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ARE CROSS-BORDER MERGERS AND ACQUISITIONS BETTER OR WORSE THAN DOMESTIC MERGERS AND ACQUISITIONS? THE UK EVIDENCE

by

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ABSTRACT

Mergers and acquisitions (M&As) are important corporate strategy actions that are vital for the companies in order to survive in this competitive global world. The popularity of those actions has increased over the years, especially in the international domain. In the UK, both the number and value of cross-border M&As has increased significantly over the years. Despite this increase, there haven't been enough studies or clear evidence about whether venturing abroad to acquire foreign targets leads the companies to better performance compared to staying domestically.

Therefore, the purpose of this thesis is to investigate the M&A phenomenon deeply and compare between cross-border and domestic M&As made by UK public acquirer firms. More specifically, the thesis concentrates on three main issues which are: (1) the difference between the returns to shareholders of acquirer firms involved in cross-border and domestic M&As; (2) the difference between the operating performance of acquirer firms involved in cross-border and domestic M&As; and (3) the difference between the impacts of cross-border and domestic M&As on the operating performance of acquirer and target firms combined.

Market-based and accounting-based approaches are used to investigate a sample of UK acquirer firms engaged in cross-border and domestic M&As both in the short-term and in the long-term periods. In general, the results reveal insignificant differences between the shareholders' returns and operating performances of acquirer firms involved in cross-border and domestic M&As over the short- and long-term periods. On the other hand, the results for acquirer and target combined firms show that cross-border M&As have lower operating performances than domestic M&As.

Recommendations are provided in order to help the decision and policy makers in the companies to decide whether cross-border M&As should be actively encouraged or discouraged in comparison with domestic M&As.

I

DEDICATION

To my family: Parents, husband, son and daughter

With all my love and gratitude

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION

1.1 Background

Mergers and acquisitions, whether being domestic or cross-border, are of great importance for companies to survive in this competitive global world. The success and failure of these transactions are of great significance and have enormous consequences for the companies themselves as well as for the other constituencies in them (Sudarsanam, 2010).

In a merger, two firms combine their assets and operations and share their resources to establish a new legal entity and achieve common objectives. Frequently, the two companies' shareholders remain as mutual owners for the newly combined entity. In an acquisition, the acquirer firm purchases the shares or assets of the target firm, with the control of these assets and operations being transferred to the acquirer firm, while the shareholders of the target firm end their ownership of the firm and the acquired firm becomes an affiliate or subsidiary of the acquirer (UNCTAD, 2000; Sudarsanam, 2003). However, Sudarsanam (2010) defined M&As generally as the combination of two companies so as to attain several business and strategic goals.

In general, mergers and acquisitions can be functionally classified into three categories. These comprise horizontal mergers, vertical mergers and conglomerate mergers. Horizontal mergers and acquisitions occur when two firms in the same line of business who are competing in the same market and industry combine together (Gaughan, 2007; UNCTAD, 2000). Vertical mergers and acquisitions occur when firms in different parts of the value chain combine

together by expanding backward to the supplier of raw materials or by expanding forward towards the final consumers (Gaughan, 2007; UNCTAD, 2000). Conglomerate mergers and acquisitions occur when the combining firms work in different industries and different business lines with unrelated activities (Gaughan, 2007; UNCTAD, 2000).

The importance of horizontal mergers and acquisitions has risen somewhat over the years and the aim of the firms from consolidating their resources here is to achieve synergies and often greater market power. In the vertical mergers and acquisitions the firms typically aim to reduce their transaction costs as well as to take advantage of the economies of scope. In conglomerate mergers and acquisitions, the firms try to diversify their risk and extend economies of scope (UNCTAD, 2000).

Depending on the mood of the target, the acquisition can be either friendly or hostile. In a friendly takeover, the target firm's board agrees to engage in the M&A transaction. However, hostile takeovers take place in spite of the rejection of the target company's board (UNCTAD, 2000).

Mergers and acquisitions can also be domestic or cross-border deals. Domestic M&As are those which include an acquirer and a target firm operating in the same home country, whereas cross-border M&As are those transactions where the acquirer and the target firm are placed in different countries (UNCTAD, 2000).

The increase in the number and value of international M&A deals shows that cross-border M&As have gained more importance and popularity around the world over the years (Goergen and Renneboog, 2004; Conn et al., 2005). Also in the UK, there has been a significant increase in the value and number of cross-border acquisitions. For example, the value of UK acquisitions by the year 2000 was the highest over the other years and also

occupied 30% of the world's total value of cross-border acquisitions, which made the UK as a leading country in cross-border deals (Conn et al., 2005; UNCTAD, 2000). This high value may be explained by the occurrence of some mega deals which were started in 1999 and completed in 2000, such as the one where the UK Vodafone Airtouch Plc, the world's largest wireless communications company, acquired the German cellular phone company Mannesmann for more than $200 billion, this transaction being the largest in the M&A history (DePamphilis, 2008; UNCTAD, 2000).

Also, traditionally and over the years, the UK surpassed all the other European Union (EU) countries in terms of the intensity of merger and acquisition activity and its exposure to global M&As (Sudarsanam, 2010). Moreover, within the huge rise in takeover activity over the years, the UK proved to be a leading player in conducting M&A transactions which makes it " the second largest M&A market after the US" (Sudarsanam, 2010, p.22).

Tables 1.1 and 1.2 respectively show the number and value of cross-border M&A purchases made by UK acquirers compared with the world total values and numbers from 1987 to 2007. However, the whole tables as provided by the UNCTAD (2008) are available in Appendix 1.

Table 1.1: Number of Cross-border Merger and Acquisition Purchases 1987-2007

Year	World	UK	%
1987	1 174	274	23%
1988	1 879	528	28%
1989	2 723	669	25%
1990	3 360	584	17%
1991	3 908	559	14%
1992	3 724	482	13%
1993	3 965	521	13%
1994	4 566	596	13%
1995	5 498	717	13%
1996	5 868	743	13%
1997	6 740	936	14%
1998	7 995	1 022	13%
1999	9 007	1 196	13%
2000	10 031	1 291	13%
2001	8 098	1 078	13%
2002	6 553	814	12%
2003	6 621	764	12%
2004	7 270	901	12%
2005	8 560	1 063	12%
2006	9 075	1 103	12%
2007	10 145	1 206	12%

Source: UNCTAD cross-border M&A database (www.unctad.org/fdistatistics)
Category: WIR-key Data from Annex of WIR 2008

Table 1.2: Value of Cross-border Merger and Acquisition Purchases 1987-2007
(Millions of dollars)

Year	World	UK	%
1987	97 311	22 333	23%
1988	137 630	26 901	20%
1989	167 068	38 786	23%
1990	200 389	29 877	15%
1991	116 642	12 751	11%
1992	112 939	15 988	14%
1993	123 492	20 697	17%
1994	170 575	29 827	18%
1995	231 577	37 132	17%
1996	264 254	46 638	18%
1997	370 987	73 437	20%
1998	692 686	121 624	18%
1999	903 868	232 410	26%
2000	1 349 777	406 621	30%
2001	730 441	120 155	17%
2002	483 238	85 838	18%
2003	411 302	70 227	17%
2004	565 871	70 636	13%
2005	929 362	113 406	12%
2006	1 118 068	125 747	11%
2007	1 637 107	269 709	17%

Source: UNCTAD cross-border M&A database (www.unctad.org/fdistatistics)
Category: WIR-key Data from Annex of WIR 2008

It can be seen that there was a large scale increase in the number and value of the world's total mergers and acquisitions during the period 1992 to 2000. During the nineties the vast increase in the number of mergers was accompanied by an economic boom which was represented by the vast growth in the internet and telecommunications industries and the development of the European new markets. However, after the millennium, when the dot com bubble burst in 2000, there was a collapse in consumer confidence in those industries in the following years as well as an overcapacity in the traditional sectors which resulted in a reduction in the merger activity (Goergen and Renneboog, 2004).

For the UK, the pattern is similar to the world's movements taking into consideration that the UK's share of the world's total number of cross-border purchases remained within 12% to 14% from 1991 until 2007 as shown previously in Table 1.1, which shows that the UK is participating in an active way in cross-border M&As.

The increase in the number and value of M&A transactions has been associated with an increase in the number of theories and publications examining this phenomenon. Some researchers expect an outperformance of cross-border M&As over domestic M&As for both acquirer and target firms (Martynova et al., 2007). The reason is that in cross-border M&As, the firms expand their businesses into new markets and internalize the target firms' R&D capabilities, which gives them a competitive advantage over other firms and makes them benefit from the imperfections in the international capital market (Martynova et al., 2007).

