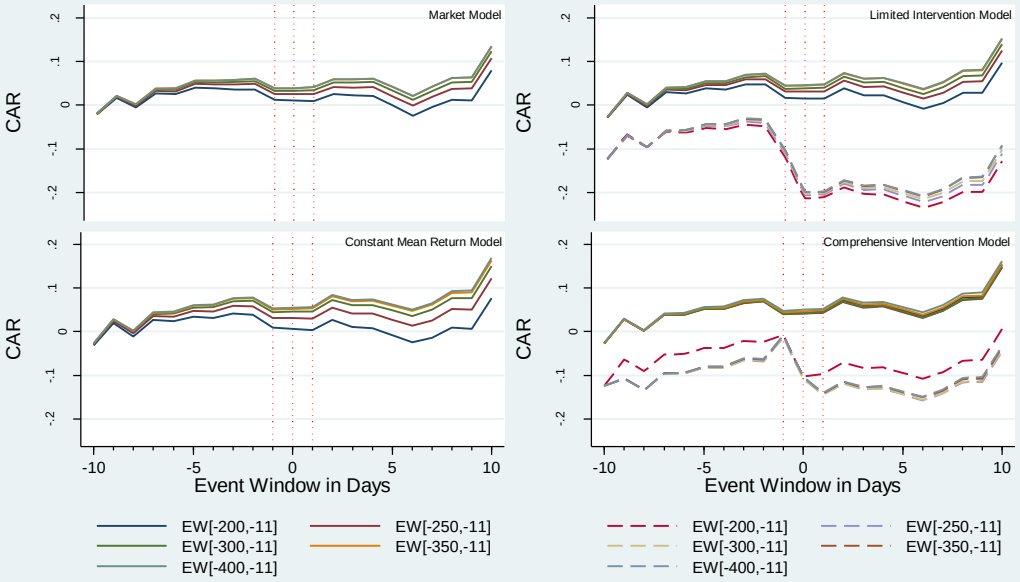


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 21 - Case 36 Geneva Finance

Cumulative Abnormal Return (CAR) either side of ASX announcement

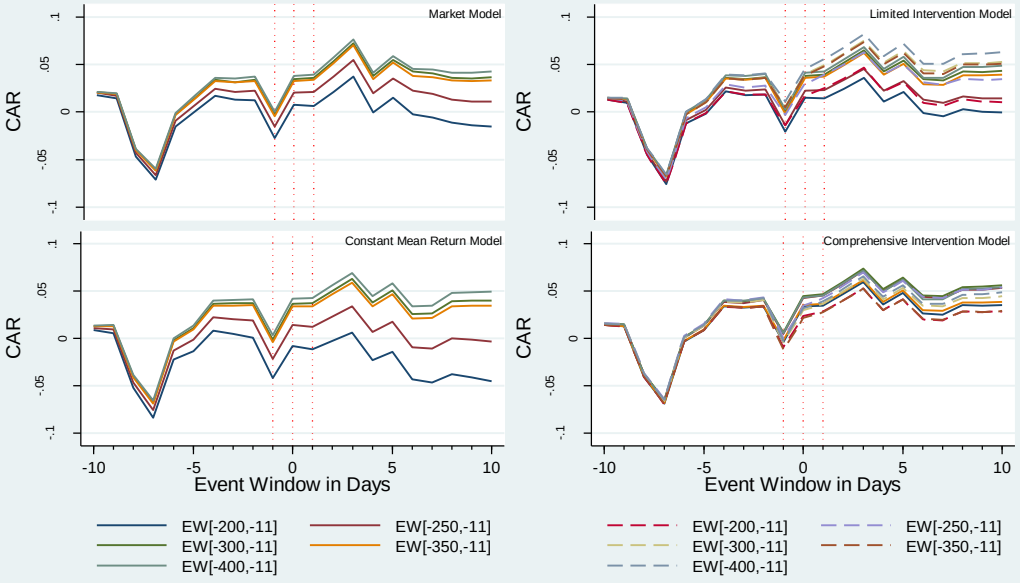


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 22 - Case 16 Kingsheath

Cumulative Abnormal Return (CAR) either side of ASX announcement

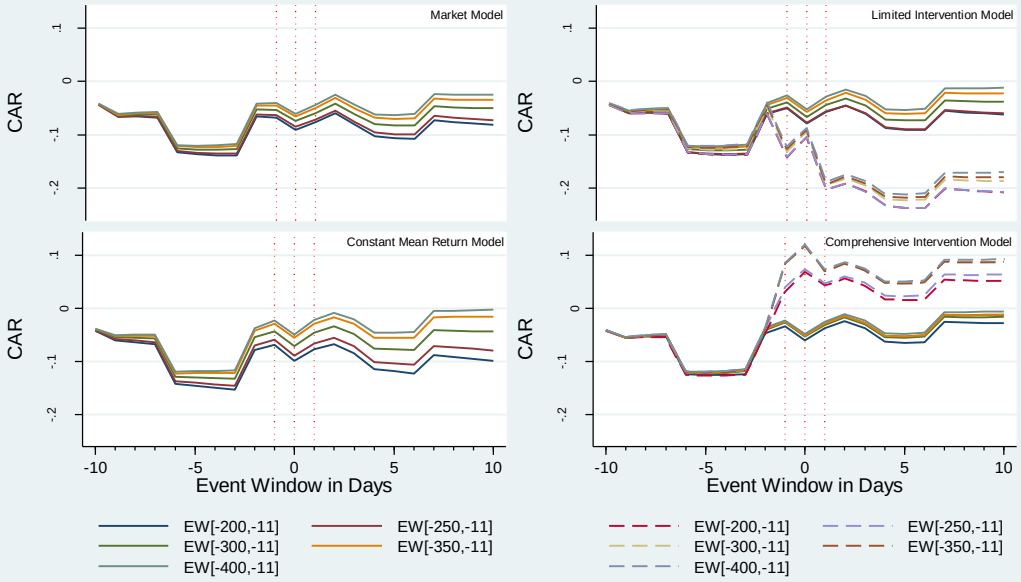


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 23 - Case 3 Finance Brokers

Cumulative Abnormal Return (CAR) either side of ASX announcement

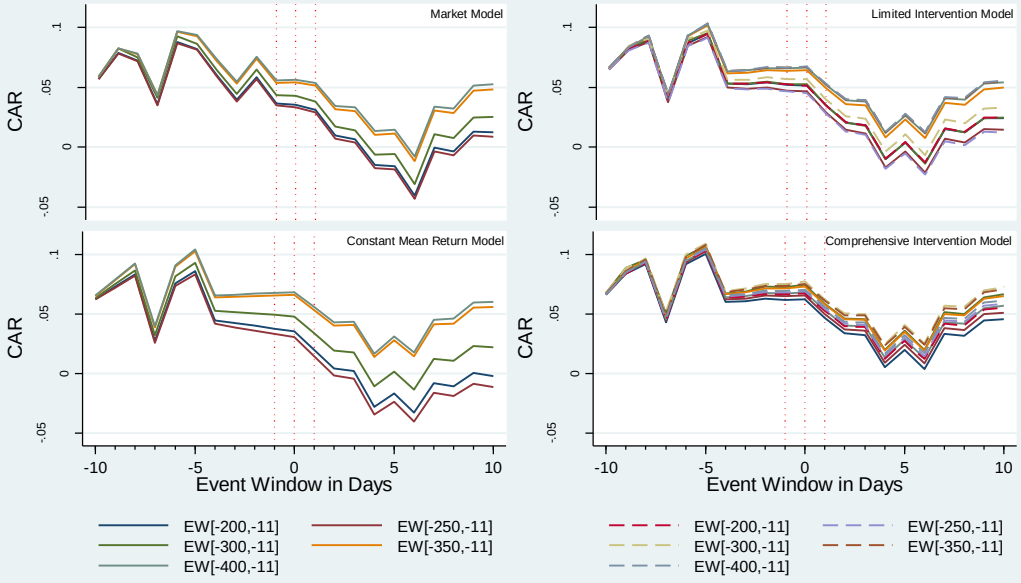


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 24 - Case 49 Preslands

Cumulative Abnormal Return (CAR) either side of ASX announcement

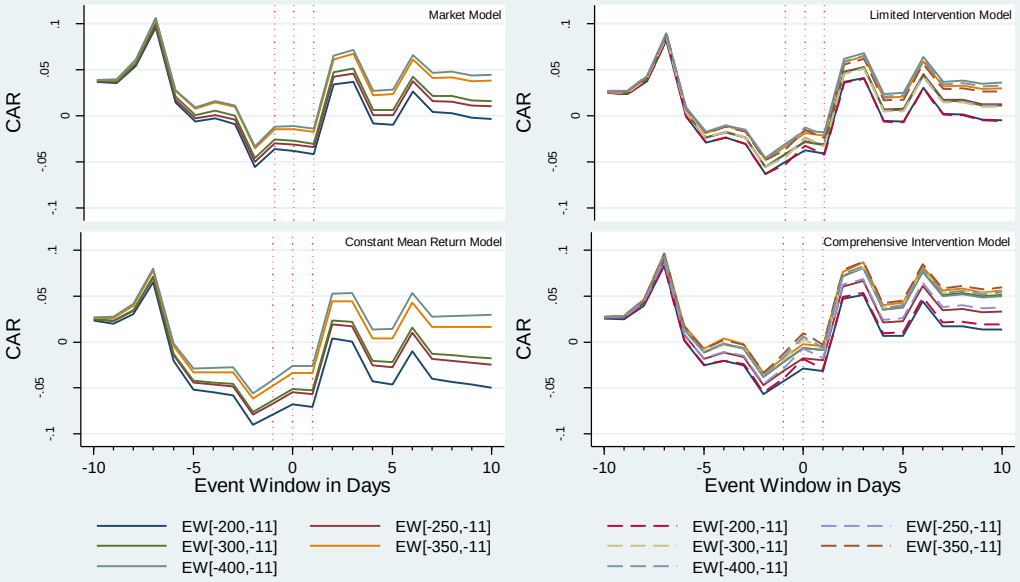


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 25 - Case 41 Lawyers private mortgages

Cumulative Abnormal Return (CAR) either side of ASX announcement

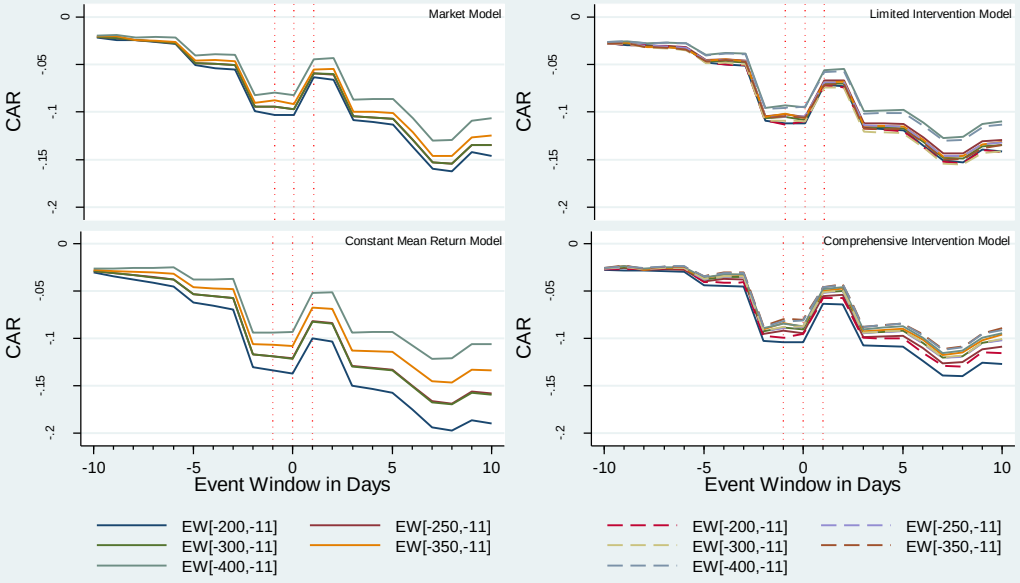


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 26 - Case 61 Ainsworth

Cumulative Abnormal Return (CAR) either side of ASX announcement

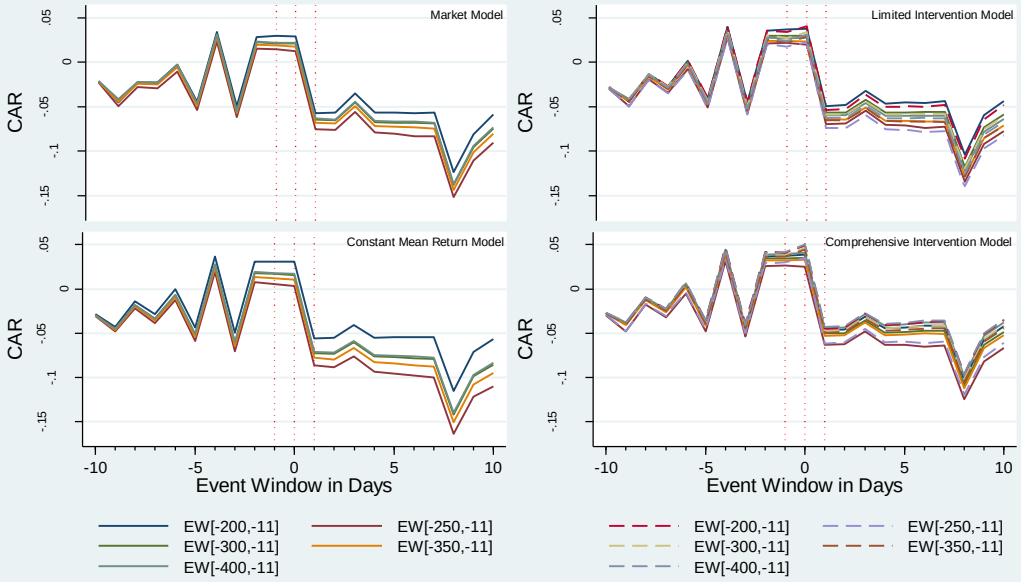


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 27 - Case 23 Meadow Springs

