

“Domestic and Cross-Border Mergers and Acquisitions by US Acquiring Firms: The Impact of Cash and Gearing Levels on Shareholder Returns”



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ABSTRACT

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This paper analyses acquiring firm shareholder returns following the announcement of US domestic and cross-border acquisitions over the timeframe of 2006-2013. A sample of 243 deals is examined, consisting of 42 cross-border and 201 domestic transactions from across various industries, excluding utility, banking and other finance related firms. The secondary focus of this research is to examine the determinants of acquiring firm shareholder returns, with a particular focus on the impact that acquirers' cash resources and debt levels have on the returns achieved.

The US possesses some of the most highly developed financial markets in the world and is home to many of the world's largest companies. In recent years, the debate around America's prohibitive corporate tax scheme and its effect on the increasing cash piles of US firms has been highly newsworthy. Many high-profile US firms are choosing to move their headquarters to other countries in order to avail of more friendly tax rates, leading to increased concern and consideration of tax rate changes in the US. Further to this, 2013 saw the return of animal spirits and confidence to global markets and US merger and acquisition activity reached its highest levels since the onset of the global financial crisis in 2008.

An event study methodology, along with the market model, is utilised in order to measure announcement returns. Similar to prior research, transaction and firm-specific variables are also used to investigate the key determinants of acquiring firm shareholder returns. Returns are found to be marginally positive, on average, for acquiring firm shareholders over both the five-day and 11-day windows, with slightly higher returns of 0.378% being achieved over the shorter window. Furthermore, the domestic sub-sample yields more positive returns across both windows than the cross-border sample, albeit statistically insignificant.

The results of the multivariate analysis suggest support for a number of variables. Deals financed by cash are deemed to create more wealth, suggesting support for the signalling hypothesis. In addition, domestic acquirers appear to be more highly geared and to achieve higher returns than their cross-border counterparts, suggesting support for the disciplinary motive of M&As. Finally, cross-border deals appear to have significantly smaller targets in relative size to their acquirers, whilst also achieving lower returns, which indicates that such acquisitions have less impact on the overall activities of the acquiring firm. It also suggests that cross-border acquirers may target smaller firms as they are less risky, easier to integrate and less likely to need regulatory approval which may be required in larger deals.

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ETHICAL DECLARATION

ETHICAL DECLARATION

I declare that this dissertation is wholly my own work except where I have made explicit reference to the work of others. I have read the chapter 'Doing a Dissertation at WIT' in the text *Professional and Academic Skills*, and hereby declare that this dissertation is in line with these requirements. I have discussed, agreed and complied with whatever confidentiality or anonymity terms of reference were deemed appropriate by those participating in the research and dealt appropriately with any other ethical matters arising.

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Ruth Concannon

Date

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ABBREVIATIONS & TERMINOLOGY

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- AR:** Abnormal Returns refer to the difference between the performance of a company stock and the performance of the index of which it is listed on.
- CAR:** Cumulative Abnormal Returns are the sum of the daily abnormal returns over a specified number of days (i.e. the event window)
- CAAR:** Cumulative Average Abnormal Returns are the average of a number of cumulative abnormal returns.
- M&A:** Mergers and Acquisitions: a merger involves combining the assets of two separate entities in order to form one new legal entity, whereas an acquisition or takeover is the transfer of the control of assets from one company to another.
- EMH:** Efficient Market Hypothesis: an investment theory which states that it is impossible to beat the market due to stock market efficiency and stock prices reflecting all publicly available information.
- US:** United States of America
- UK:** United Kingdom
- EU:** European Union
- SIC:** Standard Industrial Classification: a system utilised to classify companies into different industries based on a four digit code.
- SPSS:** Statistical Package for Social Sciences is a software package used to examine data and perform quantitative analyses.
- S&P 500** Standard and Poor's 500: a stock market index based on the market capitalisation of the 500 largest companies listed on the NYSE or NASDAQ.

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INTRODUCTION

Chapter One:

INTRODUCTION

1.1 Introduction:

The aim of this paper is to investigate domestic and cross-border takeover activity involving US public companies and the wealth effects for acquiring firm shareholders for the period of 2006-2013. In particular, this paper aims to examine the differences in share price reactions from domestic versus cross-border deals for US acquiring firms. Further to this, the paper aims to investigate if share price reaction differs depending on the cash resources and level of debt of the acquiring company. It places a particular emphasis on the free cash flow, debt-monitoring and disciplinary motives of takeover activity.

1.2 Research Rationale

In recent times, the issue of cash surpluses within US companies has been very topical. According to *The Economist* (2010), “the Federal Reserve’s measure of the ‘financing gap’, the shortfall of corporate income relative to spending, was minus 0.8% of GDP” in 2009. This surplus figure grows even further if the retained earnings of foreign subsidiaries are included also. Bloomberg (2013) indicates that the cash balances of non-financial firms have increased 77% from \$820 million in 2006, to over \$1.45 trillion in 2012. However, an increasing problem with such high cash balances relates to agency problems, whereby self-interested managers chose to spend free cash-flows on low-benefit or even value-destroying takeovers at the expense of shareholders’ best interests. This is in order to construct ‘empires’ and fulfil their hunger for status, power, compensation and prestige.

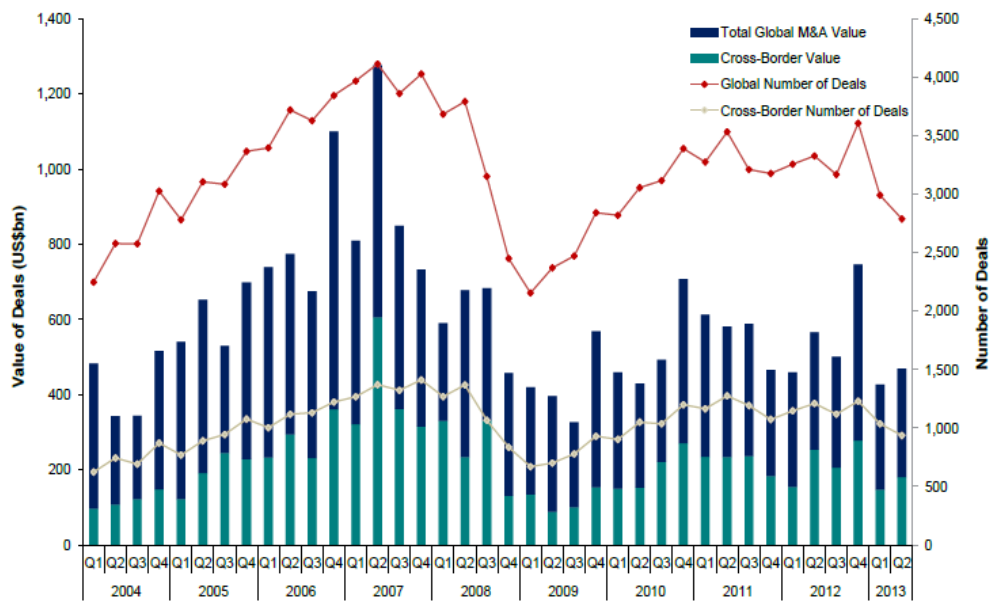
Further to this, Forbes (2013a) asserts that America’s prohibitive corporate tax scheme pushes US firms to keep 58% of their cash overseas. According to *The Wall Street Journal* (2013), the US has a top corporate rate of 35%, making it the highest in the developed world and a very emotive issue during the run up to the 2012 US presidential elections (Reuters, 2012). According to Reuters (2012), during his re-election campaign, President O’Bama addressed the ever-prevalent gripe by US corporations that the US top corporate tax rate is too high and proposed cutting it to 28% from its current level. In accordance with this, as U.S. firms’ overseas profits are currently not liable to U.S tax until they are repatriated, many

firms choose to keep them overseas and use foreign takeover activity to participate in ‘tax inversion’ manoeuvres, a technique recently characterised as ‘unpatriotic’ by President O’Bama. Loopholes in the tax system enable US firms to acquire firms in tax-friendly nations such as Ireland which has a corporate tax rate of 12.5%, merge the two entities into one and subsequently move their headquarter to the new country to avail of the more favourable tax rates. In line with this, The Financial Times (2013c) asserts that in 1960 the US was home to 17 of the world’s 20 largest companies, but fifty years later only six were headquartered there. This supports the notion that tax plays a role in the M&A decisions of large U.S. corporations, though it is most-definitely not the only motive encouraging cross-border M&A activity.

According to the *Financial Times* (2013b), 2013 saw the return of animal spirits to global markets, as US merger and acquisition activity reached its highest levels since the onset of the global financial crisis in 2008, signalling a return of confidence to the markets. The value of M&A activity was rocketed in September 2013 due to the announcement of the Verizon’s \$US130bn buyout of Vodafone’s 45% stake in Verizon Wireless, the third-largest deal in corporate history (CNBC, 2013). Further confidence was also brought to the markets in the same week when Microsoft agreed to purchase Nokia’s mobile phone business for \$US7.2bn.

Furthermore, Uddin and Boateng (2011) assert that most of the growth in foreign direct investment (FDI) over the past two decades occurred through cross-border M&As. Uddin and Boateng (2011) indicate that global cross-border M&A activity has risen from \$49.8bn in 1987 to \$1.63 trillion in 2007. Similarly, Erel et al (2012) indicate that the volume of global cross-border M&As has grown from 23% of total takeover activity in 1998 to 45% in 2007. Similarly, Martynova and Renneboog (2008) indicate that there was a threefold increase in the number of cross-border deals versus domestic deals over the last two decades. Mergermarket (2013) illustrates the value of global cross-border M&As from 2004-2013 in Fig. 1.1, overleaf.

Figure 1.1: Global M&A Activity (2004-2013)



Source: Mergermarket (2013)

Therefore, the on-going global discussions regarding proposals for U.S. corporate tax reforms, as cited by *New York Times* (2013), as well as the build up of corporate cash piles and the return of confidence to US M&A markets has made now a notably remarkable time to be studying the investment and acquisition decisions of U.S. corporations. The mixture of such factors allows for a new dimension to be put on existing research. Correspondingly, the 2006-2013 time frame allows for further pre and post-financial crisis M&A activity comparison and analysis. Respective to this, as the author of this paper is a U.S. citizen, she has an increased personal interest in the topic which strengthened her inclination to study U.S. merger and acquisition activity in more detail.

1.3 Contributions and Limitations of the Study

There is an abundance of literature available involving domestic deals, whilst literature on cross-border deals is still relatively limited, though becoming increasingly popular. Therefore, this paper conducts a comparison of the wealth effects to acquirer shareholders involved in US domestic and international deals in order to determine if differences in returns exist. Acquisitions represent considerable investments for firms and are a significant part of restructuring activities post-financial crisis as well as being a significant part of future growth strategies, and it is for these reasons that acquiring firm shareholders have been chosen as the focal point of this paper.

This paper offers a twofold contribution, similar to that of Moeller and Schlingemann (2005), as it focuses on examining the returns for US acquiring firm shareholders of domestic and cross-border acquisitions for the time frame 2006-2013 as well as analysing the key firm and deal-specific characteristics impacting these returns, similar to Francis et al (2008) and Erel et al (2012). However, the significant addition of this paper is that it provides a present-day analysis, incorporating the effects of the most recent global financial crisis and subsequent cessation of the sixth merger wave, but more importantly it also captures the effect of the US prohibitive corporate tax system and increasing cash-piles of US firm on M&A activity.

However, a number of limitations are applicable to the study in that it takes a quantitative approach, relies on the assumption of semi-strong market efficiency, examines acquiring firms only and is confined to public acquirers from a single country setting, has a relatively small sample size and time-frame, no post-merger analysis is conducted and it explores a limited number of variables.

The remained of this paper is structured as follows:

Chapter Two critically analyses the relevant literature in relation to the returns of acquiring shareholders along with the deal and firm-specific characteristics effecting these returns in both a domestic and cross-border context.

Chapter Three provides details of the four research questions analysed in this study. It also details the sample utilised and the methodology employed in order to investigate these questions. Finally, the limitations of this study are also presented.

Chapter Four provides a detailed analysis of the findings of the research, with a particular focus on the findings deemed statistically significant.

A discussion of the key findings in relation to prior literature follows in Chapter Five.

Finally, Chapter Six outlines the conclusions of this study and highlights possible areas of research for the future.

LITERATURE REVIEW

Chapter Two:

LITERATURE REVIEW

2.1 Introduction:

This chapter provides an introduction to the key motives and empirical evidence in relation to mergers and acquisitions. The chapter commences with the main motives as to why takeovers occur. Next, an overview of the theoretical motivations for overseas acquisitions is presented. This is followed by a detailed synopsis of the empirical studies relevant to shareholder wealth effects in the US, before concluding with the determinants of acquiring firm shareholder returns.

2.2 Theoretical Motives for Takeovers:

Berkovitch and Narayanan (1993) outline three main motives of firms for participating in takeovers, namely, synergy, agency and hubris. Zhang (1998) and Hodgkinson and Partington (2008) have similar views and also recognise synergy, agency and hubris as the main motives underpinning mergers and acquisitions. Table 2.1 outlines the gains that each of these motives brings to the target and acquiring firms.

Table 2.1: Motives for M&As			
Takeover Motives:	Gains to Target Firm's Shareholders	Gains To Acquiring Firm's Shareholders	Total Gains
Synergy Motive	+	+	+
Agency Motive	+	-	-
Hubris Motive	+	-	0

Source: Berkovitch and Narayanan (1993)

2.2.1 Synergy Motive:

Synergy is explained by Seth (1990) as the value that is created from the combination of specific characteristics of both firms involved in the acquisition. The Federal Trade Commission (1992, p.30) state that “mergers have the potential to generate significant efficiencies by permitting a better utilization of existing assets, enabling the combined firms to achieve lower costs in producing a given quantity and quality than either firm could have achieved without the proposed transaction”. Berkovitch and Narayanan (1993) suggest that

takeovers take place due to the economic gains that are obtained from the unification of two firms' resources. They assert that management of the target and acquiring firms are aiming to maximize the wealth of shareholders and therefore will only become involved in takeover activity if they believe there will be gains for both sets of shareholders.

Similarly, Hayward and Hambrick (1997) state that when synergy occurs, the commonalities and complementarities between the target and acquiring firm facilitate the combined value of the firms to be greater than their value as two separate entities. Further to this, Seth et al (2000) state that acquisitions occur when the total value of the two firms combined exceeds the sum of the values of the single firms. There is an assumption that managers are motivated by shareholders' interests in economic value creation and that they are able to accurately assess the value potential of the merged entity. Trautwein (1990) and Larsson and Finkelstein (1999) indicate three synergistic outcomes that can be achieved from takeover activity: financial, operational and managerial synergies.

2.2.1.1 Financial Synergy

Sudarsanam et al (1996) distinguish between three sources of financial synergy related to takeovers: (a) tax advantages arising from underutilised debt capacity, (b) the combination of the growth opportunities and financial resources (namely cash) of the merging companies, and (c) the coinsurance of debt of the two firms. Similarly, Fluck and Lynch (1999) assert that managers and shareholders of firms can gain financially by merging two firms. The combined firm will be in a better position to finance positive net present value projects than the firms would have been individually. Leland (2007) states that financial synergies are typically created when changes in the scope of the firm occur that affect optimal capital structure. Financial synergies occur, according to Tsai (2008), when the cost of capital is reduced due to the firms being combined.

2.2.1.2 Operational Synergy

According to Penrose (1959), as cited by Brush (1996), a firm partakes in takeover activity to expand or diversify in order to use its resources more lucratively. They argue that the sharing of resources across businesses within a corporation can potentially be more efficient than purchasing them in markets. Further to this, Healy et al (1992) argue that merged entities have a higher level of operating efficiency. Arden and Nappi (2012) argue that operational synergies created from mergers and acquisitions can simplify processes and reduce purchasing, manufacturing and distribution costs. Furthermore, the increased buying power

of the new entity provides a potential purchasing advantage over the competition and results in the ability to capture a greater market share. Furthermore, Johnson (2000) asserts that further benefits can be associated with operational efficiencies and increased market share, such as advertising cost savings, increased brand awareness, improved market coverage from the integration of product lines and access to new customers. Brush (1996) states that the benefits may arise from economies of scope as well as economies of scale. Panzar and Willig (1981) state that economies of scope occur when it is less costly to produce two or more products in one firm than to produce them separately. Economies of scale occur, according to Stimpert and Laux (2011), when a firm produces a larger quantity of goods and is therefore able to spread fixed costs over a larger quantity of output, decreasing the average cost per unit.

2.2.1.3 Managerial Synergy

Matsusaka (1993) indicates that acquiring firms may undertake acquisitions as they perceive the target as underperforming and poorly managed, causing the firm to be undervalued. Sudarsanam et al (1996) argue that managerial synergy arises when a competent management team takes over a less competent team, leading to wealth gains for both sets of shareholders. Linking both arguments together, Larsson and Finkelstein (1999) argue that the replacement of incompetent management and the application of complementary skills and competencies and during the takeover process allows managerial synergies to occur.

2.2.2 Agency Theory Motive:

On the contrary, Jensen and Meckling (1976, p.310) define an agency relationship as “a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent”. As the agent is likely to want to maximise his/her own benefits, he/she will not always act in the best interests of the principal. Similarly, Berkovitch and Narayanan (1993) suggest that the managers of acquiring firms participate in takeovers to enhance their own welfare, at the expense of their own shareholders. They also argue that the acquiring firm’s management has chosen the target firm as it is the firm most suited to increase their welfare. Target shareholders become aware of their value to the acquirer and will attempt to obtain some of this value by using their bargaining power. Hence, the acquiring firm’s shareholders lose whilst the target firm shareholders gain. Hodgkinson and

Partington (2008) also recognise that managers do not always act in the best interest of their shareholders and may pursue takeover bids that benefit themselves whilst costing shareholders. Similarly, Martynova and Renneboog (2008) state that managers diversify as a means of reducing their companies' earnings volatility, which in turn enhances firm survival and protects their personal position. Furthermore, Shleifer and Vishny (1989) assert that managers entrench themselves in the firm by taking on excessive investment in assets which complement their own skills, making them more valuable to shareholders and enabling them to raise their own compensation levels.

2.2.2.1 Free Cash Flows Theory

Jensen (1986) recognises that high free cash flows contribute to the agency theory when managers choose to spend a firm's free cash on acquisitions rather than pay it out to shareholders. This is supported by Lang et al (1991), as cited by Gregory and O'Donohoe (2014), who argue that firms with large free cash flows and underutilised borrowing power are more likely to carry out low-benefit or even value-destroying takeovers. Howe et al (1992) and Yiannaki (2013) also state that managers are incentivised to use a firm's free cash flows to participate in negative net present value projects instead of distributing the cash flows to shareholders. Martynova and Renneboog (2008, pp. 2170) argue that industrial shocks or booming markets that leave "excessive funds at the discretion of management" can cause self-interested management to participate in "empire building" activities. In addition, Hope and Thomas (2008) argue that that managers' motivations for constructing 'empires' generally reflect hunger for status, power, compensation and prestige.

2.2.3 Hubris Theory

According to Pray et al (2004), the term 'hubris' is of Greek origin, meaning 'animal spirits' and refers to the overconfidence and greed of managers participating in takeover bids. Jiang et al (2011) indicate that overconfidence refers to the psychological bias of people to overestimate the probability of their success and underestimate the probability of their failure. Roll (1986) and Berkovitch and Narayanan (1993) explain the hubris hypothesis whereby mergers and acquisitions are motivated by management's mistakes in overestimating the value of the target and hence, overpaying. Roll (1986) argues that when several firms are bidding for the same target, intense bidding wars can occur, resulting in higher-priced bids. Over bidding by the acquirers leads to positive gains for the target shareholders but negative

gains for their own shareholders. According to Hayward and Hambrick (1997), hubris affects exceedingly confident managers who highly estimate their ability to obtain benefits from acquisitions. Similarly, Gaughan (2011, p.168) describes hubris to be when “managers seek to acquire firms for their own personal motives and that the pure economic gains to the acquiring firm are not the sole motivation or even the primary motivation in the acquisition”. More recently, Brennan and Conroy (2013) state that hubris can manifest in arrogance and the disdain for the contribution of others, where top managers pursue strategies due to their own overstated confidence and impaired convictions. Further to this, Chan et al (2011) explain that this overstated confidence can occur as a result of favourable stock returns in the recent past. Managers may mistakenly deduce this success into the future, presupposing a perceived undervaluation that never materialises.

2.3 Theoretical Motives for Cross-Border Acquisitions

The theoretical motives influencing cross-border takeover activity resemble those of domestic deals, with the inclusion of synergy, agency and hubris. Yet, it must be noted that the motives for cross-border M&A activity extend much further than this. Weston and Chung (1990, p.6) recognise that cross-border acquisitions and firm restructuring activities are “driven by globalisation of markets, technological and financial innovations, deregulation, tax chances, fluctuating exchange rates and other changes in environments.”

The main theoretical motives underpinning cross-border M&A activity are outlined in Table 2.2, along with details of relevant literature which outlines each of the motives. This is followed by a more detailed discussion of the most pertinent theoretical motives of this study in the subsequent section. (Please refer to Appendix F for details of motives deemed less pertinent.)

Table 2.2: Theoretical Motives for Cross-Border M&As	
Theoretical Motive	Empirical Studies
Imperfections in product and factor markets	Fatemi and Furtado (1988) (cited by Conn and Connell (1990))
Corporate governance systems	Danbolt and Maciver (2012), Hagendorff et al (2008)
Diversification and globalisation	Hopkins (1999), Moeller and Schlingemann (2005)
Tax effect	Bertrand and Zuniga (2006)
Technology	Weston et al (1999)
Exchange Rate Fluctuations	Harris and Ravenscraft (1991)
Deregulation	Andrade et al (2001)

Table 3: Theoretical motives for cross-border M&As

2.3.1 Imperfections in Product and Factor Markets

Classical economic models suggest that the factors of production are perfectly mobile across international boundaries. However, according to Harris and Ravenscraft (1991) and Corhay and Rad (2000), two of the primary motives for participating in international mergers are imperfections and costs in product and factor markets. Harris and Ravenscraft (1991) assert that such imperfections and costs result in FDI by encouraging multinational enterprises to pursue international acquisitions and capitalise on monopoly rents. Furthermore, Conn and Connell (1990) argue that imperfections in the local capital market may enable the foreign acquiring firm to achieve monopsony returns.

2.3.2 Diversification and Globalisation

According to Danbolt and Maciver (2012), cross-border M&As can deliver additional benefits than domestic acquisitions such as international diversification and access to new markets. Moeller and Schlingemann (2005) assert that as capital and product markets are becoming increasingly interlinked, new markets are being produced and globalisation is becoming a tactical priority for firms. Furthermore, Moeller and Schlingemann (2005) suggest that this has subsequently led to a rise in overseas takeover activity involving US companies. Advances in transportation and communication, according to Weston and Chung (1990), have created world markets with increased international competition. Hopkins (1999)

asserts that international acquisitions can increase a firm's market power by enabling them to attain a higher market share. Similarly, higher market power can be achieved through product diversification and offering customers a broad rather than narrow product line. Furthermore, firms may choose to acquire in order to gain complimentary products to defend and/or strengthen their market position. In line with this, Graham et al (2008) explain that the acquisition of foreign firms enables the rapid exploitation of growth opportunities in overseas markets.

Fatemi (1984) also emphasises the risk-reduction effect attached to international diversification. Similarly, Amit and Livnat (1988) suggest that firms diversify into new enterprises unrelated to its existing businesses and new markets in order to lower the risk of bankruptcy. Boateng et al (2008) indicate that the reduction in both operational and financial risks created through geographical market expansion is a source of value created in cross-border acquisitions but not in domestic takeovers.