On the other hand, some issues may arise in cross-border M&As and cause difficulties in managing the newly combined firms. These include the differences between acquirer and target countries in their cultures and regulations, which may result in the failure of achieving the expected merger synergies and cause cross-border M&As to underperform domestic M&As (Martynova et al., 2007).

The examination of the M&A transactions has been conducted using two main approaches: one of them is the stock market-based approach and the other is the accounting- based approach (Tuch and O'Sullivan, 2007).

Stock market studies have been conducted either over the short-term or over the long-term. The short-term approach is based on the idea of stock market efficiency which means the reaction of the stock market to the announcement or completion of the M&A transaction, and this reaction provides and reflects a reliable measure and information about the expected value of the acquisition (Sudarsanam, 2010). However, long-term studies assume that the market needs more time to assess the value implications of the M&A and to react to the news, which requires extending the examination for several years following the acquisition.

In general, the studies which examined the domestic M&As over the short-term period have found that target firms' shareholders achieve significant gains whereas acquirer firms' shareholders achieve either small or insignificant gains. However, most of the studies conducted over the long-term period have found that acquirer firms suffer from significant wealth losses most of the time (Sudarsanam, 2010). Also, studies which examined cross-border M&As over the short-term have found mixed results with some of them reporting positive returns, others reporting wealth losses, whereas the rest show insignificant returns. In general, cross-border M&As do not result in wealth gains for acquirers' shareholders in most cases (Sudarsanam, 2010).

In comparison with the market-based studies and the examination of the stock market reaction, only a few studies have been conducted to examine the operating performance of firms. However, the evaluation of the M&A on the basis of the operating performance is important and helps in providing additional insights into the effects and consequences of the M&A transactions (Sudarsanam, 2010).

In general, previous accounting-based studies examining the operating performance of firms following domestic and cross-border M&As have yielded inconsistent results (Selcuk and Yilmaz, 2011). Some of them report gains (Healy et al., 1992; Powell and Stark, 2005), some report losses (Dickerson et al., 1997) whereas others show insignificant results (Ghosh, 2001; Sharma and Ho, 2002).

Most of the previous studies have used samples from the eighties and the early nineties in their examinations, which may make their results out of date with the changes in the global world nowadays. Also, those previous studies, whether being market-based or accounting-based, haven't differentiated between domestic and cross-border M&As in their examinations, which makes it unclear and ambiguous for the companies which are willing to conduct an M&A transaction to decide whether or not going abroad is better for them than staying in their home country.

This thesis will try to fill these gaps in the literature by examining cross-border and domestic M&As using a sample of UK acquirer firms involved in cross-border and domestic M&As during the period 1996 to 2003, which is more recent than the periods examined in other previous studies. The examination will endeavour to provide a clear platform for the companies who are intending to go for an M&A transaction in a way that can help them to make their decisions about whether or not to go abroad. The examination will be conducted by studying the consequences of the M&A deals over the short-term and long-term periods using both market-based and accounting-based approaches.

1.2 Aims and Objectives

Despite the increase in the popularity and importance of cross-border M&As, there hasn't been enough research on cross-border M&As and the difference between them and domestic M&As, which requires a more thorough analysis for this strategy. Although cross-border and

domestic M&As have common characteristics, cross-border M&As have distinctive and important differences (Shimizu et al., 2004). Previous studies have tried to answer some of the questions and assumptions concerning this phenomenon, but there are still some gaps in the literature that need to be filled.

The main aim of this thesis is to provide an in depth analysis and comparison between cross-border and domestic M&As made by UK public acquirer firms between 1996 and 2003. Therefore, in order to achieve this overall aim, the research concentrates on the key objectives as follows:

Study One: To examine the difference between the reactions of the share prices of UK acquirer firms to the announcements of cross-border and domestic mergers and acquisitions.

Study Two: To investigate the difference between the operating performances of UK acquirer firms involved in cross-border and domestic mergers and acquisitions.

Study Three: - To examine the difference between the impacts of cross-border and domestic M&As on the operating performance of UK acquirers and targets combined.

- To check whether the impacts of domestic and cross-border M&As on the operating performance of UK acquirers only are different from their impacts on the operating performance of UK acquirers and targets combined.

1.3 Contribution of the Thesis

This thesis attempts to examine some of the issues in a way which differs from the previous studies in the following aspects:

- This study attempts to examine whether there are significant deviations or differences in the results achieved by merger and acquisition transactions conducted in the domestic market and mergers and acquisitions conducted in the foreign market. Previous studies concentrated on each kind of merger and acquisition separately.

- This study examines a sample which covers the years 1996 to 2003, which is more recent than previous studies that were conducted using samples from the eighties and the early nineties. Therefore, our sample is more up-to-date than the previous studies and reflects the changes in the global world nowadays.

- The examination of the impacts of mergers and acquisitions on the operating performance of UK acquirer firms is virtually nonexistent in the previous literature, which makes the second study of the thesis a major contribution to the literature. Most of the previous researchers who examined the operating performance of firms involved in M&As have conducted their examination for the acquirer and target firms combined, which makes it unclear whether the acquirer firm alone or the target firm alone have gained from the acquisition or not. Therefore, examining the acquirer firms only without including the targets will give a better idea of the differences between the impacts of cross-border and domestic M&As on the operating performance of acquirer firms.

- Also, the analyses conducted in this thesis combines the market-based approach with the accounting-based approach by using returns data as well as operating performance cash flow and accrual data in evaluating acquirer firms and the combined firms involved in cross-border and domestic M&As, using new methodologies and several measures and techniques.

Additionally, the significance of the thesis may be considered in the light of its contribution to the existing knowledge and the practical perspective in the following aspects:

- The examination and comparison between cross-border and domestic M&As helps firms in developing strategic plans and makes it easier for them to make the best choice of whether to go internationally and cross the borders or stay in their home country, since it applies an in depth analysis of some of the main issues concerning the consequences of those M&A deals.

- Findings from the thesis might shed some insights to academicians as well as decision and policy makers in formulating better strategies so as to improve resources allocation in a way that leads for the benefit of the firm as well as the economy as a whole.

- The findings of the thesis might help managers who are thinking about conducting a merger and acquisition deal to identify their positions before they make any decision and give ideas on the strategies which they should follow in order to avoid losses and achieve the best results.

1.4 Structure of the Thesis

The thesis is structured into 5 chapters. Chapter 1 provides a general introduction and overall overview of the thesis. This includes a general background with some definitions, aims and objectives of the thesis, contributions and structure of the thesis.

Chapters 2, 3 and 4 are the empirical chapters of the thesis. Chapter 2 commences by presenting some of the motives, theories and regulations of takeovers in general. It then investigates the difference between the reaction of the market to the announcement of cross-

border and domestic M&As by examining the returns to shareholders of UK acquirer firms. An event study methodology is applied and different methods and event windows around the announcement date are used to calculate the abnormal returns of acquirers' shareholders followed by a regression analysis to examine the impact of some of the acquirer and deal characteristics on the returns to shareholders of acquirer firms.

Chapter 3 presents the second empirical study of the thesis which can be considered as a continuation of the examination of the first empirical study of UK acquirer firms. It aims to investigate the difference between the operating performance of UK acquirer firms which are engaged in cross-border and domestic mergers and acquisitions. The study examines a time period of three years before and three years after the acquisition by applying different performance measures, models and benchmarks. Also, a regression analysis is applied in order to examine the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms.

Chapter 4 presents the third empirical study of the thesis. In the first empirical part of the study, the analysis is applied on the combined firms (acquirer and target firms together) in order to examine the difference between the impacts of cross-border and domestic M&As on the operating performance of the combined firms. However, the second empirical part of the study examines only the acquirer firms rather than the combined acquirer and target firms in order to check whether excluding the target firms from the analysis has any significant impact on the results.

Finally, Chapter 5 summarises the key findings and conclusions of the previous chapters. The chapter also discusses some of the implications of the study, its limitations, as well as making suggestions for future research. Figure 1.1 presents the structure of the thesis.