Cumulative Abnormal Return (CAR) either side of ASX announcement

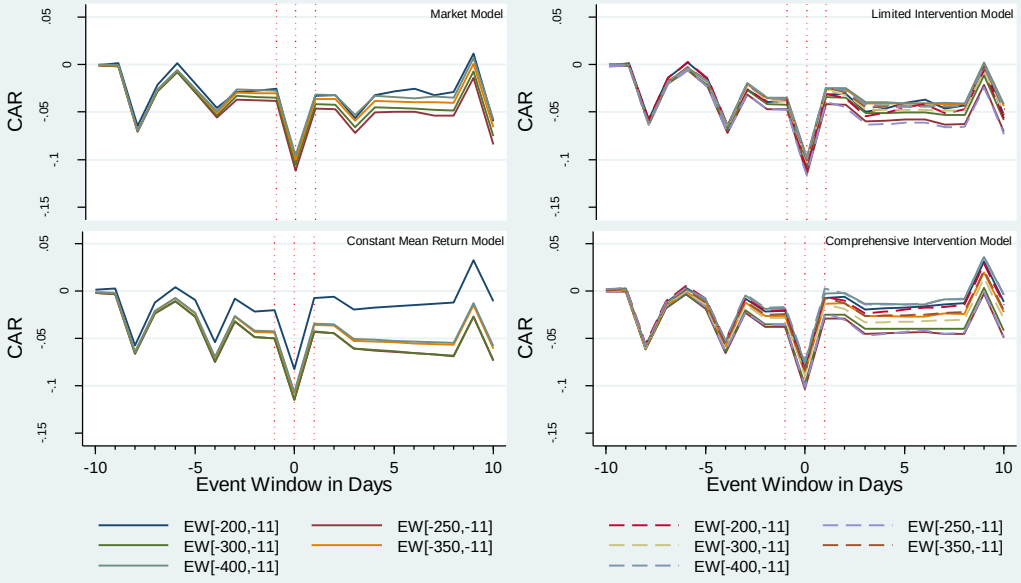


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 28 - Case 35 Truckies

Cumulative Abnormal Return (CAR) either side of ASX announcement

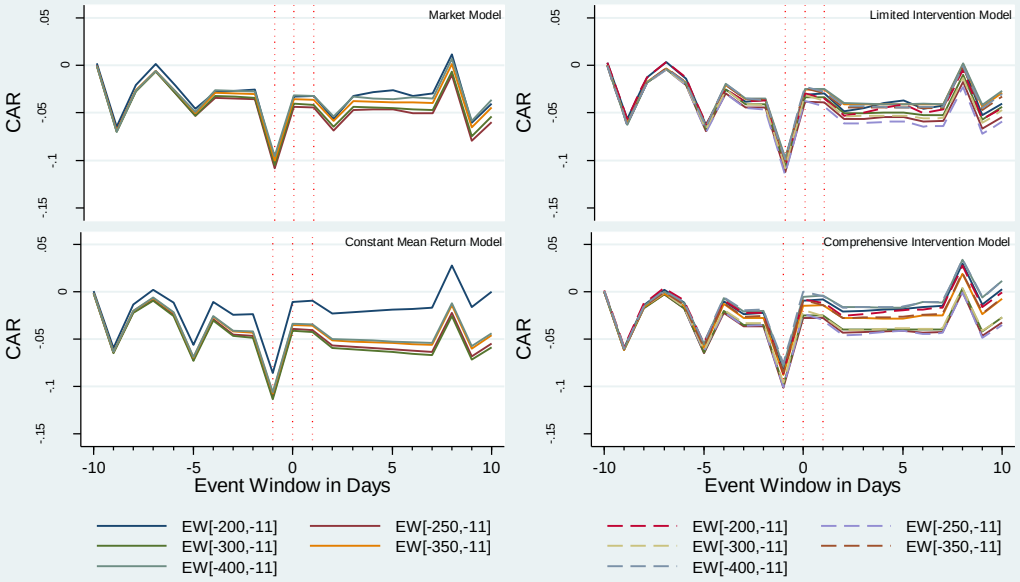


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 29 - Case 1 Global finance

Cumulative Abnormal Return (CAR) either side of ASX announcement

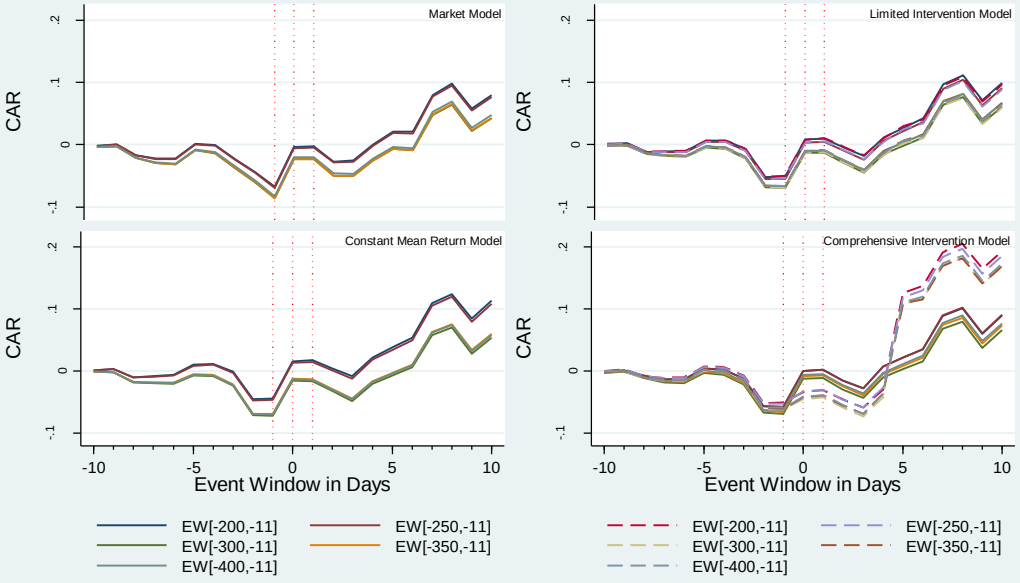


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 30 - Case 47 Allstate

Cumulative Abnormal Return (CAR) either side of ASX announcement

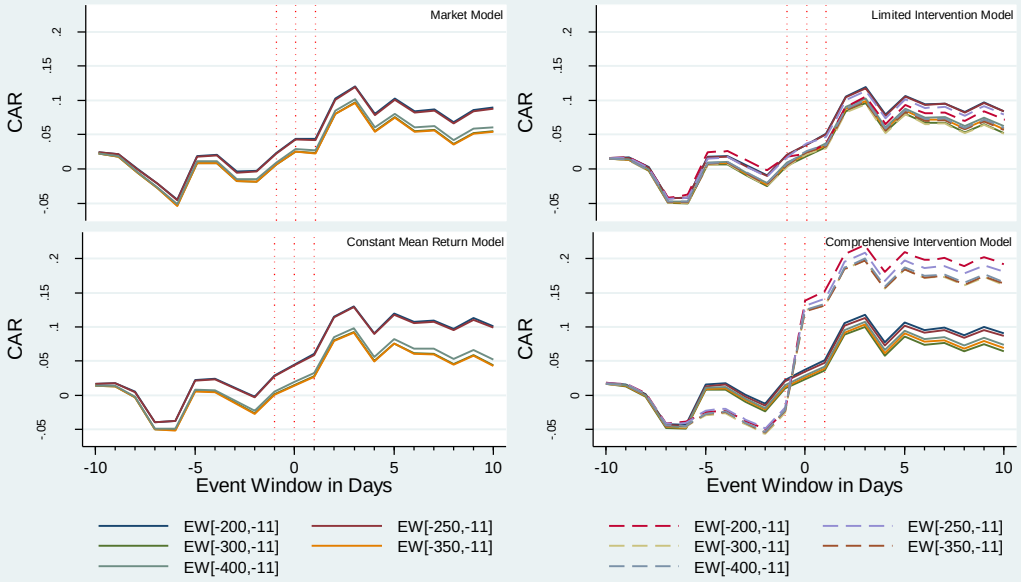


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 31 - Case 9 Nomad

Cumulative Abnormal Return (CAR) either side of ASX announcement

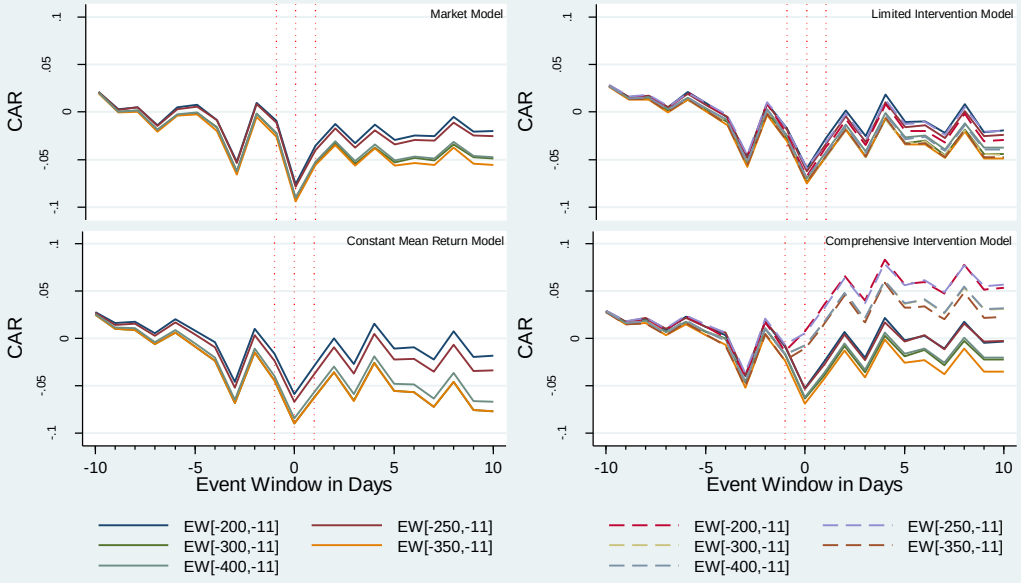


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 32 - Case 38 Vogue Homes

Cumulative Abnormal Return (CAR) either side of ASX announcement

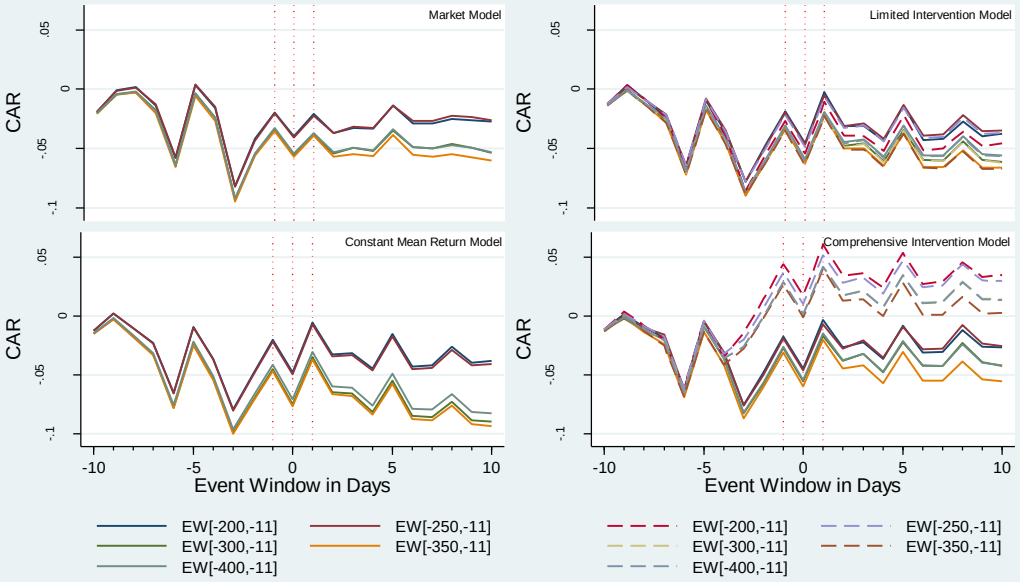


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 33 - Case 64 ACT

Cumulative Abnormal Return (CAR) either side of ASX announcement

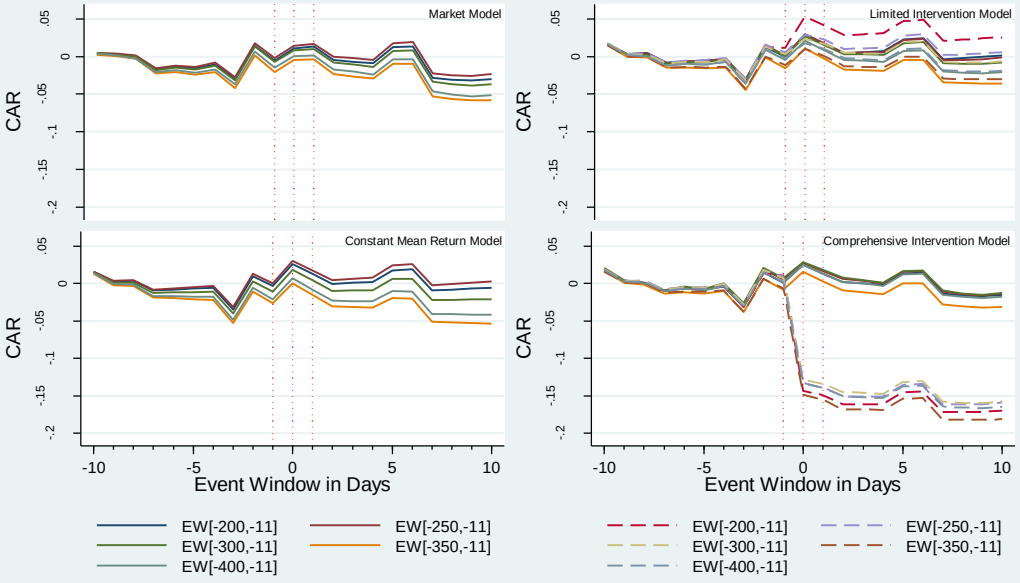


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 34 - Case 28 Reynold Wines

Cumulative Abnormal Return (CAR) either side of ASX announcement

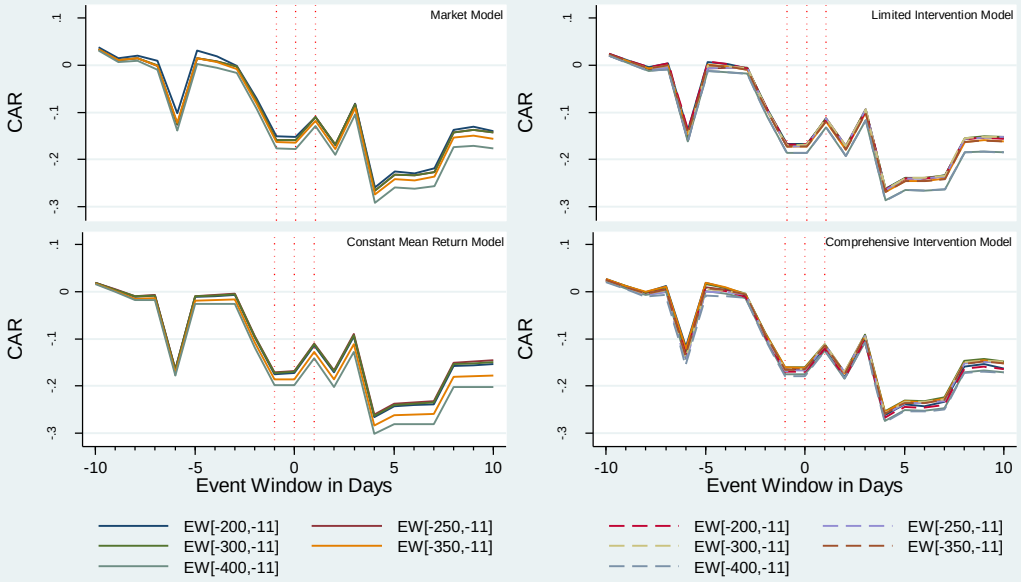


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 35 - Case 53 Multiplex

Cumulative Abnormal Return (CAR) either side of ASX announcement

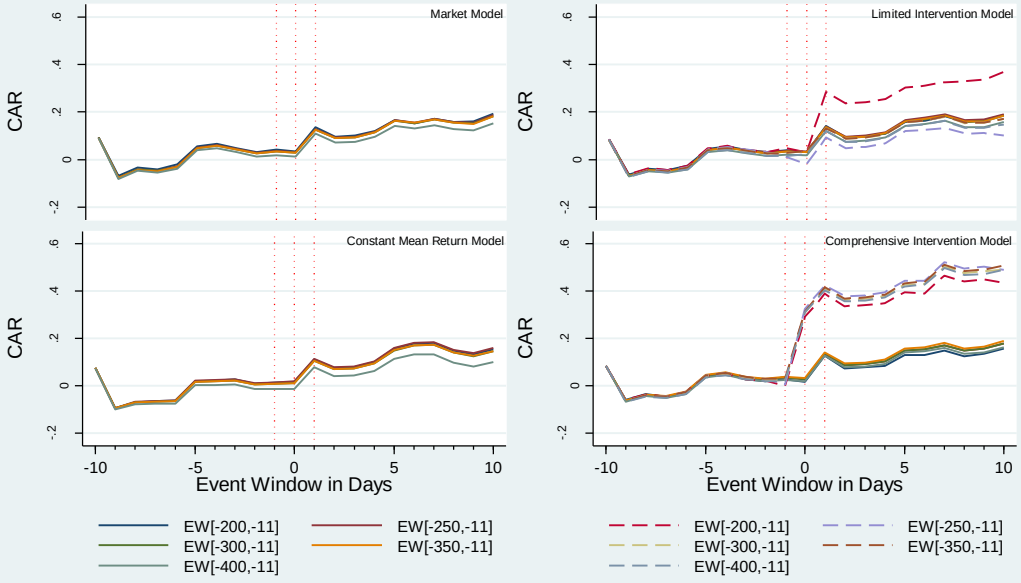


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 36 - Case 25 Coplex Resources & Case 63 Eurogold

Cumulative Abnormal Return (CAR) either side of ASX announcement

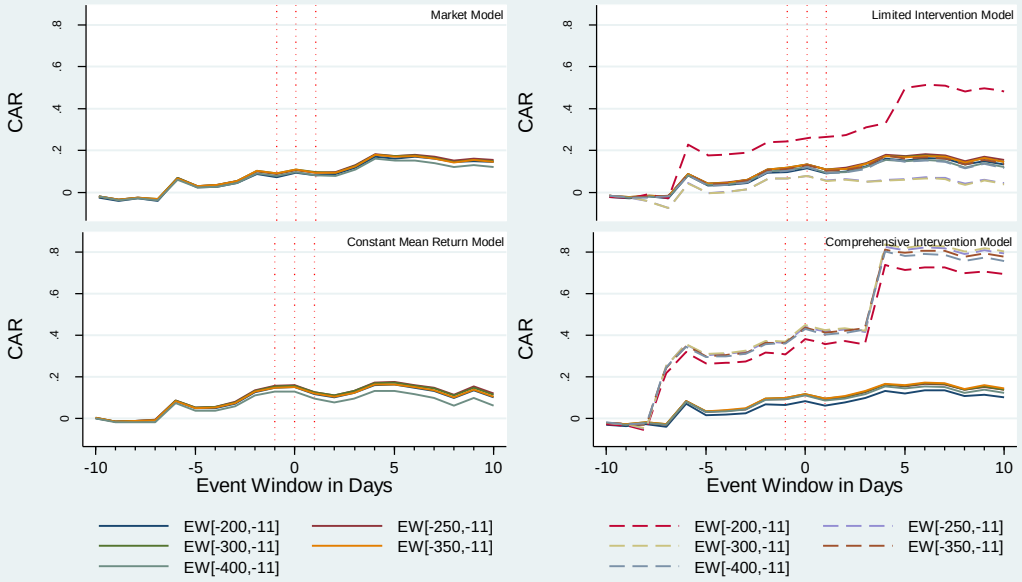


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 37 - Case 34 Spatial

Cumulative Abnormal Return (CAR) either side of ASX announcement

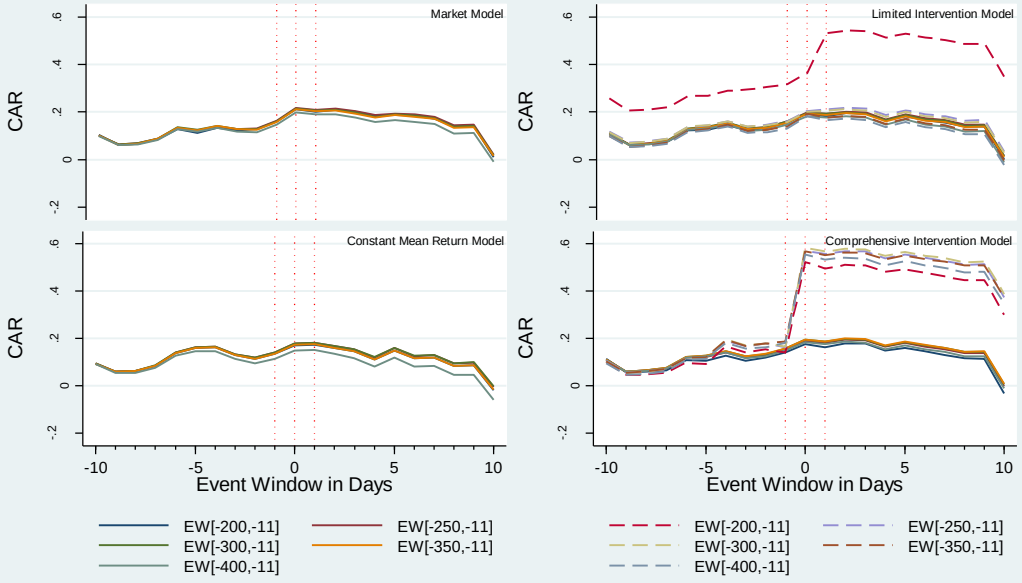


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 38 - Case 42 QPSX

Cumulative Abnormal Return (CAR) either side of ASX announcement

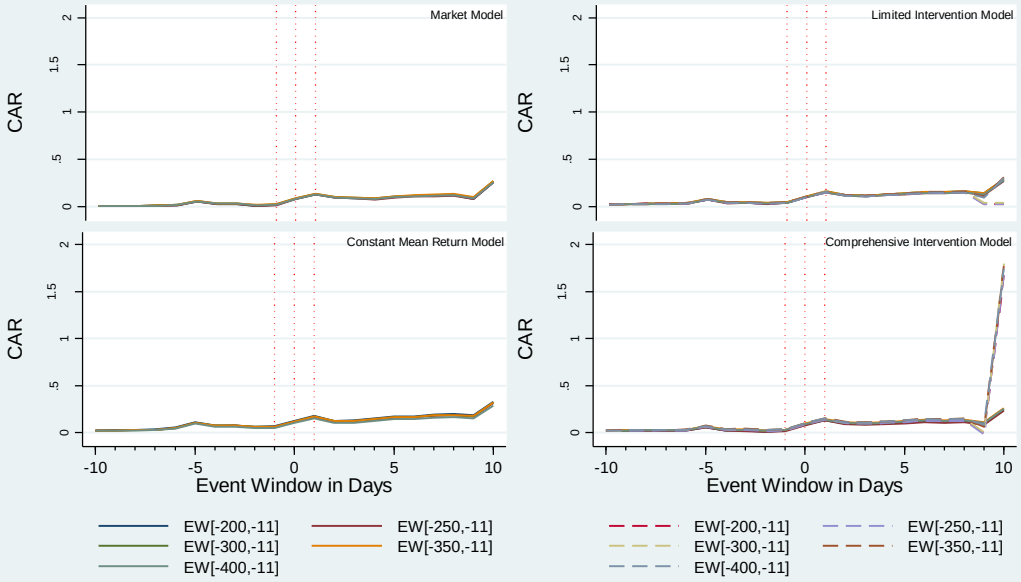


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 39 - Case 68 Strange Bedfellows