2.3.3 Tax Effect

According to Martynova and Renneboog (2008), expansion through international acquisitions allows firms to exploit differences in tax systems. Further to this, Bertrand and Zuniga (2006) argue that the corporate tax rate of a given country impacts upon corporate R&D investment decisions. Firms can be deterred from investing in particular countries due to higher corporate tax rates which reduce the expected return on investment. Devereux et al (2008) uphold that there is increasing competitive pressure on governments to reduce their corporation tax rates. According to *Financial Times* (2013), the corporation tax regime in the United States, enforces the highest rates in the developed world. Pozen (2013) indicates that the corporate tax rate of the US currently stands at 35%.

Foley et al (2007) explain that the US and many other countries tax the foreign income of their corporations. Furthermore, Manzon et al (1994) argue that Internal Revenue Service (IRS) regulations hamper US firm's competitiveness as they use world-wide income as the basis for taxation. However, according to Foley et al (2007), as these taxes can be deferred until earnings are repatriated, firms facing higher repatriation taxes of foreign income will hold higher levels of cash. Furthermore, these cash piles can be used to fund attractive investment opportunities such as additional acquisitions.

2.3.4 Exchange Rates

According to Weston and Chung (1990), not only do fluctuating exchange rates affect the prices of raw materials and the prices of goods sold, but they also influence the buying and selling of foreign companies. Froot and Stein (1991), as cited by Harris and Ravenscraft (1991), developed a model linking cross-border acquisitions to exchange rate fluctuations. They argue that due to information asymmetries regarding an asset's payoffs, it is extremely costly, if not impossible, for entrepreneurs to purchase the asset solely with externally financed funds. Therefore, Froot and Stein (1991) argue that information intensive investments such as acquisitions, will be partly financed by the net wealth of the entrepreneur, which will vary with exchange rates. They maintain that a cost of capital advantage will occur for acquiring firms if their country's currency is strong against the currency of the target firm's nation. Furthermore, Danbolt and Maciver (2012), argue that volatility in exchange rates provides acquiring firms with a cost of capital advantage over target firms if managers are able to time the takeover activities to correspond with a strong home currency compared to that of the target country.

2.4 Evidence of the Wealth Effects to Acquiring Shareholders in M&A Activity

This section aims to analyse the key empirical evidence on returns received by acquiring firm shareholders, in particular, detailing the returns for acquiring shareholders in domestic and cross-border acquisition deals completed by US firms. (Please refer to Appendix F for evidence from firms in different nations, namely the UK). Further to this, particular attention is given to the motives for domestic and cross border deals as they occur in the research.

There has been a large amount of studies done regarding merger and acquisition activity, in a US domestic and global context whilst spanning a range of decades. However, for the purpose of this paper, the empirical evidence has been limited to more recent decades.

2.4.1 Domestic Deals by US Acquiring Firms

Andrade et al (2001) documented US merger activity using information from the stock database of the Center for Research in Security Prices (CRSP) at the University of Chicago, focusing on mergers where both the acquirer and target were US-based publically traded firms. They based their study on a sample of 4,256 deals from 1973-1998. They found an average three-day abnormal return gain for target firms of 16%, whilst acquiring firm

shareholders made average returns of -0.7%. However, when Andrade et al (2001) split the sample into further sub-samples, they found that the negative announcement period for acquiring firm shareholders was limited to those that used stock as a method of payment. Firms that financed their acquisition with at least some stock had average three-day abnormal returns of -1.5%, whereas firms that abstained from using equity as a payment method had average abnormal returns of 0.4%.

More recently, Moeller et al (2004) tested a sample of 12,023 US domestic acquisitions from 1980 to 2001 and found an equally weighted average three-day announcement return of 1.1% for acquiring firm shareholders. Similarly, Moeller and Schlingemann (2005) tested a sample of 4,430 domestic and cross-border acquisitions undertaken by US firms between 1985 and 1995. They found that US firms who acquire domestically experience significantly higher announcement returns of approximately 1% during a three-day event window. Furthermore, they found stock returns to be negatively affiliated with global and industrial diversification increases.

Further to this, Rheaume and Bhabra (2008) tested a sample of 2,421 domestic US acquisition deals between 1993 and 2005, retrieving daily stock return data from the CRSP. Using a 2-3-day event window, they found that firms which pursued unrelated diversification strategies did not create any positive wealth effects for their shareholders. Contrastingly, the 1,776 firms that made acquisitions within related sectors, accrued shareholder gains. Furthermore, the most highly related acquisitions, which were expected to produce the most synergistic gains, did in fact consistently return wealth gains to the acquiring firm shareholders.

2.4.2 Cross-Border Deals by US Acquiring Firms

Datta and Puia (1995) examined the shareholder wealth effects of 112 international acquisitions undertaken by US firms during the period 1978 to 1990 but found that on average, cross-border deals do not create wealth for acquiring firm shareholders during a two-day event window. They conclude that cultural fit highly impacts shareholder returns as takeovers characterised by large cultural distances returned lower wealth effects for the acquiring firm shareholders.

Contrastingly, Markides and Oyon (1998) tested a sample of 236 cross-border acquisitions undertaken by US firms; 47 in Canada and 189 in Europe. Of the abnormal returns generated,

they found 125 to be positive and 111 to be negative. The returns ranged from -11.6% to +20.4% with a median value of +0.18%. They therefore concluded that US cross-border acquisitions create value for acquiring firms. Similarly, Deshpande et al (2012) find that acquirers from developed countries with developed country targets have statistically significant positive announcements.

In line with the earlier studies of Datta and Puia (1995), Moeller and Schlingemann (2005) found significantly lower announcement returns for US firms who had undertaken international acquisitions compared to those that had acquired domestically during the period 1985-1995. They found that acquisitions resulting in global diversification increases displayed lower three-day announcement returns. Furthermore, they found that acquirer gains were lower for takeovers involving targets based in countries with more highly governed environments and/or with weaker shareholder rights.

Further to this, Francis et al (2008) analysed a sample of 1,491 cross-border transactions and 7,692 domestic acquisitions conducted by US firms from 1990-2003. Overall, they found that acquirers embarking in cross-border acquisitions experienced significantly lower average three-day abnormal stock returns (0.96%) than those in domestic acquisitions (1.43%). However, when Francis et al (2008) divided the sample into further sub-samples of 1990-1995 and 1996-2003, they found a negative cross-border effect from 1991-1995 (similar to that of Moeller and Schlingemann (2005) but that overseas acquisitions were value-creating for US firms from 1996 to 2003.

More recently, Gregory and O'Donohoe (2014) examined the short-term wealth effects of both acquiring and target shareholders following the announcement of UK acquisitions from 1990 to 2005. They found US cross-border acquirers to earn significant announcement returns of -1.39% over a five-day window, whereas EU acquirers achieved insignificant returns of -0.23%.

2.5 Determinants of Acquiring Shareholder Returns

According to Homberg et al (2009), the most common justification for pursuing M&As is to increase the wealth of the acquiring firm shareholders. Following the announcement of an M&A deal, the returns obtained by acquiring firm shareholders are determined by a number of firm specific factors, namely, relatedness of the two entities, bidders toehold and the gearing and cash levels of the parties.

2.5.1 Industry Relatedness

As previously analysed, a key motive underpinning M&A activity is the hunt for synergistic benefits that can be created from merging two entities. Berkovitch and Narayanan (1993) suggest that takeovers take place due to the economic gains that are obtained from the unification of two firms' resources and aim to maximize the wealth of shareholders.

Further to this, Homberg et al (2009) argue that relatedness is a source of synergy and comes in many forms, namely, business, cultural, technological and size relatedness. Homberg et al (2009) state that synergies are highest during related acquisitions as the management team should have a sound understanding of the target firm due to its similarity. They should also be able to transfer knowledge generated in the original firm into the newly acquired firm. Similarly, by acquiring a target in a related industry, the acquirer decreases the number of potential rivals, therefore increasing the market power of the merged entity.

Gugler et al (2003) analysed a sample of worldwide mergers, concluding that related mergers perform better than conglomerate or vertical mergers. Similarly, Gregory and McCorriston (2005) tested a sample of 333 UK cross-border acquisitions from 1984-1995. They partitioned the sample into two sub-sample; same industry acquisitions and conglomerate acquisitions. In the short-run, they found that neither same industry acquisitions nor conglomerate takeovers achieved significant abnormal returns for their shareholders. However, in the long-run, the synergistic benefits enabled the same industry acquisitions to perform significantly better than conglomerate takeovers, though still producing negative returns. Related industry acquisitions achieved returns of -3.6% after 5 years, compared to returns of -21.8% for conglomerate acquisitions.

Similarly, Rheaume and Bhabra (2008) tested a sample of 2,421 US M&As from 1993-2005. They found that firms which acquired related targets achieved synergistic gains, resulting in positive wealth changes for the acquiring shareholders. However, firms that followed an unrelated diversification strategy experienced no significant changes in shareholder wealth.

2.5.2 Bidder Toehold

With reference to M&As, bidder toehold is where the acquiring firm already possesses a minority stake in the target firm prior to pursuing a much larger stake. According to Asquith and Kieschnick (1999), the bidder is more likely able to purchase the toehold position at a significantly lower price per share than the necessary to purchase the remaining shares in the acquisition. Carroll and Griffiths (2010) suggest that bidders with prior toeholds that successfully acquire the target generally gain by buying shares of the target in the pre-bid market. Furthermore, they argue that acquirers with bidder toehold may earn notable profits by making acquisition attempts designed to influence the target's share price. However, Carroll and Griffiths (2010) also note that a larger toehold increases an acquirer's profits if the takeover is successful, but leads to greater losses if the acquisition fails. A failed takeover which has a large toehold sends signals to the market of severe managerial entrenchment.

Furthermore, Betton et al (2009) argue that not only does a toehold reduce the number of shares needed to be purchased at the full takeover premium, but it is also sold at an even greater premium if a rival bidder wins the target. As the expected gains from toehold increase the bidder's valuation of the target, it gives rise to more aggressive bidding which can deter competition from rivals. However, Betton et al (2009) tested a sample of over 10,000 initial control bids for US public targets and found that since the 1980s, the occurrence of bidder toehold is declining steadily. However, they found when it does occur in takeover deals, the average bidder toehold is quite large at 20%.

2.5.3 Gearing Levels and Cash Levels

Another important factor which contributes to determining the level of shareholder returns achieved is the method of financing used in the acquisition. According to Martin (1996, p.1231), the pecking order theory of financing states that "managers follow a financing hierarchy as follows: internal finance, then borrowing, then external equity financing." Further to this, Martin (1996), in line with Jensen (1986), argues that firms with large amounts of cash, or high cash flow, or sufficient debt levels are more likely to finance their

investments with cash. Correspondingly, in relation to the theoretical M&A motive of agency, Jensen (1986), Lang et al (1991) and Gregory and O'Donohoe (2014) recognise that firms with large free cash flows and underutilised borrowing power are more likely to carry out low-benefit or even value-destroying takeovers. Similarly, Harford (1999) concludes that cash-rich firms participate in value-decreasing activities. Pinkowitz et al (2013) assert that firms with large cash piles overinvest and tend to make poor acquisitions. Further to this, an earlier study by Mann and Sicherman (1991) indicates that managers participate in takeover activity as firm size is positively related to executive compensation and promotion. Therefore, if managers hoard free cash flows, they can finance these projects internally and avoid being monitored in capital markets.

Furthermore, Martynova and Renneboog (2009) state that the financing sources chosen by the bidding firm may be influenced by the preferred payment method in the takeover deal. In line with the pecking order hypothesis, Martynova and Renneboog (2009) argue that there is a negative price reaction to the announcement of an equity issue as investors consider an equity issue as a signal of overvaluation. Therefore, firms only issue equity when alternative finance sources are too costly or unavailable.

Martynova and Renneboog (2009) assert that 63% of takeovers are financed entirely by cash but at least 1/3 of these partially finance with external funds. Further to this, 70% of the takeovers which use external funding are financed by debt and 30% with equity. Further to this, Martynova and Renneboog (2009) contend that firms that use debt to finance their acquisitions are less likely to engage in value-destroying activities. Debt capital is typically raised in a bank and banks are typically perceived to have superior information and evaluation abilities that enable them to identify bad acquisitions, therefore only funding deals with net present value. However, according to the UNCTAD (2013) leveraged buyouts (LBOs) peaked in 2007, prior to the onset of the economic crises and will continue to face refinancing problems in the coming years. Pre-crisis debt markets were characterised by favourable credit conditions which fuelled highly leveraged acquisitions, but post-crisis credit conditions are not nearly as favourable leading to a fall in the value of LBOs.

Correspondingly, Sudarsanam et al (1996) analysed 429 completed UK acquisitions from 1980 to 1990 and found little support that unused debt capacity acted as a value creator for acquiring firm shareholders. Similarly, Greogory and O'Donohoe (2014) tested a sample of 290 completed UK public company acquisitions from 1990 to 2005, with the acquiring firms

being located both domestically and internationally. They found bidder gearing to have a positive relationship with the returns of domestic acquirers, which is consistent with the free cash flow hypothesis.

Contrastingly, Bhabra and Huang (2013) examined 136 M&A deals undertaken by Chinese firms from 1997-2007. They found evidence that the significant positive abnormal returns received by acquiring shareholders were partially due to the fact that they paid for the targets with cash resources.

2.6 Control Variables Determining Acquiring Shareholder Returns

The following three control variables, payment method, firm size and bid reaction (Appendix G), are deemed to be the most important and significant in this study as they impact greatly on shareholder wealth.

2.6.1 Payment Method

According to Ismail and Krause (2010), the method of payment that a firm chooses to use for mergers and acquisitions- cash, shares or a combination of these, can significantly impact on the successful completion of the deal. They argue that the presence of asymmetric information between the bidder and the target regarding the value of the acquirer's shares enables the bidder to tender with shares if these are overvalued and to offer cash if they are undervalued. Similarly, Dutta et al (2013) state that if a bidder believes that a company's shares are correctly valued, it may offer cash in order to send a positive signal to the market. For this reason, stock financed deals are viewed less favourably by the market than cash financed acquisitions. Similarly, Gregory and O'Donohoe (2014) argue that acquiring shareholders lose when equity is the chosen form of payment, as it signifies overvaluation of their stock and/or uncertainty of the target firm's true value.

Contrastingly, Fuller et al (2002) argue a tax-based hypothesis that favours stock payment methods. If the acquirer purchases the target firm with cash, target shareholders face immediate taxes, but if stock is used as a method of payment, the tax implications are deferred. However, De La Bruslerie (2012) proposes that in recent times, many substantial takeover bids have occurred using a mixed payment method. Furthermore, Pinkowitz et al

(2013) argue that cash- rich firms are less likely to finance their acquisitions with cash than non cash-rich firms.

Walker (2000) studied a sample of 278 acquisitions from 1980 to 1996. He found evidence supporting the notion that acquisitions can take advantage of asymmetric information between acquiring firm managers and acquiring/target firm shareholders. He found evidence that acquiring firm shareholders earned higher returns following cash offers.

Martynova and Renneboog (2009) used a sample of 1,361 M&As that were executed in 26 European countries between 1993 and 2001. Their findings supported the view that firms' financing decisions are influenced by the bidder's concerns about the cost of capital. In line with the pecking order hypothesis, cash-rich bidders opted for internally generated funds, the most inexpensive source of financing. Further to this, Martynova and Renneboog (2009) found evidence that the acquiring firm's payment method and financing decisions impacted significantly on the returns to their shareholders. They found significantly negative price reactions following the announcement of equity-paid acquisitions.

2.6.2 Firm Size

According to Homberg et al (2009) it is believed that acquisitions comprising of target and bidding firms of similar size lead to enhanced knowledge integration and display the most efficient integration processes. Krishnan et al (2007), as cited by Homberg et al (2009), emphasis that it is easier to achieve synergies and identify redundancies when the merged firms are of equal size, which leads to workforce reductions and subsequent cost savings.

Contrastingly, Seth (1990) argues that when an acquirer purchases a target which is larger in size, it acts as a means of increasing their economies of scale and scope as well as their market power. Similarly, Gregory and O'Donohoe (2014) argue that larger merger combinations achieve cost savings via larger economies of scale, which leads to increased revenues. However, Bruton et al (1994) assert that acquiring larger firms leads to more complex organisational structures and increases the chances of management losing control. Therefore, they argue that acquiring relatively small targets, leads to enhanced acquisition performance.

Fuller et al (2002) studied the acquiring shareholder returns for a sample of firms making five or more successful bids within three years from 1990 to 2000. In total, their sample included 3,135 acquisitions. They found that as the relative size of public target firms increased, the

returns for cash offers became more positive, more negative for equity offers and remained unchanged for combination offers.

2.7 Conclusion

This chapter has provided an analysis of the relevant literature pertaining to domestic and international merger and acquisition activity, with a particular focus on US activity.

The chapter commenced by examining the contrasting motives as to why takeovers occur, namely the traditional motives, synergy, agency and hubris. The theory suggests that firms participate in takeover activity to benefit from the financial, operational and managerial synergies that may arise. Similarly, the agency and hubris motives suggest that takeover activity may occur due to managers acting in their own best interest or due to managerial over-confidence and/or mis-valuation. Continuing on, this chapter placed further emphasis on the free cash flow theory, which suggests firms with high free cash flows, participate in value destroying activities.

Next, an overview of the most pertinent theoretical motivations behind overseas acquisitions was presented, namely; imperfections in product and factor markets, diversification and globalisation, the tax effect and exchange rate fluctuations. Next, empirical evidence in relation to shareholder wealth effects in the US was presented. The large US market appears to have the most prominent M&A activity, based on the volume of literature available on it. The US offers mixed empirical evidence regarding shareholder wealth effects from M&A activity, including the more recent phenomena of cross-border takeovers. Finally, this chapter concludes with a brief synopsis of the determinants of acquiring shareholder returns.

DATA & METHODOLOGY

Chapter Three:

DATA AND METHODOLOGY

3.1 Introduction

This chapter commences with an outline of the research objectives. Following this, an overview of the research design and the data and methodology employed is presented. Finally, the chapter concludes by highlighting any limitations to the methodology utilised.

3.2 Research Objectives

The purpose of this paper is to examine the wealth effects for US acquiring firm shareholders engaged in domestic and overseas deals during the period 2006-2013. In addition, we seek to evaluate the key determinants of acquiring firm shareholder returns.

A number of objectives have been developed in order to evaluate the wealth effects for acquiring firm shareholders and their determinants, and these are outlined in Table 3.1;

Table 3.1: Key Research Questions	
Number	Research Question
RQ. 1	What are the wealth effects for US acquiring firms' shareholders following the announcement of domestic and overseas acquisitions?
RQ. 2	Are there significant differences in acquiring firm shareholder returns from domestic as oppose to cross-border deals?
RQ.3	Are there significant differences across the deal and firm specific characteristics of domestic and cross-border acquisitions?
RQ. 4	What is the role of deal and firm specific characteristics (i.e. acquirers' gearing, acquirers' cash resources, size and payment form) in explaining acquiring firm shareholder returns in domestic and overseas acquisitions?

3.3 Sample and Data

The sampling frame incorporates M&A announcements involving US firms as the acquirer and target firms are either US or international. US acquiring firms were chosen as the focus of this study as the United States has one of the world's most highly developed financial markets and a large open takeover market (Bloomberg, 2010). Furthermore, US firms feature among the most acquisitive companies in the world and possess significant cash holdings. Of late, US firms have been undertaking significant volumes of mergers and acquisitions (KPMG, 2013). According to Forbes (2013), in the first half of 2013, US firms completed 116 acquisitions in emerging markets, which is higher than the activity of other developed economies such as Europe, Australia, Canada and Japan. Moreover, the timeframe spans from 1st January 2006 to 31st December 2013 and therefore covers all recent US merger activity, including pre, during and post the 2008 global financial crisis. Further to this, the eight year timeframe also incorporates the final two years of the sixth merger wave, which commenced following the US Federal Reserve's responses to the economic shock of 9/11 but came to an end in 2008.

In the US, the S&P 500 is a highly influential market value-weighted stock index and is recognised as the best single gauge of the large cap U.S equities market. It is made up of 500 leading, blue-chip companies across the principal industries of the US economy and covers 80% of US equities (Standard and Poor, 2014).

3.3.1 Data

The compilation of deals was sourced using the *Thomson One* screening and analysis tool and the following standards were applied. All takeovers must have been completed before December 31st 2013, thus removing failed takeover attempts from the analysis which could potentially distort results. All acquiring firms must be US and publicly listed in order for an analysis of share price to be undertaken. Target firms can be either public or private and US or international, as this allows for a comprehensive analysis of domestic and cross-border deal activity. In line with the M&A studies of Kiymaz and Mukherjee (2000) and Starks and Wei (2013), utility, bank and other finance related firms are excluded from the analysis due to potential valuation issues and differing regulatory environments. The deals must involve the acquirer purchasing 50% or more of the target firm, so that they are the majority shareholder. Furthermore, the analysis incorporates only deals with a value of at least \$500 million in order ensure a significant announcement effect is created and examine only the

more significant buyers in the market. Studies by Hayward and Hambrick (1997), Beitel et al (2004), Goergen and Renneboog (2004) and Hagendorff et al (2008) also analysed the more significant buyers, utilising a deal value of at least \$100 million. Correspondingly, Grinstein and Hribar (2004) utilised a deal value of \$1 billion or larger.

Based on the aforementioned criteria, the initial search resulted in 561 bid announcements from *Thomson One*. These results were transferred to Excel along with the individual deal tear sheets. The basic transaction information collected includes the announcement date, the deal value, the nationality of the target, the percentage of shares acquired, Standard Industry Classification (SIC) of both the target and acquirer, whether previous bid toehold was held by the acquirer and the payment method utilised as these underpin the basis of the analysis. Further deals were then excluded due to a number of restrictions in relation to the availability of data, leaving a final sample of 252 deals, which consists of 209 domestic deals and 43 cross-border deals. However, the sample was reduced even further to 243 deals due to removing outliers from the data on the basis that they had standardised residuals greater than ± 2.5 .

The cross-border deals consisted of target firms in Australia, Brazil, Canada, China, Hong Kong, Israel, Norway, South Africa, Switzerland, Taiwan, Turkey as well as ten EU countries. The largest US domestic deal is AT&T's takeover of Bell South Corp in 2006, valued at more than \$72.67bn. The largest cross-border deal is Eaton Corp's 2012 takeover of Cooper Industries PLC in Ireland, valued at more than \$11.4bn. The sample is deemed adequate to allow for an extensive investigation as prior studies in the area have used smaller samples, such as Hayward and Hambrick (1997) who studied 106 large US acquisitions during the period 1989 to 1992. Similarly, Nnadi and Tanna (2013) studied 62 bank mega-mergers in the European Union during the period 1997-2007.

Both Excel and SPSS were utilised to examine the acquiring firm shareholder returns and to establish the link between the deal and firm characteristics and the returns to acquiring firm shareholders. Furthermore, SPSS has also been used to determine the statistical significance of these returns for the full sample and relevant sub-samples. As a means of calculating the abnormal returns, daily stock close-prices were downloaded for one year preceding and one year post the announcement date. Similarly, pertinent S&P 500 data was also collected for the same time-frame surrounding the announcement date.

Table 3.2, below, illustrates a breakdown of the sample of acquisitions announced (by year) by US acquirers over the sample period 2006-2013, which will be discussed further in the following chapter.

Table 3.2: Number of Acquisitions Announced Per Year		
Year	N	%
2006	34	13.99
2007	34	13.99
2008	16	6.58
2009	28	11.52
2010	26	10.70
2011	24	9.88
2012	42	17.28
2013	39	16.05
TOTAL	243	100

3.4 Research Design

3.4.1 Event Studies

This study deploys a quantitative approach rather than qualitative techniques as it relies on the compilation and analysis of share price data as well as incorporating other firm related financial data. According to Berkovitch and Narayanan (1994), as cited by Hodgkinson and Partington (2008, p.107), “target and acquirer gains are defined as the change in their respective shareholders’ wealth”. In order to measure the acquiring firm’s shareholder wealth effect a standard event study approach will be utilised in this study. This will measure the returns to the acquiring firm’s shareholders around the announcement of the acquisition deal.