Figure 1.1: Structure of the Thesis

Chapter 1

Introduction

Chapter 2

The Difference between the Returns to Shareholders of UK Acquirer Firms in Cross-border and Domestic M&As

Chapter 3

The Difference between the Operating Performance of UK Acquirer Firms in Cross-border and Domestic M&As

Chapter 4

The Difference between the impacts of Cross-border and Domestic M&As on the Operating Performance of Combined Firms

Chapter 5

Summary, Conclusions and

Recommendations

CHAPTER TWO

THE DIFFERENCE BETWEEN THE RETURNS TO SHAREHOLDERS OF UK ACQUIRER FIRMS INVOLVED IN CROSS-BORDER AND DOMESTIC ACQUISITIONS

2.1 Introduction

Mergers and acquisitions are of significant importance to all the stakeholders in the merging firms whether they are shareholders, employees, consumers or the wider community (Sudarsanam, 2010). Thus, the assessment of the success of these mergers and acquisitions is very important and can be achieved in several ways.

One of the ways for assessing the success of the mergers is by focusing on the shareholders' value, since shareholders are the controlling power in the organization and the residual owners of the company (Martynova and Renneboog, 2008). Therefore, the shareholders must be the focal point for any study or valuation of the firm since focusing on the shareholder value yields an efficient evaluation criterion (Tuch and O'Sullivan, 2007).

There have been a number of previous studies concentrating on the effects of merger and acquisition deals. Most of those studies focused on the examination of the market reaction due to the announcement of mergers and acquisitions and the impact on the target, acquirer or the combined firm. In general, most of the results for those short-term market-based studies have shown that target firms usually gain whereas bidders experience losses or no significant market reaction at all. Therefore, in general there has been no clear evidence of any net wealth

creation whereas there has been wealth transfers to target firm shareholders from acquiring firm shareholders (Fraser and Zhang, 2009).

However, other studies examined the impact of M&As by examining longer time periods concentrating on the long-term stock performance of the combined firms rather than the short-term market reaction only. However, those studies have shown that the evaluation of the stock price performance over a long time period is difficult due to the availability of other potential conditions that may have an impact on the price of the combined firms over the extended time period (Tuch and O'Sullivan, 2007; Fraser and Zhang, 2009).

Over the years, the popularity of the merger and acquisition strategy for firms has increased and grown so much making mergers and acquisitions universal. They have become an important strategy used by many firms throughout the world. Within this global trend, the period after the mid- 1980s and 1990s witnessed an increase in the number and value of international acquisitions made by UK firms which were almost equal to that of domestic acquisitions (Conn et al., 2005). Figures 2.1 and 2.2 show the number and value of cross-border and domestic acquisitions made by UK acquirers for the years 1987 to 2007 depending on the data provided by the UK National Statistics.

Figure 2.1: Number of Cross-border and Domestic Acquisitions by UK Acquirers 1987-2007

Source: based on M&As data provided by the UK office for National Statistics (2009) / (www.statistics.gov.uk)
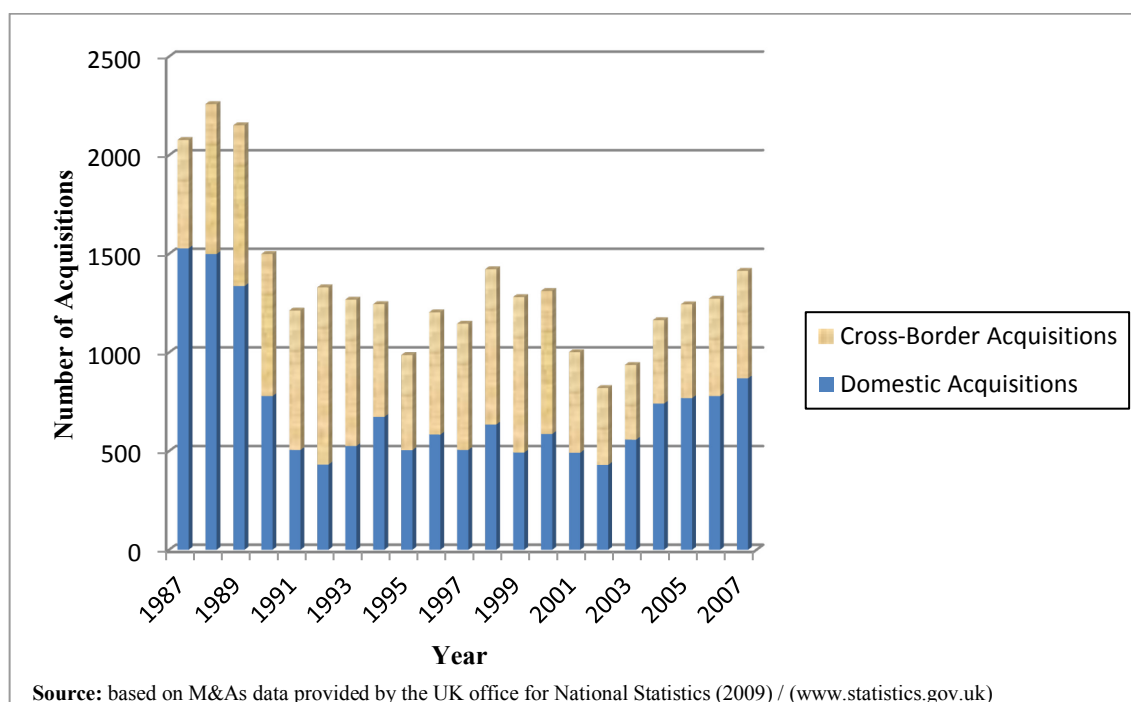
Figure 2.2: Value of Cross-border and Domestic Acquisitions by UK Acquirers 1987-2007

Source: based on M&As data provided by the UK office for National Statistics (2009) / (www.statistics.gov.uk)
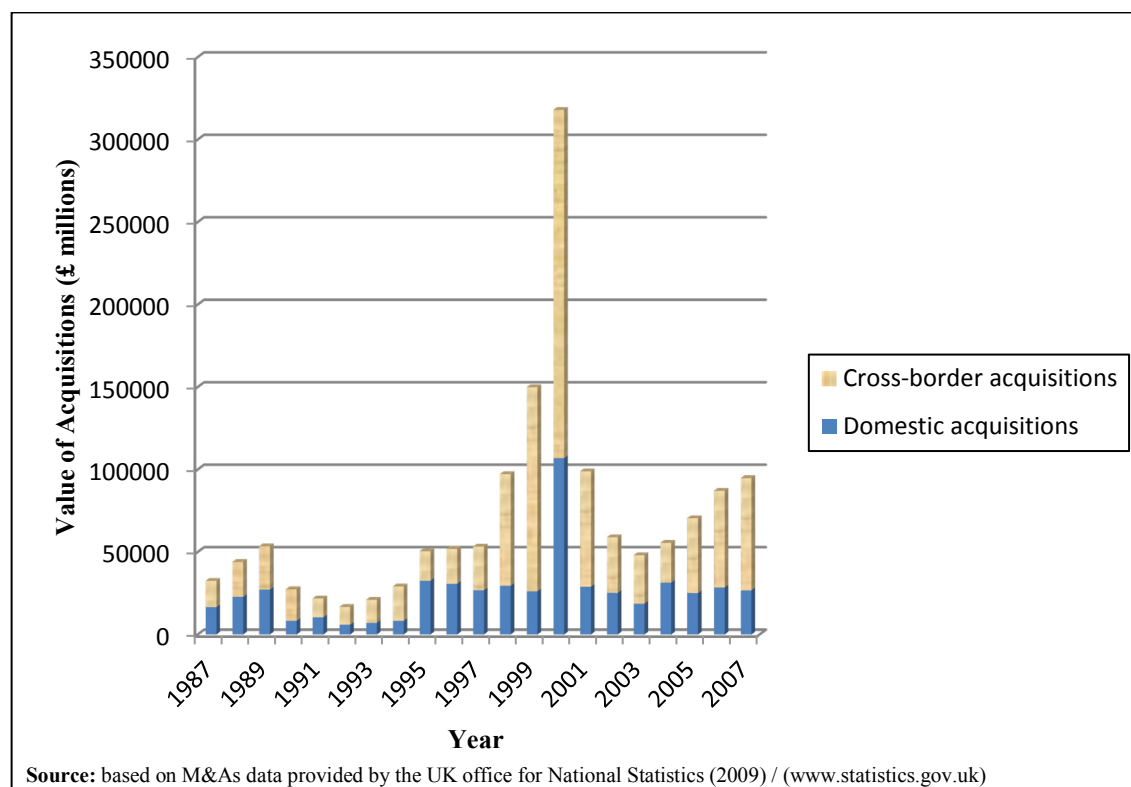
Consequently, within the increased level of takeover activity, this has been accompanied by an increase in the number of academic studies which examine the performance of the targets and bidders of the combining firms (Sudarsanam and Mahate, 2003). Although some research has been conducted regarding the returns to shareholders, most of the previous studies have examined either the domestic M&As or cross-border M&As separately. However, the approach in this study differs from those previous studies that dealt with the examination of the takeover activity in a way that compares directly between cross-border and domestic acquirers' returns. Therefore, the emphasis is on examining the returns of each type of acquirer in isolation and then the comparison between the returns of acquirer firms engaged in cross-border and domestic M&As.