Cumulative Abnormal Return (CAR) either side of ASX announcement

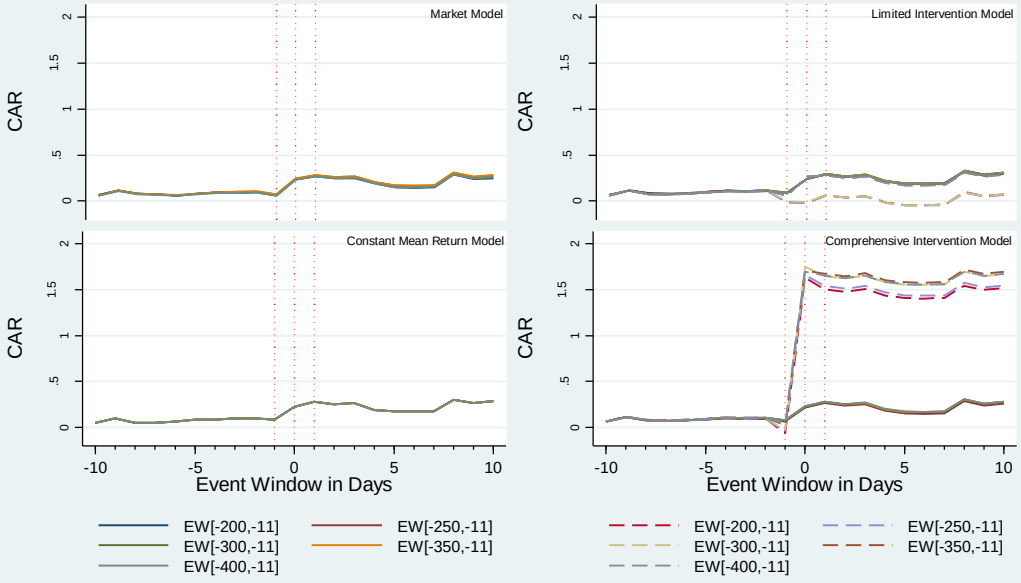


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 40 - Case 51 Wright

Cumulative Abnormal Return (CAR) either side of ASX announcement

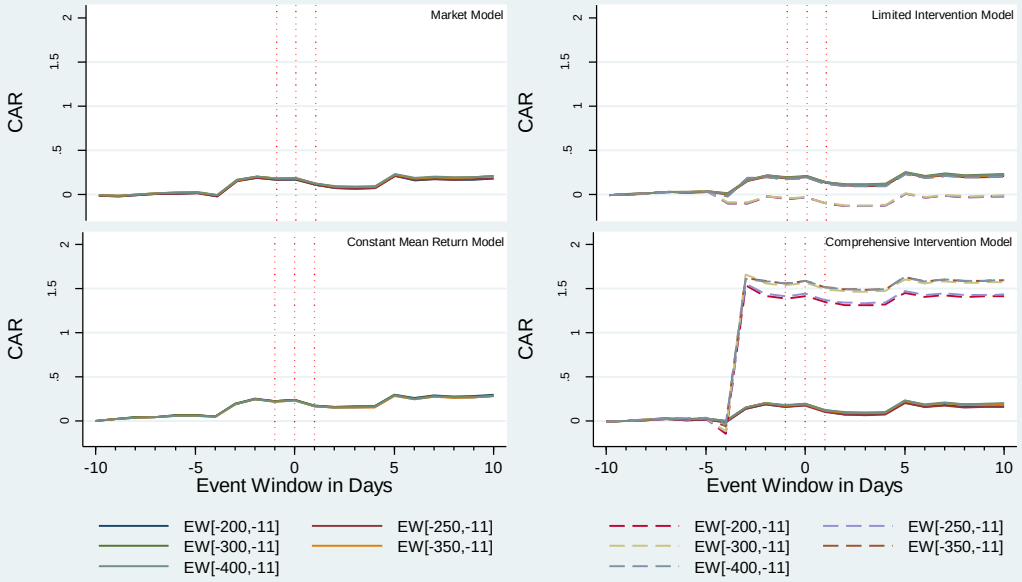


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 41 - Case 21 Performance Finance

Cumulative Abnormal Return (CAR) either side of ASX announcement

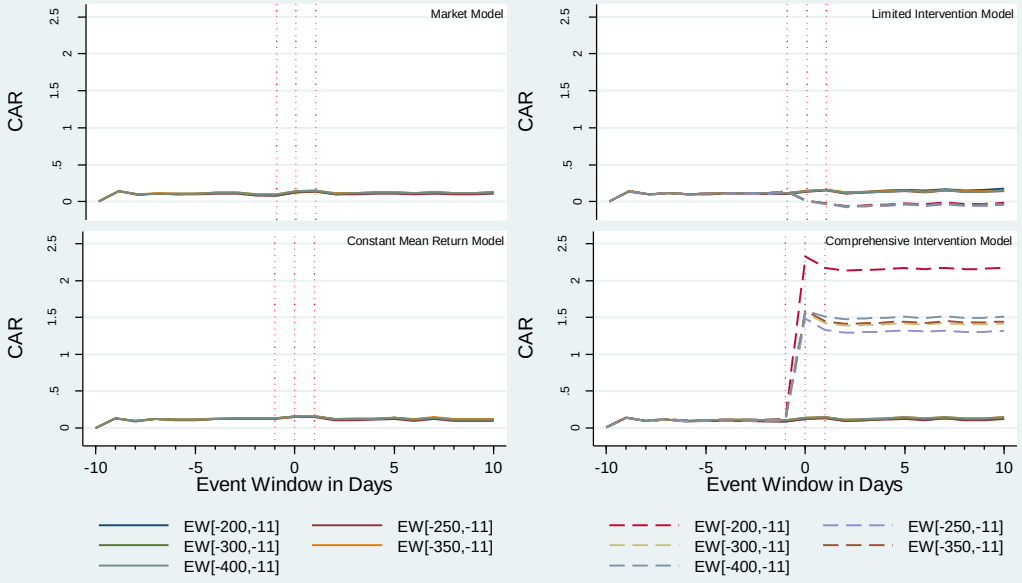


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 42 - Case 26 Aristocrat

Cumulative Abnormal Return (CAR) either side of ASX announcement

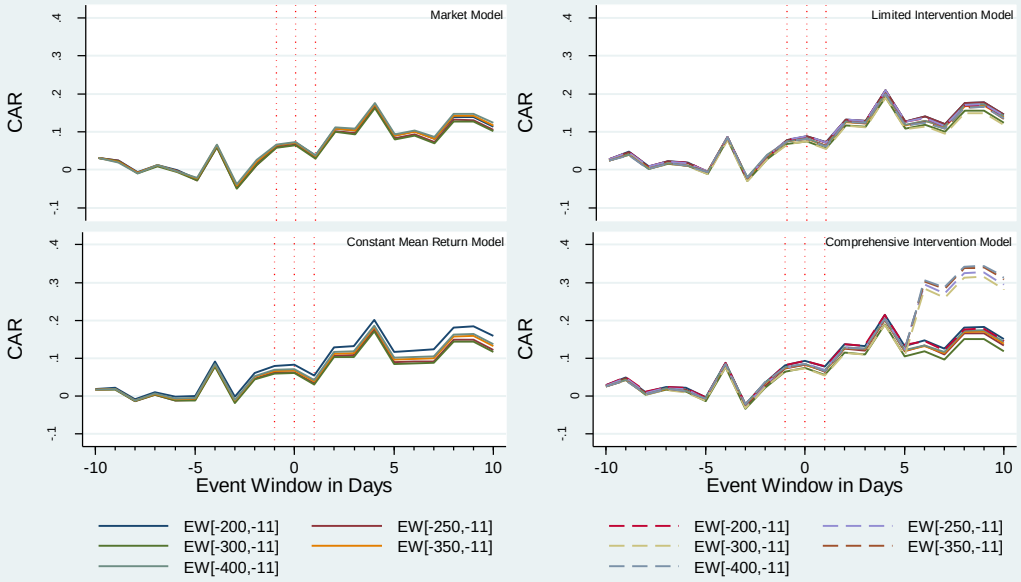


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 43 - Case 44 Marlor & Case 48 Interline

Cumulative Abnormal Return (CAR) either side of ASX announcement

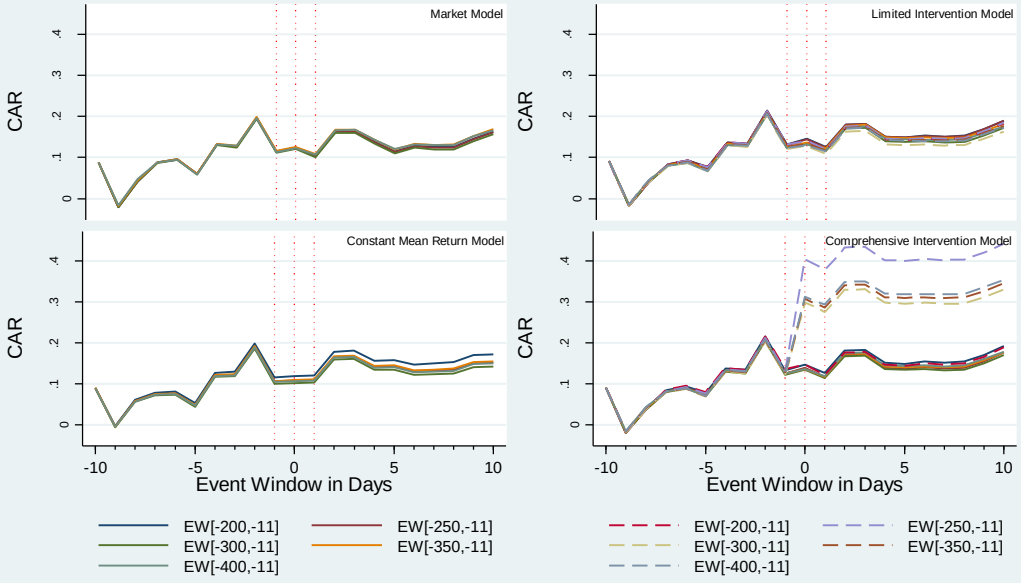


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 44 - Case 62 Shenton Park

Cumulative Abnormal Return (CAR) either side of ASX announcement

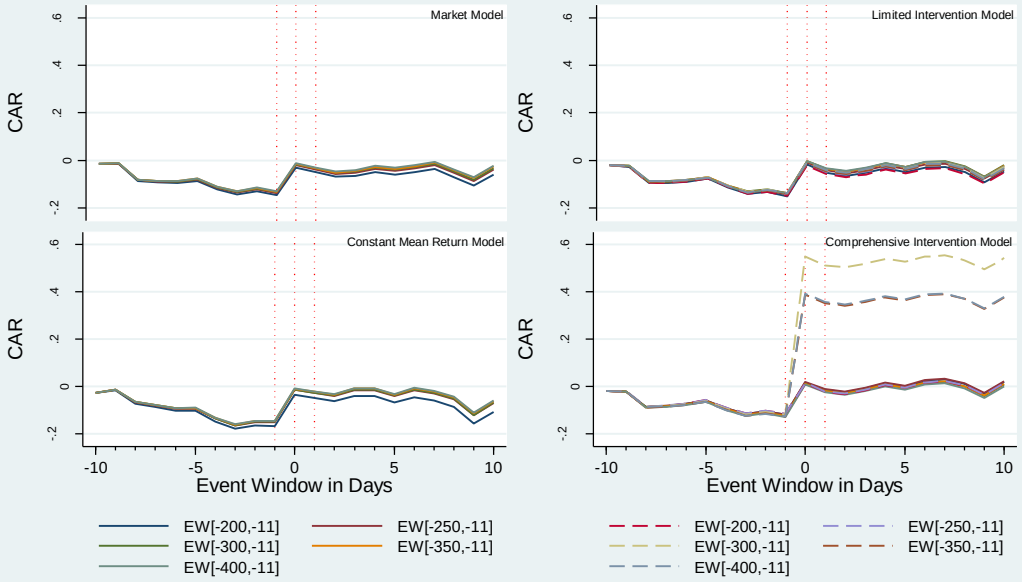


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 45 - Case 67 Downer

Cumulative Abnormal Return (CAR) either side of ASX announcement

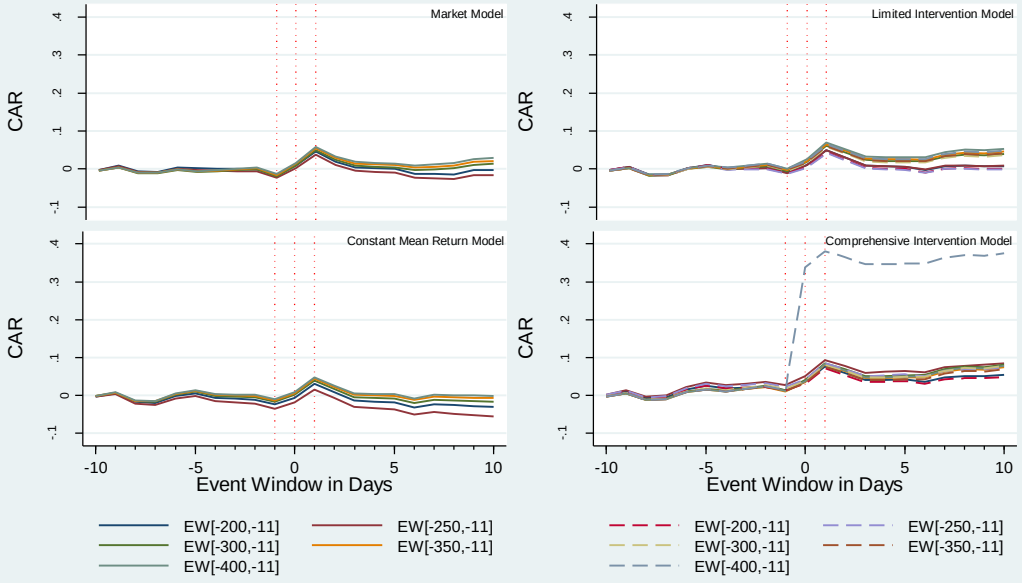


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 46 - Case 60 Centaur

Cumulative Abnormal Return (CAR) either side of ASX announcement

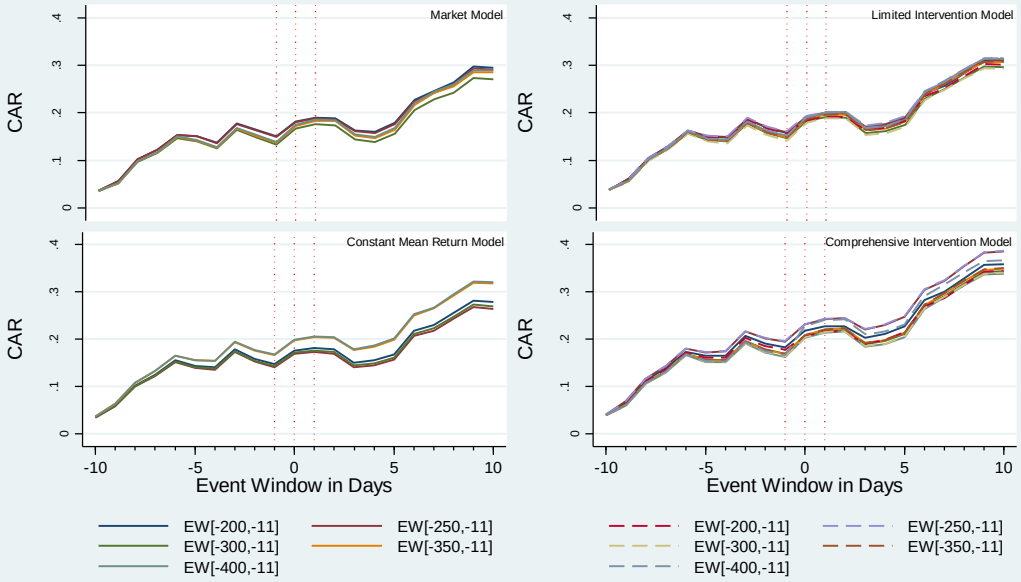


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 47 - Case 50 Village Life

Cumulative Abnormal Return (CAR) either side of ASX announcement

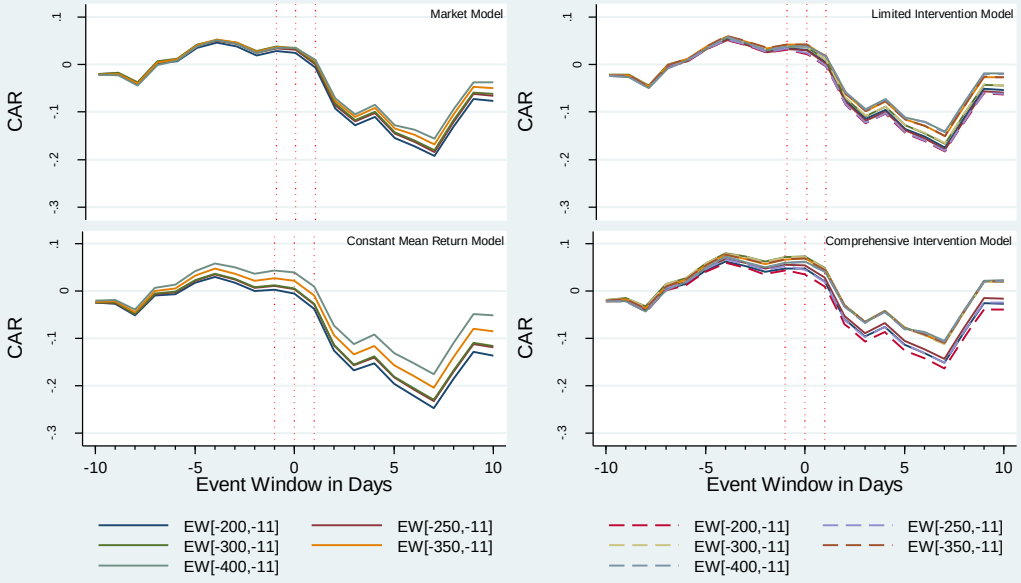


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 48 - Case 54.1 Westpoint v Masu

Cumulative Abnormal Return (CAR) either side of ASX announcement

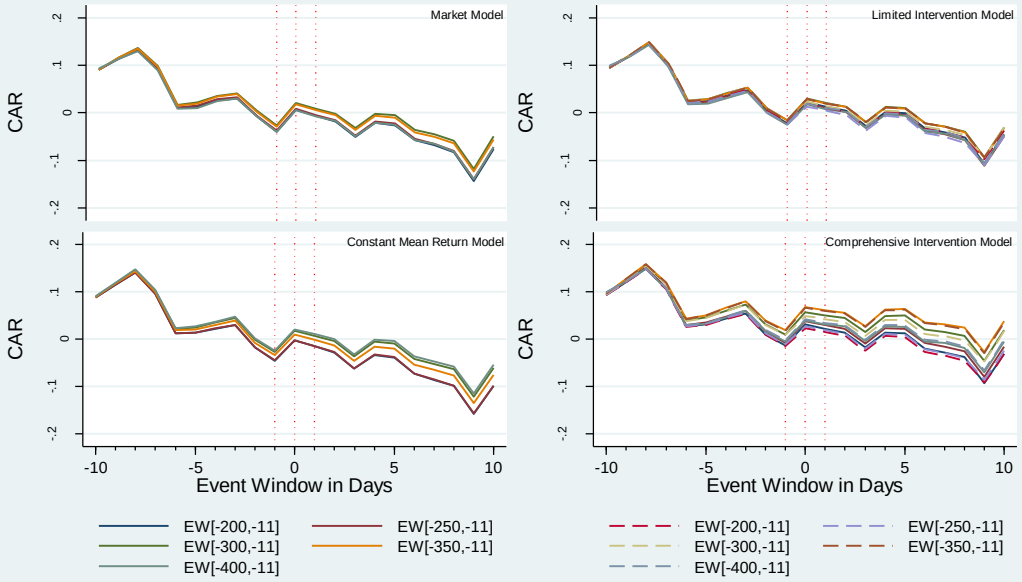


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 49 - Case 74 Opes Prime

Cumulative Abnormal Return (CAR) either side of ASX announcement

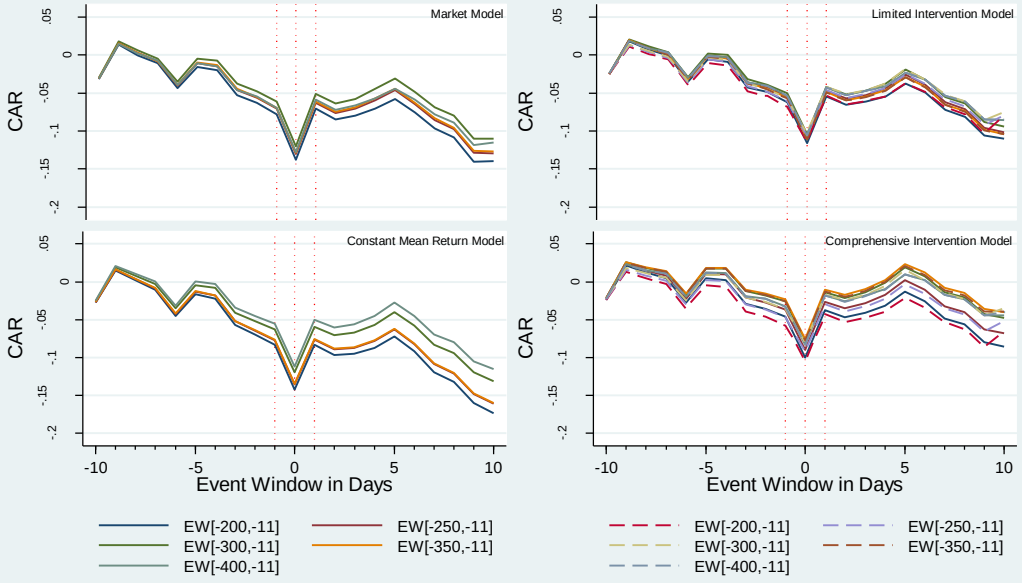


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 50 - Case 46 Concept Equity