Event studies, a concept originally developed by Ball and Brown (1968) and Fama, et al (1969), have now become ubiquitous in capital market research (Corrado, 2011). Markides and Oyon (1998) state how an event study can be used to determine the impact of M&A announcements on shareholder wealth. They refer to an event study as a “financial methodology that compares the firm’s actual stock price on the day of the acquisition announcement, relative to the stock price expected from the behaviour of the firm’s stock

price” over a certain time period. Furthermore, Markides and Oyon (1998) define abnormal returns as the differences between the actual and the expected stock price. Similarly, Koch and Fenili (2013) refer to an event study as a useful financial and statistical technique which quantitatively evaluates the financial impact of an unexpected event. They describe abnormal returns to be directly related to the change in a firm’s market capitalisation. Furthermore, they state that daily abnormal returns (DARs) are calculated each post-event trading day. Similarly, cumulative abnormal returns (CARs) are described to be the accumulation of DARs over a specific number of days. Rhéaume and Bhabra (2008) examined the CARs for four different event windows in order to analyse short-run announcement effects for US domestic M&As. Similarly, Francis et al (2008) utilised three-day CARs when studying US firms making cross-border acquisitions.

Event studies relate heavily to the Efficient Market Hypothesis (EMH), which was originally developed by Bachelier (1900) (as translated by Davis and Etheridge (2006)) but further developed by Fama (1965). Further to this, the theory of random walks, as described by Fama (1965), affirms that the future prices of a security are no more predictable than the path of a sequence of unsystematic numbers. As investors react instantaneously to any newly available information, they thereby eliminate any profit opportunities. In line with this, Fama (1970) deems a market to be efficient when prices always fully reflect all available information. Market efficiency can be classified into three forms, namely, weak form, semi-strong form and strong form. According to Fama (1970), weak form efficiency suggests that a security price reflects historical price information, semi-strong efficiency suggests that prices incorporate all publically available information and strong-form efficiency asserts that prices reflect all privately held information also. Furthermore, according to Cummins and Xie (2009), under the semi-strong form of the EMH, when an acquisition is announced, the stock market will adjust the valuation of the firms involved in the deal based on all of the publicly available information. In line with this, Shen et al (2012), assert that US stock markets are semi-strong efficient.

MacKinlay (1997) defines an event window to be the timeframe over which the share prices of the firms involved in the event will be analysed. The event windows utilised when studying M&A activity vary significantly and there is no consensus as to which is the best approach for analysing the impact of announcements on shareholder wealth. Hodgkinson and Partington (2007) argue that short event windows may not permit for examination of all the gains from a bid. Whilst longer event windows may avoid this problem, they increase the risk

of confounding gains from the bid with abnormal returns from other events. According to Von Eije and Wiegerinck (2010), it is normal to include the days surrounding the event day in the window in order to examine if they also have abnormal returns. Prior to the event day, the firm's returns may have been influenced by information relating to the acquisition that leaked into the market somewhat early. Similarly, following the event day further abnormal returns may gauge second-thought price effects that occur in less efficient markets and after the close of the stock market on the event day. Dilshad (2013) asserts that determining an event window that accurately captures an announcement effect, depends on how quickly researchers believe information leaks out. Hence, it was decided that two event windows, five days (-2, +2) and 11 days (-5, +5) (one trading week pre and post), would be utilised for this study, aiming to overcome the aforementioned problems and consistent with a number of key studies in this area, such as Kiyamaz (2004), Antoniou et al (2008), Ismail and Krause (2010) and Khanal et al (2014).

Table 3.3, below, outlines the event windows utilised in many key US M&A studies, demonstrating that the chosen windows vary considerably.

Table 3.3: Outline of Key US M&A Studies			
Study	Time Frame	Sample	Event Window(s)
Markides and Oyon (1998)	1975-1988	47 Canadian and 189 European acquisitions completed by US firms.	(-1, 0), (-1, +3) and (0, +5) days
Kiyamaz (2004)	1989-1999	355 US targets and 391 US bidders involved in cross-border acquisitions of financial institutions.	(-1,0), (-1,1), (-5,5), (-10,10) and (-10,2) days
Moeller and Schlingemann (2005)	1985-1995	383 cross-border acquisitions and 4,047 domestic acquisitions by US firms.	(-1,+1) days
Francis et al (2008)	1990-2003	1,491 cross-border acquisitions and 7,612 domestic transactions by US acquiring firms	(-1, +1) days
Khanal et al (2014)	2010-2012	38 M&As in the US ethanol industry.	(-30, +30), (-1, +1), (+2, +30), (-2,+2) and (-5,+5) days

3.5 Methodology Employed

This study utilises two analysis techniques on the data. First of all, in order to calculate the short-term wealth effects achieved by the acquiring firm shareholders on a specific day, the abnormal returns are calculated. Secondly, a regression analysis is run in order to investigate the determinants of acquiring shareholder returns.

3.5.1 Cumulative Abnormal Returns

A number of models can be engaged in order to evaluate abnormal returns, namely, the market model, the market adjusted model and the Capital Assets Pricing Model (CAPM). Researchers have failed to come to a consensus as to which is the optimal model to use in the US, with academics such as Moeller and Schlingemann (2005) opting for the market adjusted model and others such as Francis et al (2008) and Khanal et al (2014) utilising the market model. The market adjusted model assumes firms to have levels of risk and return similar to the market as it considers market risk (α) to be zero and company risk (β) to be one. As this assumption can be considered untrue, the market model of Sharpe (1963) will be utilised in this study to examine the impact of acquisition announcements on acquiring firm shareholder wealth.

Hassan et al (2007) and Kohers et al (2007) use the traditional market model to calculate abnormal returns in their studies of US acquiring firms. Similarly, Coakley and Iliopoulou (2006) utilise the market model in their study of UK M&As as follows;

$$ER_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

$ER_{i,t}$ = Expected return for firm i on day t

$R_{m,t}$ = Corresponding return on the value-weighted market index (S&P 500).

α = Alpha

β = Beta

The abnormal return each day for the firm is then obtained as follows;

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t})$$

$AR_{i,t}$ = Abnormal returns for the firm i on day t

$R_{i,t}$ = Actual returns of security i on day t.

α = Alpha

β = Beta

$R_{m,t}$ = Market return on day t.

The market model parameters are estimated using a 200 day estimation period (- 205, - 6, i.e day 205 prior to the announcement date to day 6 prior to the announcement date), as used by Moeller et al (2004). In order to determine values for α (intercept) and β (slope), the Excel Function Wizard was utilised. Firstly, the daily price returns for both the stock and the market (S&P 500) were calculated for each day of the 200 day estimation period using the LOG function. Alternatively, the following formula can be utilised;

$$\text{Daily returns} = \frac{\text{Yesterday's price} - \text{today's price}}{\text{Yesterday's price}}$$

Excel's Function Wizard was then utilised to determine α (intercept) and β (slope) for each deal, using the log stock returns as y and the log market returns for x. The market model formulas, as given above, were then applied in order to calculate the expected returns, abnormal returns and subsequent cumulative abnormal returns for the two event windows, (-2, +2) days and (-5, +5) days.

The next step consisted of testing the statistical significance of the abnormal returns. SPSS was utilised to perform one-sample t-tests on both of the cumulative abnormal returns. The p-value is analysed in terms of the widely-recognised gauge of significance, as utilised by numerous academics such as Chu (2002). Further to this, in order to establish variations in returns across various sub-samples, SPSS was used to perform multiple independent sample t-tests. This enables the researcher to establish if differences in returns that are statistically

significant exist between various sub-samples, including cash versus equity payments, related versus non-related industries, prior toehold versus no toehold and pre-crisis versus post-crisis.

3.5.2 Determinants of Acquiring Firm Shareholder Returns

In order to investigate the determinants of acquiring firm shareholder returns for the domestic and over-seas transactions, the following regression models were utilised;

Cross-Border Acquisition Returns:

$$\text{CAR} = \alpha + \beta_1 \text{ Cash Resources} + \beta_2 \text{ Gearing} + \beta_3 \text{ Relatedness} + \beta_4 \text{ Bidder Toehold} + \beta_5 \text{ Target Location} + \beta_6 \text{ Payment Method} + \beta_7 \text{ Relative Size} + \beta_8 \text{ Exchange Rate} + \varepsilon$$

Domestic Acquisition Returns:

$$\text{CAR} = \alpha + \beta_1 \text{ Cash Resources} + \beta_2 \text{ Gearing} + \beta_3 \text{ Relatedness} + \beta_4 \text{ Bidder Toehold} + \beta_5 \text{ Target Location} + \beta_6 \text{ Payment Method} + \beta_7 \text{ Relative Size} + \varepsilon$$

Table 3.4, overleaf, details further information regarding the regression variables utilised in this study. Initially, a dummy variable indicating whether the reaction to each deal was hostile (1) or friendly (0) was to be included. However, this variable was removed as all 243 deals proved to be friendly.

Furthermore, as a means of securing the reliability of results and ensuring that no multi-collinearity issues exist, a correlation analysis of the variables was undertaken in Excel as well as an analysis of the variance inflation factors (VIF) in SPSS. (Please see Appendix E)

Table 3.4: Regression Variables

Variable	Definition	Test For	Hypothesised Impact on Acquiring Shareholder Returns	Previous Empirical Studies
Domestic/ Cross Border Acquisition	Dummy variable equal to one if target is cross-border and zero if target is domestic.	Cross-border effect	Positive	Conn at al (2005), Feito-Ruiz and Mendez-Requejo (2011)
Cash Resources	Acquirer cash divided by acquirer total assets at year end prior to deal announcement	FCF	Negative	Jensen (1986)
Gearing	Total debt to total assets of the acquirer as of year-end prior to deal announcement.	FCF and Discipline Effect	Positive	Ismail and Krause (2010)
Relatedness	Dummy variable equal to one if the acquirer and target have the same SIC code and equal to zero if they differ.	Operational synergy	Positive	Sudarsanam et al (1996) Feito-Ruiz and Mendez-Requejo (2011)
Bidder Toehold	The percentage of any holding of shares by the acquirer in the target prior to the acquisition announcement.	Management entrenchment and agency costs	Positive	Sudarsanam et al (1996) Danbolt and Maciver (2012)
Payment Method	Dummy variable equal to one if the transaction is all cash financed and zero if equity/hybrid financed.	Control	Positive	Francis et al (2008)
Relative Size	The transaction value divided by the equity market capitalisation of the acquirer at the end of the fiscal year prior to the acquisition announcement.	Control	Negative	Moeller et al (2004) Feito-Ruiz and Mendez-Requejo (2011) Danbolt and Maciver (2012)
Exchange Rate	Based on the US (home country of each buyer), we take the currency's average exchange rate (units of foreign currency per dollar) for the sample period 2006-2013 and subtract the currency's exchange rate for the year of the takeover. This difference is then divided by the average exchange rate. As a result, positive (negative) values indicate the currency is strong (weak) relative to the U.S. dollar.	Strong or weak currency Exchange rate effect (cross-border sub-sample only)	Negative	Harris and Ravenscraft (1991) Cakici et al (1996) Moeller and Schlingemann (2005)

3.6 Limitations

There are a number of limitations to this study and the methodology employed. The quantitative and event study approach of this study limits the analysis to only share price data and short-term wealth effects. There is no post-merger analysis conducted on the merged entity's profitability, productivity, integration process, corporate culture, divestments or long term wealth effects. Further to this, event studies rely heavily on semi-strong market efficiency and assume that there have been no leakages of information prior to the announcement dates which may have affected the share prices.

The sample utilised is relatively small, consisting of 243 deals and therefore it must be noted that a small sample size can limit the study. Furthermore, the sample consists of a mix of domestic and cross-border deals, limiting the sample size for each. Moreover, the sample analysed is limited to acquirers from a single country setting only, the United States and confined to the time period 2006-2013. The study also focuses on the returns to the acquiring firm shareholders and neglects the target firm's returns. Similarly, the study is also based upon public firms as there is a lack of available data for private entities. Finally, the proposed number of variables utilised in the regression analysis may also lead to limitations as there are a number of other variables that could also be included.

3.7 Conclusion

This chapter presented an overview of the research methodology employed in this study. The research questions to be investigated were outlined, before a brief synopsis of the data collection methods and the overall sample included was provided. This paper employs quantitative methods and will adopt an event study approach as utilised in prior M&A studies. To conclude, a number of limitations in relation to the data and method utilised are outlined. The subsequent chapter details the research findings of this study.

FINDINGS

Chapter Four:

FINDINGS

4.1 Introduction

The purpose of this chapter is to present the research findings, commencing with a description of the sample, deal and firm statistics. Next, the short term wealth effects are presented, followed by the results of the univariate analysis. Finally, the chapter concludes with the findings of multivariate analyses.

4.2 Descriptive Statistics

The sample utilised for this study consists of 252 acquisitions completed by US firms during the period 2006-2013. In order to improve the accuracy of the analysis, outliers¹ in the data are removed, reducing the sample to 243 deals. Numerous sample and deal descriptives, which were generated through the data analysis, are detailed below.

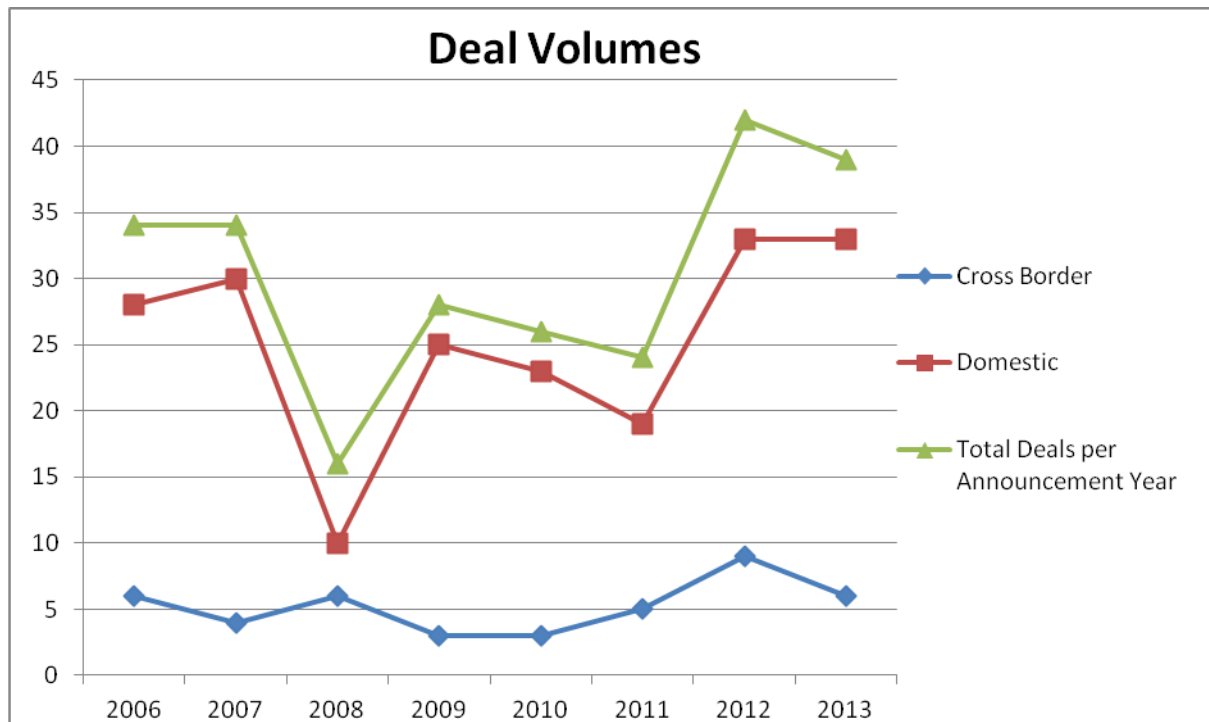
4.2.1 Annual Deal Volumes

Fig. 4.1, illustrates the volume of cross-border and domestic deals announced per annum, as well as the total deal volume. It is evident that the number of domestic deal announcements is larger than cross-border deal announcements in any given year. As indicated in Table 4.1, in 2007, 88.24% of the deals were domestic, compared to 11.76% being cross-border. However, in 2008 domestic deals only accounted for 62.5% of the deals announced, whereas cross-border deals accounted for 37.5%. Overall, there appears to be a relatively stable rate of M&A activity during the period 2006-2007, coinciding with the final two years of the sixth merger wave as discussed by Gaughan (2011). However, such activity is seen to decline rapidly in 2008, coinciding with the onset of the global financial crisis. Due to the increased investor scepticism accompanying the crisis, M&A activity in 2008 reduced to just under half of that reported for 2006 and 2007. This reduction in activity subsequently led to the demise of the sixth merger wave and highlights the level of due diligence that firms place upon their M&A investment decisions, particularly the more significant buyers entering into high value deals. Following this, 2009-2011 displayed a different pattern as M&A activity began to

¹ Based on the methods of Hadi and Simonoff (1993) and Morris et al (2011) deals with a standardised residual larger than ± 2.5 were investigated as potential outliers. The standardised residuals were also plotted in order to aid with the identification of outliers.

recover. Though deal volumes almost doubled their 2008 level, they did not quite reach their pre-crisis levels. Activity was very much domestic in nature, emphasising that firms had become more risk averse following the crisis. However, by the following year the recovery appeared to be complete with deal volumes exceeding their pre-crisis levels for 2012 and 2013, peaking in 2012 with 42 deals.

Figure 4.1: Deal Volumes per Annum



As indicated in Fig.4.1, 2012 proved to be the most popular year for acquisitions, accounting for over 17% of the sample. Despite a small dip in takeover activity, 2013 also remained very strong, perhaps indicating improvements in the global economy and greater confidence in the markets and perhaps signalling that US firms are beginning to spend their built-up cash-piles.

Table 4.1: Domestic and Cross-Border Deals Announced Per Annum					
Announcement Year	Cross-Border		Domestic		Total
	N	%	N	%	N
2006	6	17.65%	28	82.35%	34
2007	4	11.76%	30	88.24%	34
2008	6	37.50%	10	62.50%	16
2009	3	10.71%	25	89.29%	28
2010	3	11.54%	23	88.46%	26
2011	5	20.83%	19	79.17%	24
2012	9	21.43%	33	78.57%	42
2013	6	15.38%	33	84.62%	39
Total	42	100%	201	100%	243

4.2.2 Cross-Border Sample Descriptives

The cross-border sub-sample is analysed below in terms of its key descriptive. The cross-border sample consists of 42 deals over the time-frame 2006-2013, accounting for 17.28% of the full sample. Correspondingly, Fig. 4.2 depicts the nationalities of the target firms involved in the cross-border deals. Canada is the most popular location for cross-border deals by US firms, accounting for 19.04% of the cross-border sub-sample. Australia is the second most popular destination, with a total of four cross-border deals occurring there.

Figure 4.2: Nations of Cross-Border Targets

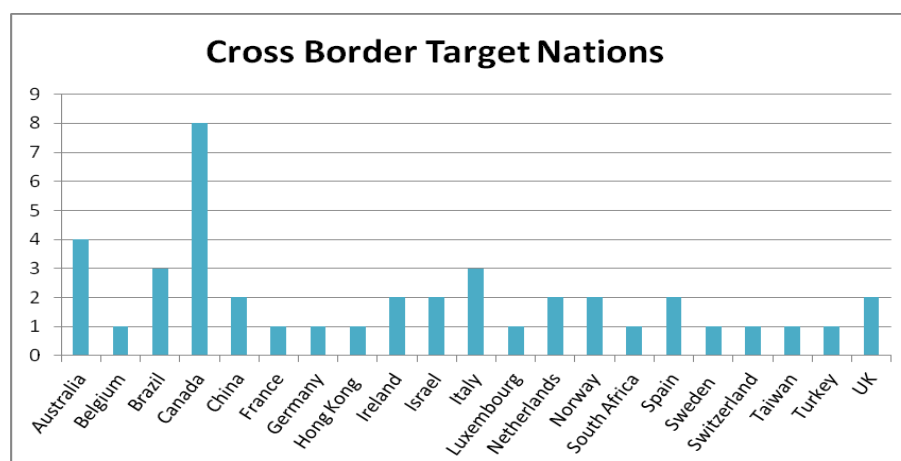


Table 4.2, below, illustrates the composition of the cross-border sample by industry, albeit, utility, bank and other finance related firms are excluded. Up to two-thirds of the deals were into non-related industries, based upon the acquiring and target firms' primary SIC codes (Please see Appendices B and C), which suggests that motives other than operational synergy are the key drivers in many of these deals. Similarly, this may indicate that geographic as well as industrial diversification may be important to such acquirers. No hostile bids were recorded in the sample, as friendly bids accounting for 100% of the cross-border sample according to *Thomson One*. Only 2.38% of the cross-border acquirers built up a toehold prior to announcing their takeover bid.

Table 4.2: Industry Distribution of Cross-Border Sample		
Industry	N	%
Consumer Products and Services	1	2.38%
Consumer Staples	3	7.14%
Healthcare	12	28.57%
High Technology	10	23.80%
Industrials	6	14.29%
Materials	8	19.05%
Retail	2	4.77%
Total	42	100%

Up to 76% of the deals were financed by predominantly cash and 24% predominantly by equity or a hybrid combination of cash and equity. This large number of cross-border deals paid for using cash is expected as target shareholders tend to be reluctant to accept foreign equity. Furthermore, post-crisis, perhaps due to the build up of corporate cash piles and the high US corporate tax rate, acquiring firms are choosing to spend their cash overseas, emphasising the possibility of underlying free cash flow, agency theory, tax and disciplinary motives of takeover activity. Finally, there are three cross-border acquirers that complete two acquisitions during the sample's time-frame and therefore may be specified as frequent acquirers. However, only one of the three firms completed their two acquisitions during the

same year, which may act as a limitation and affect the accuracy of its CAR results due to overlapping estimation windows.

4.2.3 Domestic Sample Descriptives

The domestic sub-sample is analysed below in terms of its descriptives. The sample consists of 201 deals across the time-frame 2006-2013 and accounts for 83% of the full sample. Table 4.3, depicts the composition of the domestic sub-sample by the industry of the acquirer, with high technology firms (29.85%) and healthcare firms (27.36%) accounting for the two largest proportions of the sample, so too with the cross-border sample. The domestic sub-sample is more evenly split than the cross-border sub-sample in terms of industry relatedness, with 42% of firms acquiring targets with the same SIC codes and 58% of firms making bids into non-related industries. Correspondingly, this would suggest that domestic acquirers (41.80%) are more inclined to seek operational synergy than cross-border acquirers (33.33%). It also suggests that perhaps industry consolidation plays an important role in the firms' investment decisions, particularly post-crisis.

Table 4.3: Industry Distribution of Domestic Sample		
Industry	N	%
Consumer Products and Services	10	4.98%
Consumer Staples	8	3.98%
Healthcare	55	27.36%
High Technology	60	29.85%
Industrials	25	12.44%
Materials	9	4.48%
Media and Entertainment	6	2.98%
Retail	13	6.47%
Telecommunications	15	7.46%
Total	201	100%

Again, similar to the cross-border sample, friendly bids accounted for 100% of the domestic sample. Only 1.5% of the domestic acquirers built up a toehold prior to their takeover bid compared with 2.4% in cross-border deals. This may suggest that cross-border acquirers are more uncertain that a deal will be successful due to the possibility of competing bids and consequently build-up a toehold to achieve some profit despite of the outcome of the bid.