Moreover, many of the previous studies were conducted using acquisition transactions based on data and samples covering time periods during the eighties and early nineties which make their results out of date in reflecting the rapid changes in the global business environment nowadays.

However, the sample here covers an important and interesting period in the M&A activity, since in the nineties there was an increase both in the number and value of acquisitions, especially in 1996 which witnessed a steep increase in the total value of the US, UK and European acquisitions which reached about USD 1,117 million (Goergen and Renneboog, 2004). This rise in the value of acquisitions continued in the following years which gave the M&A activity much more strength. Also, the increase in the M&A activity in the recent years was accompanied by a typical phenomenon which is a larger size of the acquisitions than ever before. Furthermore, the M&A activity has become more global with cross-border M&As by industrialised countries representing over 80% of all foreign direct investment (Conn et al., 2005; Goergen and Renneboog,2004).

The results of the studies applied on samples covering the eighties and early nineties may not be applicable to the recent M&A activity due to the changes in global business environment nowadays. For example, there have been changes in the economic, institutional and cultural structures of firms in different countries over the years, which may impact the results of examining recent M&A transactions differently than previous years.

Also, there has been an increase in the number of mega cross-border merger and acquisition deals in recent years in comparison with the eighties and early nineties, which may contribute to the existence of some differences in the results (UNCTAD, 2005).

Recent studies which examined the impact of mergers and acquisitions on the returns to shareholders of acquirer firms around the announcement date have focused either on cross-border M&As or domestic M&As separately. For example, Campa and Hernando (2004) examined European acquirer firms engaged in cross-border M&As with results showing insignificant cumulative abnormal returns.

Gregory and McCorriston (2005) achieved similar results of insignificant abnormal returns for a sample of UK acquirer firms involved in cross-border M&As. However, Ben Amar and Andre (2006) found significantly positive cumulative abnormal returns to Canadian acquirer firms involved in cross-border mergers and acquisitions.

Considering domestic mergers and acquisitions, Moeller et al. (2004) examined a sample of US acquirer firms engaged in domestic acquisitions with results showing significant positive cumulative abnormal returns. However, Sudarsanam and Mahate (2003, 2006) achieved different results for UK acquirer firms, with significant negative returns of 1.4% over the (-1, +1) event window.

The previous studies haven't differentiated between domestic and cross-border mergers and acquisitions in their examinations of the returns to acquirer firms, which makes it unclear and ambiguous of whether or not cross-border M&As generate higher returns to acquirer firms than domestic M&As.

Therefore, this study will fill the gap in the literature by the use of a sample that combines both cross-border and domestic M&As and the direct comparison of the returns to shareholders of acquirer firms involved in cross-border and domestic M&As, in order to find out whether or not there is any significant difference between them.

Therefore, more specifically the objectives of this chapter are as follows:

- To examine the difference between the reactions of the share market returns on the London Stock Exchange to the announcement of cross-border and domestic acquisitions by UK acquirers.

- To examine the impact of some of the deals and acquirers characteristics on the returns to shareholders of UK acquirers.

In order to achieve the objectives of this chapter, a sample of 585 UK public acquirer firms involved in domestic and foreign acquisitions over the period 1996-2003 is examined. Event study methodology is applied using three benchmark models which are the mean-adjusted model, the market model and the market-adjusted model. The results in general show significant positive returns to shareholders in domestic mergers and acquisitions compared with insignificant negative abnormal returns to shareholders in cross-border mergers and acquisitions. However, there has been no significant differences between the returns to

acquirers' shareholders involved in cross-border and domestic M&As over most of the event windows examined around the announcement date.

This chapter is organised as follows: Section 2.2 discusses the previous theoretical and empirical literature on domestic and cross-border M&As. Section 2.3 describes the regulation system of takeover bids in the UK. Section 2.4 presents the data sample and methodology, while section 2.5 reports and discusses the empirical results. Section 2.6 which is the final section summarizes the key findings and conclusions.

2.2 Literature Review

This section commences by reviewing the theoretical and empirical studies of the motives for mergers and acquisitions and then discusses the theoretical and empirical results of returns to shareholders in domestic and cross-border mergers and acquisitions.

2.2.1 Motives for Mergers and Acquisitions

Theoretical research and studies over the years provided several explanations for the M&A strategy by examining various motives for mergers and acquisitions in general. Therefore, there have been a lot of possible reasons which were suggested as an explanation for why a company chooses M&A as a way of growth. In general, the most common cited motive is to achieve synergy. However, there are several other motives such as diversification, market power, improved management or tax motives (De Pamphilis, 2008).

Trautwein (1990) argued that the motives of mergers and acquisitions haven't received enough theoretical efforts from researchers as much as the merger consequences. However, most researchers agree that in reality, there are a number of different motives that drive mergers to take place and not only one motive (Ravenscraft and Scherer, 1987; Trautwein, 1990; Hopkins, 1999; DePamphilis, 2008). Therefore, it was useful to group these motives

into various categories (Mukherjee et al., 2004). For example, Trautwein (1990) classifies the theories for merger motives into seven categories which are efficiency, monopoly, raider, valuation, empire-building, process and disturbance theory. However, most of these theories haven't got enough empirical results with which to support them. Berkovitch and Narayanan (1993) and Seth et al. (2000, 2002) indicate three major motives for mergers which are the achievement of the synergy, hubris and managerialism. Mueller and Yurtoglu (2007) divide them into synergy, market for corporate control, managerial discretion, overvaluation and the hubris hypotheses. Also, Mukherjee et al. (2004) mentioned some of the motives which include diversification, management incentives and tax considerations.

Consequently, there are numerous theories that explain the reasons why mergers and acquisitions take place. The most common ones are the synergy or efficiency theory, the hubris, managerialism or agency theory, each of which will be discussed below in detail with the empirical findings on them.

2.2.1.1 The Synergy Hypothesis

The synergy hypothesis suggests that the motive for the acquisitions exists when it is a value increasing event, which means that the firm's value after the combination is greater than the values of the individual firms operating separately (Bradley et al., 1988; Seth et al., 2000). This means that improving the efficiency of the combining firms is a popular explanation for acquisitions. Therefore, it follows that managers of acquirer and target firms intend to engage in the combination only if it results in shareholders' wealth maximization for the acquirer and target firms (Berkovitch and Narayanan, 1993; Goergen and Renneboog, 2004).

In general, the sources of value from synergy could be classified into three types, which are: operational synergy, managerial synergy and financial synergy. The operational synergy can arise from the economies of scale and scope or through the increased monopoly power.

Therefore, operational synergies will be available and result in gains to the shareholders of both firms if the combining firms share the same industry. If the companies are not from the same industry but are horizontally or vertically related then there will be an increase in their monopoly power (Sudarsanam et al., 1996). On the other hand, if the merger is conglomerate and the firms are from unrelated industries, then the value creation will result from non-operational sources of synergy such as managerial or financial sources (Sudarsanam et al., 1996).

Empirical studies suggest that the operating synergy through economies of scale and scope are important determinants for shareholders' wealth (DeLong, 2003). Economies of scale are reached by spreading the fixed costs over the increased production (Sudarsanam, 2003). However, economies of scope can be achieved through using an existing group of skills or assets which were already used to produce a specific service or product in producing related services and products (Sudarsanam, 2003). This is most often found when the combination of a number of product lines in one firm is much cheaper than producing them in separate firms.

Also, market power economies which are achieved by the ability of the firms to control prices due to their greater size represent another source of synergy. It is achieved by the monopoly power which refers to the firms' ability to force buyers to accept higher prices, or through monopsony power which refers to the firm's ability to force the suppliers in accepting lower prices (Sharma and Ho, 2002).