Cumulative Abnormal Return (CAR) either side of ASX announcement

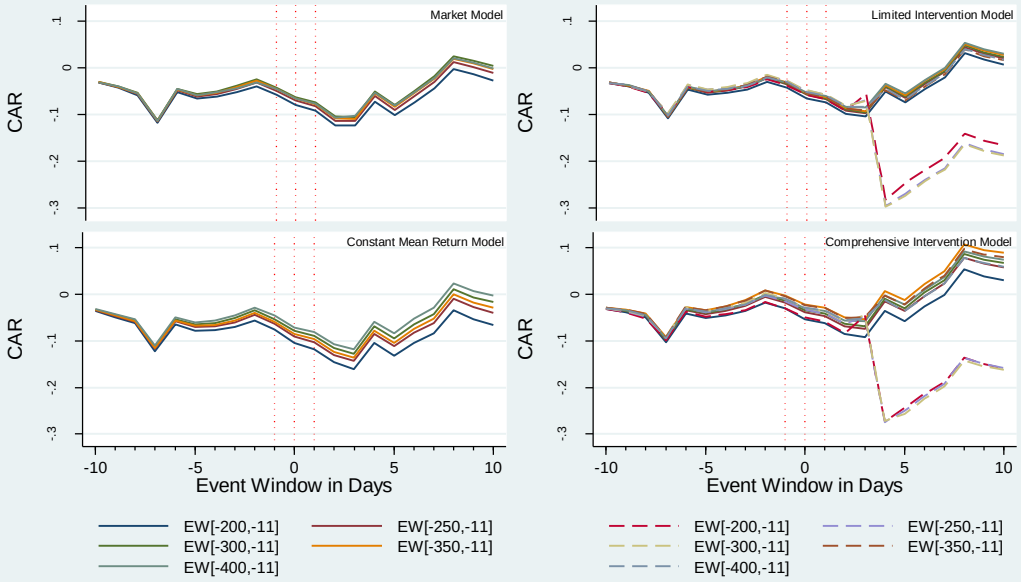


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 51 - Case 65 Peninsula Shipping

Cumulative Abnormal Return (CAR) either side of ASX announcement

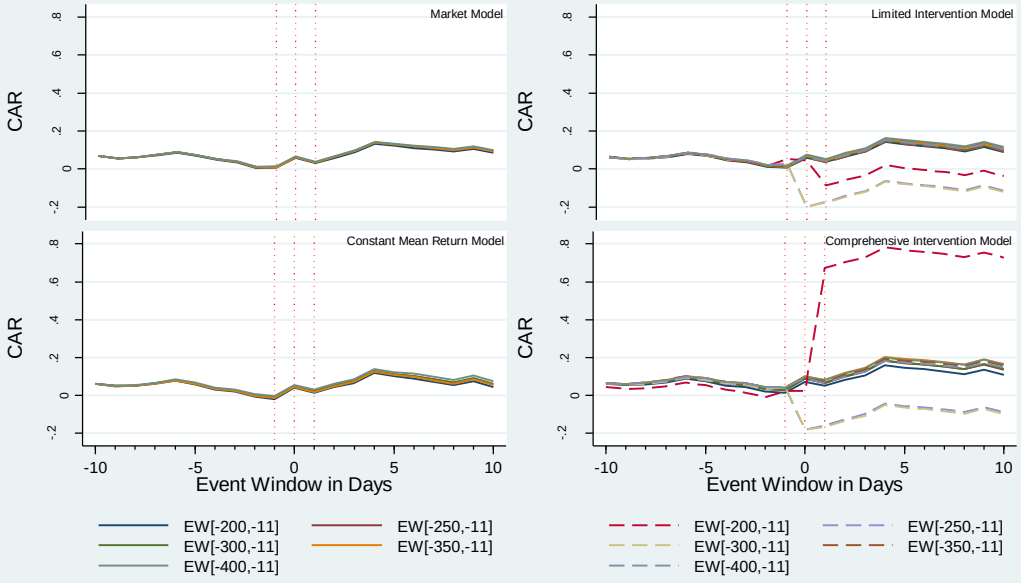


case was resolved by a settlement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 52 - Case 39 Sons of Gwalia

Cumulative Abnormal Return (CAR) either side of ASX announcement

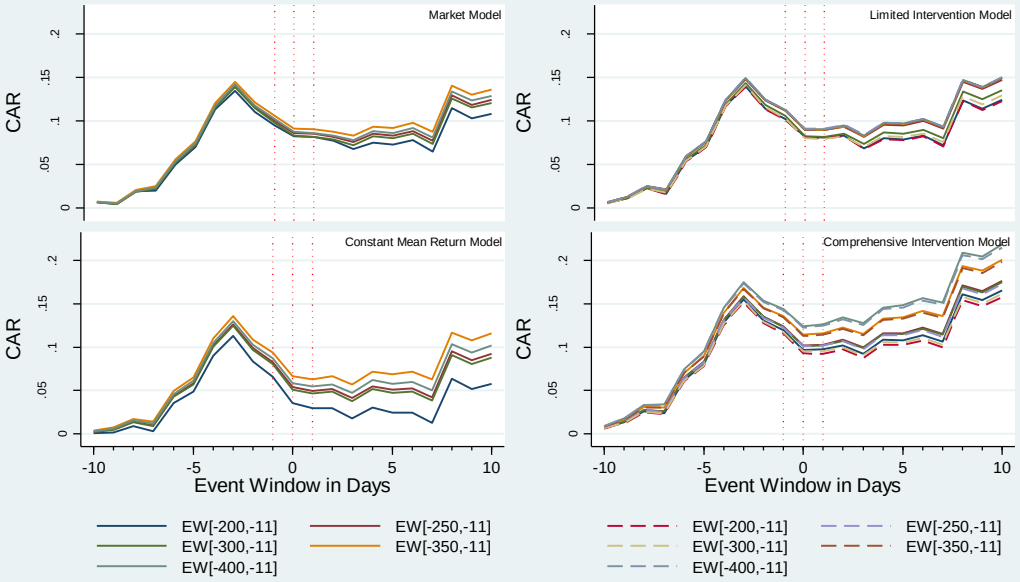


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 53 - Case 84 Arasor

Cumulative Abnormal Return (CAR) either side of ASX announcement

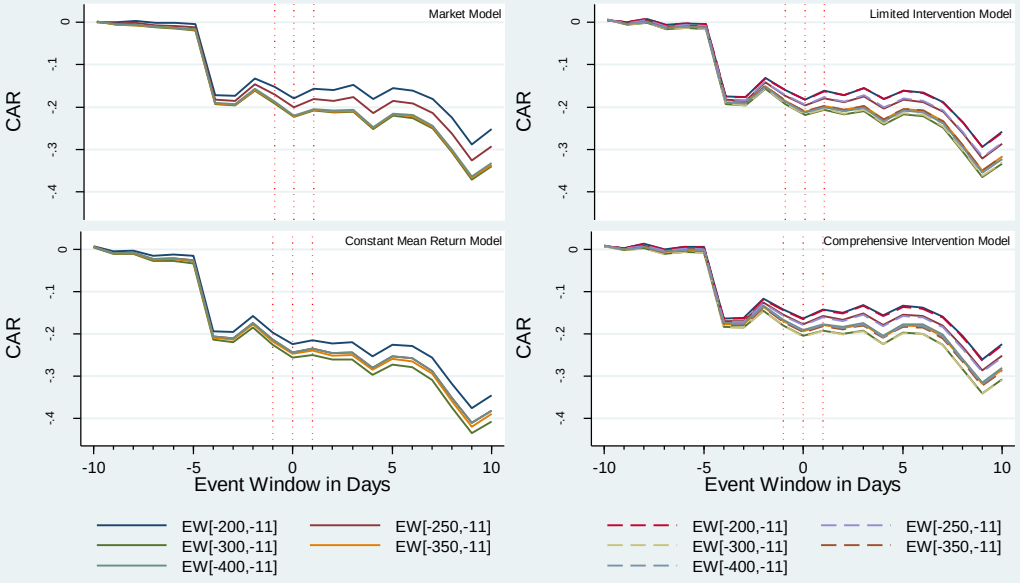


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 54 - Case 37 NEIB

Cumulative Abnormal Return (CAR) either side of ASX announcement

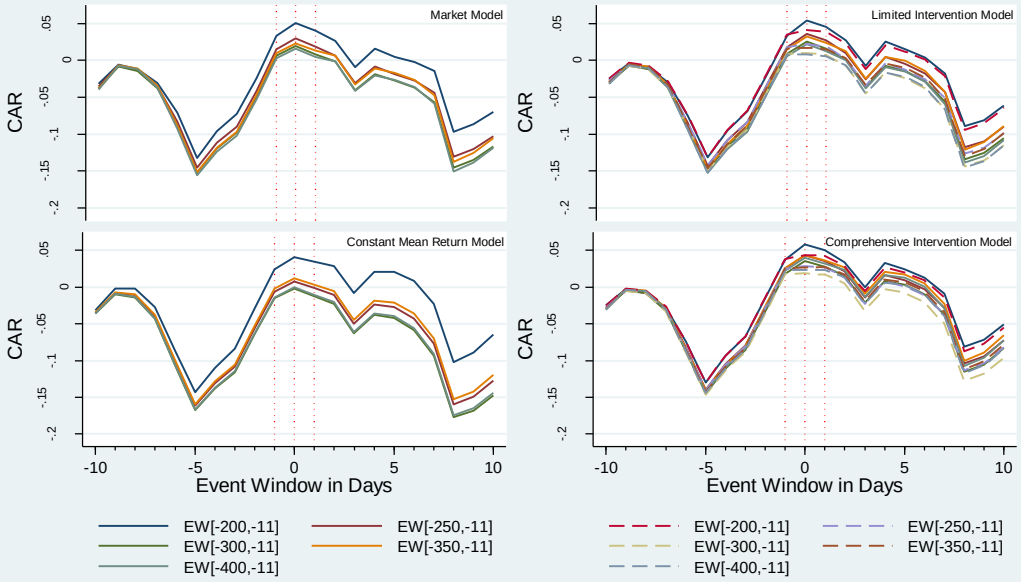


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 55 - Case 66 Watson v AWB

Cumulative Abnormal Return (CAR) either side of ASX announcement

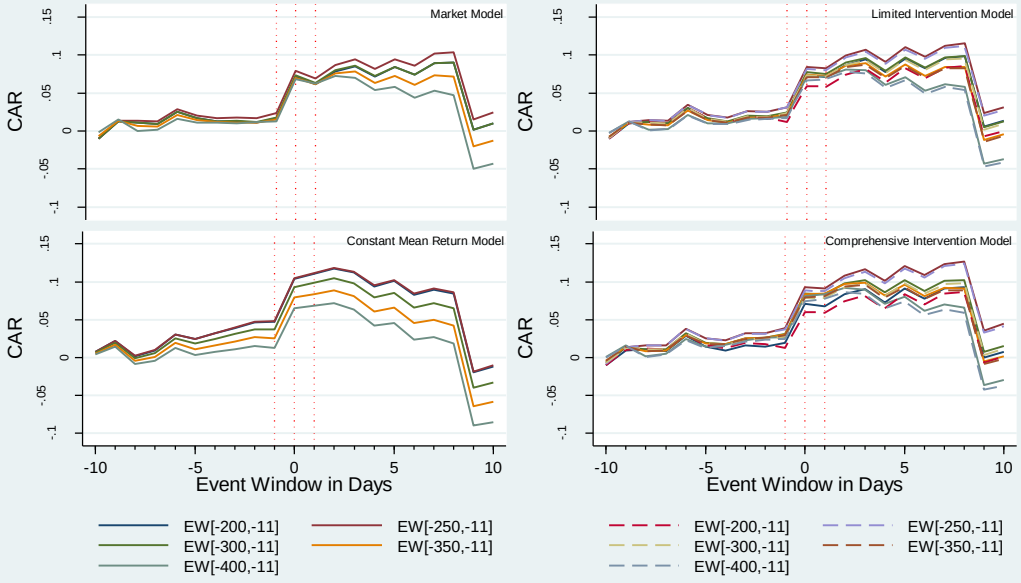


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 56 - Case 54.2 Case 5 Westpoint v PIS

Cumulative Abnormal Return (CAR) either side of ASX announcement

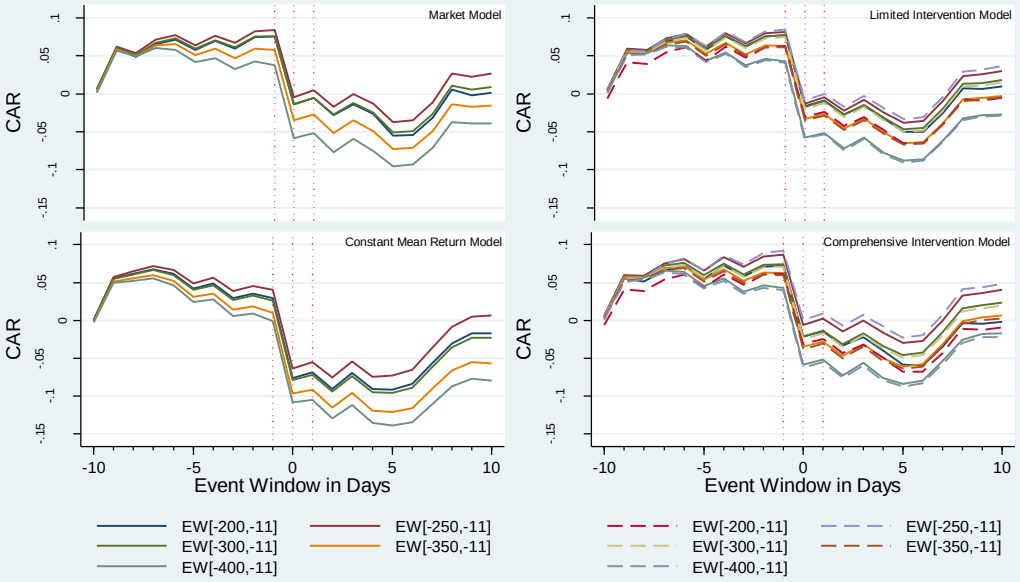


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 57 - Case 79 Kingstream

Cumulative Abnormal Return (CAR) either side of ASX announcement

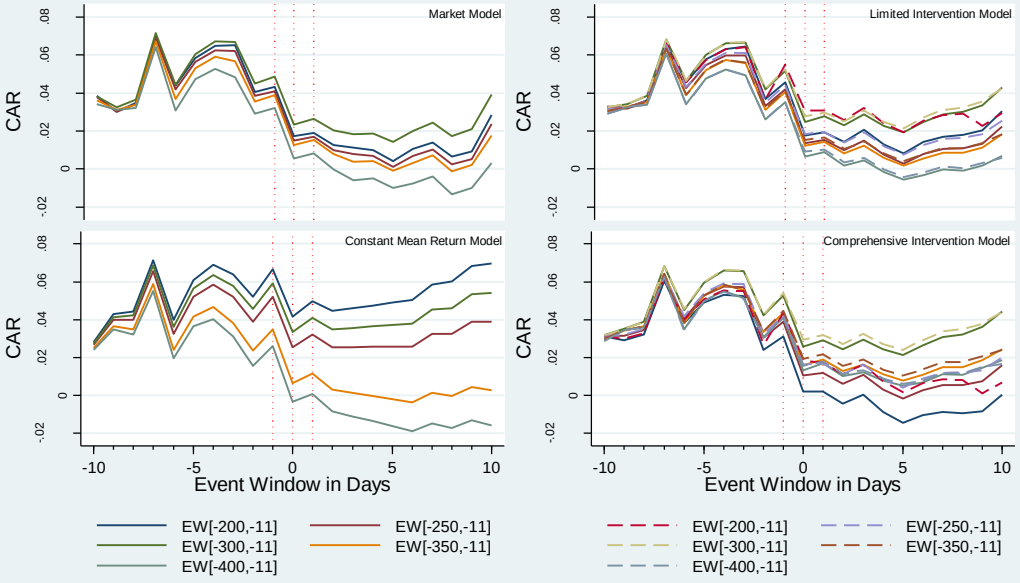


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 58 - Case 24 AM Corp

Cumulative Abnormal Return (CAR) either side of ASX announcement

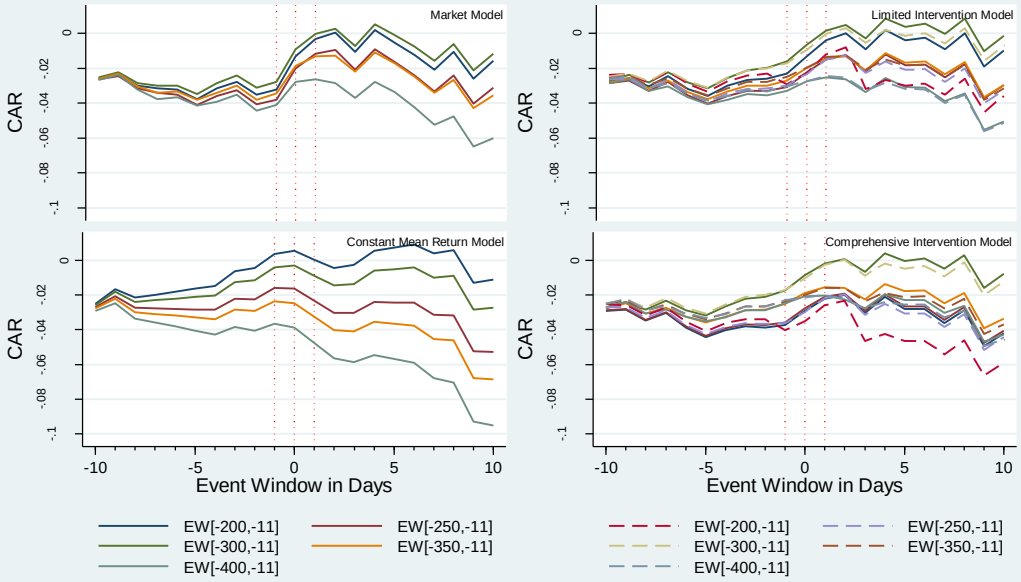


case was resolved by a settlement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 59 - Case 58.2 Case 6 Westpoint v Quantum