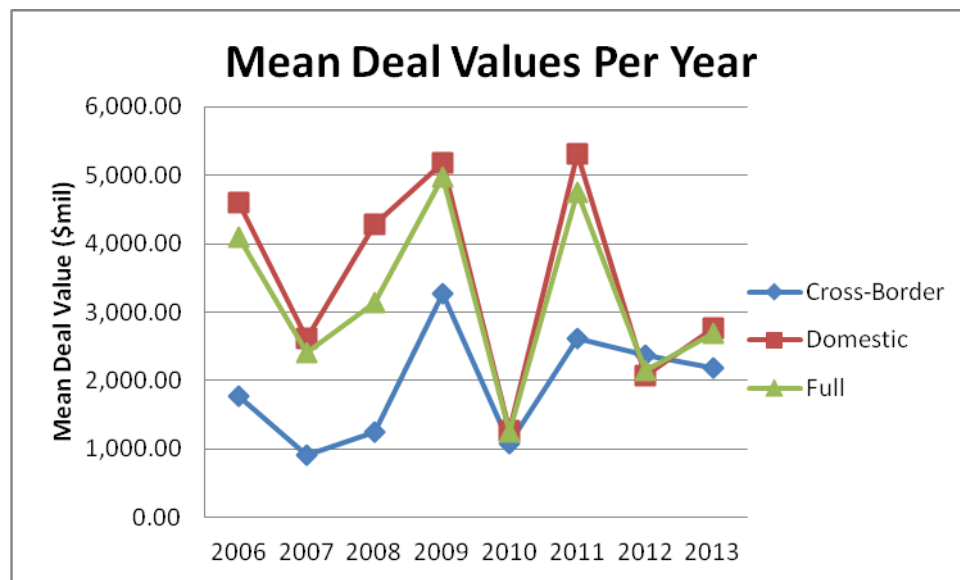
Again, cash was the most common method of payment, with up to 72 % of domestic deals being paid for predominantly by cash, compared to 28% being financed by equity or a mixture of cash, equity and other resources. Finally, there are 33 domestic acquirers that may be referred to as frequent acquirers as they completed two or more takeover bids during the sample period. For example, Johnson and Johnson completed five successful bids during the sample period, all of which occurred in different years (2006, 2008, 2009, 2011 and 2013). However, it appears six of the 33 acquirers completed two or more of their acquisitions within the same year, which again may act as a limitation and perhaps affect the accuracy of the results for each deal due to overlapping estimation windows.

4.2.4 Mean Deal Values

Table 4.4, illustrates the apportionment of transactions per annum, detailed by their total values, mean values, minimum values and maximum values. As indicated in the table, the value of deals varied significantly during the period 2006-2013. Fig. 4.3, indicates that mean deal values peaked in 2009 at \$4,976.67 million. However, the highest total deal value occurred in 2006 (\$139,445.10 million), which can be linked to AT&T acquiring Bell South for \$72,671 million, which is the largest deal included in the sample. Furthermore, there appears to be substantial variations between the maximum deal values and the minimum deal values across the time-frame. For every year, excluding 2012, domestic deals had a higher mean value than their cross-border counterparts, suggesting US firms perhaps are more cautious buying abroad or else it is easier to acquire small firms overseas. Furthermore, the impact of the global financial crisis can be seen in Table 4.4 as deal volumes plummeted from 34 in 2007 to 16 in 2008, bringing the sixth merger wave to an end. Despite this, mean deal values rose in 2008 and 2009, before falling again in 2010. The mean deal value for the full sample is \$3,095.88 and for the years 2006, 2008, 2009 and 2011 the yearly mean values were above this, while in 2007, 2010, 2012 and 2013 the yearly mean deal values fall below this.

Table 4.4: Deal Values for the Sample Period							
Year	N	Total Deal Value	Min. Deal Value	Max. Deal Value	Cross-Border Mean Value	Domestic Mean Value	Total Sample Mean Value
		\$ mil	\$ mil	\$ mil	\$ mil	\$ mil	\$ mil
2006	34	139,445.10	506.99	72,671.00	1,781.81	4,598.37	4,101.33
2007	34	82,156.96	500.00	9,750.75	913.85	2,616.72	2,416.38
2008	16	50,237.99	500.00	15,513.13	1,251.94	4,272.64	3,139.87
2009	28	139,346.86	525.00	38,615.30	3,264.05	5,182.19	4,976.67
2010	26	32,575.76	500.00	3,688.70	1,085.63	1,274.73	1,252.91
2011	24	114,100.29	522.36	29,370.07	2,615.61	5,317.00	4,754.18
2012	42	89,799.36	533.68	11,460.74	2,369.96	2,074.84	2,138.08
2013	39	104,635.50	543.27	16,381.39	2,192.82	2,772.08	2,682.96

Figure 4.3: Mean Deal Values per Annum



When compared, Fig.4.4, depicting total deal volumes per year, and Fig.4.5, depicting mean deal values per year, the volume of deals appears to remain relatively more stable over the sample period and recovers from its fall in 2008. The highest volume growth occurs from

2011-2012. However, the mean deal values appear to fluctuate far more from 2006-2013, falling and rising repeatedly. It is noticeable and most interesting that the second biggest fall in average deal values was from 2011-2012, suggesting that though the market for M&A activity was improving, firms were focussing on smaller and less risky targets as opposed to larger deals. Furthermore, it also indicates that smaller companies were more likely to have been undervalued or in financial distress, leaving them prone to takeover bids.

Figure 4.4: Total Deal Volumes

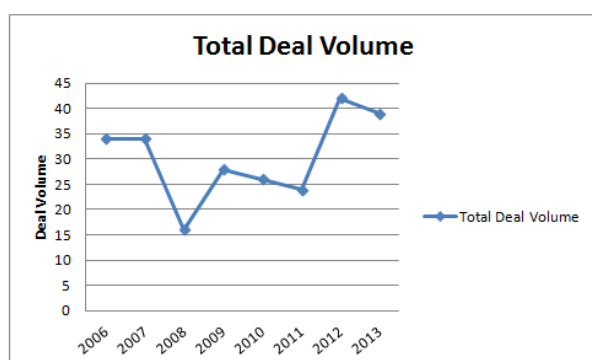
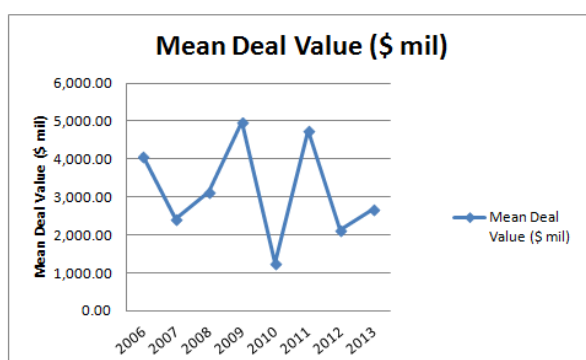


Figure 4.5: Mean Deal Values



4.3 Announcement Effect

The cross-border and domestic sub-sample announcement effects, as well as those for the whole sample, across both the five-day and 11-day event windows are examined in this section.

4.3.1 Research Question 1

RQ.1 : What are the wealth effects for US acquiring firms' shareholders following the announcement of domestic and overseas acquisitions?

Table 4.5 outlines the announcement effect for all US domestic and overseas acquiring firm shareholders. In addition, the cumulative average abnormal returns (CAAR) for the whole sample are also presented.

Table 4.5: Cumulative Average Abnormal Returns					
Event Window (days)	N	CAAR (%)	Minimum (%)	Maximum (%)	P-Value
Cross-Border					
CAR (-2, +2)	42	0.1195	-18.99	9.27%	0.900
CAR (-5, +5)	42	-0.1133	-16.85	12.58	0.910
Domestic					
CAR (-2, +2)	201	0.4320	-18.77	16.42	0.369
CAR (-5, +5)	201	0.1497	-19.94	17.87	0.775
Full					
CAR (-2, +2)	243	0.3780	-18.99	16.42	0.379
CAR (-5, +5)	243	0.1042	-19.94	17.87	0.823

As outlined in Table 4.5, above, the results are statistically insignificant at the five percent level irrespective of the event window analysed, which suggests that negligible announcement effects are achieved. However, a number of compelling considerations can be taken from the data within.

Taking the full sample into consideration, US acquiring firm shareholders appear to experience positive returns upon the announcement of a takeover deal. Acquiring firm shareholders achieve positive returns of 0.104% over the 11-day event window, albeit statistically insignificant. However, over the shorter five-day window, slightly higher returns of 0.378% are achieved, with a maximum return of 16.42% and a minimum of -18.99% being obtained. Further to this, over the five-day window 46.1% of the returns are positive, compared to 53.9% being negative. Similarly, for the 11-day window, 48.1% of the returns are positive, compared to 52.9% being negative.

Cross-Border Sub- Sample CAARs

Table 4.5 suggests that the acquiring shareholder wealth effects in cross-border deals are varied. Returns are positive over five days at 0.119%, albeit insignificant. Yet over the slightly longer 11-day event window returns are negative, though very small (-0.113%) and

statistically insignificant, signifying that there is no value creation for shareholders in cross-border deals over the longer window, but rather they breakeven.

Domestic Sub-Sample CAARs

Positive returns are achieved from domestic deals over the five-day window, though minute and insignificant. Similar results are achieved for over the 11 days for the domestic sample, with average returns of 0.149% being achieved.

4.4 Research Question 2

RQ.2: Are there significant differences in acquiring firm shareholder returns for domestic as oppose to cross-border deals?

Table 4.6, below, illustrates the results of the independent sample t-test, which indicate that returns to acquiring shareholders appear to be greater in domestic deals than cross-border deals, albeit statistically insignificant, during both the five and 11-day event windows studied. We can therefore conclude that though cross-border effects of -0.3125% and -0.2623% occur for the five-day and 11-day windows, respectively, the effects are not statistically significant.

Table 4.6: Differences in Returns from Domestic and Cross-Border Deals						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Cross-Border	42	0.1195	0.0614	0.783	-0.275
	Domestic	201	0.4320	0.0680		
CAR (-5, +5)	Cross-Border	42	-0.1133	0.0648	0.831	-0.213
	Domestic	201	0.1497	0.0742		

4.4.1 Differences in Returns due to Payment Method

Table 4.7: Differences in Returns Due to Payment Method						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Cash	177	0.9588	0.0585	0.060	1.907
	Equity/Mix	66	-1.179	0.0838		
CAR (-5, +5)	Cash	177	0.7415	0.0653	0.050	1.982
	Equity/Mix	66	-1.604	0.0874		

Approximately 73% of all deals are financed predominantly by cash and the remaining 27% are financed by equity or a hybrid combination of the two. The independent t-test results in Table 4.7 indicate a statistically significant difference at the 10% level in returns from cash as oppose to equity/hybrid payment methods for both windows. Cash deals generate marginally positive returns for acquiring shareholders of 0.95% and 0.74% for the five-day and 11-day windows respectively, whereas equity/hybrid deals saw shareholders achieving significant negative returns of -1.17% and -1.6% (t-stats = 1.907 and 1.982).

4.4.2 Differences in Returns due to Industry Relatedness

Table 4.8: Differences in Returns Due to Industry Relatedness						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Related	98	0.1492	0.0777	0.679	-0.415
	Unrelated	145	0.5322	0.0585		
CAR (-5, +5)	Related	98	-0.3585	0.0793	0.429	-0.792
	Unrelated	145	0.4171	0.0678		

Table 4.8 demonstrates that returns from related industry deals do not differ from those of unrelated deals, according to the independent sample t-test results. The results are statistically insignificant for both the five and 11-day windows. However, the five-day window suggests firms acquiring in unrelated industries achieve more positive returns, at 0.53% on average, compared to 0.14% in related industries. Correspondingly, in the 11-day window, unrelated acquisitions continue to yield higher returns (0.41%) in contrast to related acquisitions (-0.35%), on average. Thus, the market appears to respond more positively to unrelated deals, albeit insignificantly.

4.4.3 Differences in Returns due to Prior Toehold

Table 4.9: Differences in Returns Due to Prior Toehold						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Toehold	4	0.7188	0.0657	0.918	0.103
	No Toehold	239	0.3723	0.0669		
CAR (-5, +5)	Toehold	4	1.6187	0.0641	0.675	0.420
	No Toehold	239	0.0789	0.0728		

Table 4.9 illustrates that there is no statistically significant difference between the returns of an acquirer with a prior toehold or the returns of those without, regardless of the event window. However, firms with a prior toehold do appear, on average, to achieve more positive returns, albeit statistically insignificant. Firms with a prior toehold achieved returns of 0.71% and 1.6% during the five and 11-day windows, respectively, compared to 0.37% and 0.078% for those who did not hold a prior toehold. By establishing a toehold in advance of initiating a bid, a positive signal is sent to the market which reassures shareholders. If the bidding firm was to be defeated by a rival bid, the firm would still gain from selling their established toehold at a premium to the competitor. However, the announcement effect is decreased due to the existence of a prior toehold as the market may already expect a deal.

4.4.4 Differences in Returns Pre and Post-Crisis

Table 4.10: Differences in Returns Pre and Post Crisis						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Pre-Crisis	68	0.0119	0.0676	0.595	-0.532
	Post-Crisis	175	0.5203	0.0666		
CAR (-5, +5)	Pre-Crisis	68	-1.227	0.0723	0.075	-1.790
	Post-Crisis	175	0.6216	0.0722		

Pre-crisis deals are defined as those completed before 2008, whereas post-crisis takeovers occur from 2008-2013. The onset of the global financial crisis in 2008 resulted in the cessation of the sixth merger wave, therefore making pre-crisis deals part of the merger wave and post-crisis deals not. Surprisingly, post-crisis deals achieve higher returns, on average, than pre-crisis deals for both the five and 11-day windows, suggesting that confidence has returned to the markets. However, the 11-day window demonstrates the only significant difference (at the 10% level), with negative returns of -1.22% pre-crisis and positive returns of 0.62% post-crisis (t stat = -1.790).

4.5 Univariate Analysis of Deal and Firm Specific Characteristics

RQ.3: Are there significant differences across the deal and firm specific characteristics of domestic and cross-border acquisitions?

The findings of research question three, employing a univariate analysis of the key transaction and company specific characteristics examined are exhibited in this section.

Table 4.11, overleaf, illustrates the results of tests examining the differences in gearing ratios, cash resources and the relative size of acquirers in cross-border and domestic deals. (Please refer to Table 3.4 in Chapter Three for variable definitions.)

Table 4.11: Differences in Relative Size, Gearing and Cash Resources for Domestic and Cross-Border Deals

Variable		N	Mean (%)	Std. Dev	P-Value	T-Statistic
Relative Size	Cross-Border	40	21.25	0.2333	0.006	-2.786
	Domestic	194	37.19	0.6089		
Gearing Ratio	Cross-Border	42	18.89	0.1324	0.704	-0.381
	Domestic	201	20.02	0.1826		
Cash Resources	Cross-Border	42	9.92	0.0883	0.184	-1.333
	Domestic	201	12.30	0.1083		

As depicted in Table 4.11, domestic acquirers appear smaller², more cash rich and more highly geared than their cross-border counterparts. However, the difference in the two sub-samples is only statistically significant under the relative size variable (1% level) (t-stat = -2.786). Nonetheless, the remaining variables provide significant information, albeit insignificant.

Overseas targets are just over one-fifth of their acquirers' size (21%) in contrast to domestic targets which are almost 40% of the size of their acquirer. These findings are not surprising as the US is home to many of the world's largest companies and cross-border deals generally consist of an immense international firm acquiring a relatively smaller foreign target firm.

The average gearing ratio (total debt to total assets) of domestic acquirers is 20%, which is marginally higher than that of cross-border acquirers at 18.9%, albeit statistically insignificant. Though the gearing ratios do not appear to be very high, particularly with the competitive interest rates available, we need to know more about the nature of the debt in order to provide a more detailed interpretation. Furthermore, domestic acquirers appear to have greater cash resources at their disposal, with a cash to total assets ratio of 12.3% compared to that of 9.92% of cross-border acquirers, albeit statistically insignificant.

² When analysing the relative size of firms, nine acquirers were deemed to have excessively high relative sizes that were causing skewness in the data. Such deals were excluded to augment the quality of results. Firms included: Thomson Reuters Corp (x2), Sun Microsystems Corp, Valeant Pharmaceuticals Intl, AMR Corp, Ralcorp Holdings Inc, Inverness Med Innovations Inc (x2) and Motorola Inc.

Overall, the gearing and cash profiles of cross-border and domestic acquirers appear relatively the same, which is not to unusual as the US tends to have highly acquisitive firms.

Figure 4.6: Exchange Rate Movements During the Sample Period

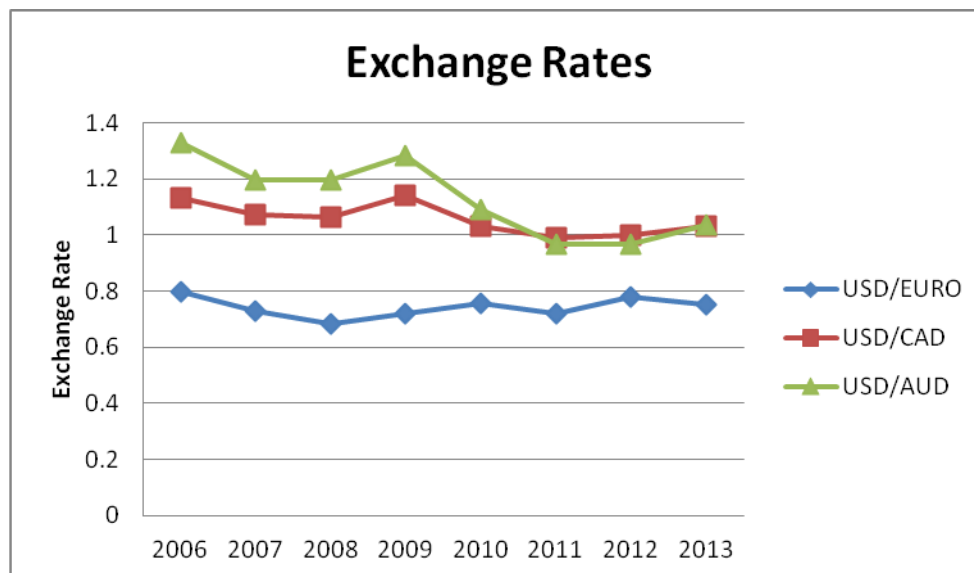


Fig. 4.6, above, illustrates the movement of the US dollar against the Euro, Canadian dollar and Australian dollar over the period 2006-2013, indicating that the US dollar has weakened against each of the three currencies. The smallest depreciation occurred against the Euro, where in 2006 \$1USD was equal to €0.797 but yet only equal to €0.753 in 2013. Similarly, the Canadian dollar and Australian dollar have also strengthened against the US dollar. The Australian dollar strengthened the most, with \$1 USD equal to \$1.32 AUD in 2006, but falling to only \$1.035 AUD in 2013. These findings suggest that cross-border targets have become relatively more expensive for US acquirers and may have a negative effect on acquiring shareholder returns.

Table 4.12: Impact of Exchange Rate on Returns in Cross-Border Deals						
Event Window (days)		N	Mean (%)	Std. Dev	P-Value	T-Statistic
CAR (-2, +2)	Weak ER	23	0. 2482	0.0608	0.883	0.148
	Strong ER	19	-0. 0361	0.0637		
CAR (-5, +5)	Weak ER	23	-0. 4430	0.0580	0.722	-0.358
	Strong ER	19	0. 2857	0.0738		

It is evident from Table 4.12, above, that no significant differences exist in returns achieved by acquiring shareholders in respect to the strength of the exchange rate (ER)³. Positive returns, averaging 0.24%, are achieved during the five-day window when the ER is weak, yet negative returns result when the ER is deemed to be strong. Contrastingly, during the 11-day window negative returns of -0.44% are achieved with a weak ER and positive returns, averaging 0.285%, result when the ER is strong, albeit insignificant.

4.6 Multivariate Analysis of Deal and Firm Specific Characteristics

RQ.4: What is the role of deal and firm specific characteristics (i.e. acquirers' gearing, acquirers' cash resources, size and payment form) in explaining acquiring firm shareholder returns in domestic and overseas acquisitions?

In order to answer the final research question, this section presents the results of the regression analysis utilised to establish the effect of the transaction and firm specific characteristics on the full sample, as well as the cross-border and domestic sub-samples.

4.6.1 Multivariate Analysis- Full Sample

Table 4.13, overleaf, illustrates the results of multiple regressions conducted in order to establish the effect of the transaction and firm specific characteristics on the full sample. The equations for each model as well as the p-values of each variable are reported in the table.

³ Based on the US (home country of each buyer), we take the currency's average exchange rate (units of foreign currency per dollar) for the sample period 2006-2013 and subtract the currency's exchange rate for the year of the takeover. This difference is then divided by the average exchange rate. As a result, positive (negative) values indicate the currency is strong (weak) relative to the U.S. dollar.

CARs from the five-day event window were the dependent (y) variable for each of the seven regression models described in the table. The five-day returns were utilised in order to examine the shortest-term wealth effects, though models using the 11-day window CARs returned similar results. Each analysis began with the insertion of control variables, followed by the firm specific variables being included and excluded individually based upon their explanatory power. The concluding regression model for the full sample as well as sub-samples includes all of the variables.

Table 4.13: Multivariate Analysis of Full Sample							
Full Sample	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7
Constant	-0.014	-0.011	-0.011	-0.012	-0.016	-0.030	-0.036
Pay Method	0.022 (0.019)**	0.022 (0.026)**	0.021 (0.029)**	0.021 (0.030)**	0.020 (0.034)**	0.027 (0.006)*	0.027 (0.007)*
Rel. Size	0.000 (0.126)						0.000 (0.092)***
CB/ Dom.		-0.004 (0.723)					-0.002 (0.848)
Toehold			-0.001 (0.522)				-0.001 (0.653)
Relatedness				0.000 (0.962)			-0.003 (0.718)
Cash Resources					0.042 (0.298)		0.044 (0.287)
Gearing						0.073 (0.003)*	0.080 (0.001)*
N	243	243	243	243	243	243	243
R² (%)	3%	2.1%	2.2%	2%	2.5%	5.5%	7.5%
F	3.697	2.555	2.701	2.492	3.046	7.047	2.738
F Sig.	0.026**	0.080***	0.069***	0.085***	0.049**	0.001*	0.009*
Adj. R² (%)	2.2%	1.3%	1.4%	1.2%	1.7%	4.8%	4.8%

*Significant at the 1% level, **Significant at the 5% level, ***Significant at the 10% level.

Equation 7 from Table 4.13 illustrates the regression analysis results with every variables included and is deemed statistically significant at the 1% level (F stat= 2.738), with a R^2 value of 7.5%. However, when the variables are each analysed individually, prior toehold, relatedness and cash resources are all statistically insignificant in each of the seven models tested. Contrastingly, payment method, relative size and gearing are all deemed statistically significant variables in determining the returns to acquiring shareholders over the five-day event window. The variable incorporated as a means for testing for a cross-border effect has a negative co-efficient, though statistically insignificant, which indicates that cross-border deals do not differ in explanatory power to their domestic counterparts.

Each of the seven models indicate that payment method has statistically significant explanatory power at the 5% or 1% level, depending on the model. The suggestion is that all cash deals have a positive effect on returns to acquiring shareholders, whereas equity or hybrid forms of payment have a negative impact. Similarly, relative size is a statistically significant variable at the 10% level. The positive co-efficient (0.000) suggest that returns improve, albeit marginally different from zero, for acquiring firm shareholders the larger the size of the target relative to the size of the acquirer. Finally, according to Table 4.13, gearing is also a statistically significant variable, indicating that firms with greater debt levels relative to their assets make significantly positive returns for their shareholders over the five-day window.

4.6.2 Multivariate Analysis- Cross-Border Sub-Sample

Table 4.14, below, illustrates the multivariate analysis results of the transaction and firm characteristics in relation to the cross-border sub-sample only. The variable for differentiating between cross-border and domestic deals has been excluded as all deals are cross-border. However, a variable measuring differences in the exchange rate has been included for this model only.