Managerial synergy could arise when the bidder's management team has managerial competency greater than what is needed for the current tasks in their firm. Thus, they may seek to take over a target which has less competent managers so as to employ their surplus managerial resources and improve the efficiency of the target which is less efficient due to their insufficient management. Therefore, the acquirers' managerial surplus will combine with

the targets' non-managerial organizational capital to create synergy by the merger with both bidder and target shareholders experiencing wealth gains (Sudarsanam et al., 1996).

Moreover, there is scope for financial synergy in certain acquisitions. This kind of synergy occurs when the merger or the acquisition results in lower cost of capital for the acquiring firm or the newly formed firm. It can result from some possible sources which are: the tax advantage resulting from the unused debt capacity in any of the bidder or target firms, since there will be a much higher debt capacity resulting from the new combined firm; financial economies of scale through lower transactions and securities costs as well as "the complementary nature of the growth opportunities and financial resources of the merging companies and the coinsurance of debt of the two companies" (Sudarsanam et al., 1996, p. 675).

The synergy hypothesis was supported by the results of some of the empirical studies. Berkovitch and Narayanan (1993) find in their examination of a sample of US firms engaged in domestic deals that the synergy is the most important motive for these takeovers supported by the positive total gains.

Goergen and Renneboog (2004) investigated an intra European sample which contained acquirers and targets from the UK and Continental Europe (UK, Ireland, Germany, Austria, Switzerland, France, Scandinavia, Belgium, Netherlands, Luxembourg, Southern Europe and Central Europe). They examine whether the most common reason for takeovers is synergy, agency problem or managerial hubris. They found a significantly positive relationship between target gains and bidder gains and between target shareholder gains and total gains which suggest that synergies are the main motivations for bids, with targets and bidders sharing the wealth gains.

Therefore, although the rational may differ from one merger to the other, there's a common measure of success for mergers, which is efficiency gains through synergies and the increased value of the combined firms (Mukherjee et al., 2004).

2.2.1.2 The Hubris Hypothesis

The hubris hypothesis proposes that acquisitions are the result of managers' mistakes in evaluating target firms and that the synergy gain is zero (Roll, 1986). Consequently, when managers make errors of overestimating the synergies of the merger or the acquisition, the takeover may take place and as a result there might be an overpayment for the target.

The hubris hypothesis is also referred to as the ''winners curse''. The reason for this comes from the reality that sometimes in the auctions and the existence of many bidders with a range of several bids for the target company, an increase in the competitive environment would make the estimation of the actual value of the target more difficult. Therefore, the winning bid may be much higher than the expected value of the target company. In this situation, the winner is described as being cursed and may regret paying much more than what the company is worth (DePamphilis, 2008).

However, since the synergy is assumed to be zero, then the higher the gain for the target, the greater will be the loss to the acquirer firm and the total gain will be zero. Therefore, we may say in this case that there is a negative correlation between the targets' and the acquirers' gain, whereas there is no correlation between the target and the total gain (Berkovitch and Narayanan, 1993; Goergen et al., 2004). Berkovitch and Narayanan (1993) found evidence of hubris in a sub-sample of US takeovers and Firth (1980) also found evidence of hubris that was reflected by positive gains to target firms while examining a sample of UK firms.

2.2.1.3 The Agency Hypothesis (Managerialism)

The agency hypothesis proposes that takeovers are motivated by the acquirers' management self-interest (Goergen and Renneboog, 2004). Therefore, this leads to the problem that the managers who are working as agents for the owners (stockholders) may have some conflicting interests. This is because some managers are interested in the actions that provide them with extra power and prestige such as growth, size and diversification (Hopkins, 1999), whereas the owners (stockholders) are more likely to be interested in the profitability of their firm as well as the increase in their stock prices. Therefore, unlike the hubris hypothesis, the acquirers' management here will knowingly overpay in takeovers to maximize their own wealth and corporate growth rather than the firm shareholders' wealth (Seth et al., 2000). Some managers may have the motive to do that if their salaries and bonuses are dependent on the size of their firms rather than on their performance.

In comparison with the previous hypotheses, there will be a negative correlation between the targets value and the bidders' value, and negative correlation between the targets value and the total value (Goergen and Renneboog, 2004). Using a sub-sample of US takeovers which took place during 1963-1988, Berkovitch and Narayanan (1993) found evidence for the managerialism hypothesis which was reflected by the negative correlation between target and total gains.

2.2.2 Cross-border Mergers and Acquisitions Motives

The dynamics of cross-border M&As have great similarities to those of domestic M&As (Shimizu et al., 2004). However, since cross-border mergers and acquisitions have some unique characteristics, costs and benefits, due to their international nature, there may be some possible systematic differences in the different motives for domestic and cross-border acquisitions (Harris and Ravenscraft, 1991; Seth et al., 2000). Also, we shouldn't ignore the

fact that cross-border M&As involve some unique challenges caused by the different economic, cultural, and institutional structures within the different countries (House et al., 2002; Shimizu et al., 2004). Therefore, we shouldn't treat cross-border mergers and acquisitions as an extension of domestic mergers and acquisitions since they are more complex due to the various differences between the countries of the acquirer and the target companies (Sudarsanam, 2003). As a result, managers need to take into consideration those differences in domestic and cross-border mergers and acquisitions in the cultural, environmental, legal and accounting rules differences (Sudarsanam, 1995).

Generally speaking, the synergy, hubris and managerialism may be possible motives for both domestic and cross-border mergers and acquisitions. For example, the synergy hypothesis is also applied in cross-border mergers and acquisitions. Eun et al. (1996) test the synergy hypothesis using a sample of foreign acquirers acquiring U.S. firms during the period 1979-1990. Their findings generally show that cross-border M&As are synergy-creating activities. Moreover, Kiymaz and Mukherjee (2000) show that country diversification results in synergistic benefits. Also, it was found by Seth et al. (2000) who examined a sample of foreign acquisitions of US firms that the synergy hypothesis is the main explanation for those transactions (Mukherjee et al., 2004). Therefore, efficiency gains through synergy are probably the most obvious reason for mergers and acquisitions whether being domestic or cross-border (UNCTAD, 2000).

The hubris hypothesis may also be relevant to cross-border acquisitions and not only to domestic mergers and acquisitions. This relies upon the belief that the information asymmetry is on average greater in cross-border deals between a foreign bidder and a domestic target than in domestic deals between a domestic bidder and a domestic target (Seth et al. 2000). Therefore, the lack of information in this situation will increase the probability that the

bidders' managers overvalue the targets while mistakenly believing their evaluation to be correct.

Moreover, the managerialism hypothesis has been suggested as a motive for domestic mergers and acquisitions. However, it may also be relevant to the cross-border mergers and acquisitions if managers of the foreign firms are willing to acquire greater power and authority within their firm or reduce their human capital risk through diversification (Amihud and Lev, 1981; Seth et al., 2000).

There have been many other explanations for the reason why companies choose to do cross-border mergers and acquisitions. Hitt et al. (2001) described five reasons which are: increasing market power, overcoming entry barriers, diversification, speed of entry to market and overcoming the cost of new product development. Sudarsanam (1995) addressed other motives for cross-border M&As such as achieving economies of scale and extending market by external growth, access to inputs such as raw materials, labour or technology, defensive ways to reduce earnings volatility by diversifying products and markets as well as exploiting unique advantages such as management capabilities, production, brand, design and reputation.

The difference in the macroeconomic conditions in two countries may be a driver for cross-border mergers and acquisitions. These may be the rate of growth, the lower costs and many other opportunities which are available in other countries. Therefore, it may seem reasonable to expect the slower growth countries being more often home to acquirer firms with the faster growth countries being more often home to targets (Hopkins, 1999).

Another motive for cross-border mergers and acquisitions is to use it as a mode of entry to new markets internationally by acquiring other companies in new countries. This will help the firm to protect and grow its market position by acquiring rather than starting up a new

company and thus gaining a more competitive advantage and experience. In comparison with other modes of entry such as exporting, licensing, franchising, joint ventures or wholly owned subsidiaries, mergers and acquisitions offer a high degree of control, high need for resource commitment and are fast to implement (Hopkins, 1999). Therefore, mergers and acquisitions are often considered as the fastest way for the firms to achieve the desired goals (UNCTAD, 2000), especially if considered from the international point, since cross-border mergers and acquisitions are considered as the quickest way of entry into international markets because they shorten the time needed to access new countries by acquiring an existing firm and facilitate the entry into the market in a competitive way.