Cumulative Abnormal Return (CAR) either side of ASX announcement

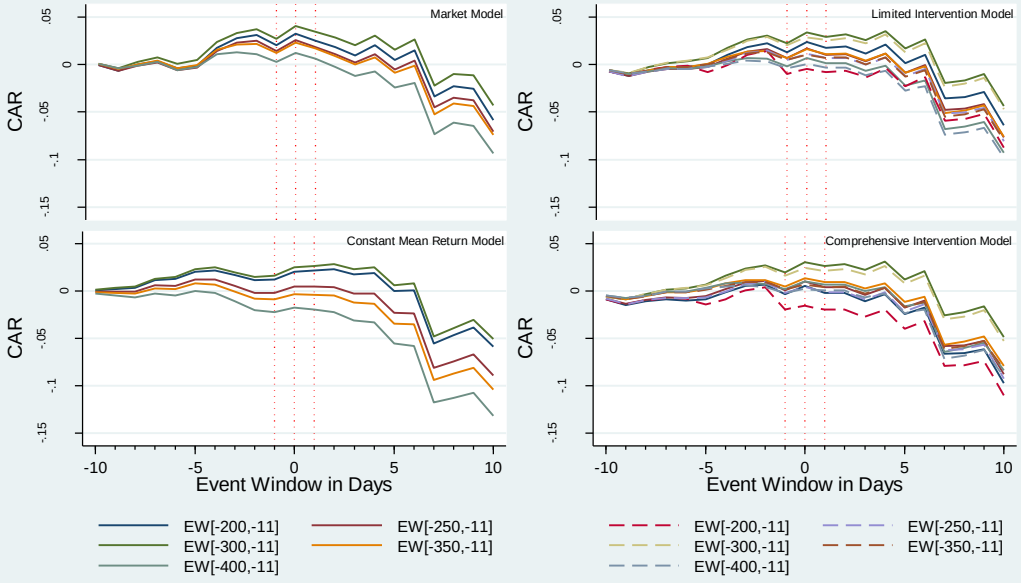


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 60 - Case 83 Ceramic Fuel

Cumulative Abnormal Return (CAR) either side of ASX announcement

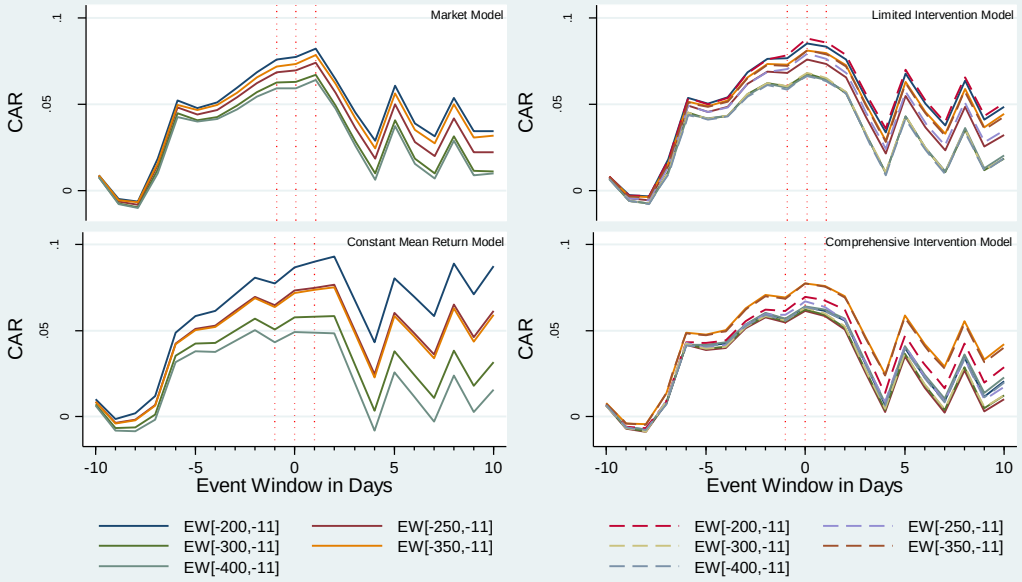


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 61 - Case 89 Napier

Cumulative Abnormal Return (CAR) either side of ASX announcement

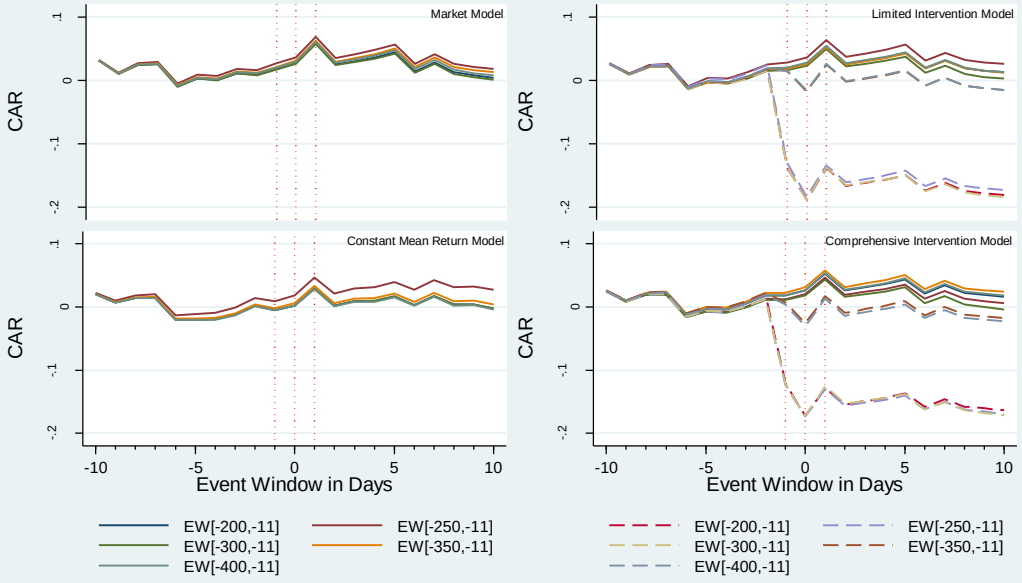


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 62 - Case 77 Pan Pharma

Cumulative Abnormal Return (CAR) either side of ASX announcement

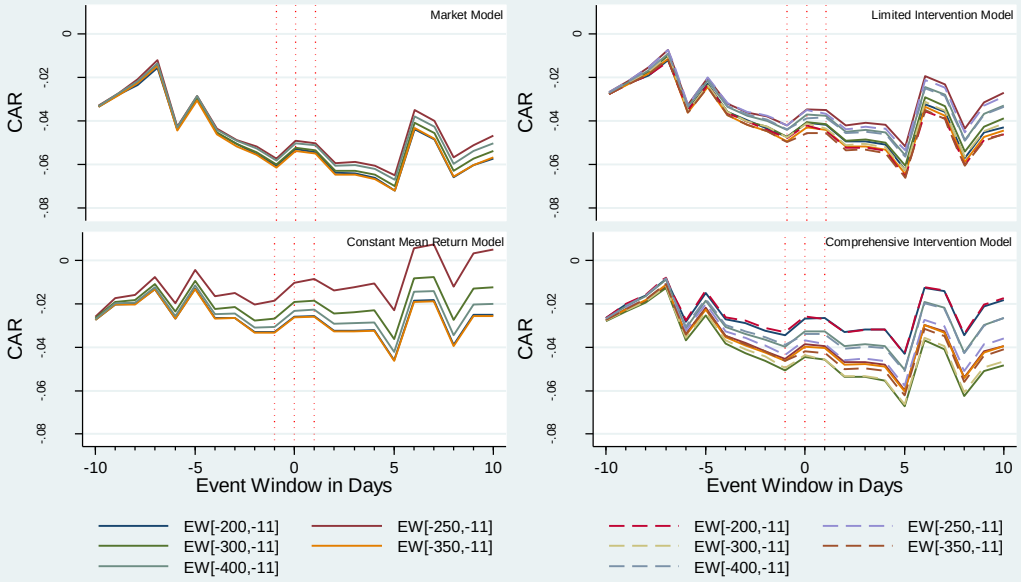


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 63 - Case 99 PCI

Cumulative Abnormal Return (CAR) either side of ASX announcement

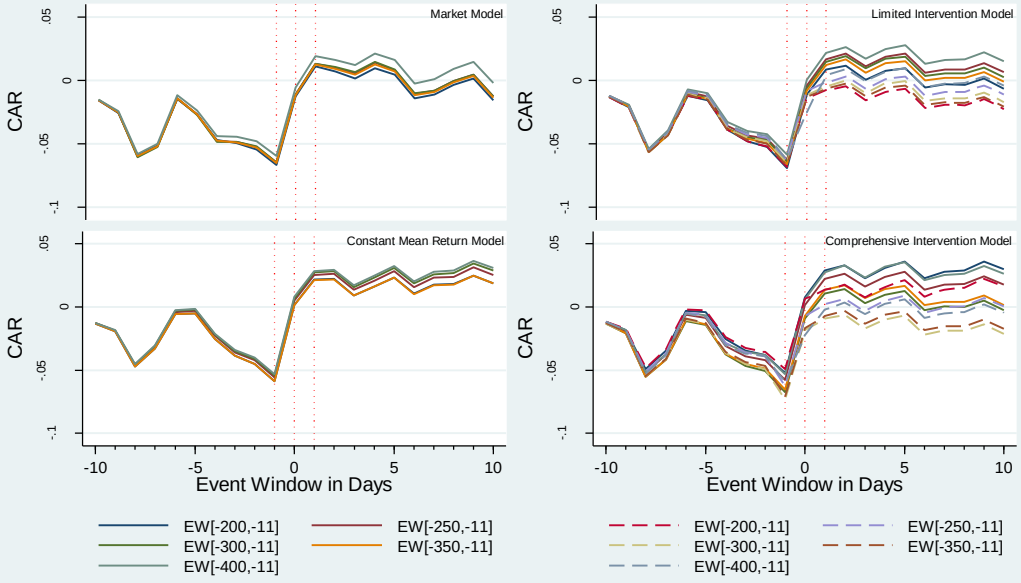


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 64 - Case 82 National Potato

Cumulative Abnormal Return (CAR) either side of ASX announcement

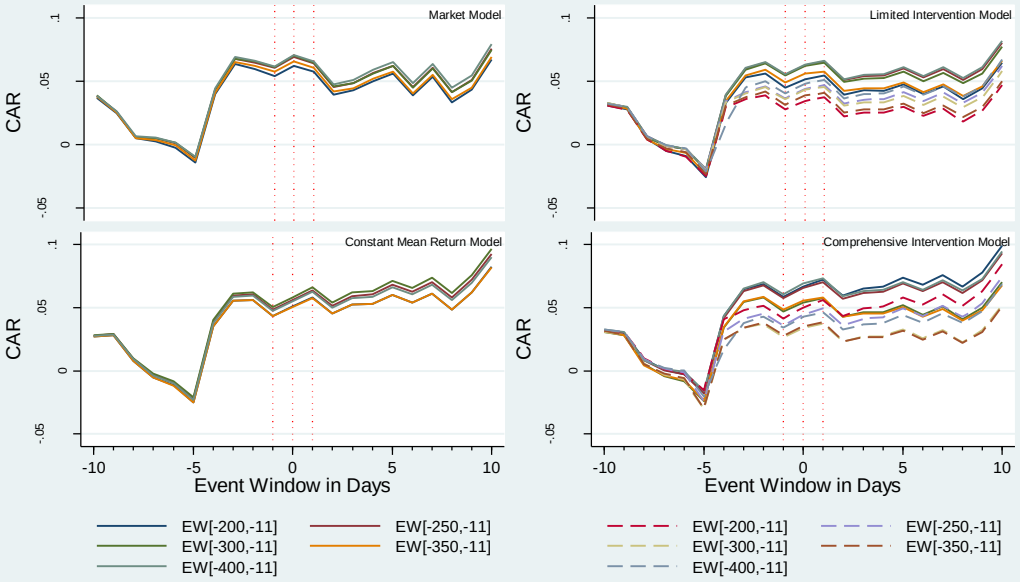


case was resolved by a judgement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 65 - Case 100 WDS & Case 106 Seana

Cumulative Abnormal Return (CAR) either side of ASX announcement

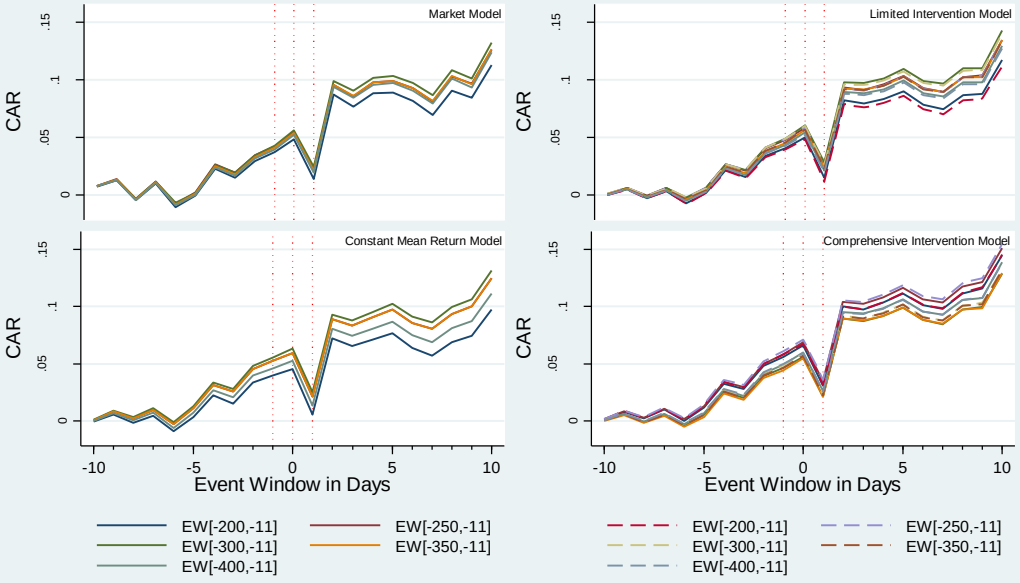


case was resolved by a withdrawal and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 66 - Case 92 Babcock US

Cumulative Abnormal Return (CAR) either side of ASX announcement

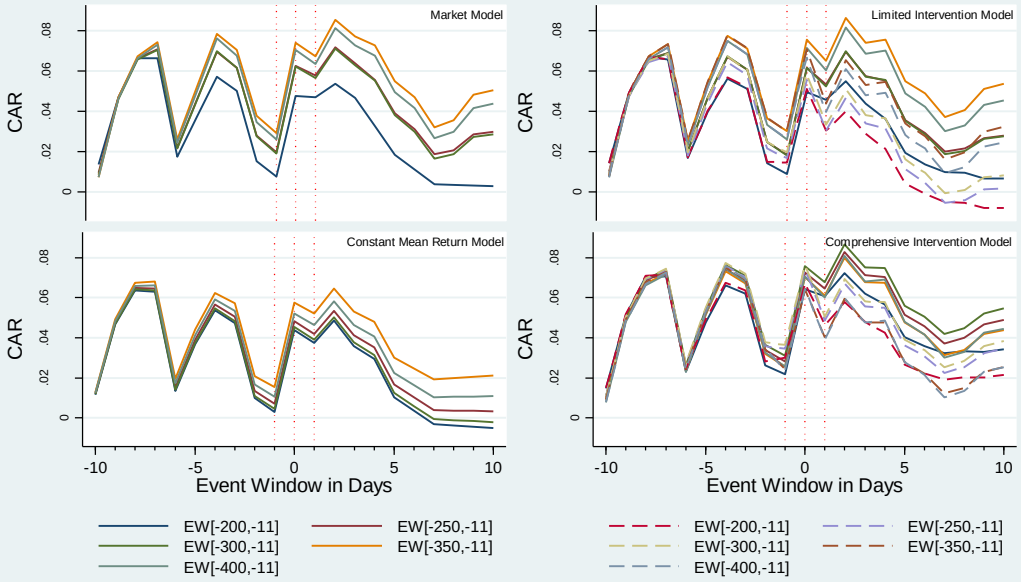


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 67 - Case 80 Oz Minerals

Cumulative Abnormal Return (CAR) either side of ASX announcement

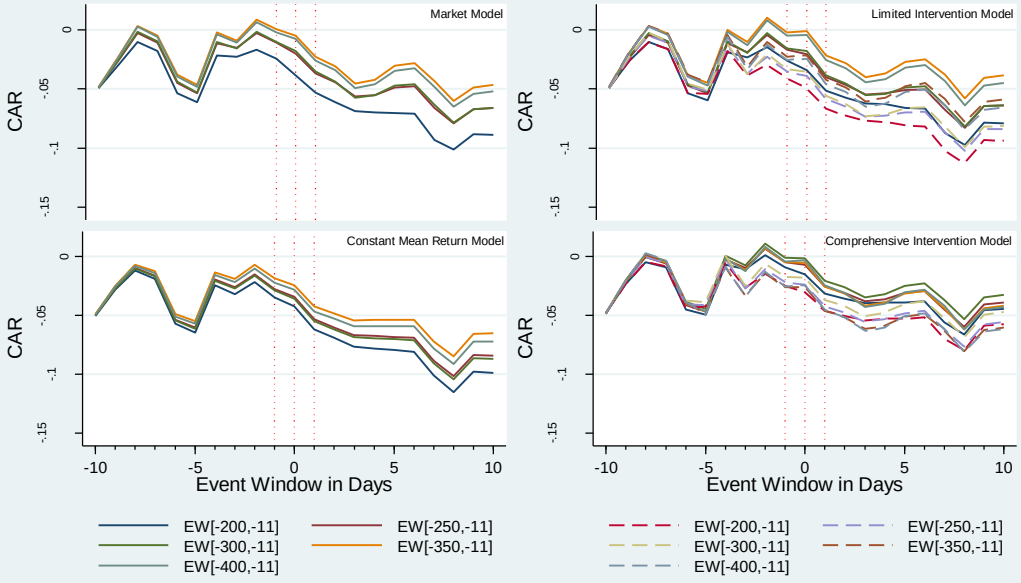


case was resolved by a withdrawal and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 68 - Case 93 Hydrocool