Table 4.14: Multivariate Analysis of the Cross-Border Sample							
Cross-Border	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6	Equation 7
Constant	-0.058	-0.053	-0.053	-0.054	-0.074	-0.057	-0.083
Pay Method	0.076 (0.001)*	0.070 (0.001)*	0.071 (0.001)*	0.071 (0.001)*	0.075 (0.000)*	0.076 (0.000)*	0.083 (0.001)*
Rel. Size	0.000 (0.389)						0.000 (0.326)
Toehold		0.002 (0.701)					0.002 (0.579)
Relatedness			0.001 (0.965)				-0.011 (0.582)
Cash Resources				0.005 (0.964)			0.030 (0.781)
Gearing					0.098 (0.128)		0.102 (0.176)
Ex. Rate						-0.133 (0.238)	-0.054 (0.669)
N	42	42	42	42	42	42	42
R² (%)	26.3%	25.1%	24.9%	24.9%	29.2%	27.5%	32.7%
F	6.955	6.550	6.452	6.452	8.056	7.406	2.359
F Sig.	0.003*	0.004*	0.004*	0.004*	0.001*	0.002*	0.045*
Adj. R² (%)	22.5%	21.3%	21.0%	21.0%	25.6%	23.8%	18.8%

*Significant at the 1% level, **Significant at the 5% level, ***Significant at the 10% level.

Equation 7 from Table 4.14 indicates the results of the regression with every variable included and is statistically significant at the 5% level, demonstrating an R² value of 32.7%. Though, it must be noted that the sample size is relatively small, limiting the analysis. However, when each of the variables are analysed individually, payment method is the only

statistically significant variable. The remainder of the variables are deemed insignificant, including the variable measuring the strength of the exchange rate. Payment method is significant at the 1% level, despite the composition of the regression model, which signifies its influence in explaining the returns to acquiring shareholders. Comparable to the findings of the full sample, CARs appear to increase when takeover deals are financed by cash, yet there is a negative price reaction to the announcement of equity financed bids.

4.6.3 Multivariate Analysis- Domestic Sub-Sample

Table 4.15, overleaf illustrates the multivariate analysis results of the transaction and firm specific characteristics in relation to the domestic sub-sample only. There are only six models for the domestic sub-sample as the cross-border/domestic variable and the exchange rate variable are irrelevant.

Based on the results of the six regression models, gearing is the only significant variable. All other variables are insignificant, including payment method which has been significant at the 1% level for both the full sample and cross-border sub-sample. Gearing is significant at the 5% level when tested individually as well as when tested with all other variables, signifying its substance in explaining the returns of acquiring shareholders. In line with the findings of the full-sample, the result of the domestic sub-sample suggests that firms who use debt to finance their activities are less like to engage in value-destroying activities and therefore boost investor confidence.

Table 4.15: Multivariate Analysis of the Domestic Sample

Domestic	Equation 1	Equation 2	Equation 3	Equation 4	Equation 5	Equation 6
Constant	-0.006	0.005	0.006	-0.004	-0.008	-0.028
Pay Method	0.013 (0.226)					0.015 (0.192)
Rel. Size	0.000 (0.142)					0.000 (0.132)
Toehold		-0.002 (0.295)				-0.002 (0.429)
Relatedness			-0.004 (0.685)			-0.005 (0.650)
Cash Resources						0.066 (0.153)
Gearing				0.070 (0.114)	0.060 (0.023)**	0.075 (0.005)*
N	201	201	201	201	201	201
R² (%)	1.7%	0.6%	0.1%	1.3%	2.6%	6.8%
F	1.739	1.102	0.165	2.526	5.259	2.349
F Sig.	0.178	0.295	0.685	0.114	0.023**	0.033**
Adj. R² (%)	0.7%	0.1%	-0.4%	0.8%	2.1%	3.9%

*Significant at the 1% level, **Significant at the 5% level, ***Significant at the 10% level.

4.7 Conclusion

This chapter has outlined the findings from the various forms of data analysis completed as part of this research study. It incorporates a detailed summary of the results obtained, with a particular emphasis on the results deemed to be the most applicable to the research questions as outlined in the previous chapter. Table 4.16 contains a brief summary of the statistically

significant variables found in the analyses of the full sample as well as the domestic and cross-border sub-samples. Furthermore, Table 4.17, overleaf, compares the hypothesised impact of each of the variables as given in Chapter Three to the actual findings achieved. The following chapter discusses these findings in more detail and will compare and contrast with the relevant literature.

Table 4.16: Summary of Significant Variables			
	Full Sample	Domestic	Cross-Border
Payment Method	X		X
Relative Size	X		
Toehold			
Relatedness			
Cash Resources			
Gearing	X	X	

Table 4.17: Comparison of Hypothesised Findings vis-à-vis Actual Findings

Variable	Hypothesised Direction	Previous Empirical Studies	Findings
Domestic/ Cross Border Acquisition	Positive	Conn et al (2005) Feito-Ruiz and Mendez- Requejo (2011)	Negative (not statistically significant)
Cash Resources	Negative	Jensen (1986)	Positive (not statistically significant)
Gearing	Positive	Ismail and Krause (2010)	Positive (stat. significant @ 5%)
Relatedness	Positive	Sudarsanam et al (1996) Feito-Ruiz and Mendez-Requejo (2011)	Negative (not statistically significant)
Bidder Toehold	Positive	Sudarsanam et al (1996) Danbolt and Maciver (2012)	Negative (Full and Dom) (not statistically significant) Positive (CB) (not statistically significant)
Payment Method	Positive	Francis et al (2008)	Positive (stat. significant @ 5%)
Relative Size	Negative	Moeller et al (2004) Feito-Ruiz and Mendez- Requejo (2011) Danbolt and Maciver (2012)	Null (stat. significant @ 10%)
Exchange Rate	Negative	Harris and Ravenscraft (1991) Cakici et al (1996) Moeller and Schlingemann (2005)	Negative (not statistically significant)

DISCUSSION

Chapter Five:

DISCUSSION

5.1 Introduction

This chapter contains a discussion of the research findings outlined in Chapter Four and relates these findings to the relevant literature contained in Chapter Two.

5.2 Announcement Effects for Domestic and Cross-Border Acquiring Shareholders

This piece of research investigates the wealth effects for US shareholders acquiring domestically or cross-border following the announcement of M&A deals. The method utilised in this study was the Market Model, in line with the work of Moeller et al (2004) and Kohers et al (2007). We find there are positive announcement returns for shareholders over both the five-day and 11-day event windows. However, these returns are deemed to be insignificantly different from zero, similar to the results of Gregory and McCorriston (2005) who reported positive but insignificant five-days CARs for firms acquiring in the US during their sample period 1984-1995.

It is apparent that acquiring shareholders attain slightly more positive returns during the shorter five-day window, suggesting that much of the wealth is captured around the announcement date. This finding supports the work of Shen et al (2012), suggesting that when an acquisition is announced the stock market adjusts the valuation of the firms involved in the deal based on all publicly available information, making the US market semi-strong efficient. The results of this study, albeit insignificant, are similar to prior empirical research undertaken on the US M&A activity, which have indicated that returns to US acquirers are positive surrounding the announcement date. Markides and Oyon (1998) find positive abnormal returns to be generated for 125 of 236 deals (53%), with a median value of 0.18%, and therefore concluded that value was created for US acquirers. Similarly, Moeller and Schlingemann (2005) find positive three-day returns of 0.307% for cross-border US acquirers and of 1.173% for domestic US acquirers during their sample period 1985-1995.

There are numerous possible explanations as to why our results are insignificant. Firstly, as the US is one of the most highly acquisitive countries in the world, M&A activity may be

considered as the 'norm' for US firms by investors. Furthermore, as our sample includes the more significant buyers in the market, acquiring smaller firms may have little effect on the daily activities of the acquirer and thus creating little or no reaction by investors. Finally, the small positive returns may be attributable to the time-frame of the study as it includes the market turbulence experienced during global financial crisis and the end of the sixth merger wave.

5.2.1 Domestic Sample Analysis

The first research question alludes to the short-term wealth effects attained in domestic and cross-border acquisitions after the announcement of a takeover deal. The average returns achieved in domestic deals are positive at 0.432% and 0.149% for the five-day and 11-day windows, respectively, albeit small and statistically insignificant. These results are consistent with Moeller et al (2004) and Moeller and Schlingemann (2005) whom also found positive returns.

Moeller et al (2004) examine domestic acquisitions made by US public firms from 1980 to 2001 and find statistically significant positive returns of 1.1% over a three-day window. Similarly, Moeller and Schlingemann (2005) studied domestic US acquisitions between 1985 and 1995 and found statistically significant positive returns of 1.173% over a three-day window. Though our results are similar to the aforementioned studies, in terms of being positive, the smaller positive returns achieved in this study may be attributable to the onset of the global financial crisis in 2008. The crisis subsequently led to a reduction in M&A activity and deal values, bringing the sixth merger wave to an end. The lower returns achieved in this study, in comparison to previous studies, may be due to uncertainty within global markets in 2008 and the subsequent years, suggesting that external factors may be hampering the returns from M&As. An example of this is the second largest domestic deal, Merck and Co's takeover of Schering-Plough Corp, which occurred in 2009 amidst turbulence, uncertainty and distress, thus suggesting that returns achieved in the short-term may not be the optimal gauge of success.

However, many studies do find different results, such as Andrade et al (2001) whom study domestic US deals from 1973-1998 and concluded that domestic deals achieve negative average returns of -0.7% for acquiring firm shareholders over the three-day window. Rheaume and Bhabra (2008) similarly study US acquisitions between 1993 and 2005 and

found that unrelated acquisitions did not achieve gains for domestic acquiring firm shareholders.

In summary, though prior studies are not unanimous with their findings, our results are largely consistent with other research involving domestic US acquisitions.

5.2.2 Cross-Border Sample Analysis

The returns to US acquiring shareholders engaged in cross-border acquisitions are found to be varied but almost null over the two event windows. Positive returns of 0.119% are found over the five-day window and negative returns of -0.113% over the 11-day window, albeit all insignificant. Over the five-day window, 23 deals achieve positive returns and 19 deals achieve negative returns, albeit all insignificant. We can therefore assert that on average cross-border acquisitions create value for acquiring firms during the five-day window. However, due to the marginality of the returns, it is perhaps more appropriate to conclude that acquiring firm shareholders breakeven in cross-border takeovers. Evidence is quite mixed in prior literature relating to the returns achieved by acquiring shareholders in cross-border transactions. Our results appear to be similar to those of Markides and Oyon (1998), Moeller and Schlingemann (2005), Francis et al (2008) and Deshpande et al (2012) whom found positive returns during short three-day and five-day windows.

Markides and Oyon (1998) examine cross-border acquisitions undertaken by US firms and find 125 of the abnormal returns to be positive and 111 to be negative, ranging from -11.6% to +20.4% with a median value of +0.18%. They conclude that cross-border acquisitions are value-creating for US acquiring firms. Similarly, Moeller and Schlingemann (2005) found three-day returns of 0.307% for US cross-border acquiring shareholders during the period 1985-1995. Francis et al (2008) also analyse cross-border transactions by US firms from 1990-2003 and find that acquirers embarking in cross-border acquisitions experience three-day abnormal stock returns of 0.96%. Finally, Deshpande et al (2012) analyse global cross-border acquisitions during the period 1984-2008. They find statistically significant returns of 0.5%, on average, for firms from developed countries such as the US acquiring developing country targets.

Contrastingly, Datta and Puia (1995) examine cross-border acquisitions undertaken by US firms from 1978 to 1990 and find that, on average, cross-border deals do not create wealth for

acquiring firm shareholders during a two-day event window. They find cultural differences play a large role in the poor returns achieved.

In summary, though mixed evidence can be found, the results of this study, albeit insignificant, are comparable to several key papers in the area of M&A research. Returns to cross-border acquirers are positive, albeit very small, in many prior studies during short three or five day event windows, consistent with our findings.

5.3 Differences in Returns: Existence of Cross-Border Effect

The second research question of this paper aims to determine if significant differences exist in shareholder returns from domestic and cross-border deals. The findings presented in chapter five suggest that while domestic acquirers achieve more positive returns and cross-border acquirers even achieve negative returns over the 11-day window, the differences are not significant in the returns attained by domestic and overseas acquiring firm shareholders. Consequently, we conclude that a significant cross-border effect does not exist in this sample. The findings are unlike those disclosed in previous studies such as Conn et al (2005), Moeller and Schlingemann (2005) and Francis et al (2008), on the basis that they find the returns to be significantly different.

Conn et al (2005) analyse domestic and cross-border acquisitions undertaken by UK acquiring firms from 1984-1998. They report that domestic acquisitions achieve higher three-day returns than cross-border deals at 0.68% and 0.33%, respectively. Similarly, Moeller and Schlingemann (2005) find significantly lower three-day returns for US cross-border acquirers (0.307%) compared to US domestic acquirers (1.173%) during the period 1985-1995. They suggest that the lower returns achieved in cross-border transactions are due to global diversification and acquiring targets in countries with more highly governed environments and/or with weaker shareholder rights.

Francis et al (2008) also analysed a sample of cross-border deals and domestic deals undertaken by US firms from 1990-2003. They found that acquirers embarking in cross-border acquisitions experienced significantly lower average three-day abnormal stock returns (0.965) than those in domestic acquisitions (1.43%).

In conclusion, while our results are similar to the aforementioned studies in terms of cross-border acquisitions achieving lower returns than their domestic counterparts, our results are statistically insignificant unlike the prior studies. The absence of a significant cross-border effect may be due to the US market being semi-strong efficient and having a vast amount of information available. Furthermore, we also note that the majority of targets included in the cross-border sample are from developed countries and therefore have similar standards and governance levels.

5.4 Determinants of Acquiring Shareholder Returns

Another key objective of this research was to examine the determinants of acquiring shareholder returns. This section presents a discussion on the main transaction and firm-specific characteristics deemed to be significant in the study, as detailed in Chapter Five. The control variables- payment form and relative size- were deemed to be statistically significant. However, the only firm specific variable determined statistically significant is gearing, in both the full sample and domestic sub-sample.

5.4.1 Method of Payment

The method of payment has been recognised as an influential control variable in a number of prior studies, including those of Cornu and Isakov (2000), Moeller and Schlingemann (2005), Ismail and Krause (2010) and Gregory and O'Donohoe (2014). Method of payment is deemed statistically significant at the 1% level in determining acquiring shareholder returns across the full and cross-border samples. Cash deals achieve marginally positive returns of 0.95% and 0.74% during the five-day and 11-day windows, respectively, whereas equity and mixed payment deals achieve negative returns for shareholders of -1.17% and -1.6% consistent with prior studies such as Walker (2000), Moeller and Schlingemann (2005) and Martynova and Renneboog (2009).

Similar to our own results, Walker (2000) finds US acquiring firm shareholders achieve positive returns in deals paid for by cash (2.17%) and negative returns for those financed by equity and mixed payment (-1.7%) upon analysing a sample of 278 US acquisitions from 1980 to 1996. Walker (2000) finds that asymmetric information between the bidder and the target regarding the value of the bidder shares enables the bidder to offer shares if they are overvalued and to offer cash if they are undervalued. Similarly, Moeller and Schlingemann (2005) found that returns improved the greater the proportion of cash used in hybrid payment

schemes in their study of US domestic and cross-border takeovers from 1985-1995. More recently, Martynova and Renneboog (2009) analysed a sample of 1,361 M&As conducted in 26 European countries between 1993 and 2001 and found a significantly negative price reaction following the announcement of equity-paid acquisitions.

Contrastingly, Dutta et al (2013) studied a sample of 1,300 M&A deals by Canadian acquirers from 1993-2001 and found a significant positive effect for equity financed cross-border acquisitions.

Though there is varied evidence on the optimal method of payment, it can be concluded that cash has a significant positive announcement effect for the full and cross-border samples in this study and there are a number of reasons as to why cash is the preferred payment method. Consistent with the signalling hypothesis and the findings of Dutta et al (2013) and Gregory and O'Donohoe (2014) stock offers signify overvaluation of the bidder's stock and/or uncertainty of the target firm's true value and investors therefore fear overpayment and subsequent wealth losses through a drop in their share price. Equity payments also lead to issues regarding control for bidding shareholders. Furthermore, this study's timeframe incorporates both pre and post the most recent global financial crisis. Pre-crisis, debt was available at attractive interest rates, allowing firms to finance acquisitions with cash and post-crisis, firms were more risk adverse and spending own-resources may have been seen as the safest option for expansion.

We can also assume that these significant buyers are profitable and have cash on hand to invest in M&As as part of their growth strategies. Furthermore, in line with the views of Martynova and Renneboog (2008), expansion through international acquisitions allows firms to exploit differences in tax systems. In recent times, US firms have been implementing manoeuvres known as "tax inversions" in order to reduce their corporate tax bills whereby they purchase a company in a tax-friendly county, merge the two firms into one and then renounce the firm's US citizenship, making it subject to the tax rate of the new country (Forbes, 2014). For example, there was much speculation that US drugstore chain Walgreens would move its tax base to Britain following its \$6.7 bn takeover of Alliance Boots in August of this year, though they eventually decided against it (Financial Times, 2014).

Finally, overseas acquirers tend to be larger firms buying smaller targets and tend to have larger cash resources as well as the capacity to maintain high levels of gearing, thus making cash the optimal payment method. However, paying with cash can also indicate management

entrenchment problems as indicated by Mann and Sicherman (1991). Managers may participate in M&A activity as firm size is positively related to their own compensation levels. Furthermore, managers may use hoarded cash piles to pay for such investment activities as a means of avoiding being monitored in capital markets.

5.4.2 Relative Size

Relative size has also been cited as an important control variable in prior empirical studies, such as Moeller et al (2004), Dos Santos et al (2008), Danbolt and Maciver (2012) and Dutta et al (2013). Target firms are significantly smaller (at the 1% level) in cross-border deals at 21% of acquirer size compared to domestic targets at 40% of acquirer size, consistent with the findings of Dos Santos et al (2008) who found that foreign target firms are relatively smaller in size than their domestic counterparts.

Relative size is deemed to be a significant explanatory variable (at the 10% level) in the full sample only. The positive co-efficient (0.000) indicates that the larger the relative size of the target, the higher the returns to acquiring firm shareholders, similar to the results of Fuller et al (2002) and Humphrey-Jenner and Powell (2014). Fuller et al (2002) tested a sample of 3,135 US domestic and cross-border deals between 1990 and 2000 and found that for private targets, CARs to acquiring shareholders become more positive as the target size increases. Similarly, Humphrey-Jenner and Powell (2014) tested a sample of 17,647 takeovers from 45 countries and found relative size to be positive and significant, indicating that scale was value-enhancing for acquiring shareholders, on average. Contrastingly, Francis et al (2008) found relative size to be significant in explaining returns, with larger acquirers achieving more positive returns.

In summary, though there is mixed evidence, our findings appear to be similar to prior empirical studies in the area. The findings in relation to relative size suggest that larger merger combinations achieve cost savings via operational synergy and larger economies of scale and scope, which leads to increased revenues and returns, as indicated by Gregory and O'Donohoe (2014). Furthermore, it would appear that US multi-nationals continue to enter into cross-border takeovers, despite the low returns and in some cases break-even results, for a number of reasons. Firstly, acquiring overseas allows for geographical as well as industrial diversification. Secondly, acquiring in tax-friendly countries allows firms to take advantage of favourable tax systems. Finally, large US firms buying smaller cross-border targets also allows for a low-risk method of industry consolidation. Cross-border targets that are smaller

in relative size to their target are less risky, easier to integrate and less likely to result in competitive concerns or need regulatory approval than larger rivals.

5.4.3 Gearing

The examination of gearing ratios, a firm-specific variable, as a determinant of shareholder returns is a relatively new concept in M&A studies and therefore prior studies, such as Ismail and Krause (2010) and Gregory and O'Donohoe (2014) are limited in availability. Domestic acquirers appear to have higher gearing ratios (20%) compared to overseas acquirers (18.8%), albeit statistically insignificant. Furthermore, gearing is deemed statistically significant at the 1% for the full sample and at 5% for the domestic sub-sample in determining returns to acquiring shareholders.

Similar to our own results, Gregory and O'Donohoe (2014) find bidder gearing to have a positive relationship with the returns of domestic acquirers when they examined a sample of 290 UK public company acquisitions from 1990 to 2005. These results are consistent with the free cash-flow hypothesis of Jensen (1986), which suggests that managers endowed with free cash flow will invest it in negative net present value projects, and are supported by the work of Lang et al (1991), Martynova and Renneboog (2000) and Yiannaki (2013).

As domestic acquirers achieve higher returns, albeit insignificant, it suggests that their higher gearing acts as means of debt-monitoring and supports the disciplinary motive of M&A activity. US firms tend to be quite large and interest rates remain highly competitive, enabling large firms to carry high debt levels. However, they must ensure they have the cash to service their debt obligations, which therefore discourages them from spending their cash on value-destroying projects. Furthermore, debt is typically raised in banks and banks are perceived to have superior information and evaluation abilities which enable them to identify bad acquisitions. Moreover, highly geared acquirers purchasing cross-border targets would be considered to be participating in a much riskier investment and for this reason cross-border acquirers are less highly geared.

5.5 Conclusion

This chapter presented a discussion on the findings reported in chapter five in relation to relevant prior empirical studies. This section also discussed the author's perceived reasoning for each of the results obtained. The following chapter presents the conclusions of this research and also provides recommendations for future areas of research.

CONCLUSION

Chapter Six:

CONCLUSION

6.1 Overview

The primary aim of this research was to examine domestic and cross-border takeover activity involving US public companies and the wealth effects for acquiring firm shareholders for the period of 2006-2013. The methodology adopted an event study approach, utilising the market model, and examined two event windows (five-day and 11-day) in order to CARs around the announcement date. The results demonstrate that acquiring firm shareholders achieve more positive returns of 0.378% over the five-day window in comparison to 0.104% over the longer 11-day window, albeit statistically insignificant. However, the results are marginally different from zero for acquiring shareholders, indicating a breakeven effect. Furthermore, domestic acquirers achieve more positive returns than their cross-border counterparts for both windows, albeit insignificant, with maximum returns of 17.87% and minimum returns of -19.94% being achieved.

The secondary objective of this research was to examine the key determinants of acquiring shareholder returns, with a particular focus on transaction and firm-specific characteristics such as firms' gearing and cash levels. Initially a univariate analysis was conducted in order to examine the differences in returns achieved across numerous sub-samples. Following this, a multivariate analysis was undertaken in order to uncover the significant determinants of shareholder wealth. The findings indicate that payment method, relative size and gearing level of the acquirer are the statistically significant variables. Deals paid for in cash generate significantly positive returns of 0.74% in comparison to equity and hybrid financed deals which achieve negative returns of -1.6%. These results support the signalling hypothesis, whereby stock offers signify overvaluation of the bidder's stock and/or uncertainty of the target firm's true value and investors therefore fear overpayment and subsequent wealth losses through a drop in their share price

Similarly, domestic targets are significantly larger than cross-border targets in terms of the size of the acquiring firm. As domestic acquirers were seen to achieve higher returns, albeit insignificant, it suggests that larger merger combinations achieve cost savings via operational synergy and larger economies of scale and scope, which leads to increased revenues and returns. The findings also suggest that overseas acquirers purchase targets that are smaller in relative size

to their acquirer as they are less risky, easier to integrate and less likely to result in competitive concerns or need regulatory approval than larger firms.

Finally, the gearing ratio of the acquirer is the only significant firm-specific characteristic, significant in both the full and domestic samples. Domestic deals are perceived to use their gearing ratios as a means of debt-monitoring and discipline as it discourages managers from spending cash on value-destroying activities.

6.2 Recommendations for Areas of Future Research

This study, as with all areas of research, has a number of limitations (as documented in chapter four) and as such there remains significant opportunities of further research.

Firstly, though there is no consensus as to the most advantageous model and event window to use, perhaps future research could base itself around comparing results achieved from the different models and establishing the most appropriate model to use.