2.2.3 Theory of Cross-border Mergers and Acquisitions

Within this global environment and the increase in globalization of businesses, a number of opportunities have emerged for the firms and more pressure is put on them to engage in cross-border mergers and acquisitions (Hitt et al., 1998). Dunning (1993) has developed an eclectic model, which is relatively known as the OLI Paradigm, as an attempt to create an overall framework which covers numerous theories to explain why firms invest outside their home countries and the motivations behind that. The OLI Paradigm explains the FDI decision process which leads to cross-border acquisitions and divides the process into three decisions which are: the Ownership, Location and Internalization decision (OLI).

2.2.3.1 The Ownership Decision

The ownership decision states that the firm must have some competitive advantages in its home market in a form that can be exploited and transferred to foreign subsidiaries. These must be firm-specific and not easily copied by other firms so as to allow the firm to create value through the foreign production decision. Also, these proprietary or ownership

advantages are generally costly to create in the home country, whereas having low costs if transferred to new locations (UNCTAD, 2000).

2.2.3.2 The Location Decision

The location decision states whether or not the firm is attracted to a foreign location that is superior to the location in the firm's home country and best meet the deployment of its ownership assets. If so, the firm should be able to obtain use of the characteristics of the foreign market that will allow it to exploit and make the most of its competitive advantages in that market.

2.2.3.3 The Internalization Decision

Under the internalization decision, the firm must decide whether or not it can maintain its competitive position under the foreign acquisition or through alternative modes such as licensing or strategic expansion.

According to the previous theories, there are a lot of perils as well as opportunities accompanied with cross-border acquisitions which may affect their performance in comparison with domestic acquisitions. Therefore, there have been a number of theories and reasons why acquirers involved in cross-border M&As are expected to underperform or outperform their domestic rivals.

One of the hurdles that is expected to affect the outcome of the merger deals and make international acquisitions underperform domestic ones is cited by Finkelstein and Larsson (1999) who present a theory of greater employee resistance in cross-border transactions. In their opinion, the reason for the underperformance is that the employees react negatively to change. Therefore, since the management style as well as the alteration of the career paths or compensation structures is much more different between companies from different countries

than in companies from the same country, international acquirers are expected to underperform their domestic rivals.

Another reason why underperformance is expected in international acquisitions in comparison with domestic acquisitions stems from the problem of Information Asymmetry. This asymmetry and lack of information in cross-border deals may cause international acquirers to overvalue the targets and be more prone to overbid. Therefore, after the acquisition, the international acquirers may experience greater difficulties in integrating the target than domestic acquirers (Gioia and Thomsen, 2004) which may result in the underperformance. Moreover, cross-border acquisitions may be accompanied with some challenges such as the increased level of competition and the higher costs which may affect the acquirer gains inversely (Moeller and Schlingemann, 2005). Moreover, hubris and agency problems may be higher in cross-border acquisitions and cultural conflicts may be much more than in domestic acquisitions, which may lead to lower bidder returns (Denis et al., 2002).

On the other hand, there are other researchers who list some reasons why international acquirers are expected to outperform their domestic rivals. For example, Moeller and Schlingemann (2005) showed that acquisitions of foreign assets provided acquirer firms with different opportunities than those arising from domestic transactions, such as risk management, technology improvements and, sometimes, better government policies. Also, cross-border acquisitions give the opportunity for the companies to access new markets. This will provide the combined company with an increase in the economies of scale; since the combined production and increased sales will enable them to make cuts in the unit cost. Therefore, cross-border acquisitions are expected to prove superior in typical manufacturing businesses where scale is a key to success (Morck and Yeung, 2003).

Moreover, Bertrand and Zitoun (2005) presented a theory which states that international acquisitions allow acquirers to transfer their technological and managerial competencies to the home country of the target, which will result in improving the target's performance. This as a result predicts that international transactions will outperform domestic ones.

Also, the rationalisation gains may be higher in cross-border acquisitions than in domestic ones. This arises from the different marginal production costs that may exist between the acquirer and the target that are located in different countries. Therefore, this will give the acquirer the opportunity to take advantage of this difference in cost and move the production to countries with lowest costs (Bertrand and Zitouna, 2005).

2.2.4 Review of the Empirical Studies

A number of empirical studies have been carried out to examine the issue of the returns to shareholders in mergers and acquisitions. These studies have been conducted either for the short-term or the long-term. In the short-term studies, the period under examination comprises days or a few months around the announcement of the merger and acquisition deal, whereas in the long-term studies the researchers extend their examination period to include several years around the announcement day.

Each of these two event study periods has its own advantages and disadvantages. Regarding the short-term approach, there is an assumption of stock market efficiency. This means that the reaction of the stock market to the announcement of the acquisition gives a reliable measure of the acquisitions' expected value. Therefore, if the capital market is information efficient, it will take just a short time to recognize the expected costs and benefits of the merger and reflect them into share price reactions at the time of the merger (Sudarsanam, 2003). Thus, a short event window will be enough in this occasion to reflect all the valuation effects of the merger announcement.

On the other hand, some researchers find that even though short-term studies "are relatively straight forward and trouble free" (Tuch and O'Sullivan, 2007, p.148), the announcement returns in this situation may tend to reflect the investors' expectations and thus be subject to bias (Tuch and O'Sullivan, 2007). Therefore, those researchers suggest that they need to lengthen the event window to several years so as to capture the whole impact of the merger announcement. They rely on the idea that the markets need a long period of time to revise their judgment and evaluate the value implications of the acquisition and its progress and the competitors' reaction. However, even though the long event window has its own advantages, it creates other, bigger problems. These include the increase in chances for the existence of changes in other strategic, operational or financial events for the acquirer firms in the longer event windows, which may impact the valuation of the acquisition, since it is difficult to isolate the takeover effect from those caused by other changes. Moreover, the long window reduces the reliability of the test results and raises the bad model problem (Tuch and O'Sullivan, 2007).

In general, when the returns are measured over short time intervals or windows around the announcement day of the merger, most of the previous studies have shown significant positive wealth gains for target firm shareholders due to the premium paid for their shares. However, the results for the bidder firms were divided between those that reported negative abnormal returns and others that reported zero or slightly positive abnormal returns (Sudarsanam and Mahate, 2006). On the other hand, studies conducted over long time intervals following the mergers have shown mixed results depending on the kind of methodology used but generally speaking, returns to acquirers' shareholders are often significantly negative (Mueller and Yurtoglu, 2007).

Previous empirical studies were conducted for both the short-term and the long-term periods for the bidder and target companies in different countries. The results of these empirical studies may differ from one country to the another; therefore, the results for each country are presented separately for both domestic and cross-border studies.

2.2.4.1 Domestic Mergers and Acquisitions

The results for both US and UK studies show a clear conclusion that target firm shareholders achieve economically high and statistically significant wealth gains. On the other hand, the impact of acquisitions at the time of the bid announcement on the returns of bidder firm shareholders is mixed with some studies showing small positive or negative returns and others showing zero returns (Sudarsanam and Mahate, 2003; Goergen and Renneboog, 2004). The studies which showed significant positive returns to acquirers in the US and UK were mostly those studies which were conducted for takeovers that took place during the 1950s and 1960s when the takeovers might have been more beneficial to shareholders in acquiring firms (Tuch and O'Sullivan, 2007). However, recent studies show more negative performance for acquirers in the US and the UK, with recent evidence from other countries being more positive (Tuch and O'Sullivan, 2007).

Also, the results for the long-term post-acquisition performance of acquirers are mixed and inconclusive because of the sensitivity of the shareholder wealth performance over the long-term period to the benchmark model used for calculating the long-term abnormal returns, which represents a major methodological issue (Sudarsanam and Mahate, 2003). However, the majority of the previous studies report wealth losses for acquirers at the time of the bid announcement as well as during the post-acquisitions period (Sudarsanam and Mahate, 2003).

2.2.4.1.1 US Domestic Acquirers

The short-term studies which are conducted for the US show that target firms' shareholders realize substantial gains. On the other hand, the results for the bidder firms' shareholders show either no significant difference in the returns to acquirers, small positive or negative significant returns around the announcement of the bid (Tuch and O'Sullivan, 2007). In the long-term period most of the studies conducted for the US bidders find negative significant or insignificant returns, especially those conducted for public targets.