Cumulative Abnormal Return (CAR) either side of ASX announcement

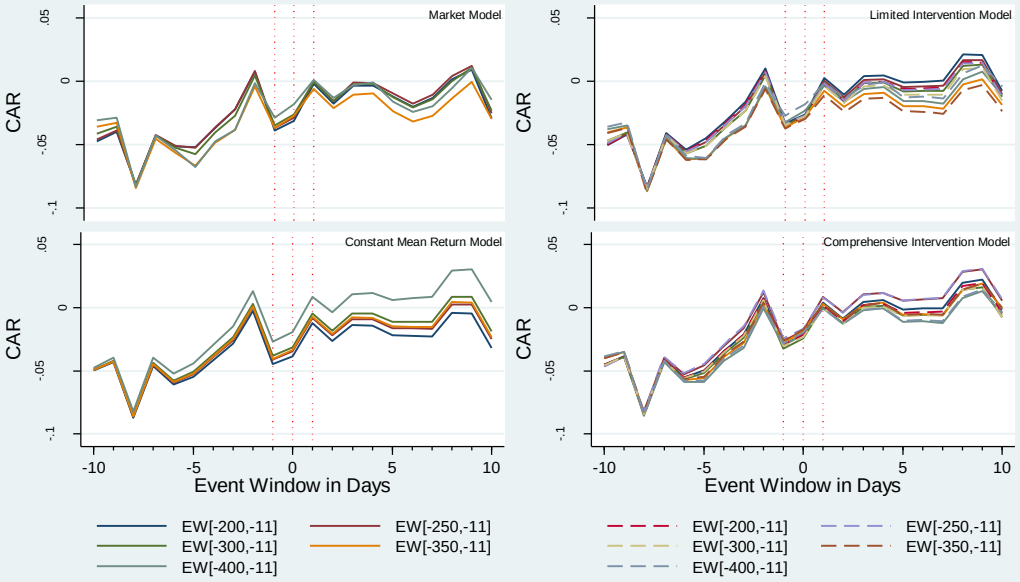


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 69 - Case 75 Credit Corp

Cumulative Abnormal Return (CAR) either side of ASX announcement

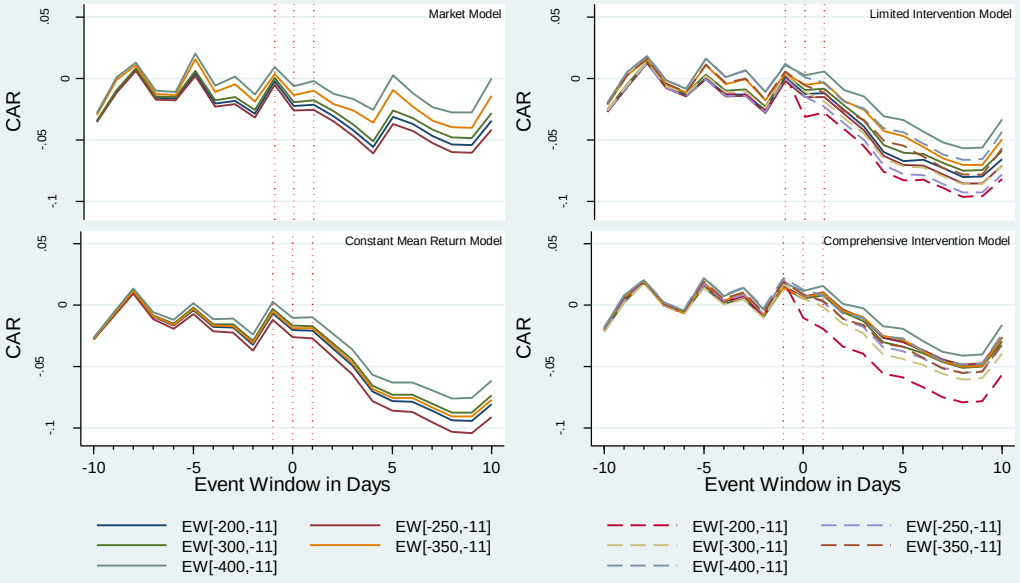


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 70 - Case 105 Babcock

Cumulative Abnormal Return (CAR) either side of ASX announcement

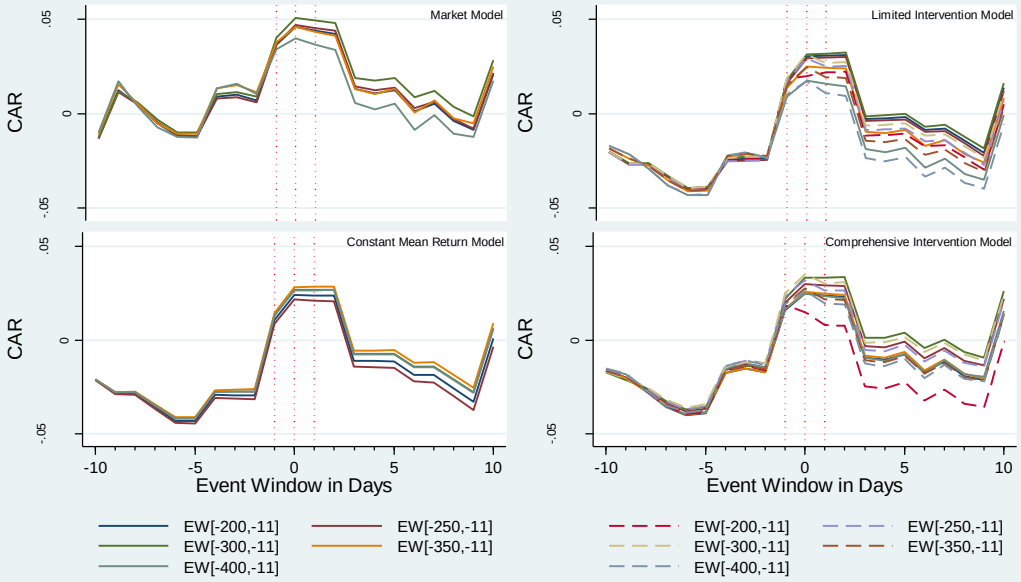


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 71 - Case 116 Koonara

Cumulative Abnormal Return (CAR) either side of ASX announcement

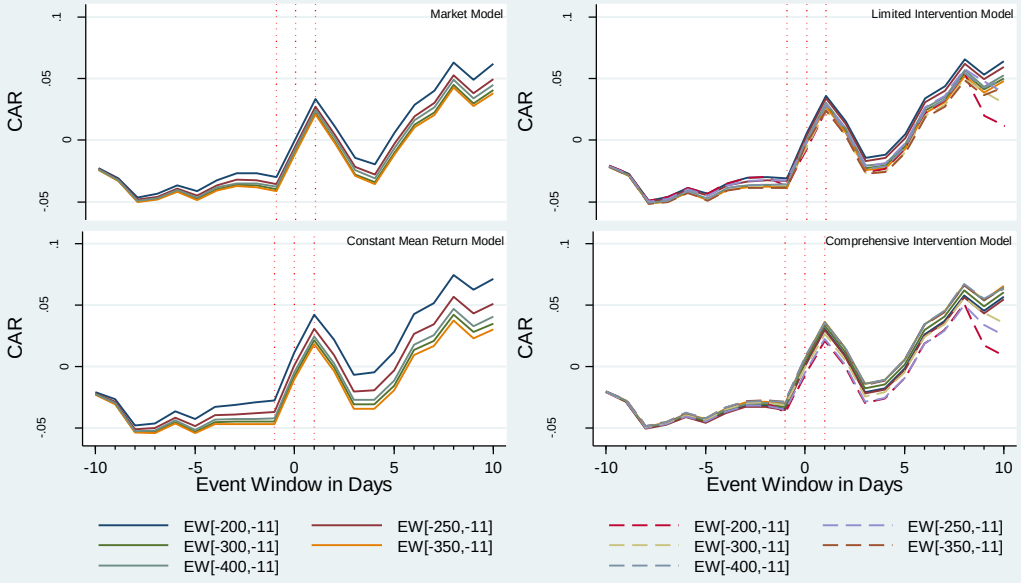


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 72 - Case 102 Kimberley

Cumulative Abnormal Return (CAR) either side of ASX announcement

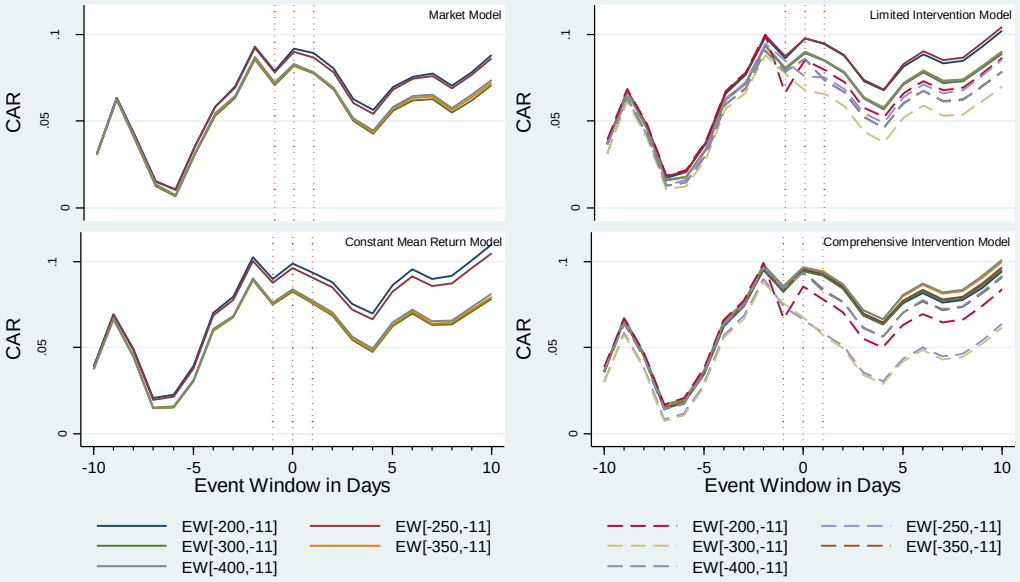


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 73 - Case 94 Uniloc

Cumulative Abnormal Return (CAR) either side of ASX announcement

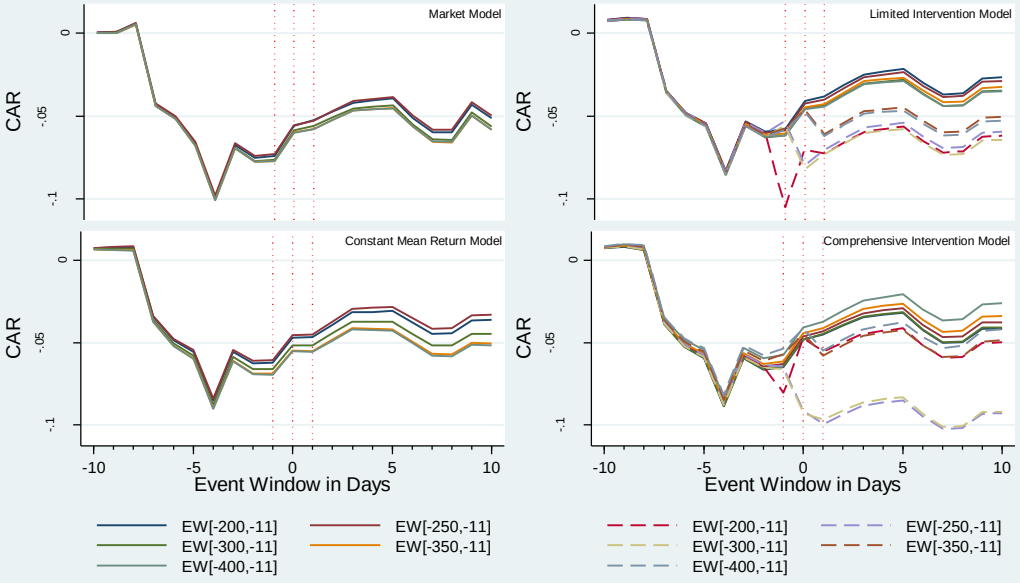


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 74 - Case 95 Trans Pacific Industries

Cumulative Abnormal Return (CAR) either side of ASX announcement

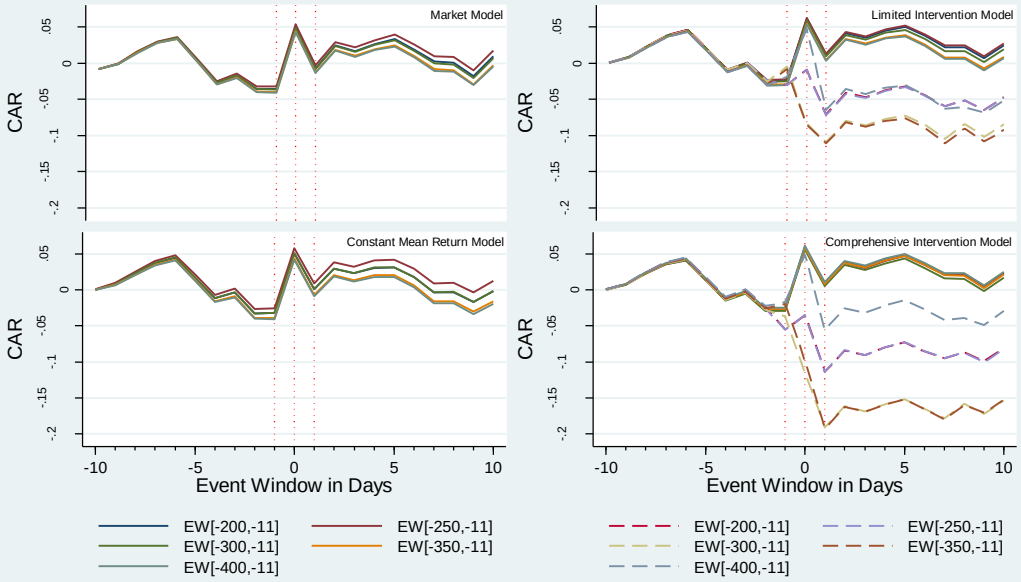


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 75 - Case 71/72 Centro

Cumulative Abnormal Return (CAR) either side of ASX announcement

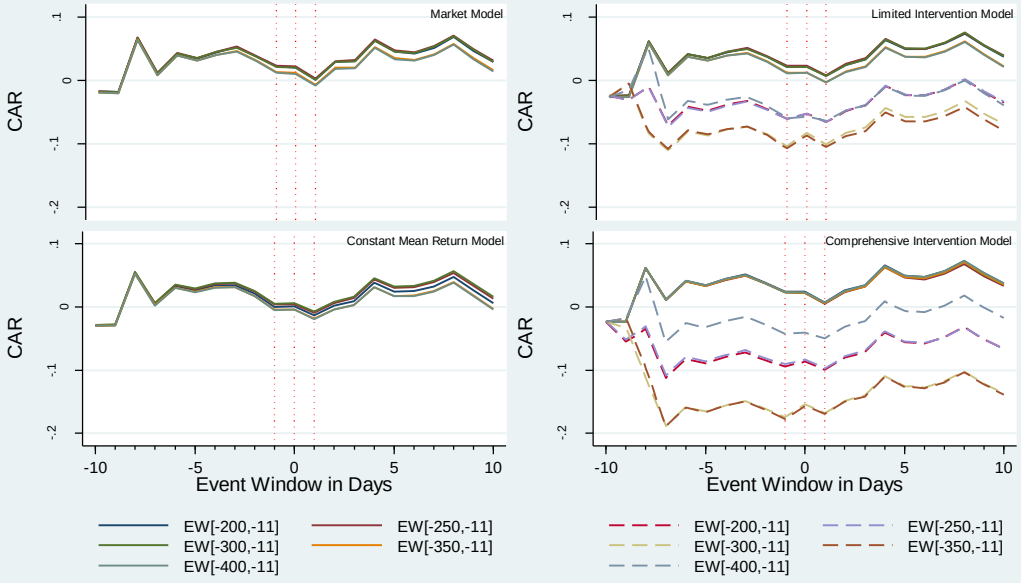


case was resolved by a settlement and the final outcome is categorised as good

source MS_ES08_IA02v02

Event 76 - Case 96 Innovaratone

Cumulative Abnormal Return (CAR) either side of ASX announcement

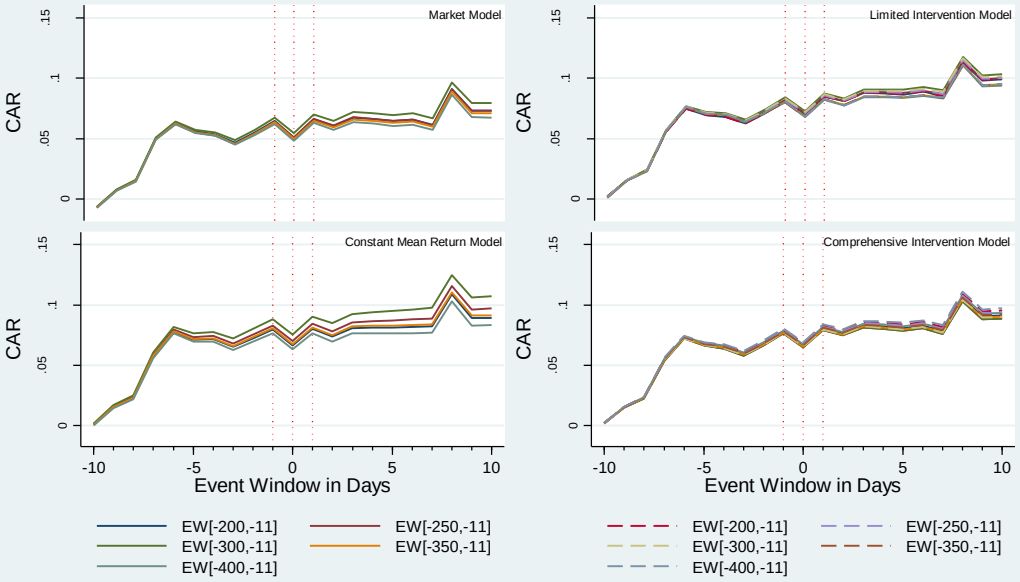


case was resolved by a judgement and the final outcome is categorised as bad

source MS_ES08_IA02v02

Event 77 - Case 119 Christie Qld

Cumulative Abnormal Return (CAR) either side of ASX announcement

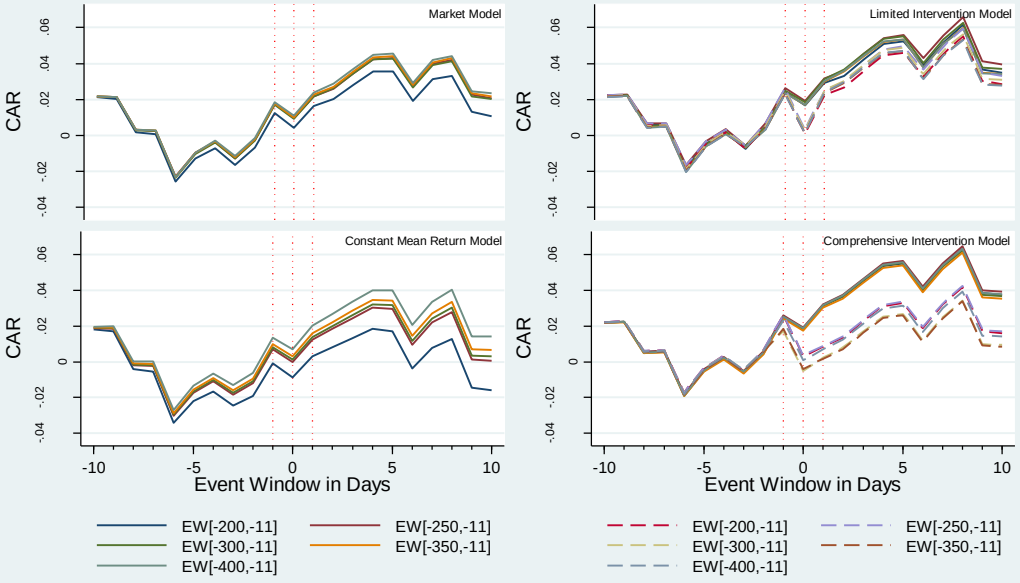


case was resolved by a settlement and the final outcome is categorised as bad

source MS_ES08_IA02v02

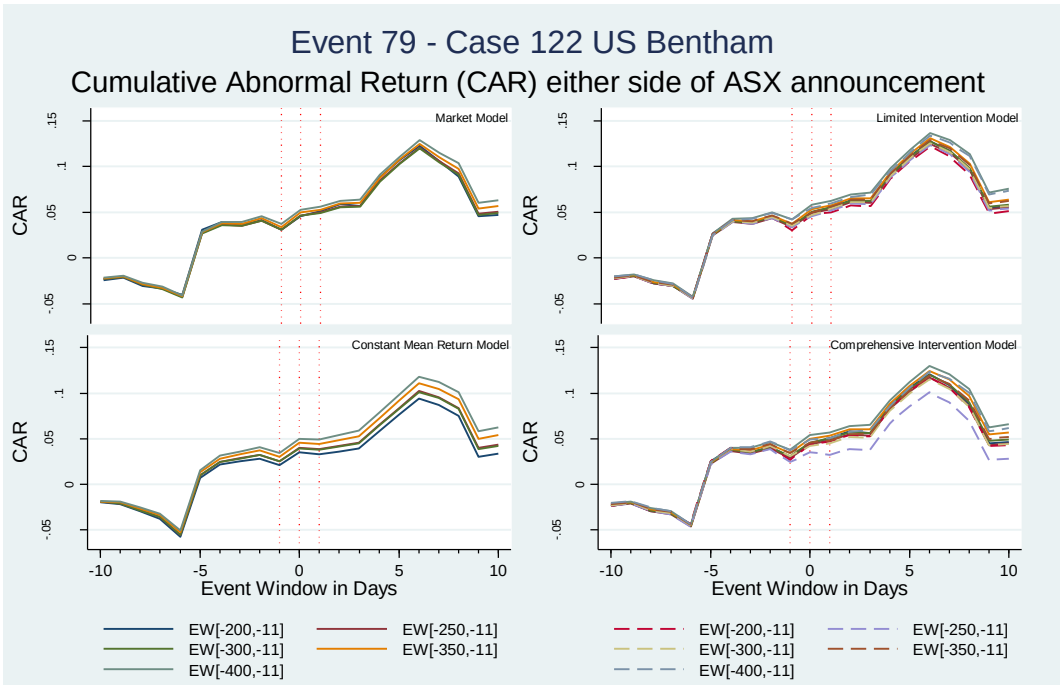
Event 78 - Case 103 Councils v local Govt

Cumulative Abnormal Return (CAR) either side of ASX announcement



case was resolved by a judgement and the final outcome is categorised as good

source MS_ES08_IA02v02



case was resolved by a judgement and the final outcome is categorised as good

source MS_ES08_IA02v02

Appendix 19 - Discussion of highly and very significant case outcomes

Event 2 Tobacco Wholesalers

In 1997 the High Court of Australia declared[432] that the State tobacco licensing schemes[433] as invalid and a subsequent case[434] allowed licensed retailers to recover the licence fees paid before the schemes were declared invalid[435]. Subsequently and independently the major tobacco retailers achieved compromises with their wholesalers to recover the fees they had paid.