This study focuses on the time-frame 2006-2013, which includes the year 2008 and the onset of the global financial crisis. The inclusion of 2008 may have acted as a limitation and perhaps future studies could exclude this year. Similarly, an extended time-frame would increase the sample size and combat the limitations involved with a small sample sizes. Furthermore, future research could perhaps compare the returns to US acquiring firms across the different merger waves.

Another recommendation would be to conduct a post-merger analysis which looks at the merged entity's profitability, productivity, integration process, corporate culture, divestments and longer term wealth effects. This would allow for a more in-depth analysis of the firms' longer-term strategies and underlying motives for conducting the takeovers.

Furthermore, a more in-depth analysis regarding the gearing levels and the nature of the debt (i.e. bank loans, bonds, etc) utilised by acquiring firms would allow for interesting future research in the context of chosen payment methods and market reactions.

This study focused on acquiring shareholder returns only. An analysis of target shareholder returns alongside those of acquiring firm shareholder returns could also be an area of further research. In addition, to delve more deeply into financial synergy, more analysis could be conducted on the target firm's and post merger firm's resources.

Finally, this research only had one grouping for cross-border targets and one for domestic targets, whereas future research could examine if there are differences in returns depending on the target firm's region (i.e. Eastern or Western) or the industries involved. Furthermore, a comparison of the results from a nation in close proximity, such as Canada (of which accounted for the highest amount of cross-border deals in this study) would make for interesting research.

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APPENDICES

APPENDICES

Appendix A: Personal Reflection of the Dissertation Process

The process of writing this dissertation has been one of the most stressful, challenging and frustrating experiences that I have encountered to date. However, at the same time it has also been one of the most rewarding and confidence boosting experiences of my lifetime. When I think back to September, when the dissertation process was just in its opening phases and I was still clueless as to what topic to choose, I am amazed at how far I have come and how much I have achieved. The skills and knowledge that I have gained whilst completing this dissertation will be invaluable as I leave the walls of WIT behind and set out on my journey to establish a fulfilling career.

The dissertation process began in September 2013, whereby each MBS student was asked to compile a list of areas of interest for their research topic. Personally, I found this to be quite a daunting task. Initially, I had no idea about what topic to choose and I wasn't even quite sure of what my options were. Looking back now, I laugh at the feeling of panic that spread through me during a meeting with Professor William Forbes and the Economics and Finance class. It felt as if everyone else in the class had decided upon their research topics and knew where they were going with their dissertations, whereas I was still in the stage of contemplating numerous ideas and therefore blurted out the first idea that popped into my head. However, after much thought and personal debate, I eventually decided to run with idea of Mergers and Acquisitions (M&As), an area very topical in finance today. Though, once I made the decision relief did not come automatically as I found myself questioning my decision and considering changing my topic to SME Finance on numerous occasions. One of the critical learning points that I take from this process is that it is important to take your time, within reason, and investigate all possible areas before finalising your topic. You need to be sure that you have sufficient interest in the topic in order to be able to put the required time and effort into it.

To be completely honest, I feel that the area of research suits my personality and skill-set quite well as I enjoy working on my own and have a high level of attention to detail as well as strong organisational and analytical skills. Therefore, I didn't really mind spending the long hours trawling through prior literature and empirical studies to complete my literature review. Though, I will admit, just like everyone else, there were times that I was ready to pull

my hair out! In particular, it was extremely frustrating the amount of time that it could take to find even just one article in support of a particular point made.

Another critical learning point that I took from the process was the importance of having a plan in place and looking at the bigger picture. This became evident during the findings chapter, which I would consider to be the most time-consuming and frustrating chapter of the whole dissertation due to the amount of data that needed to be collected and cleansed. I found myself on occasions wasting time due to having to repeat tasks because I hadn't looked at the bigger picture. For example, when downloading the share price data I thought that I was saving time by being precise when counting back my 205 trading days. However, though I took weekends into consideration, bank holidays never once crossed my mind and therefore I found myself short a few days. Having to repeat simple tasks like this not only wasted time but left me feeling angry and frustrated with myself.

Despite the stresses, worries and frustrations encountered whilst completing this dissertation, it has still been such a rewarding experience. It is hard to explain the feelings of achievement and pride that have come over me knowing the amount of time and effort that I have put into this final piece of research. Furthermore, I am very appreciative of the whole dissertation process due to the amount of knowledge and skills that I have gained and developed upon during it. Firstly, my knowledge regarding the topics of M&As and the research methods employed to study them has increased significantly. Secondly, the various chapters of the dissertation have enabled me to improve upon numerous skills, namely, brain-storming, decision-making, research, analytical, IT, numerical, organisational, planning, communication (both written and oral), time-management, and selecting vital details from vast amounts of information, to name but a few. All of the aforementioned skills are highly desired by employers and therefore developing them throughout the dissertation process has helped to make me a more employable and sought-after graduate as well as given me talking points on my CV.

On reflection, there are a few aspects of the dissertation that I would have done differently. To start, I would begin collecting my data earlier and change my approach as to the way I collected and laid out the data in order to eliminate time-wasting and avoid having to repeat tasks. I would also save and label more of the articles that I came across for convenience purposes. I found that I dismissed articles that I came across if they weren't relevant to that particular topic that I was working on, though they may have been relevant at a later date.

Finally, I would also have left more time for my discussion. Analysing my findings and relating them back to prior literature was more time-consuming than I had first anticipated and I would have liked to have had more time to research more articles with results similar to mine.

Overall, I found the dissertation process to be enjoyable, fulfilling and extremely beneficial for my future career. It has left me with a sense of pride and achievement, as well as feeling more positive and confident about myself and my capabilities. Nonetheless, I could not have done it without the help of so many people, in particular my supervisor Dr. Sheila O'Donohoe, who offered her continuous guidance, support and expertise throughout the dissertation process, which I am truly grateful of.

Appendix B: Dataset of Cross-Border Deals							
Year Announced	Deal Value (\$mill)	Acquirer Name	Prior Toehold (%)	Target Name	Target Country	Acquirer SIC Code	Target SIC Code
2013	860.43	Jazz Pharmaceuticals PLC	0	Gentium SpA	Italy	2834	2836
2013	1,630.21	Crown Holdings Inc.	0	Mivisa Envases SAU	Spain	3411	3411
2013	8,537.99	Perrigo Co	0	Elan Corp PLC	Ireland	2834	2836
2013	600	Adobe Systems Inc	0	Neolane SA	France	7372	7372
2013	764.29	Hecla Mining Co.	0	Aurizon Mines Ltd.	Canada	1044	1041
2013	764	Stryker Corp	0	Trauson Holdings Co Ltd.	China	3841	5047
2012	629.37	Expedia Inc	0	Trivago GmbH	Germany	4724	4724
2012	1,500	Mohawk Industries Inc	0	Marazzi Group SpA	Italy	2273	3253
2012	734.58	NCR Corp	0	Retalix Ltd.	Israel	3578	7372
2012	3,199.40	UniteadHealth Group Inc	0	JPLSPE Empreendimentos	Brazil	6324	6324

Year Announced	Deal Value (\$mill)	Acquirer Name	Prior Toehold (%)	Target Name	Target Country	Acquirer SIC Code	Target SIC Code
2012	801.96	Medtronic Inc.	0	China Kanghui Holdings	China	3845	3841
2012	850	Stanley Black & Decker Inc	0	Infastech Co Ltd.	Hong Kong	3429	3452
2012	11,460.74	Eaton Corp	0	Cooper Industries PLC	Ireland	3593	3643
2012	700	Amgen Inc	0	Mustafa Nevzat Itlac Sanayii AS	Turkey	2836	2834
2012	1,453.56	URS Corp	0	Flint Energy Services	Canada	8711	1389
2011	1,055.00	Alexion Pharmaceuticals Inc.	0	Enobia Pharma Inc	Canada	2834	2836
2011	688.66	Valeant Pharmaceuticals	0	iNova Pharmaceuticals	Australia	2834	2834
2011	8,500	Microsoft	0	Skype Global Sarl	Luxembourg	7372	7372
2011	705.16	Dresser-Rand Group Inc.	0	Grupo Guascor	Spain	3511	499A
2011	2,129.25	Newmont Mining Corp.	0	Fronteer Gold Inc.	Canada	1041	1041

Year Announced	Deal Value (\$mill)	Acquirer Name	Prior Toehold (%)	Target Name	Target Country	Acquirer SIC Code	Target SIC Code
2010	2,153.90	Wal-Mart Stores Inc	0	Massmart Holdings Ltd	South Africa	5331	5141
2010	603	Owens-Illinois Inc	0	Cia Industrial de Vidros	Brazil	3221	3221
2010	500	Medtronic Inc.	0	Invatec SpA	Italy	3845	3841
2009	1,427.36	Bunge Ltd	0	Moema Group Mills Brazil	Brazil	2075	2061
2009	3,426.39	Cisco Systems Inc.	0	Tandberg ASA	Norway	3577	3663
2009	4,938.41	Thomson Reuters Corp	0	Thomson Reuters PLC	UK	7375	7375
2008	695.00	Symantec Corp	0	MessageLabs Group Ltd	UK	7372	7376
2008	860.79	Monsanto Co	0	De Ruiter Seeds Group BV	Netherlands	115	181
2008	573.90	KLA-Tencor Corp	0	ICOS	Belgium	3827	3674
2008	3,190.85	Staples Inc	0	Corporate Express NV	Netherlands	5943	5045
2008	1,000.00	Sun Microsystems Inc	0	MySQL AB	Sweden	3571	7372

Year Announced	Deal Value (\$mill)	Acquirer Name	Prior Toehold (%)	Target Name	Target Country	Acquirer SIC Code	Target SIC Code
2008	1,191.08	Microsoft Corp	0	Fast Search & Transfer ASA	Norway	7372	7372
2007	543.92	Lam Research Corp	0	SEZ Holding Ltd	Switzerland	3559	3674
2007	1,273.49	Newmont Mining Corp	13.55%	Miramar Mining Corp	Canada	1041	1041
2007	789.46	Coeur d'Alene Mines Corp	0	Bolnisi Gold NL	Australia	1041	1041
2007	1,048.54	Coeur d'Alene Mines Corp	0	Palmarejo Silver & Gold Corp	Canada	1041	1041
2006	878.12	Jabil Circuit Inc	0	Taiwan Green Point Enterprises	Taiwan	3672	3679
2006	1,976.06	Hospira Inc	0	Mayne Pharma Ltd	Australia	2834	2834
2006	604.29	Genzyme Corp	0	AnorMED Inc	Canada	2836	2834
2006	4,835.96	Advanced Micro Devices Inc	0	ATI Technologies Inc	Canada	3674	7372
2006	1,533.34	Peabody Energy Corp	0	Excel Coal Ltd	Australia	1241	1221

Year Announced	Deal Value (\$mill)	Acquirer Name	Prior Toehold (%)	Target Name	Target Country	Acquirer SIC Code	Target SIC Code
2006	863.07	VeriFone Holdings Inc	0	Lipman Electronic Engineering	Israel	3575	3578

Appendix C: Dataset of Domestic Deals						
Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2013	1,400.00	Textron Inc	0	Beech Holdings LLC	3724	3721
2013	1,599.56	Oracle Corp	0	Responsys Inc	7372	7372
2013	993.66	DealerTrack Technologies Inc	0	Dealer.com Inc	7373	7375
2013	6,685.51	Avago Technologies Ltd	0	LSI Corp	3674	3674
2013	1,819.24	The Men's Wearhouse Inc	0	Jos A Bank Clothiers Inc	5611	5611
2013	622.81	RR Donnelley & Sons Co	0	Consolidated Graphics Inc	2752	2752
2013	930	Monsanto Co	0	The Climate Corp	115	7372
2013	800	eBay Inc	0	Braintree Payment Solutions	7389	7372
2013	1,483.58	Stryker Corp	0	MAKO Surgical Corp	3841	3842

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2013	1,983.61	Packaging Corp of America	0	Boise Inc	2653	2671
2013	985	Alliant Techsystems Inc	0	Bushnell Outdoor Products Inc	3482	3949
2013	602.72	Maxim Integrated Products Inc	0	Volterra Semiconductor Corp	3674	3674
2013	717.01	Cubist Pharmaceuticals Inc	0	Trius Therapeutics Inc	2834	2834
2013	775.5	Cubist Pharmaceuticals Inc	0	Optimer Pharmaceuticals Inc	2834	2834
2013	543.27	Hanesbrands Inc	0	Maidenform Brands Inc	2361	2341
2013	2,596.67	Cisco Systems Inc	0	Sourcefire Inc	3577	7374
2013	1,337.22	Bally Technologies Inc	0	SHFL entertainment Inc	7372	3999
2013	1,189.57	AT&T Inc	0	Leap Wireless Intl Inc	4813	4812
2013	2,543.54	Kroger Co	0	Harris Teeter Supermarkets Inc	5411	5411
2013	9,692.50	Amgen Inc	0	Onyx Pharmaceuticals Inc	2836	2836

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2013	614.9	Stratasys Ltd	0	MakerBot Industries LLC	3577	3577
2013	1,000	Johnson & Johnson	0	Aragon Pharmaceuticals Inc	2834	2834
2013	2,640.80	Salesforce.com Inc	0	ExactTarget Inc	7372	7372
2013	1,100.00	Yahoo! Inc	0	Tumblr Inc	7375	7375
2013	5,096.08	Actavis Inc	0	Warner Chilcott PLC	2834	2834
2013	15,501.39	Thermo Fisher Scientific Inc	0	Life Technologies Corp	3829	2836
2013	3,067.16	GE	0	Lufkin Industries Inc	3612	3533
2013	1,181.66	Office Depot Inc	0	OfficeMax Inc	5943	5943
2013	560	Town Sports Int Holdings Inc	0	63rd & West End Avenue	7997	7997
2013	2,070.00	Cardinal Health Inc	0	AssuraMed Holding Inc	5122	5047
2013	16,381.39	Liberty Global Inc	0	Virgin Media Inc	4841	4813
2013	2,020.18	Oracle Corp	0	Acme Packet Inc	7372	3577

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2013	944.02	Allergan Inc	0	MAP Pharmaceuticals Inc	2834	2834
2012	966.99	Oracle Corp	0	Eloqua Inc	7372	7372
2012	603.45	Honeywell International Inc	0	Intermec Inc	3714	3577
2012	4,981.29	ConAgra Foods Inc	0	Ralcorp Holdings Inc	2099	2043
2012	1,200.00	Cisco Systems Inc	0	Meraki Inc	3577	4812
2012	617.55	Starbucks Corp	0	Teavana Holdings Inc	5813	5499
2012	1,805.56	priceline.com Inc	0	KAYAK Software Corp	7389	7375
2012	533.68	Humana Inc	0	Metro Health Networks Inc	6324	8011
2012	851.98	3M Co	0	Ceradyne Inc	3841	3264
2012	635	CH Robinson Worldwide Inc	0	Phoenix Intl Freight Svcs Ltd	4731	4731
2012	3,073.57	Valeant Pharmaceuticals Intl	0	Medicis Pharmaceutical Corp	2834	2834
2012	3,080.00	AMR Corp	0	US Airways Group Inc	4512	4512

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2012	2,568.12	Hertz Global Holdings Inc	0	Dollar Thrifty Automotive Grp	7514	7514
2012	5,695.42	Aetna Inc	0	Coventry Health Care Inc	6324	6324
2012	805.72	Verint Systems Inc	0	Comverse Technology Inc	7373	3661
2012	1,260.00	VMware Inc	0	Nicira Inc	7372	7372
2012	925	Thermo Fisher Scientific Inc	0	One Lambda Inc	3829	2836
2012	627.46	Thomson Reuters Corp	0	FX Alliance Inc	7375	6231
2012	4,851.60	WellPoint Inc	0	Amerigroup Corp	6324	6324
2012	2,530.69	Dell Inc	0	Quest Software Inc	3571	7372
2012	811.87	Ingram Micro Inc	0	Brightpoint Inc	5045	5065
2012	7,183.42	Bristol-Myers Squibb Co	0	Amylin Pharmaceuticals Inc	2834	2834
2012	1,200.00	Microsoft Corp	0	Yammer Inc	7372	7372
2012	670.45	Salesforce.com Inc	0	Buddy Media Inc	7372	7372

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2012	603.94	Verizon Communications Inc	0	Hughes Telematics Inc	4813	3669
2012	4,693.00	DaVita Inc	0	HealthCare Partners LLC	8092	8011
2012	880.38	Ascena Retail Group Inc	0	Charming Shoppes Inc	5621	5621
2012	870.58	Microchip Technology Inc	0	Standard Microsystems Corp	3674	3674
2012	3,918.85	Hologic Inc	0	Gen-Probe Inc	3841	3841
2012	730	Jazz Pharmaceuticals PLC	0	EUSA Pharma Inc	2834	2834
2012	4,086.49	SXC Health Solutions Corp	0	Catalyst Health Solutions Inc	7372	6324
2012	775	Amazon.com Inc	0	Kiva Systems Inc	5961	7373
2012	1,908.82	Oracle Corp	0	Taleo Corp	7372	7372
2012	2,523.87	Bristol-Myers Squibb Co	0	Inhibitex Inc	2834	2836
2011	1,000	Crown Castle International	0	NextG Networks Inc	4812	4812

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2011	3,088.22	Lam Research Corp	0	Novellus Systems Inc	3559	3559
2011	620.74	Synopsys Inc	0	Magma Design Automation Inc	7372	7372
2011	650	NeuStar Inc	0	TARGUS Information Corp	4899	7373
2011	16,182.72	United Technologies Corp	0	Goodrich Corp	3724	3728
2011	585.29	Jazz Pharmaceuticals Inc	0	Azur Pharma Ltd	2834	2834
2011	580	Teradyne Inc	0	LitePoint Corp	3825	3825
2011	29,370.07	Express Scripts Inc	0	Medco Health Solutions Inc	5122	8099
2011	8,111.84	Ecolab Inc	0	Nalco Holding Co	2841	4952
2011	522.36	Honeywell International Inc	0	EMS Technologies Inc	3714	4812
2011	3,581.72	International Paper Co	0	Temple-Inland Inc	2621	2631
2011	2,914.06	Sealed Air Corp	0	Diversey Inc	2671	2842

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2011	20,097.79	Johnson & Johnson	0	Synthes Inc	2834	3842
2011	550	Genpact Ltd	0	Headstrong Corp	8742	7373
2011	600	Gilead Sciences Inc	0	Calistoga Pharmaceuticals Inc	2836	2834
2011	914	DSW Inc	0	Retail Ventures Inc	5661	5661
2011	7,165.24	Alpha Natural	0	Massey Energy Co	1221	1222
2011	3,948.17	Rock-Tenn Co	0	Smurfit-Stone Container Corp	2631	2631
2011	540	Perrigo Co	0	Paddock Laboratories Inc	2834	2834
2010	741.76	Rovi Corp	0	Sonic Solutions	2721	7372
2010	955.12	Dell Inc	0	Compellent Technologies Inc	3571	7372
2010	2,155.01	Thermo Fisher Scientific Inc	0	Dionex Corp	3829	3823
2010	800	Medtronic Inc	11%	Ardian Inc	3845	3841
2010	734.39	Allegheny Technologies Inc	0	Ladish Co Inc	3317	3462

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2010	2,247.71	EMC Corp	0	Isilon Systems Inc	3572	3572
2010	587.98	Microsemi Corp	0	Actel Corp	3674	3674
2010	1,041.69	Southwest Airlines Co	0	AirTran Holdings Inc	4512	4512
2010	1,569.57	Hewlett Packard Co	0	ArcSight Inc	3571	7372
2010	837.57	Bristol-Myers Squibb Co	0	ZymoGenetics Inc	2834	2836
2010	932.83	3M Co	0	Cogent Inc	3841	7373
2010	545	HealthSpring Inc	0	Bravo Health Inc	6324	6324
2010	2,065.32	Hewlett Packard Co	0	3PAR Inc	3571	3572
2010	730	Medco Health Solutions Inc	0	United BioSource Corp	8099	2836
2010	650	Avon Products Inc	0	Silpada Designs Inc	2844	3911
2010	750.33	Boeing Co	0	Argon ST Inc	3721	3829
2010	3,578.19	Celgene Corp	0	Abraxis BioScience Inc	2834	2836
2010	1,162.53	Ralcorp Holdings Inc	0	American Italian Pasta Co	2043	2099

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2010	3,688.70	UAL Corp	0	Continental Airlines Inc	4512	4512
2010	1,302.80	Hewlett Packard Co	0	Palm Inc	3571	3575
2010	715.6	Oracle Corp	0	Phase Forward Inc	7372	7372
2010	808	Perrigo Co	0	PBM Products LLC	2834	2023
2010	718.76	Abbott Laboratories	0	Facet Biotech Corp	2834	2836
2009	525	Stryker Corp	0	Ascent Healthcare Solutions	3841	7389
2009	3,182.65	Hewlett Packard Co	0	3Com Corp	3571	3577
2009	3,469.75	The Stanley Works	0	The Black & Decker Corp	3429	3546
2009	687.58	Equinix Inc	0	Switch & Data Facilities Co	4813	4813
2009	2,776.68	Cisco Systems Inc	0	Starent Networks Corp	3577	3663
2009	568	ViaSat Inc	0	WildBlue Communications Inc	3663	7375
2009	8,374.20	Xerox Corp	0	Affiliated Computer Svcs Inc	3579	7374

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2009	3,627.86	Dell Inc	0	Perot Systems Corp	3571	7374
2009	1,738.29	Adobe Systems Inc	0	Omniiture Inc	7372	7372
2009	1,511.90	Agilent Technologies Inc	0	Varian Inc	3825	3826
2009	930.1	Amazon.com Inc	0	Zappos.com Inc	5961	5961
2009	22,247.40	Bristol-Myers Squibb Co	0	Medarex Inc	2834	2836
2009	890.29	Intel Corp	0	Wind River Systems Inc	3674	7371
2009	2,368.07	EMC Corp	0	Data Domain Inc	3572	3572
2009	988.22	Johnson & Johnson	0	Cougar Biotechnology Inc	2834	2836
2009	15,243.05	DirecTV Group Inc	0	Liberty Entertainment Inc	4841	4841
2009	5,421.63	PepsiCo Inc	29.23%	Pepsi Bottling Group Inc	2086	2086
2009	7,305.20	Oracle Corp	0	Sun Microsystems Inc	7372	3571
2009	590	Cisco Systems Inc	0	Pure Digital Technologies Inc	3577	3861

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2009	1,329.54	Gilead Sciences Inc	0	CV Therapeutics Inc	2836	2836
2009	38,615.30	Merck & Co Inc	0	Schering-Plough Corp	2834	2834
2009	1,127.47	Live Nation Inc	0	Ticketmaster Entertainment Inc	7929	5961
2009	4,067.19	CF Industries Holdings Inc	0	Terra Industries Inc	2873	2873
2009	1,377.74	Abbott Laboratories	0	Advanced Medical Optics Inc	2834	3841
2009	591.59	Endo Pharmaceuticals Holdings	0	Indevus Pharmaceuticals Inc	2834	2834
2008	1,060.72	Johnson & Johnson	0	Mentor Corp	2834	3842
2008	946.56	AT&T Inc	0	Centennial Communications Corp	4813	4812
2008	6,497.47	Eli Lilly & Co	0	ImClone Systems Inc	2834	2836
2008	945	eBay Inc	0	Bill Me Later Inc	7389	7375
2008	583.22	ViroPharma Inc	0	Lev Pharmaceuticals Inc	2834	2834
2008	15,513.13	The Dow Chemical Co	0	Rohm & Haas Co	2821	2821