Fuller et al. (2002) examined the short-term shareholder returns for a sample of 539 US public acquirers who acquired five or more foreign and domestic targets within a three-year period between 1990 and 2000. They examined the five-day event period (-2, 2) around the announcement day using the market-adjusted model. Their study considered public, private and subsidiary targets, relative size and the method of payment. The results for all the bids are statistically significant positive CARs of 1.77%. More specifically, the results indicate that bidders who buy private firms experience gains with significant positive returns of 2.08%, gain when the target is a subsidiary of a public firm with significant positive returns of 2.75%, whereas they lose when the bidder buys a public firm suffering significant negative returns of -1%. In addition, the results show that when the bidder uses stock as a payment method or when the target is large relative to the bidder, the gain or loss for the bidder firms is greater in absolute value.

Moeller et al., (2004) examined a comprehensive sample of 12,023 domestic acquisitions made by US public acquirers between 1980 and 2001, taking into consideration the size effect. In the short-term, they used the market model to calculate the three-day (-1, +1) cumulative abnormal returns and in the long-term the Fama-French three factor model was used over the 36 months period. The results show positive significant cumulative abnormal

returns of 1.102% over the three-day period, whereas in the long term the results show insignificant positive returns of 1.8%. However, their results show that the announcement of acquiring small firms is significantly better than large firms with abnormal returns 2.24 percentage points higher than that associated with acquisition announcements for large firms.

2.2.4.1.2 European Domestic Acquirers

Regarding the European countries, there is little information about the share price performance of the firms involved in merger and acquisition activities, especially those written in the English language (Sudarsanam, 2003). However, the review for the existing studies show results which are similar to those achieved in the US and the UK studies. They show gains to target firms in most of the cases, whereas the acquirers just about break even (Sudarsanam, 2003).

2.2.4.1.3 UK Domestic Acquirers

The studies that have been conducted for the UK companies in the short-term period give results which show target shareholders realizing substantial gains whereas acquirers recieve either zero insignificant returns, small significant positive or small significant negative returns around the announcement of the bid (Tuch and O'Sullivan 2007; Sudarsanam 2003).

Sudarsanam and Mahate (2003) examine the performance of a sample of 5l9 UK acquirers between 1983 and 1995 both in the short- and long-term periods to establish whether the performance depends on their pre-bid status or type as being glamour or value acquirers, measured by the PE ratio and MTBV and the impact of the method of payment used. They use a variety of benchmark models to calculate the buy and hold abnormal returns (BHARs) which are the size-adjusted, the market-adjusted, the market to book value-adjusted and the means-adjusted model. They report abnormal returns for three periods: the bid announcement

period from day - 1 to day +1, the bid period from day +2 to day +40 and the post acquisition period ranging from +41 to +750 days.

For the bid announcement period (- 1, +1), the whole sample of acquirers experience statistically significant negative abnormal returns (-1.4%). This result is consistent with some other previous studies done for the UK, such as Sudarsanam et al. (1996) who report cumulative abnormal returns of -1 .26%, and Holl and Kyriasis (1997) who report cumulative abnormal returns of -1.4% for UK acquirers in the time period 1979-1989. In the second event window (+2, +40) acquirers realize insignificant negative and positive BHARs which range from -1.89% to 0.5%. In the long-term over the three-year window, more than half of the acquirers experience wealth losses with significant negative returns at an average of -15% across the various benchmark models.

Again in 2006, Sudarsanam and Mahate used the same sample as that in 2003 in order to examine the bid period and the long-term three-year shareholder wealth performance of four types of acquirers. This includes the single friendly bidder, the single hostile bidder, the white knight bidder (the friendly bidder who competes with a hostile bidder for the same target and wins the bid) and the multiple hostile bidder, and thus did not limit their study to just friendly and hostile acquirers.

For the short-term period they calculated the pre-bid returns over days from -20 to -1, and the bid announcement period over the -1 to +1 days. The results show that the abnormal performance index return APR which they interpret as the value gain associated with the event over days -20 to -1 is on average 1.1% to 1.6% for friendly acquirers; 2.5% to 2.9% for single hostile; 1.6% to 2% for white knights and 1.3% to 1.7% for multiple hostiles. In the bid announcement period, -l to +1 days, the overall sample return is about -1.4% with both

friendly acquirers and single hostile acquirers suffering value losses (about -1.5% and -1.9% respectively).

2.2.4.2 Cross-border Mergers and Acquisitions

Sudarsanam (2003) made a review of some of the previous cross-border studies that investigated the shareholder wealth effects, especially those focusing on the short term surrounding the takeover announcement. The results of these studies were mixed with some of them reporting positive returns and others showing wealth losses depending on the country of the acquirer. In general, his review shows that cross-border acquisitions in the US and Europe do not generate wealth gains for acquirer shareholders in most cases.

For example, one of the studies he mentioned is the one conducted by Eun et al. (1996) who examined the impact of cross-border mergers and acquisitions on foreign acquirer firms of US targets between 1979 and 1990. The acquirer firms were from different countries which were Australia, Canada, UK, France, Hong Kong, Japan, Netherlands, Sweden, Switzerland, Germany, and others. The results show that on average, foreign acquirer shareholders of US targets experienced wealth gains that varied across countries of acquirers. For example, Canadian acquirers had moderate wealth increases whereas Japanese shareholders experienced major wealth increases. However, shareholders of UK acquirers experienced significant wealth losses. Therefore, the results of examining cross-border acquisitions in general depend on the country of the acquirer as well as the periods of the studies and the length of the event windows examined.

2.2.4.2.1 US Cross-border Acquirers

Doukas and Travlos (1988) examined the impact of cross-border mergers and acquisitions on the stock prices of US bidder firms. They found that when the US bidder firms expand into new industries and geographic markets, the shareholders of these firms experience significant

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positive abnormal returns. Whereas when the US bidder firms already have operations in the target firms' country, the shareholders experience insignificant negative abnormal returns.

Also, in a study of US international acquisitions, Doukas (1995) found that his sample of 463 US acquirers which took place between 1975 and 1989 achieved small positive abnormal returns. However, Eckbo and Thorburn (2000) found insignificant negative cumulated abnormal returns of -3.7% for US acquirers who acquired Canadian targets during the twelve months following the announcement of the merger.

2.2.4.2.2 European Cross-border Acquirers

The number of studies which examined the international acquisitions of European corporations has been relatively few (Lowinski et al., 2004). For example, Goergen and Renneboog (2004) investigated the short-term returns for large European (Continental Europe and the UK) domestic and cross-border mergers and acquisitions for the period 1993-2000. Their sample which included 178 mergers and acquisitions with deal values of more than $100 million had both a European bidder and target. They measured the short-term wealth effects for the firms using the market model and applied six different measures of beta using several event windows which are (-1, 0), (-2, +2), (-40, 0) and (-60, +60) in days. The results in general showed significant positive abnormal returns for the target firms which ranged between 9.01% and 23.10% over the different event periods. Also, the results for acquirer firms showed significant positive abnormal returns of 0.70% and 1.18% over the (-1, 0) and (-2, +2) event windows, compared with insignificant results over the other windows.

This is consistent with the results found by Campa and Hernando (2004) who examined the impact of merger and acquisition announcement on the shareholders' returns for a sample of European firms including the UK. Their sample included European targets and bidders over the period 1998-2000. They used the CAPM method to examine seven different windows pre,

post and around the announcement date which are (-90,-1), (-60,-1), (-30,-1), (-1, +30), (-30, +30), (-1, +1), (-30, +1). They found that on average, target firm shareholders received a significant cumulative abnormal return of 9% in a one- month window around the announcement date. On the other hand, there were no significant cumulative abnormal returns for the acquirer firm shareholders on average. However, the sample period in Campa and Hernando (2004) study is only two years (1998 to 2000) which might make their results insufficiently representative.

Also, Corhay and Rad (2000) didn't find any evidence of significant announcement effects for cross-border mergers in their examination of Dutch firms. In Germany, there have been similar conclusions from the short-term perspective for cross-border acquisitions (Lowinski et al., 2004). From the long-term perspective, negative stock price reaction to German bidders were found during the first months after the announcement of the merger whereas there was significant positive cumulative abnormal returns after 24 months of the merger announcement (Lowinski et al., 2004).

2.2.4.2.3 Cross-border Mergers and Acquisitions in Other Countries

Ben-Amar and Andre (2006) examined 327 acquisitions conducted by Canadian listed firms for the years 1998-2002. The main reason for their study was to investigate the relationship between ownership structure and acquiring firm performance. Using the market model, they found that the average Cumulative Abnormal Returns (CAR) around the announcement date (-1, +1) were positive and significant 1.06% and so Canadian M&A created value for the acquiring firm shareholders during the short-term. They also found that cash deals, acquisitions of private targets and cross-border deals resulted in a positive impact on the announcement abnormal returns. In general, their results showed that on average, the markets perceive Canadian M&A as value creating transactions.