Thousands of smaller retailers also sought to recover from British American Tobacco Australia ('BATA'), Philip Morris Ltd ('PML') and major wholesalers, the fees they had paid. The organisation and funding of those claims was undertaken by Firmstones Pty Ltd ('Firmstones') and IMF[436]. IMF had this deal brought to them by a third party and negotiated settlement with Phillip Morris of 100% of the amounts owing shortly prior to trial[437]. The announcement of the PML settlement expected the IMF fees to amount to AS$5m but noted that the retailers had to accept by the 1 October 2002 or else the case against both PML and BATA would proceed to trial. The announcement also made clear that the settlement with PML would not affect the claim against BATA which was approximately double in size. On 3rd October 2002 IMF announced that the PML retailers had accepted the settlement and that the trial against BATA had commenced. On 8th October 2002, IMF announced that BATA, prior to judgement,

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[432] *Ha v New South Wales* (1997) 189 CLR 465.

[433] The specific legislation in *Ha* was the Business Franchise Licences (Tobacco) Act (1987) NSW but the court's reasoning was applicable to the other States.

[434] *Roxborough v Rothmans of Pall Mall Australia Ltd* [2001] 208 CLR 516.

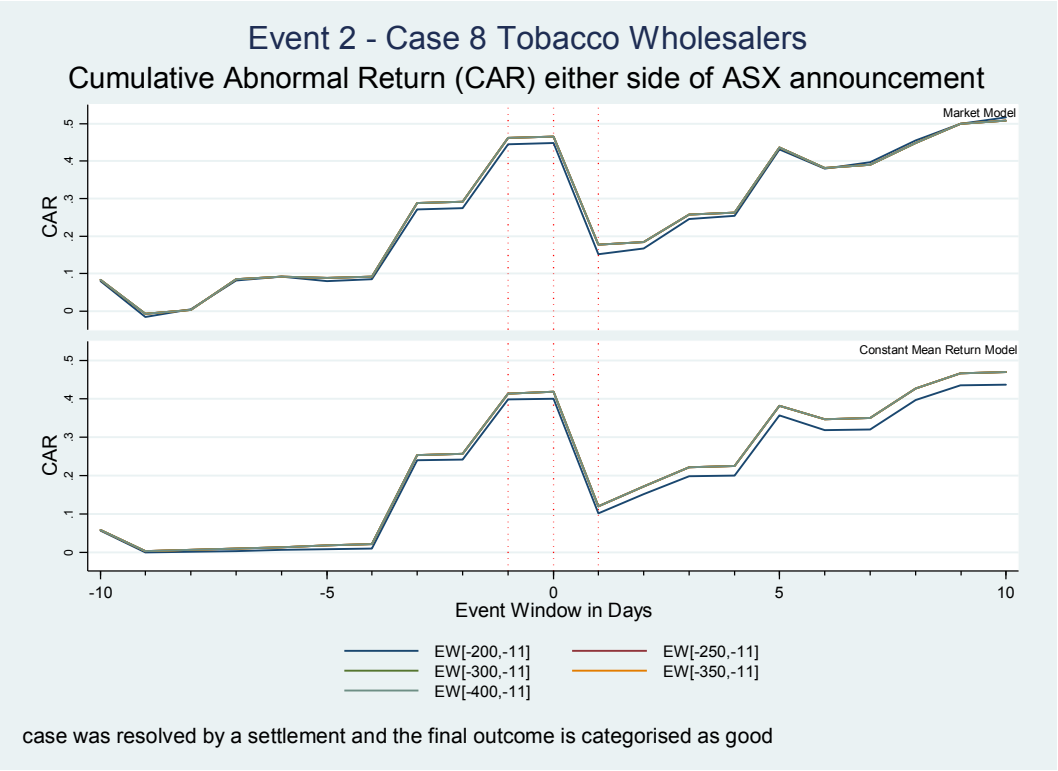
[435] A licence was normally for 1 month and the fee was set at 100% of the value of tobacco sold in the preceding month. Wholesalers levied the licence fee by applying 100% to the price of the tobacco as it was sold on the assumption that the retailer would continue to require a licence. Thus the cost to the retailer of tobacco purchased in June included the licence fee for July. The *Ha* judgment was declared on 5 August 1997 and consequently tobacco sales from the 1 July 2007 to 5 August 1997 included a levy for licence fees in August and September which were no longer payable.

[436] See *Marston v Statewide Independent Wholesalers Ltd* [2003] NSWSC 816 at §8. IMF announced to the market on 10th May 2002 that it intended to fund the claims of Tobacco retailers against Phillip Morris and British American Tobacco. However, IMF's website said a funding agreement was entered into on 9 December 2001. (http://www.imf.com.au/cases.asp?ID=23&showlist=2 updated 31 December 2007 Viewed 9 April 2008, No longer available - screen clipping on file).

[437] ASX announcement 16 September 2002 at 12:19.

had made a settlement offer of 105% of the amount owing subject to acceptance and that IMF had reduced its fee to 30% in order that claimants received a net 75%.

Figure 29 Tobacco wholesalers



From Figure 29 it is apparent that the market did not react to the news during the afternoon of the announcement. The following day the reaction was negative, possibly due to the further announcement that

> *"a private members bill was introduced into the Australian parliament by Mr Stephen Smith of the Australian Labour Party on 16 September 2002 entitled "Tobacco Excise Windfall Recovery (Assessment) Bill 2002", which in essence aims to impose as a tax an amount equal to the excise that was levied and paid by retailers to tobacco wholesalers."*

Were such a bill to become law then the recovery prospects would be poor. It should be noted however that the prospect of such a tax had been raised in 23 July 2002[438]

[438] See Media Release of Shadow Minister Smith (2012).

and should only have been of limited surprise. The bill never progressed to a second reading and was dropped in March 2003.

The Directors Report within the Insolvency Management Fund Limited Annual Report for the year ended 30 June 2002 estimated the fees from this case at A$20-25m. By the 4th November 2002 that estimate had been revised to in excess of A$15m. At the IMF broker presentation of the 2002/2003 results in August 2003 the company informed the brokers that the total revenue they expected to receive from this case was around A$14m (A subsequent website posting**Error! Bookmark not defined.** shows income of $13.3m and direct outlays of $4.1m). The company also said: "*This case taught us an enormous amount about how to organise very large numbers of plaintiffs in an efficient and timely way. It also taught us the importance of regular communication. We have honed our multiple plaintiff procedures as a result of our experience with this very large case*". The quantum of the loss of each claimant was not complex as the cases were confined to the simple issue of over-paid (i.e. a factual amount) levy and whilst IMF proudly state that defendants paid 100% or even 105% of the claim, from investors' perspective the shortfall against the predictions would be very disappointing.

Event 13 Global Market Link

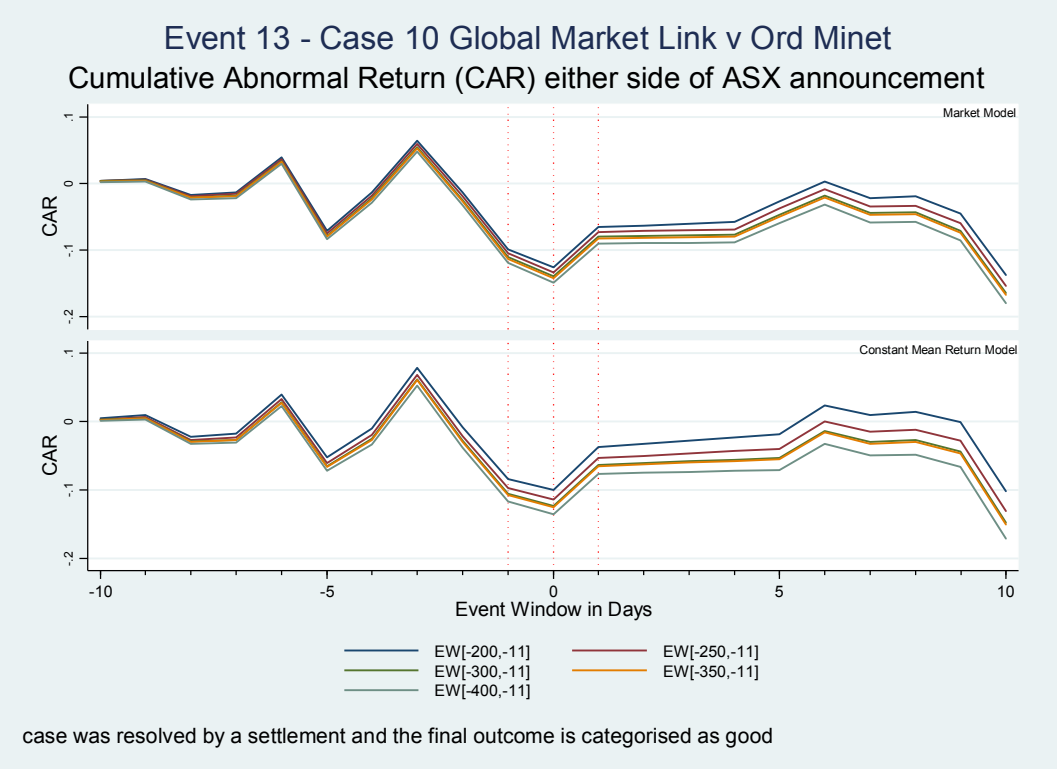
GML and OMG contracted to produce and promote a share trading scheme which OMG undertook to use its best endeavours to use in Australia. OMG merged with JP Morgan and the contract was terminated by OMG. GML sought damages arising out of the termination[439]. On 4 November 2002 IMF announced[440] that "*in October 2002 Global Market link (Pty) Ltd (in Liquidation)* ['GML'] *funded by IMF on a fee of 40% commenced proceedings in the Supreme Court of Western Australia against Ord Minnett Group Limited* ['OMG'] *claiming damages for breach of contract*". The claim value given to the brokers in August 2003 (IMF, 2003) was A$20m and the trial

[439] www.imf.com.au/cases/gmloverview.htm at 21 August 2003. Viewed 3 June 2014 via http://web.archive.org/web/20030821231916/http://www.imf.com.au/cases/gmloverview.htm.

[440] IMF ASX Announcement 4 November 2002.

was expected to take place during 2004[441]. The quarterly case portfolio as at 10 May 2004 had reduced the maximum claim value to A$10m and extended to 30 June 2005 the latest case completion date[442]. The estimated latest completion date was extended by a further year to 30 June 2006 in the quarterly case portfolio as at 31 March 2005[443].

Figure 30 Global Market Link



On 19 September 2005 IMF informed the market that a mediation had been convened but that "*should not be taken to mean any more than the parties propose to discuss settlement in good faith*"[444]. On Wednesday 16 November 2005 IMF announced that the liquidator of GML had settled the claim on confidential terms and that IMF was

[441] IMF Annual Report 2003 p.7.

[442] IMF ASX Announcement 17 May 2004.

[443] IMF ASX Announcement 6 April 2005.

[444] IMF ASX Announcement 19 September 2005.

entitled to a fee of A$1m and reimbursement of the $300k paid on behalf of the liquidator.

Although the outcome of this case was profitable, a fee of $1m was very different from the fee of 40% of A$20m i.e. A$8m intimated three years earlier and this may explain the negative coefficient. On the other hand it is apparent from Figure 30 that the downward slide in CAR had commenced on Monday the 14th November and in that context it may be relevant that the AGM took place on Friday 11th November with some negative comments from both Chairman[445] and Managing Director[446] as well as positive news about the future. Thus the downward trading prior to this case announcement may be the result of the market digesting and reacting to the mixed news over the weekend before stabilising

Event 45 Downer ED

This was a shareholders claim that the Company failed to adhere to the listing rules and Corporations Act. In February 2006 Downer told the market that an increase in sales "*should translate directly to at least a 20% uplift in net profit after tax*". That expectation was not corrected until 8 August 2006 when Downer told the market that for the year ended June 2006 it would report a net loss after tax of $25 million whereas the market had been expecting a net profit after tax of around $125 million. The shareholders allege that the company knew, or ought to have known, before August 2006 and failed to inform the market that the expected profits would not be realised[447].

IMF announced on 8 May 2007 that it had agreed to fund the shareholders claim and in the Investment Portfolio Report (IPR) as at 30th June 2007 gave its best estimate of

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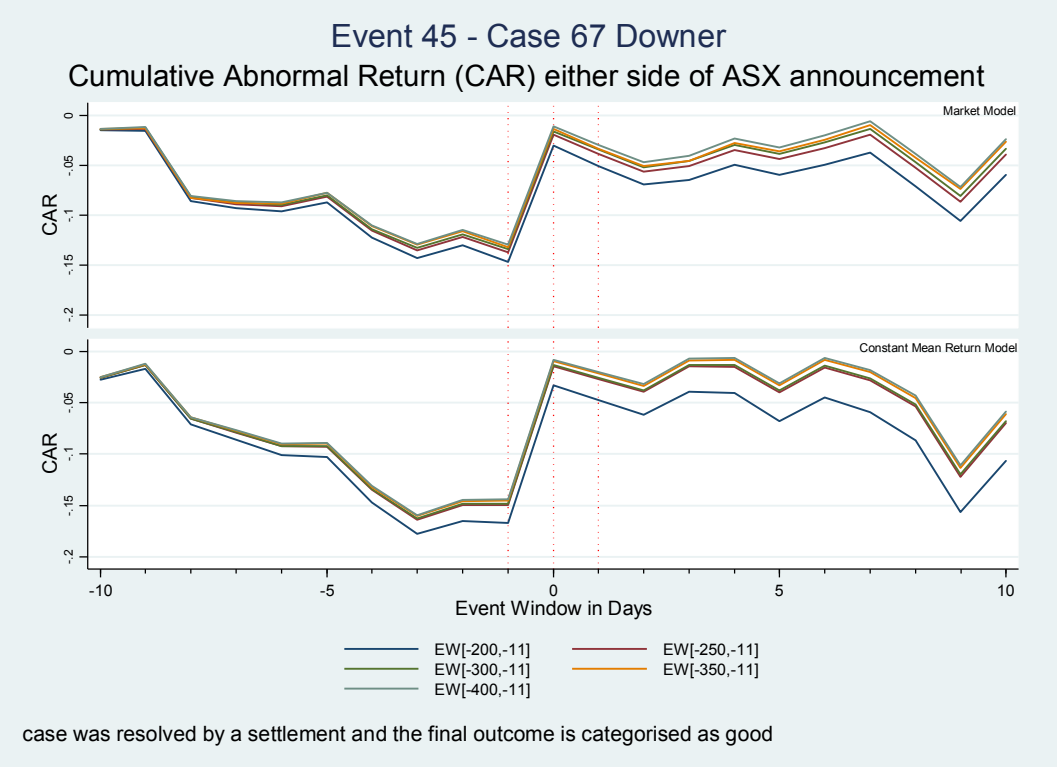
[445] IMF ASX Announcement 11 November 2005 – Chairman's Address e.g. "*the past year was disappointing in terms of resolved cases…we believe it is prudent to ensure that access to additional funding is gained before significantly expanding the portfolio…*"

[446] IMF ASX Announcement 11 November 2005 – Managing Directors Address e.g. "*profit levels have only been satisfactory for one of our three, full financial years…IMFs share price has dropped about $0.30 from $0.85 12 months ago as a result of no major investments concluding since then*".

[447] *http://www.imf.com.au/cases.asp?ID=58*. Viewed 2 October 2009. No longer available. Screen clipping on file with author.

the maximum claim value as A$12m and the latest completion date as December 2008[448]. The maximum claim estimate was reviewed upwards first to A$20m in the IPR at 30 September 2007 and then to A$35m in the 31 December 2007 IPR[449]. In the IPR of 31 March 2008 the latest completion date was extended to 31 December 2009[450]. On 31 October 2008, IMF announced a settlement, conditional on approval by at least 50% by value of funded persons, which would result in revenue of about A$6.8m and a pre-tax profit of about A$5.8m[451].

Figure 31 Downer EDI



The highly significant coefficient on the day of the announcement halted a falling trend in the CAR (Figure 31). The AGM took place on 7 November i.e. announcement day +5 which may account for subsequent changes in the CAR.

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448 IMF ASX announcement 20 July 2007.

449 IMF ASX announcements 30 October 2007 and 31 January 2008.

450 IMF ASX announcement 30 April 2008.

451 IMF ASX announcement 28 November 2008 reports the unconditional settlement.

Event 64 National Potato

This was a claim in Pretoria, South Africa against the alleged failure of the auditors of the National Potato Co-operative Ltd to conduct a proper audit. The claim had a long history dating back to an investigation of irregularities undertaken in 1997 and was described as being of epic proportions[452]. In October 2007 IMFs competitor HLS agreed to fund the claim but they terminated that arrangement in December 2008 and a new agreement with IMF was concluded on 28 January 2009 and security was provided to the court [453].

IMF announced on 2 February 2009[454] that the claim was part heard and that the value of the claim was approximately A$70m. In the half year accounts to 31 December 2009 it was announced that the trial was expected to complete in April 2010[455].

Various delays occurred in the trial proceedings[456] and judgement was finally given in favour of the claimant on 24 January 2011 when IMF announced it expected revenue of around A$16.5m and a gain of A$13m subject to the possibility of an appeal[457]. On 24th February 2011 IMF announced that both parties intended to appeal. Leave to appeal was finally granted on 23 September 2013[458] and was expected to be heard in 2014.