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2008	12,565.03	Hewlett Packard Co	0	Electronic Data Systems Corp	3571	7376
2008	2,958.29	Delta Air Lines Inc	0	Northwest Airlines Corp	4512	4512
2008	500.00	Microsoft Corp	0	Danger Inc	7372	7372
2008	1,156.95	Inverness Med Innovations Inc	0	Matria Healthcare Inc	2835	8099
2007	9,750.75	Ingersoll-Rand Co Ltd	0	Trane Inc	3562	3585
2007	3,214.72	Celgene Corp	0	Pharmion Corp	2834	2834
2007	1,400.00	Dell Inc	0	EqualLogic Inc	3571	3572
2007	8,056.05	Oracle Corp	0	BEA Systems Inc	7372	7372
2007	860.49	Textron Inc	0	United Industrial Corp	3724	3694
2007	505.00	Bristol-Myers Squibb Co	0	Adnexus Therapeutics Inc	2834	2834
2007	705.99	ARRIS Group Inc	0	C-COR Inc	3663	3663

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2007	1,279.17	Medco Health Solutions Inc	0	PolyMedica Corp	8099	2834
2007	500.00	Citrix Systems Inc	0	XenSource Inc	7372	7372
2007	905.58	RF Micro Devices Inc	0	Sirenza Microdevices Inc	3674	3674
2007	4,067.51	Medtronic Inc	0	Kyphon Inc	3845	3841
2007	1,704.32	Hewlett Packard Co	0	Opsware Inc	3571	7372
2007	806.99	LKQ Corp	0	Keystone Automotive Inds Inc	5015	5013
2007	985.37	Western Digital Corp	0	Komag Inc	3572	3572
2007	2,611.57	CommScope Inc	0	Andrew Corp	3357	3663
2007	3,101.63	URS Corp	0	Washington Group Intl Inc	8711	1522
2007	4,100.00	Coca-Cola Co	0	Energy Brands Inc	2086	2086
2007	789.21	Payless ShoeSource Inc	0	Stride Rite Corp	5661	3149
2007	6,333.12	Microsoft Corp	0	aQuantive Inc	7372	7319
2007	1,604.65	Cardinal Health Inc	0	VIASYS Healthcare Inc	5122	3841

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2007	1,623.14	Inverness Med Innovations Inc	3.85%	Biosite Inc	2835	3845
2007	1,472.32	Xerox Corp	0	Global Imaging Systems Inc	3579	5044
2007	3,090.52	Cisco Systems Inc	0	WebEx Communications Inc	3577	7389
2007	2,425.34	UnitedHealth Group Inc	0	Sierra Health Services Inc	6324	6324
2007	3,292.09	Oracle Corp	0	Hyperion Solutions Corp	7372	7372
2007	586.75	Whole Foods Market Inc	0	Wild Oats Markets Inc	5411	5411
2007	6,226.04	Sirius Satellite Radio Inc	0	XM Satellite Radio Hldgs Inc	4832	4832
2007	4,658.67	Vulcan Materials Co	0	Florida Rock Industries Inc	1422	3273
2007	1,014.57	Symantec Corp	0	Altiris Inc	7372	7372
2007	830.00	Cisco Systems Inc	0	Ironport Systems Inc	3577	7372
2006	1,458.78	Johnson & Johnson	0	Conor Medsystems Inc	2834	3841

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2006	538.51	Illumina Inc	0	Solexa Inc	3826	8731
2006	1,382.22	McKesson Corp	0	Per-Se Technologies Inc	5122	7372
2006	4,146.17	Abbott Laboratories	0	Kos Pharmaceuticals Inc	2834	2834
2006	1,132.28	Merck & Co Inc	0	Sirna Therapeutics Inc	2834	2834
2006	1,353.55	Level 3 Communications Inc	0	Broadwing Corp	4813	3661
2006	2,491.10	Eli Lilly & Co	0	ICOS Corp	2834	2836
2006	3,252.40	Oshkosh Truck Corp	0	JLG Industries Inc	3711	3531
2006	2,473.63	Gilead Sciences Inc	0	Myogen Inc	2836	2834
2006	3,880.47	Motorola Inc	0	Symbol Technologies Inc	3663	3577
2006	1,576.60	Monsanto Co	0	Delta & Pine Land Co	115	131
2006	808.54	Brocade Commun Sys Inc	0	McDATA Corp	7372	7372
2006	535.00	Time Warner Telecom Inc	0	Xspedius Communications LLC	4813	4813
2006	4,509.75	Hewlett Packard Co	0	Mercury Interactive Corp	3571	7372

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2006	2,336.93	EMC Corp	0	RSA Security Inc	3572	7372
2006	680.71	American Med Sys Holdings Inc	0	Laserscope Inc	3841	3845
2006	780.00	FEDEX Corp	0	Watkins Motor Lines Inc	4513	4213
2006	10,291.79	Thermo Electron Corp	0	Fisher Scientific Intl Inc	6798	6798
2006	773.35	Quantum Corp	0	Advanced Digital Infon Corp	3572	3572
2006	2,057.10	Boeing Co	0	Aviall Inc	3721	3769
2006	1,237.50	Level 3 Communications Inc	0	TelCove	4813	4813
2006	1,390.23	Millipore Corp	0	Serologicals Corp	3826	2836
2006	1,001.97	SBA Communications Corp	0	AAT Communications Corp	4899	4813
2006	889.65	Micron Technology Inc	0	Lexar Media Inc	3674	3674
2006	72,671.00	AT&T Inc	0	BellSouth Corp	4813	4813
2006	1,122.69	Armor Holdings Inc	0	Stewart & Stevenson Services	3482	3511

Year Announced	Deal Value (\$mil)	Acquirer Name	Prior Toehold (%)	Target Name	Acquirer SIC Code	Target SIC Code
2006	506.99	KLA-Tencor Corp	0	ADE Corp	3827	3829
2006	3,475.36	Home Depot Inc	0	Hughes Supply Inc	5211	5039

Appendix D: Full Sample Data with CARs Included

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2006	Jabil Circuit Inc	0.0125	-0.0543	1	1	0.0803	0.1153	0.1927
2006	Hospira Inc	0.0549	0.0225	1	1	0.2983	0.2872	0.0545
2006	Genzyme Corp	0.0165	-0.0240	1	1	0.1550	0.0331	0.0250
2006	Advanced Micro Devices Inc	-0.1725	-0.1659	1	0	0.2370	0.3911	0.0160
2006	Peabody Energy Corp	0.0315	0.0391	1	1	0.2306	0.1415	0.0631
2006	VeriFone Holdings Inc	0.0843	0.0061	1	1	0.5550	0.5041	0.1975
2006	Johnson & Johnson	0.0090	-0.0424	0	1	0.0534	0.0082	0.1726
2006	Illumina Inc	-0.1236	-0.1549	0	1	0.0000	0.9281	0.7059
2006	McKesson Corp	0.0190	-0.0187	0	1	0.0937	0.0871	0.0959
2006	Abbott Laboratories	-0.0146	-0.0521	0	1	0.2357	0.0678	0.0426
2006	Merck & Co Inc	-0.0066	-0.0172	0	1	0.1614	0.0163	0.0676
2006	Level 3 Communications Inc	0.1073	0.0081	0	0	0.6907	0.6725	0.0651
2006	Eli Lilly & Co	0.0109	-0.0099	0	1	0.2619	0.0387	0.2158
2006	Oshkosh Truck Corp	-0.0657	-0.0789	0	1	0.0264	0.9925	0.0742
2006	Gilead Sciences Inc	-0.0681	-0.0375	0	1	0.0002	0.1028	0.1303
2006	Motorola Inc	0.0728	0.0246	0	1	0.0000	412.3194	0.4840
2006	Monsanto Co	0.0005	-0.0130	0	1	0.1645	0.0757	0.0496
2006	Brocade Commun Sys Inc	-0.1706	-0.1775	0	0	0.2829	0.7276	0.1846
2006	Time Warner Telecom Inc	0.0988	0.1339	0	0	0.6563	0.4655	0.0682

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2006	Hewlett Packard Co	-0.0027	-0.0230	0	1	0.0676	0.0555	0.1799
2006	EMC Corp	-0.0571	-0.0432	0	1	0.0083	0.0717	0.0481
2006	American Med Sys Holdings Inc	-0.1679	-0.1450	0	1	0.0000	0.5495	0.1187
2006	FEDEX Corp	-0.0017	-0.0294	0	1	0.1370	0.0248	0.0509
2006	Thermo Electron Corp	-0.0154	-0.0518	0	0	0.0674	2.1053	0.0914
2006	Quantum Corp	-0.1475	-0.1600	0	0	0.2208	1.3765	0.0000
2006	Boeing Co	0.0042	-0.0079	0	1	0.2261	0.0363	0.0594
2006	Level 3 Communications Inc	0.0566	0.0394	0	0	0.6907	0.6149	0.0651
2006	Millipore Corp	0.0920	0.0876	0	1	0.1354	4.8844	0.3862
2006	SBA Communications Corp	0.0744	0.0666	0	1	1.0114	0.6561	0.0781
2006	Micron Technology Inc	-0.0964	-0.0694	0	0	0.1458	0.1082	0.0655
2006	AT&T Inc	-0.0429	-0.0188	0	0	0.2477	0.7523	0.0070
2006	Armor Holdings Inc	0.0296	-0.0007	0	1	0.4477	0.0967	0.0322
2006	KLA-Tencor Corp	-0.0219	-0.0130	0	1	0.0000	0.0521	0.2194
2006	Home Depot Inc	0.0471	0.0040	0	1	0.0555	0.0404	0.0130
2007	Lam Research Corp	-0.0101	-0.0115	1	1	0.1513	0.0754	0.0287
2007	Newmont Mining Corp	0.0389	0.0367	1	1	0.1379	0.0668	0.0773
2007	Coeur d'Alene Mines Corp	-0.0847	-0.0906	1	0	0.3035	0.5737	0.3608
2007	Coeur d'Alene Mines Corp	-0.0847	-0.0906	1	0	0.3035	0.7620	0.3608
2007	Ingersoll-Rand Co Ltd	-0.0786	-0.0949	0	0	0.1801	0.8127	0.0747

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2007	Celgene Corp	0.0191	0.0026	0	0	0.3209	0.1585	0.0989
2007	Dell Inc	0.0090	0.0046	0	1	0.0218	0.0246	0.3243
2007	Oracle Corp	-0.0224	-0.0247	0	1	0.2030	0.0907	0.2294
2007	Textron Inc	-0.0139	0.0038	0	1	0.4457	0.0732	0.0006
2007	Bristol-Myers Squibb Co	0.0005	-0.0286	0	1	0.3055	0.0098	0.1084
2007	ARRIS Group Inc	-0.1460	-0.1994	0	1	0.0000	0.5234	0.1537
2007	Medco Health Solutions Inc	0.0017	-0.0094	0	1	0.1072	0.0816	0.0648
2007	Citrix Systems Inc	-0.0258	-0.0346	0	1	0.0184	0.1024	0.0228
2007	RF Micro Devices Inc	0.0145	-0.1275	0	0	0.2428	0.6928	0.0872
2007	Medtronic Inc	0.0048	0.0456	0	1	0.4029	0.0660	0.1523
2007	Hewlett Packard Co	0.0208	0.0135	0	1	0.0634	0.0152	0.2000
2007	LKQ Corp	0.1123	0.1787	0	1	0.1080	0.0242	0.0049
2007	Western Digital Corp	0.0214	0.1026	0	1	0.0212	0.2172	0.2656
2007	CommScope Inc	0.0325	0.0526	0	1	0.2697	0.4561	0.1104
2007	URS Corp	0.0427	0.0425	0	0	0.1296	1.3940	0.0163
2007	Coca-Cola Co	0.0262	-0.0050	0	1	0.1937	0.0237	0.0269
2007	Payless ShoeSource Inc	0.0823	0.0479	0	1	0.1572	0.3644	0.2898
2007	Microsoft Corp	-0.0241	-0.0237	0	1	0.0000	0.0216	0.0467
2007	Cardinal Health Inc	0.0052	0.0070	0	1	0.1210	0.0196	0.1320
2007	Inverness Med Innovations Inc	0.0757	0.0911	0	1	0.0135	195.4873	0.2642
2007	Xerox Corp	0.0064	-0.0133	0	1	0.3600	0.0900	0.0725
2007	Cisco Systems Inc	0.0068	-0.0288	0	1	0.1462	0.0186	0.0761

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2007	UnitedHealth Group Inc	-0.0082	-0.0107	0	1	0.1719	0.0335	0.1310
2007	Oracle Corp	0.0372	0.0151	0	1	0.2030	0.0371	0.2294
2007	Whole Foods Market Inc	0.1040	0.0814	0	1	0.0042	0.0874	0.0305
2007	Sirius Satellite Radio Inc	0.0665	0.0650	0	0	0.5200	1.2507	0.3654
2007	Vulcan Materials Co	0.0653	0.0931	0	0	0.1659	0.5490	0.0767
2007	Symantec Corp	0.0152	0.0071	0	1	0.0286	0.0519	0.0312
2007	Cisco Systems Inc	0.0508	0.0440	0	1	0.1462	0.0050	0.0761
2008	Symantec Corp	-0.0530	-0.1388	1	1	0.1183	0.0497	0.0331
2008	Monsanto Co	-0.0689	0.1258	1	1	0.1094	0.0141	0.0667
2008	KLA-Tencor Corp	0.0432	0.0313	1	1	0.0000	0.0654	0.1563
2008	Staples Inc	0.0296	-0.0145	1	1	0.0633	0.1956	0.1212
2008	Sun Microsystems Inc	-0.0588	-0.1099	1	1	0.0684	10.0776	0.0296
2008	Microsoft Corp	-0.0187	-0.0115	1	1	0.0000	0.0036	0.0481
2008	Johnson & Johnson	-0.0390	-0.0765	0	1	0.0934	0.0056	0.0271
2008	AT&T Inc	0.0379	0.1039	0	1	0.2209	0.0038	0.0049
2008	Eli Lilly & Co	-0.0569	-0.1673	0	1	0.1692	0.1073	0.1416
2008	eBay Inc	-0.0370	-0.0231	0	1	0.0000	0.0210	0.1983
2008	ViroPharma Inc	-0.1676	-0.1167	0	0	0.0000	1.0510	0.1199
2008	The Dow Chemical Co	-0.0810	-0.0261	0	1	0.2094	0.4167	0.0605
2008	Hewlett Packard Co	-0.0693	-0.0478	0	1	0.0923	0.0967	0.1273
2008	Delta Air Lines Inc	-0.0277	-0.0481	0	0	0.4083	0.7383	0.1419
2008	Microsoft Corp	-0.0127	-0.0553	0	1	0.0000	0.0015	0.0481

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2008	Inverness Med Innovations Inc	0.0748	0.0727	0	0	0.0000	61.5218	0.0250
2009	Bunge Ltd	0.0187	-0.0002	1	0	0.2068	0.2267	0.0446
2009	Cisco Systems Inc.	-0.0102	0.0243	1	1	0.1174	0.0359	0.0884
2009	Thomson Reuters Corp	-0.0047	-0.0114	1	0	0.1815	196.5536	0.0930
2009	Stryker Corp	0.0230	0.0539	0	1	0.0023	0.0325	0.0395
2009	Hewlett Packard Co	-0.0082	-0.0003	0	1	0.1575	0.0363	0.0896
2009	The Stanley Works	0.0611	0.0390	0	0	0.3148	1.2914	0.0503
2009	Equinix Inc	-0.0655	-0.0695	0	0	0.5070	0.3461	0.1332
2009	Cisco Systems Inc	-0.0054	-0.0092	0	1	0.1174	0.4416	0.3339
2009	ViaSat Inc	0.1469	0.1466	0	0	0.0000	0.7649	0.2271
2009	Xerox Corp	-0.1781	-0.1977	0	0	0.3439	1.2139	0.0486
2009	Dell Inc	-0.0585	-0.0932	0	1	0.0213	0.1822	0.0107
2009	Adobe Systems Inc	-0.0622	-0.0361	0	1	0.0601	0.1538	0.1453
2009	Agilent Technologies Inc	0.0304	0.0703	0	1	0.2857	0.2748	0.1889
2009	Amazon.com Inc	-0.0462	-0.0730	0	0	0.1977	0.0423	0.1254
2009	Bristol-Myers Squibb Co	0.0396	0.0512	0	1	0.2396	0.4834	0.0688
2009	Intel Corp	-0.0299	0.0038	0	1	0.0381	0.0109	0.1313
2009	EMC Corp	-0.0066	0.0322	0	1	0.1548	0.1108	0.2011
2009	Johnson & Johnson	-0.0137	-0.0194	0	1	0.1178	0.0060	0.0368
2009	DirecTV Group Inc	-0.1089	-0.0892	0	0	0.2282	0.6335	0.0722
2009	PepsiCo Inc	-0.0764	-0.0611	0	0	0.1214	0.0637	0.0263
2009	Oracle Corp	0.0432	0.0192	0	1	0.2377	0.0817	0.1442
2009	Cisco Systems Inc	-0.0011	-0.0170	0	0	0.1174	0.0062	0.0884

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2009	Gilead Sciences Inc	-0.0738	-0.1093	0	1	0.2229	0.0286	0.1659
2009	Merck & Co Inc	-0.0661	0.0550	0	0	0.1187	0.0199	0.1104
2009	Live Nation Inc	-0.0561	-0.1481	0	0	0.3134	2.5121	0.1232
2009	CF Industries Holdings Inc	0.0912	0.0040	0	0	0.0024	1.7097	0.1821
2009	Abbott Laboratories	0.0099	-0.0194	0	1	0.3075	0.0166	0.0619
2009	Endo Pharmaceuticals Holdings	-0.1877	-0.1216	0	1	0.0000	0.1962	0.2058
2010	Wal-Mart Stores Inc	-0.0115	0.0085	1	1	0.2583	0.0106	0.0445
2010	Owens-Illinois Inc	0.0338	0.0222	1	1	0.4180	0.1088	0.0090
2010	Medtronic Inc.	-0.0301	-0.0457	1	1	0.3083	0.0103	0.0537
2010	Rovi Corp	-0.0127	0.0653	0	0	0.3361	0.2259	0.0141
2010	Dell Inc	-0.0328	-0.0392	0	1	0.0759	0.0340	0.0080
2010	Thermo Fisher Scientific Inc	0.0561	0.0336	0	1	0.0976	0.1107	0.0607
2010	Medtronic Inc	-0.0094	-0.0020	0	1	0.3083	0.0165	0.0537
2010	Allegheny Technologies Inc	-0.0256	0.0269	0	0	0.1222	0.1673	0.0399
2010	EMC Corp	-0.0292	0.0217	0	1	0.1445	0.0631	0.2448
2010	Microsemi Corp	0.0840	0.1173	0	1	0.0620	0.3997	0.2672
2010	Southwest Airlines Co	0.0728	0.0577	0	0	0.2559	0.1228	0.0956
2010	Hewlett Packard Co	0.0025	-0.0426	0	1	0.1379	0.0129	0.1157
2010	Bristol-Myers Squibb Co	0.0032	-0.0011	0	1	0.2280	0.0194	0.2699
2010	3M Co	-0.0187	-0.0015	0	1	0.2630	0.0159	0.0724
2010	HealthSpring Inc	0.1339	0.1421	0	1	0.1993	0.5375	0.2099

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2010	Hewlett Packard Co	-0.0366	-0.0088	0	1	0.1379	0.0170	0.1157
2010	Medco Health Solutions Inc	0.0165	-0.0217	0	1	0.2706	0.0240	0.0552
2010	Avon Products Inc	0.0232	0.0301	0	1	0.4095	0.0483	0.1819
2010	Boeing Co	-0.0468	-0.0068	0	1	0.1397	0.0191	0.0608
2010	Celgene Corp	-0.0571	-0.0678	0	0	0.0050	0.1398	0.0903
2010	Ralcorp Holdings Inc	-0.0136	0.0706	0	1	0.0000	7.3228	0.0339
2010	UAL Corp	-0.0796	-0.1325	0	0	0.4187	1.7105	0.1075
2010	Hewlett Packard Co	-0.0141	-0.0211	0	1	0.1379	0.0107	0.1157
2010	Oracle Corp	-0.0150	0.0021	0	1	0.2159	0.0058	0.1897
2010	Perrigo Co	0.1063	0.1026	0	1	0.3518	0.2169	0.1246
2010	Abbott Laboratories	-0.0029	-0.0230	0	1	0.2698	0.0253	0.0588
2011	Alexion Pharmaceuticals Inc.	0.0480	0.0060	1	1	0.0138	0.1447	0.0018
2011	Valeant Pharmaceuticals	-0.0071	0.0278	1	1	0.1578	0.0819	0.0592
2011	Microsoft	-0.0228	-0.0126	1	1	0.0690	0.0356	0.0193
2011	Dresser-Rand Group Inc.	0.0853	0.0534	1	0	0.1721	0.2056	0.1038
2011	Newmont Mining Corp.	0.0236	-0.0122	1	1	0.2157	0.0713	0.1505
2011	Crown Castle International	0.0040	0.0219	0	1	0.6005	0.0785	0.0304
2011	Lam Research Corp	-0.1350	-0.1318	0	0	0.0091	0.4850	0.0766
2011	Synopsys Inc	-0.0309	-0.0085	0	1	0.0000	0.1545	0.2602
2011	NeuStar Inc	0.0831	0.1106	0	1	0.0339	0.3382	0.5127

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2011	United Technologies Corp	-0.0210	0.0123	0	1	0.1747	0.2226	0.0732
2011	Jazz Pharmaceuticals Inc	0.0702	-0.0293	0	0	1.1571	0.7642	0.4217
2011	Teradyne Inc	0.0287	0.0500	0	1	0.1160	0.2277	0.3220
2011	Express Scripts Inc	0.0687	0.0344	0	0	0.3212	1.0326	0.0014
2011	Ecolab Inc	-0.0642	-0.1019	0	0	0.1927	0.6931	0.0483
2011	Honeywell International Inc	0.0109	0.0011	0	1	0.2113	0.0126	0.0736
2011	International Paper Co	-0.0061	-0.0400	0	1	0.3536	0.3006	0.0811
2011	Sealed Air Corp	-0.1217	-0.0615	0	0	0.3065	0.7171	0.1246
2011	Johnson & Johnson	0.0740	0.0872	0	0	0.1536	0.1183	0.0242
2011	Genpact Ltd	0.0965	0.1171	0	1	0.0430	0.1640	0.0598
2011	Gilead Sciences Inc	0.0093	0.0282	0	1	0.1197	0.0204	0.0936
2011	DSW Inc	0.1280	0.1233	0	0	0.0000	1.3989	0.1100
2011	Alpha Natural	-0.0635	-0.0741	0	0	0.1543	0.9913	0.1083
2011	Rock-Tenn Co	0.1191	0.1407	0	0	0.3873	1.8803	0.0284
2011	Perrigo Co	0.0545	0.0804	0	1	0.4346	0.0924	0.1003
2012	Expedia Inc	-0.0457	-0.0002	1	0	0.2473	0.1797	0.1095
2012	Mohawk Industries Inc	0.0927	0.1047	1	1	0.2711	0.3645	0.0046
2012	NCR Corp	-0.0138	0.0426	1	1	0.0025	0.2835	0.1329
2012	UniteadHealth Group Inc	0.0115	0.0348	1	1	0.1767	0.0592	0.1447
2012	Medtronic Inc.	0.0055	0.0318	1	1	0.3233	0.0199	0.0454
2012	Stanley Black & Decker Inc	0.0556	0.1032	1	1	0.2269	0.0744	0.1153

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2012	Eaton Corp	-0.0073	0.0096	1	0	0.2004	0.7927	0.0205
2012	Amgen Inc	0.0316	0.0440	1	1	0.3073	0.0124	0.0756
2012	URS Corp	0.0812	0.0139	1	1	0.0955	0.5199	0.0780
2012	Oracle Corp	0.0412	0.0526	0	1	0.2165	0.0075	0.2198
2012	Honeywell International Inc	-0.0235	0.0067	0	1	0.1756	0.0144	0.0700
2012	ConAgra Foods Inc	0.0424	0.0466	0	1	0.2835	0.4573	0.0852
2012	Cisco Systems Inc	0.0204	0.1153	0	1	0.1931	0.0123	0.0880
2012	Starbucks Corp	-0.0307	0.0009	0	1	0.0747	0.0180	0.1560
2012	priceline.com Inc	0.0319	0.1271	0	0	0.1640	0.0775	0.1239
2012	Humana Inc	-0.0406	-0.0550	0	1	0.1291	0.0373	0.1039
2012	3M Co	0.0016	0.0264	0	1	0.1839	0.0149	0.1120
2012	CH Robinson Worldwide Inc	0.0454	0.0594	0	0	0.0299	0.0554	0.1997
2012	Valeant Pharmaceuticals Intl	0.1443	0.0971	0	1	0.0000	133.1197	0.6392
2012	AMR Corp	0.0068	-0.0329	0	0	0.1730	510.5169	0.0171
2012	Hertz Global Holdings Inc	0.1621	0.1212	0	1	0.6523	0.5259	0.1490
2012	Aetna Inc	0.0482	0.0375	0	0	0.1161	0.3726	0.0495
2012	Verint Systems Inc	-0.0021	0.0625	0	0	0.4238	0.7529	0.1334
2012	VMware Inc	0.0128	0.0625	0	1	0.0662	0.1240	0.2396
2012	Thermo Fisher Scientific Inc	0.0070	-0.0013	0	1	0.1001	0.0544	0.0430
2012	Thomson Reuters Corp	0.0272	-0.0476	0	1	0.1728	10.1423	0.0864

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2012	WellPoint Inc	0.0317	-0.0714	0	1	0.1785	0.2105	0.0357
2012	Dell Inc	0.0014	0.0191	0	1	0.1554	0.0963	0.3611
2012	Ingram Micro Inc	-0.0143	-0.0278	0	1	0.0701	0.2910	0.1272
2012	Bristol-Myers Squibb Co	-0.0098	-0.0089	0	1	0.1752	0.1203	0.1620
2012	Microsoft Corp	-0.0116	0.0012	0	1	0.1097	0.0055	0.0152
2012	Salesforce.com Inc	-0.0289	-0.0988	0	0	0.1529	0.0486	0.1373
2012	Verizon Communications Inc	0.0015	0.0176	0	1	0.2400	0.0053	0.0303
2012	DaVita Inc	-0.0245	0.0130	0	0	0.5310	0.6621	0.1060
2012	Ascena Retail Group Inc	0.0871	0.0325	0	1	0.0000	0.3867	0.1324
2012	Microchip Technology Inc	-0.0222	-0.0599	0	1	0.1170	0.1243	0.2372
2012	Hologic Inc	-0.1599	-0.1761	0	1	0.2477	0.8506	0.1186
2012	Jazz Pharmaceuticals PLC	0.1258	0.1260	0	1	0.3540	0.4483	0.3337
2012	SXC Health Solutions Corp	0.0083	0.0163	0	0	0.2392	3.2960	0.0474
2012	Amazon.com Inc	0.0471	0.0705	0	1	0.0341	0.0098	0.0326
2012	Oracle Corp	-0.0223	-0.0189	0	1	0.2165	0.0148	0.2198
2012	Bristol-Myers Squibb Co	-0.0223	-0.0773	0	1	0.1752	0.0423	0.1620
2013	Jazz Pharmaceuticals PLC	0.0752	0.0060	1	1	0.0000	0.2791	0.3237
2013	Crown Holdings Inc.	0.0515	0.0759	1	1	0.5143	0.3073	0.0533
2013	Perrigo Co	-0.0438	-0.0228	1	0	0.3403	0.8733	0.1502

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2013	Adobe Systems Inc	0.0311	0.0115	1	1	0.1512	0.0322	0.1380
2013	Hecla Mining Co.	-0.1899	-0.1685	1	0	0.0074	0.4592	0.2037
2013	Stryker Corp	0.0320	0.0557	1	1	0.1425	0.0367	0.0749
2013	Textron Inc	-0.0412	0.0831	0	1	0.3256	0.2004	0.0650
2013	Oracle Corp	0.0807	0.0976	0	1	0.2103	0.0101	0.1837
2013	DealerTrack Technologies Inc	0.0910	0.0635	0	0	0.0005	0.8100	0.1192
2013	Avago Technologies Ltd	0.1203	0.0819	0	1	0.0010	0.8605	0.3785
2013	The Men's Wearhouse Inc	0.0762	0.0923	0	1	0.0000	1.1472	0.0891
2013	RR Donnelley & Sons Co	0.0566	0.0493	0	0	0.4420	0.3842	0.0543
2013	Monsanto Co	0.0014	0.0073	0	1	0.1026	0.0184	0.1623
2013	eBay Inc	0.0391	0.0504	0	1	0.0765	0.0121	0.1724
2013	Stryker Corp	-0.0455	-0.0523	0	1	0.1425	0.0712	0.0730
2013	Packaging Corp of America	0.0835	0.0504	0	1	0.3442	0.5354	0.0648
2013	Alliant Techsystems Inc	-0.0322	-0.0681	0	1	0.2867	0.4855	0.1252
2013	Maxim Integrated Products Inc	-0.0014	0.0009	0	1	0.0827	0.0702	0.2357
2013	Cubist Pharmaceuticals Inc	0.1643	0.1141	0	1	0.2767	0.2635	0.1047
2013	Cubist Pharmaceuticals Inc	0.1643	0.1141	0	1	0.2767	0.2850	0.1047
2013	Hanesbrands Inc	0.1251	0.1590	0	1	0.5051	0.1550	0.0088
2013	Cisco Systems Inc	-0.0196	-0.0230	0	1	0.1779	0.0249	0.1068

Year Announced	Acquirer Name	CAR (-2, +2)	CAR (-5, +5)	Domestic= 0, Cross-Border =1	Equity/Hybrid =0, Cash=1	Gearing Ratio	Relative Size	Cash Resources
2013	Bally Technologies Inc	0.1549	0.1517	0	1	0.5270	0.7104	0.0477
2013	AT&T Inc	0.0001	-0.0235	0	1	0.2395	0.0063	0.0044
2013	Kroger Co	0.0190	0.0434	0	1	0.3478	0.1886	0.0080
2013	Amgen Inc	-0.0471	-0.0375	0	1	0.4385	0.1465	0.1421
2013	Stratasys Ltd	0.0148	0.0278	0	0	0.0000	0.2057	0.0906
2013	Johnson & Johnson	0.0039	0.0140	0	1	0.1727	0.0051	0.0238
2013	Salesforce.com Inc	-0.0965	-0.1283	0	1	0.1191	0.1106	0.1458
2013	Yahoo! Inc	-0.0383	-0.0618	0	1	0.0028	0.0467	0.1057
2013	Actavis Inc	0.1124	0.1277	0	0	0.1734	0.4638	0.0312
2013	Thermo Fisher Scientific Inc	0.0233	0.0155	0	1	0.2619	0.6747	0.0379
2013	GE	0.0003	-0.0008	0	1	0.6322	0.0139	0.1178
2013	Office Depot Inc	-0.0655	-0.0980	0	0	0.1611	1.2631	0.1342
2013	Town Sports Int Holdings Inc	-0.1016	-0.1318	0	1	0.6429	2.2232	0.0006
2013	Cardinal Health Inc	0.0212	0.0281	0	1	0.1193	0.1479	0.0937
2013	Liberty Global Inc	-0.0166	-0.0448	0	0	0.6800	1.8045	0.0477
2013	Oracle Corp	-0.0182	-0.0282	0	1	0.2103	0.0128	0.1837
2013	Allergan Inc	0.0051	0.0045	0	1	0.1880	0.0335	0.1228

Appendix E: Correlation Matrix and VIF Analysis

The original correlation matrix run in Excel, below, presents issues in relation to the bid reaction variable. As all variables were deemed to be friendly in nature, no differences could be tested for with this variable. Therefore, the correlation analysis and subsequent regression analysis was re-run without the bid-reaction variable. The closer the correlation co-efficient is to 1, the stronger the correlation. However, the results of the second correlation matrix indicate that no multi-collinearity issues exist in the sample, other than the five-day and 11-day CARs (0.8609) which were never run in a regression together.

	Domestic/ Cross Border Acquisition	Bidder Toehold	Bid Reaction	Payment Method	Relative Size	Relatedness	Cash Resources	Gearing	2 Day CAR	5 Day CAR
Domestic/ Cross Border Acquisition	1									
Bidder Toehold	-0.031606261	1								
Bid Reaction	#DIV/0!	#DIV/0!	1							
Payment Method	0.026147519	-0.094479306	#DIV/0!	1						
Relative Size	-0.015028951	0.025357173	#DIV/0!	-0.072463698	1					
Relatedness	-0.066052329	0.070675516	#DIV/0!	-0.177157843	0.043465136	1				
Cash Resources	-0.088923095	-0.043301958	#DIV/0!	0.110597883	0.15528719	0.154568081	1			
Gearing	-0.031989955	-0.035569829	#DIV/0!	-0.166876275	-0.081461236	0.079802411	-0.11346323	1		
2 Day CAR	-0.004139244	-0.055536701	#DIV/0!	0.093358474	0.07314563	0.004921987	0.04248028	0.131022497	1	
5 Day CAR	0.020155647	-0.036839608	#DIV/0!	0.086320431	0.022184682	-0.03200164	0.00129489	0.051684746	0.86097678	1

	Domestic/ Cross Border Acquisition	Bidder Toehold	Payment Method	Relative Size	Relatedness	Cash Resources	Gearing	2 Day CAR	5 Day CAR
Domestic/ Cross Border Acquisition	1								
Bidder Toehold	-0.031606261	1							
Payment Method	0.026147519	-0.094479306	1						
Relative Size	-0.015028951	0.025357173	-0.0724637	1					
Relatedness	-0.066052329	0.070675516	-0.17715784	0.043465136	1				
Cash Resources	-0.088923095	-0.043301958	0.110597883	0.15528719	0.15456808	1			
Gearing	-0.031989955	-0.035569829	-0.16687628	-0.081461236	0.07980241	-0.11346323	1		
2 Day CAR	-0.004139244	-0.055536701	0.093358474	0.07314563	0.00492199	0.04248028	0.131022	1	
5 Day CAR	0.020155647	-0.036839608	0.086320431	0.022184682	-0.03200164	0.00129489	0.051685	0.86097678	1

Furthermore, the VIF results from an SPSS analysis are presented overleaf, which again indicate that there is no risk of multi-collinearity. If the VIF statistic is greater than 10, then there is a multi-collinearity risk. However, for all of the variables, the $VIF < 10$

Coefficients*

Model	Correlations			Collinearity Statistics	
	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)					
Pay_Method	.143	.173	.169	.916	1.091
Rel_Size	.087	.110	.106	.959	1.042
CB_Dom	-.018	-.013	-.012	.988	1.012
Toehold	-.049	-.029	-.028	.985	1.015
Relatedness	-.028	-.024	-.023	.930	1.075
Cash_Res	.080	.070	.067	.918	1.089
Gearing	.158	.206	.202	.945	1.058

Appendix F: Further Research

F.1 Merger Waves

F.1.1 The Occurrences of M&As Over Time:

The theoretical motives underpinning firm expansion via merger and acquisition activity are outlined above. Analysis of such takeover activity over time has documented the stylised fact that takeover deals occur in cyclical waves. Further to the seminal contribution by Nelson (1959), as cited by Gartner and Halbheer (2009), many studies have uncovered a wave-like pattern in merger activity. An outline of the occurrence of merger waves over time is presented in the following section.

F.1.2 M&A Waves

Mergers and acquisitions are said to occur in cyclical waves, according to Shleifer and Vishny (2003), Goergen and Renneboog (2004) and Gaughan (2011), with high levels of merger activity followed by periods with fewer deals. Similarly, Maksimovic et al (2013) indicate that mergers and acquisitions appear to cluster over time.

According to Gort (1969) and Harford (2005), industry merger waves are driven by a mixture of technological, regulatory and economic shocks. Similarly, Martynova and Renneboog (2008) state that M&A waves tend to correspond with numerous regulatory, political and economic changes. Gaughan (2011) indicates that if an economic expansion occurs, companies are motivated to expand as a means of meeting rising levels of aggregate demand. Firms may choose to participate in merger activity over internal, organic growth due the speed of such a form of expansion. Corporate merger activity may also occur due to regulatory shocks, such as the removal of regulatory barriers that may have previously prevented such activity. Similarly, advances in technology can bring about striking changes in existing industries, as well as creating new ones, which may lead to firm expansion.

However, according to Harford (2005), whether such a shock leads to a merger wave or not depends on whether there is adequate capital liquidity. The industry shocks that cause merger waves require a large scale reallocation of assets. Therefore, in order for such shocks to cause a wave, there must be sufficient capital liquidity to accommodate the asset reallocation.

Furthermore, Gugler et al (2012) argue that merger waves tend to be correlated with increases in share prices and price/earnings ratios, whereby the peaks of merger waves coincide closely with the peaks of stock market booms.

Gaughan (2011) details the six periods of merger waves that have taken place in U.S. history; The first wave, which is known as ‘The Great Merger Wave’, occurred from 1897 to 1904 and resulted in the creation of a large number of monopolies (Martynova and Renneboog, 2008). Eight industries- primary metals, food products, petroleum products, chemicals, transportation equipment, fabricated metal products, machinery and bituminous coal experienced the highest level of merger activity and accounted for two-thirds of the mergers of this era.

The second wave occurred during the post-World War I boom from 1916 to 1929. During this merger wave, many industries were consolidated, resulting in the formation of oligopolies. Martynova and Renneboog (2008) explain that industries no longer remained dominated by one larger organisation, but instead by two or more firms.

The Great Depression of the 1930’s and the subsequent World War II inhibited the emergence of any waves for the following decades. However, the 1950’s saw the onset of the third merger wave, according to Martynova and Renneboog (2008), which has become known as the conglomerate merger period. This period saw many relatively smaller firms targeting larger firms for acquisitions in different industries (Gaughan, 2011).

The fourth wave, 1984 to 1989, became known as the ‘megamerger’ wave due to the size and prominence of many target firms. Gaughan (2011) states that during the 1980’s, some of the largest firms in the country became acquisition targets. This period also contained a significant number of hostile takeovers compared to the previous waves and focused on achieving high profits over a short time-frame. Martynova and Renneboog (2008) explain that numerous changes led to the onset of this wave, including; technological advances in the electronics industry, deregulation in the financial services industry, new financial markets and instruments being created and changes in anti-trust policy.

The year 1992 saw the onset of the fifth US merger wave, at a time when the economy entered into its longest post-war expansion (Gaughan, 2011). This wave comprised of firms entering into strategic deals that did not rely on leverage. During these deals, firms focused on strategy more than on quick financial gains. Even though there were many megamergers during this period, fewer hostile deals occurred. According to Martynova and Renneboog (2008), this wave featured increased international takeover activity.

The US Federal Reserve's responses to the economic shock of 9/11 led to the sixth merger wave (Gaughan, 2011). The low interest rates that were established benefitted the private equity business as it became less expensive for private equity buyers to conduct leveraged acquisitions. Private equity firms encountered no difficulties raising equity capital and were also able to borrow money at attractive rates. However, as with the prior waves, this wave came to an end in 2008, when the economy entered a recession due to the subprime crisis.

In conclusion, it is evident that M&A activity in the US has occurred in cyclical waves since the late 1800's, with an abundant amount of documentation and literature available. This paper focuses on US domestic and cross-border takeover deals. ECB (2012, p.5) defines cross-border M&As to be when "the main activity of the acquirer and target firms are registered in two different countries." Since the fifth merger wave in the 1990's, cross-border deals have become increasingly significant. According to Bloomberg (2012), cross-border deals accounted for approximately half of all takeover deals announced in 2012.

F.2 Theoretical Motives for Cross-border M&As

F.2.1 Corporate Governance Systems

Danbolt and Maciver (2012) argue that a country's corporate governance system can significantly impact a firm's acquisition decisions. Similarly, Rossi and Volpin (2004) suggest that differences in laws, regulations and enforcement affect the pattern and intensity of M&As. According to Danbolt and Maciver (2012), if the acquiring firm come from a country with strong corporate governance regimes in place, management may be restricted from participating in value-destroying acquisitions. Similarly, firms with better shareholder protection can be expected to make better investment decisions by identifying profitable opportunities and potentially paying a lower premium for their targets. Further to this, Bris and Cabolis (2008) affirm that in a country with weak corporate governance systems, there may be a large number of poorly managed and potentially undervalued firms. In a cross-border merger, the practices of the target and acquirer, such as accounting standards, may become unified. Therefore, the target may benefit from a transfer of strong governance practices from the bidder. Further to this, Danbolt and Maciver (2012, p.1031) maintain that we can expect "both bidder and target abnormal returns to be higher in cross-border acquisitions where the corporate governance standards are higher in the bidder than in the target country." Similarly, Hagendorff, Collins and Keasey (2008) found evidence of acquiring banks achieving higher returns when targeting low protection economies as opposed to bidders targeting banks operating under a strong governance regime.

F.2.2 Technology

In line with cross-border acquisition being a type of FDI, Stiebale (2013) argues that international M&As are largely driven by the desire to acquire technology and complementary assets. Cross-border takeover activity can largely affect the acquiring firm's innovation activity due to the relocation of R&D activities and/or the acquisition of technological advancements and opportunities. Weston and Chung (1990) state that the pace of technological change has accelerated and subsequently increased the degree of inter-industry competition. In an increasingly dynamic world, the threats to firms of losing markets and customers have significantly grown. Similarly, Weston et al (1999) argue that products are being introduced more rapidly and product life cycles are becoming shorter, increasing the technological requirements for all companies. Furthermore, Dickerson et al (2002)

explain that international acquisition activity may occur after an economic disturbance, such as a technological improvement, which causes the long-run equilibrium number of firms in the industry to decrease, hence, leading to greater economies of scale for the remaining firms.

F.2.3 Deregulation

According to Weston et al (1999) deregulation is a driving force begin the accelerating rate of cross-border M&As, blurring the boundaries of industries and multiplying the forms and sources of competition. Andrade et al (2001) assert that deregulation creates new investment opportunities as it potentially removes long-standing barriers to consolidating and merging. Similarly, Danbolt and Maciver (2012) argue that deregulation and increased globalisation have led to considerable increases in the level of international takeover deals globally. In line with this, Brook et al (1998) argue that unrestricted consolidation would enable firms to better utilise the potential economies of scale and scope achievable from merger activity. Andrade et al (2001) explain that deregulation became a dominant factor in the M&A activities since the late 1980s and underpins approximately half of the takeover activity since then. For this reason, they refer to the 1990's as the 'decade of deregulation'.

F.3 Evidence of Shareholder Wealth Effects from M&A Activity

F.3.1 Domestic Deals by UK Firms

Conn et al (2005) conducted a study of the announcement and post-acquisition shareholder returns with a sample of more than 4,344 acquisitions completed by UK acquiring firms from 1984-1998. Further sub-samples included 131 cross-border acquisitions with public targets, 1,009 cross-border acquisitions with private targets, 576 domestic acquisitions with public targets and 2,628 domestic acquisitions with private targets. They found higher three-day average returns for acquiring shareholders of domestic deals (0.68%) than for those of cross-border deals (0.33%). Further to this, domestic deals involving private targets produced returns of 1.05%, whereas deals involving public targets gave average returns of -0.99%. Furthermore, Conn et al (2005) found that cash as a method of payment dominated both cross-border and private domestic acquisitions, but that announcement returns were lower with cash deals than non-cash deals.

More recently, Ozkan (2012) studied a sample of 147 acquisitions conducted by UK firms between 1999 and 2005. The sample consisted of 90 domestic deals and 57 cross-border acquisitions. They found that domestic acquisitions achieved higher average shareholder returns than foreign deals, returning -1.7% and -12.4% respectively. Furthermore, they observed that 11.3% of domestic acquisitions used cash only payment methods, while this figure was 55% for cross-border acquisitions.

F.3.2 Cross-Border Deals by UK Firms

Aw and Chatterjee (2004) examined the post-takeover performance of UK acquiring firms from 1991-1996. They used an overall sample of 79 acquisitions which consisted of domestic UK, Continental European and US target sub-samples. Overall, using a 36-month estimation period, they found that the acquiring shareholders of US targets received negative average cumulative abnormal returns (CAR), ranging from -4.64% in the first six months to -8.61% in the first 18 months. Similarly, they found UK bidders acquiring Continental European targets reported average CARs of -24.57% in the first 24 months.

Gregory and McCorriston (2005) studied the short and long-run performance of UK firms that participated in international acquisitions during the 1984-1994 period. They used 5-day

and 21-day event windows and an overall sample size of 333 acquisitions, which included 206 acquisitions made in the US and 98 in the EU. They found average short-run CARs of 0.00237% and -0.007% for targets acquired in the US and EU, respectively. Furthermore, they also found negative one, three and five year post acquisition returns for UK foreign acquirers. Gregory and McCorriston (2005) also found that investing in a related industry had a negative impact on returns achieved.

Appendix G: Control Variables Determining Acquiring Shareholder Returns

Bid Reaction- Hostile versus Friendly

The attitude and reaction towards a takeover bid has proven to have a significant impact on acquiring shareholder returns. According to Goergen and Renneboog (2004), an acquisition attempt is considered hostile if of the target firm's board of directors rejects the offer. Hostility is known to occur from bargaining strategies aiming to extract a higher premium for target shareholders or from differences in the target's directors' viewpoints. Goergen and Renneboog (2004) argue that hostile acquisitions are often used as a disciplinary force to remove poorly performing management. Furthermore, they assert that the announcement of hostile takeovers leads to higher acquiring shareholder returns than the announcement of friendly M&As.

Goergen and Renneboog (2004) tested a sample of 228 merger and acquisition announcements from 1993-2000. They found that hostile acquisitions created negative abnormal returns of 2.5% for bidding firm shareholders. Whereas, friendly merger announcements triggered positive abnormal returns of 2.5%.

According to Moschieri and Campa (2009), most European acquisition deals from 2001-2007 were either friendly or neutral in nature, with only 1% comprising of hostile takeovers. They found that hostile bids tended occur in larger deals, whilst also being less successful. Further to this, Gregory and O'Donohoe (2014) examined 290 UK acquisitions from 1990-2005. They concluded that in Europe bidding firms paid more for targets during hostile acquisitions.

Appendix H: Meeting Declaration Form

Meeting	Signatures	Comments
1 st Meeting: Review of proposal, literature review to date and planning ahead.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>24/10/13</i>	Talked, brain storming, my methodology how like Concannon, thought process; key topics identified
2 nd Meeting: Interim literature review, table of contents and references feedback.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>28/11/13</i>	Map out literature, key studies focus for literature done until next chapter.
3 rd Meeting: Introduction chapter and development	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>10/01/14</i>	Discussion on intro & intro; introduction & intro review + feedback variables - introduction for people, think and it should be variables; at the beginning
Mandatory Deadline: 1 st day of lectures, Semester 2: Submit Introduction and Literature Review		
Meeting 4: Literature review and introduction feedback and methods planning.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>28/02/14</i>	Discussion of initial Methodology + starting framework to map out variables, + stable it has detail and
Meeting 5: Interim methodology feedback and operationalisation issues.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>June 4th 2014</i>	Discussed methodology - how - some detail, Hyr variables + data - sample issues good program - a note on writing sample + some data collection
Meeting 6: Planning the findings chapter.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>10th July 2014</i>	Discussion on data on variables and on methodology. times re sample and found each other calculation + discussion on the research not ready
Mandatory Deadline: 10 th June 2014: Methods Chapter and Data Collection Protocols		
Meeting 7: Findings feedback, planning analysis and write-up.	Student: <i>R. Concannon</i> Supervisor: <i>John O'Donohue</i> Date: <i>13/08/14</i>	Discussion final stages a presentation, analysis + conclusion
Mandatory Deadline: 22 nd August 2014: Submit Dissertation		