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[452] "*Apparently, the particulars of claim on their own, comprise 448 pages with 304 bundles of annexures, amounting to almost 100 000 pages. The total number of documents in the case appear to exceed 200 000 pages. The trial was conducted over a period of 200 court days. It appears that the trial record comprises tens of thousands of pages.*" PriceWaterHouseCoopers Inc and Others v National Potato Co-Operative Ltd and Another (451/2012, 468/2012) [2013] ZASCA 123 (23 September 2013) §3.

[453] Earlier the case had been funded by Farmers Investment Fund (Pty) Ltd in return for 45% of the proceeds of the claim see *National Potato Co-Operative v Price Waterhouse Coopers Inc and Others* (33297/1999) [2009] ZAGPHC 38.

[454] IMF ASX announcement of 2 February 2009.

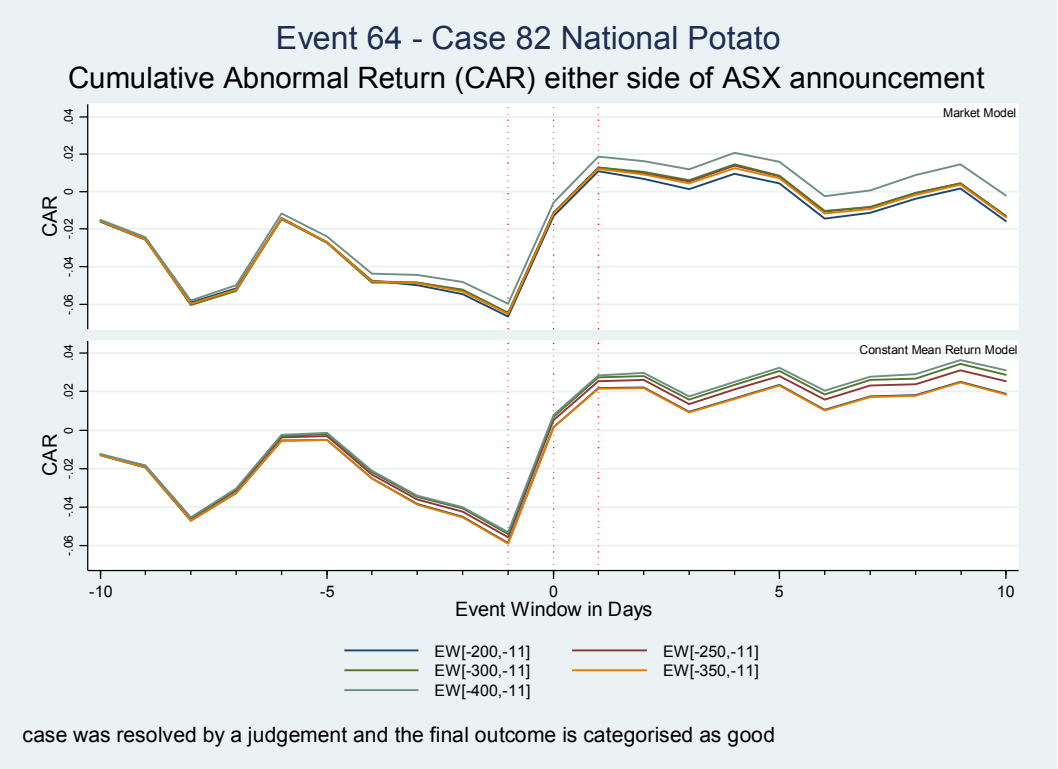
[455] IMF ASX announcement of 25 February 2010.

[456] IMF ASX announcement of 28 May 2010 referred to unavailability of a major defence witness. The judge also took a three month break which coincided with the world cup soccer tournament (see recording of IMF AGM on 5 November 2010 available at http://www.brrmedia.com/event/71362/imf-australia-2010-annual-general-meeting-mr-rob-ferguson-non-executive-chairman?popup=true&wl=183 at 4 min [Accessed 17 June 2014].

[457] IMF ASX announcement 25 January 2011.

[458] *PriceWater House Coopers & Others v National Potato Co-Operative Limited & Another* [2013]

Figure 32 National Potato Co-Operative Ltd



News of the 2011 judgement was well received by the market and gave rise to a significant positive abnormal return on the day of the announcement and a further positive abnormal (but not significant) on the following day (Figure 32).

At the time the funding of this case commenced trial was expected to resume within four months and investors would reasonably have expected the claim to be concluded shortly thereafter. The reality has been somewhat different in that the primary judgement took place two years after appointment and the appeal[459] was not determined until 2015, some six years after the client was contracted. Given the long time to bring this case to conclusion it will be interesting to see whether the South African legal process although amenable to litigation funding is attractive to litigation funders.

ZASCA 123.

[459] The appeal (*PriceWaterhouseCoopers Inc and Others v National Potato Co-operative Ltd and Another* [2015] ZASCA 2) was successful.

Event 75 The Centro Cases

On Thursday 3rd May 2012 at 14:23 IMF published its regular quarterly Investment Portfolio and Company update (announcement A[460] in Figure 33) which contained the following statement relating to the Centro cases.

> *"…The trial in this matter has been underway since 5 March 2012 and is expected to conclude in June 2012. If this matter does not settle it is unlikely to result in any revenue to IMF in FY2012."*

During the trial proceedings a breakthrough came during a lengthy moderated meeting on Monday 7 May (Lenaghan & Wilmot, 2012). What prompted that meeting is not specified but it may be relevant that the High Court of Australia reversed a Court of Appeal decision and handed down a decision in favour of the claimants in the James Hardie Industries case[461] on the preceding Thursday[462]. Press reporting on Friday 4th May made a connection between the two cases (Frith, 2012). Also relevant perhaps, is that on the 4th May the claimants were given leave to amend their pleadings because recently discovered documents revealed that PWC staff knew about the error in the classification of some of the current interest bearing liabilities of CNP[463].

From Figure 33 it can be seen that on the morning of Monday 7th May the general downward trend in IMF's share price halted until over 100,000 shares were traded between 12:15 and 12:30 when the price fell from A$1.38 to A$1.325. Over the next 15 minutes the price rallied somewhat to A$1.37 but the slide continued during the afternoon and at the end of day closing price was A$1.34.

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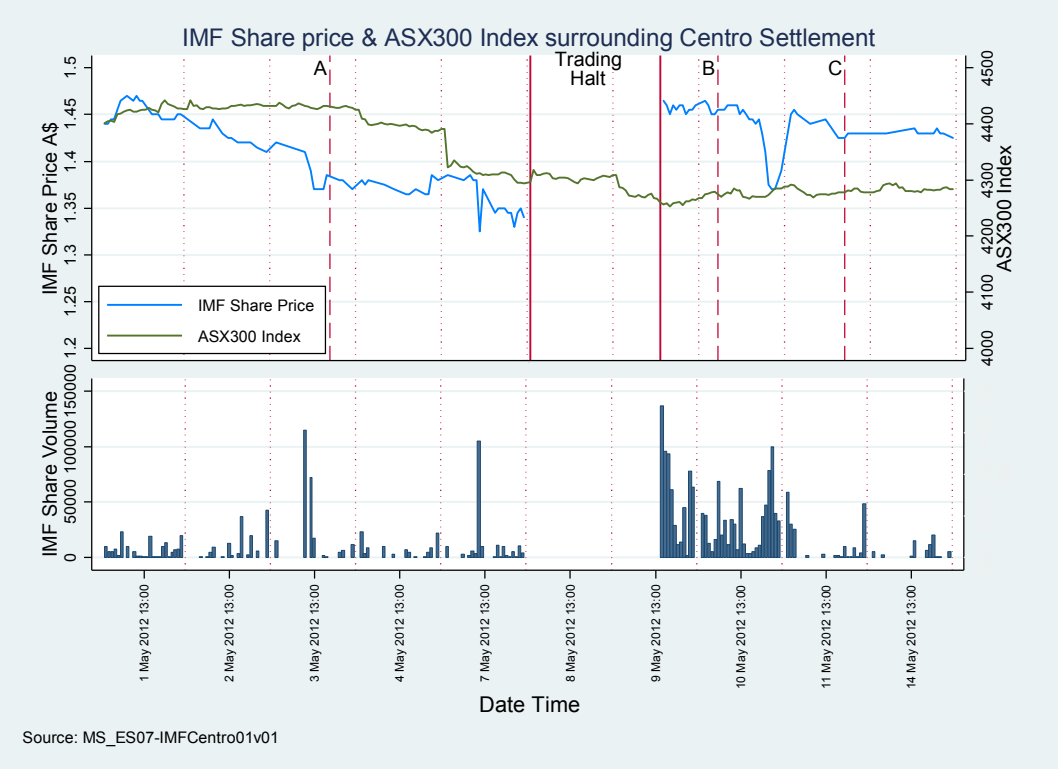
460 See http://www.asx.com.au/asxpdf/20120503/pdf/4261shx1jn3226.pdf

461 *Australian Securities and Investments Commission ('ASIC') v Hellicar* [2012] HCA 17.

462 The parties were bought together by Leon Zwier a partner in the law firm Arnold Bloch Leibler which acted for the respondent O'Brien in the James Hardie industry case. His role was as a pro bono facilitator having being contacted by various parties in April. Zwier heads up the firm's litigation & dispute resolution and reconstruction & insolvency practices and had previously acted for senior lenders in the restructure of Centro as well as for PWC, Maurice Blackburn and Slater Gordon in other matters (ABL, 2014; Whealing, 2012).

463 *Kirby v Centro Properties Limited* (No. 5) [2012] FCA 468 at §12.1.

Figure 33 IMF share price before and after the Centro settlement



Shown in the top part of Figure 33 is the ASX300 Index and the closing price of IMF shares at 15 minute intervals during the trading day (trading days are delineated by the dotted lines) for the period 1 – 14 May 2012. The lower part of Figure 33 shows the volume of IMF shares traded. During this period IMF made announcements to the market (indicated by the dashed lines A-C).

On the 8th May IMF requested a trading halt pending the release of an announcement (ASX, 2012b). That announcement was in respect of the Centro case and took place on 9th May after which trading recommenced. The significant factors in that announcement were:

1) The announcement of an in principle agreement ('IPA') to settle.
2) The proceedings in the Federal Court were stayed as a number of terms had not been finalised and it was not certain that the matter would settle, in which case the court proceedings would recommence. If the IPA did result in a settlement deed the court must approve the settlement.

3) The IPA provided for a global settlement of A$200m of which A$150m was due to IMF clients. The IPA was the largest settlement achieved to date in any Australian class action.
4) IMF would advise the market if a settlement deed is executed and will also advise the market of its expected revenue and profit (IMF, 2012e).

One would expect the investors to welcome this news as it suggests that IMF's investment over the preceding 4-4½ years were about to pay off and the potential adverse costs liability, estimated to be in the order of A$40-50m would be avoided (Merritt, 2012).

The opening price following the trading halt was A$1.45 and the closing price at the end of the day was A$1.46 despite some uncertainty still remaining. That uncertainty was removed by the announcement at 11:03 on the 10th May (announcement B[464] in Figure 33) when it was:

1) Confirmed that all parties would execute the proposed settlement and that the Court had made orders regarding the future steps to be undertaken in order to gain court approval. As part of the settlement approval process the matter would return to court on 19 June 2012.
2) If Court approval was forthcoming it was estimated that IMF would generate around A$60m of revenue and realise a profit before tax of A$42m. IMF would advise the market if and when the Court approved the settlement.
3) Uncertainty existed as to whether any revenue/profit would be recognised in the accounts to 30 June 2012.

Although there was significant trading either side of this announcement, it was the last 90 minutes of the trading day which saw the share price fall from A$1.43 to A$1.39. As the price rebounded the following morning to A$1.45 it is possible that the price fall on 10 May was as a result of traders balancing their books or it may be that the

[464] See http://www.asx.com.au/asxpdf/20120503/pdf/4261shx1jn3226.pdf

morning rally is anticipation of announcement C[465] in Figure 33 that informed the market that the High Court had given leave to appeal to the class representative in the bank fees case.

Overall, it appears from Figure 33 that the market had increased the valuation of IMF's shares from A$1.34 before the trading halt to A$1.43 which equated to a 6.7% increase and an $11m increase to the capitalisation value despite the fact that the ASX300 index had fallen by about 0.2%.

As settlement of this case resulted in IMF making a cash gain of A$62m and prevented a cash loss of A$40-50m for adverse costs, it appears that the market had already imputed most of the benefit into the capitalisation value before the settlement was reached. It ought therefore to be instructive to look at a major loss as any imputed value would need to be reversed and additional expenditure accounted for.

Event 76 Innovatorone/Collyer Bristow

The background to this litigation is described in *Brown v Innovatorone*[466]. The amount claimed was in excess of £50m and the trial on the substantive issues commenced on 17 October 2011 and concluded after 60 court days on 23 February 2012. Judgement in favour of the defendants was delivered on Friday 18 May 2012 in the High Court in London, England. As the High Court hours are usually 10:00 to 16:30 and Australia is 8-10 hours ahead of the UK, the judgement would not be available to the ASX during that Friday's trading hours.

IMF co-funded this litigation with Allianz ProzessFinanz GmbH[467].

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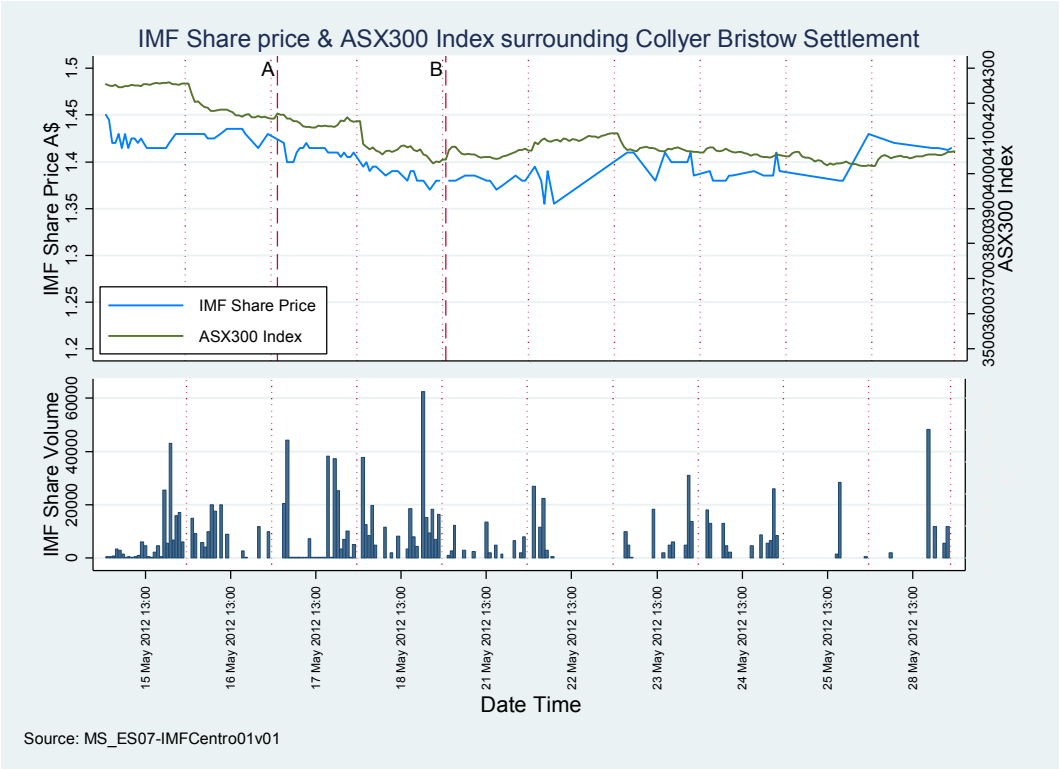
[465] http://www.asx.com.au/asxpdf/20120511/pdf/4266qsx6fkyryw.pdf

[466] *Brown & Ors v Innovatorone Plc & Ors* [2009] EWHC 1376 (Comm); *Brown & Ors v Innovatorone Plc & Ors* [2010] EWHC 2281 (Comm); *Brown & Ors v Innovatorone Plc & Ors* [2012] EWHC 1321 (Comm).

[467] Allianz ProcessFinanz GmbH announced in October 2011 that it had ceased investing in new court and arbital claims (http://www.allianz-litigationfunding.co.uk/index.htm visited 15 November 2011). Handelsblatt reported that Allianz had confirmed they intended to sell the company (http://www.handelsblatt.com/unternehmen/versicherungen/versicherungskonzerne-allianz-mottet-prozessfinanzierung-ein-seite-all/5983802-all.html last visited 6 March 2014).

On Monday 21 May 2012, IMF announced[468] that the Court had given judgement against the claimants and that no decision had been taken on an appeal. A hearing on 29 June 2012 would consider submissions as to costs as well as any appeal application. The announcement also stated that IMF had invested A$5 million in the case which would be written off, and IMF did not expect to have to pay any amount for adverse costs[469]. Leave to appeal on certain issues was granted on 3 December 2012[470] and the case was finally settled out of court in July 2013 (Dowell, 2013).

Figure 34 IMF share price before and after the Innovatorone/Collyer Bristow judgement



Shown in the top part of Figure 34 is the ASX300 Index and the closing price of IMF shares at 15 minute intervals during the trading day (trading days are delineated by the dotted lines) for the period 1 – 14 May 2012. The lower part of Figure 34 shows the volume of IMF shares traded. During this period IMF made announcements to the market (indicated by the dashed lines A-B).

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[468] http://www.asx.com.au/asxpdf/20120521/pdf/426cn71hmrvg5t.pdf

[469] ATE insurance was provided by QBE and Brit Insurance (Dowell, 2012; IMF, 2010). A knowledgeable investor would recognise that were the ATE insurance inadequate, then the defendants may choose to pursue the litigation funders for any shortfall.

[470] *Brown & Ors v InnovatorOne Plc & Ors* [2012] EWCA Civ 1587.

The market had been informed[460] on the 3rd May that *"…The trial has been completed and judgement is expected in May 2012"* and if it is presumed that losing the case would have been a shock to the market then one would expect a fall in the share price following the announcement (B in Figure 34)[468]. From Figure 34 it is apparent that the market, as represented by the ASX300, was falling during the week ending 18th May and IMF's share price was following that trend despite the positive[471] announcement (A in Figure 34)[472] on the 17th May that IMF was funding its first case in the United States.

During Thursday (17 May) and Friday (18 May) the volume of IMF shares traded was high for no other apparent reason[473]. On Monday the 21st May the closing price was also A$1.38 and on the 22nd there were no trades after 11:30hrs when the price was $1.355.

As the loss reported to the market was A$5 million a share price reduction of at least A$0.04 would not have been unexpected. Although the share price fell that much on the two days before the announcement, the market was also falling and there is no discernible evidence of news leakage or insider trading.

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[471] This was positive news as the claimant had already succeeded at first instant in his defamation case and was now responding to an appeal by the defendant.

[472] http://www.asx.com.au/asxpdf/20120517/pdf/4269v4l7z0k4fz.pdf

[473] The 'normal' explanation would be that there has been an information leak or this is indicative of insider trading. Court judgements are known to the parties' barristers before judgement is handed down but this information should not be communicated to the parties. A google search on 8 March 2014 (search terms Collyer Bristow Brown Innovator with date range 30 Apr 2012 to 17 May 2012) discovered (http://www.blackstonechambers.com/news/cases/the_innovator.html) a story on the Blackstone Chambers' website regarding the Innovator One Litigation and judgement which Google dates as 12 May 2012 which is curious but not confirmation of a 'leakage'.