Those results are similar to the ones obtained by previous studies on Canadian acquirers. Eckbo and Thorburn (2000) found similar results while examining a sample of domestic and US foreign bidders acquiring Canadian targets during the period 1964-1983. They found that Canadian domestic acquirers do better than the foreign US acquirers since over the twelve-month period after the acquisition announcement the Canadian bidders realized significantly negative cumulative abnormal stock returns of -0.63% compared to the US foreign bidders who earn insignificant negative cumulative abnormal returns of -3.72%. However, the sample used in this study covers a very old time period which is out of date with changes in the modern world.

2.2.4.2.4 UK Cross-border Acquirers

Aw and Chatterjee (2004) studied a sample of UK acquirer firms involved in merger and acquisition deals whose value exceeded US$400m and involved 79 deals over the period 1991–1996. The targets were from three geographical locations, namely the UK, USA and Continental Europe. They used two models to compute the expected returns, which were the market model (MM) and the market- adjusted returns model (MAR). Four test periods were examined: t + 6, t + 12, t + 18 and t + 24 in months. The results of this study showed that for the whole sample, UK firms experienced significant negative cumulative abnormal returns over the period examined when they acquired large targets. Also, the performance of UK bidders in domestic transactions (UK targets) surpassed that of UK bidders of US targets, and the performance of UK bidders of US targets exceeded that of UK bidders of Continental European targets who suffered the worst post-takeover CARs.

Gregory and McCorriston (2005) conducted a study to examine the short- and long-term performance of UK acquirer firms involved in foreign acquisitions using a sample of 343 acquisitions in the time period 1984-1994. In their short-run study, they applied the market

model considering two event windows which were a five-day window (-3, 1) and a longer window (-10, 10). Their results showed that for the first window (-3, 1) the foreign UK acquisitions as a whole resulted in negative but not statistically significant CARs of -0.022%. For the US acquisitions, the short-run returns were positive (0.2372%), but were negative for the EU (-0.719%) and also negative for the rest of the world (-0.2026%), but none of the three was statistically significant. Using the second window (-10,10) they generated similar results as the first window but the wealth gains for US acquisitions and for conglomerate acquisitions became negative but not statistically significant. Generally, the descriptive results for the full sample revealed that the short-term results for the returns around the event date were not statistically significantly different from zero regardless of the target firms' home country.

2.2.4.3 Cross-border vs. Domestic M&A

Some theories expect more gains and returns in international deals in comparison with domestic ones, whereas others show different conclusions, which are the outperformance of domestic acquirers over international acquirers. However, evidence till now on whether cross-border transactions have a relatively more positive, or negative, effect on bidder CARs, compared to domestic acquisitions is still mixed, depending on the country of the acquirer and the time period covered in the previous studies.

For example, Moeller and Schlingemann (2005) examined the stock performance for a sample of US acquirers involved in domestic and cross-border acquisitions between 1985 and 1995. They applied the market-adjusted returns model for the (-1, +1) event window around the announcement day. For the cross-border sample the CARs were insignificant 0.307% whereas for the domestic sample the returns were a significant 1.173%, and so US acquirers in cross-border transactions had lower announcement returns than acquirers in domestic transactions.

They also found that bidder returns were negatively related to the target country's economic restrictiveness.

Conn et al. (2005) examined the announcement and post-acquisition share returns of UK firms as acquirers of domestic and foreign targets, considering both public and private targets for a sample of acquisitions that occur during 1984-1998. For the announcement period returns, they used a three-day window (-1, 1) around the announcement date and used the market-adjusted model to calculate the abnormal returns. The results showed significantly positive returns of 0.68% for the domestic acquisitions and significant positive returns of 0.33% for the cross- border acquisitions. These positive returns resulted from mergers with private targets rather than public targets. In the long-term, they found that acquiring firms' shareholders in cross-border transactions experienced significant negative long-term returns after acquisition of private targets.

2.2.5 Impact of Acquirer and Deal Characteristics on Shareholders' Returns

It is well known in the literature that some of the deal and acquirer characteristics affect acquirer returns in general, since some previous studies show that the sign and magnitude of the acquiring firm's returns seem to depend on those characteristics. Therefore, it is expected that if these characteristics differ systematically between cross-border and domestic acquisitions, a difference between their impacts on the returns could exist (Moeller and Schlingemann, 2005). These characteristics include the payment method, relative size, industry relatedness, the status of the target and other various characteristics (Antoniou et al., 2007). Some of these different characteristics which are examined later using the regression analysis are explained below with their empirical evidence.

2.2.5.1 Method of Payment in Mergers and Acquisitions

The choice of the payment method is of significant importance for the researchers who focus on examining the determinants of the bidder returns in the merger and acquisition deals. In general, the part of the literature which emphasized the impact of payment methods on the shareholders' returns in the previous studies finds evidence which suggests that cash acquisitions perform better and generate higher returns for both target and bidder firms than equity bids at the time of the bid announcement as well as in the post-acquisition period (Tuch and O'Sullivan, 2007; Goergen and Renneboog, 2004; Sudarsanam and Mahate, 2003; Huang and Walking, 1987; Franks and Harris, 1989).

Regarding the returns earned by the bidder, Travlos (1987) reported positive abnormal returns when the acquisition is financed with cash whereas there were significant negative abnormal returns when the operation is financed with stock. This is consistent with the results of Martin (1996) who found greater abnormal returns for the bidders making cash offers than those making stock offers. Additionally, Antoniou and Zhao (2004)) reported that the bidders' return for a sample of 179 successful British bids were higher when the operation was financed with cash and mixed offers than in the case of stock offers.

The negative and positive impact on the returns due to the payment method is consistent with Myers and Majluf's hypothesis (1984) who considered that the method of payment represented an information signal to the market. This hypothesis is based on the principle that there is an asymmetry between the information owned by the managers and the other agents in the market. In other words, managers have access to private information concerning the firm's stock value and other investment opportunities to which the external investors do not have access.

Consequently, the managers of the acquiring firm will prefer to use the cash payment method for the acquisition if they believe that their shares are undervalued and that they are worth more than their current market price. Conversely, the bidding management will prefer to finance the acquisition with equity if they believe that their shares are overvalued. Thus, the announcement of the equity bid may be a signal to the market that the bidding firm's management believes that their firm's shares are overpriced (Goergen and Renneboog, 2004). On the other hand, the market may view the announcement of the cash bid as a signal that the management of the acquiring firm is expecting an increase in the value of the firm over the post-acquisition period (Myers and Majluf, 1984; Tuch and O'Sullivan, 2007) which may have good results for the bidder shareholders.

Hansen (1987) hypothesizes that bidders make stock offers if they have less information regarding the target's value. Also, managers may have to take into account the taxation factor when they determine the payment method used to finance the acquisition. The taxation of capital gains is immediate for cash acquisitions, whereas it is postponed for stock acquisitions. Therefore, the bidding firm will be encouraged to finance the deal with stock if the option of postponing this taxation is important for the target's shareholders.

However, the impact of the payment method may vary in cross-border M&As compared to domestic M&As. The positive signal of the cash bid might be diminished and not have that strong effect in the case of cross-border bids because of the existence of other factors that may influence the means of payment (Conn et al., 2005). In cross-border deals, the information problems and the uncertainty connected with acquiring abroad and the difficulty in evaluating the foreign targets, especially the private ones, may force the acquiring company to pay for the bid with equity. Therefore, the negative signal of equity bids compared with cash bids may be invalid if the acquiring shareholders recognize this problem. However, the foreign

target sometimes might be unwilling to accept the foreign equity which is offered from the acquirer, which will force the acquirer to pay with cash and this may make the signaling effect of using the cash as a payment method neutralised. Consequently, the positive impact that the cash offers have on the returns in cross-border deals may be less obvious than in domestic deals as shown by Conn et al. (2005, p.824):

"The positive impact of cash on returns may therefore be less apparent in bids for overseas public firms than in bids for domestic public firms and less apparent in bids for private than for public companies generally".

However, the results for the cross-border studies give mixed results depending on the country of the acquirer. Goergen and Renneboog (2004) found after examining a cross-border sample of European acquisitions that over both short- and long-term windows, that the shareholders of the acquiring firms responded to equity offers more favorably (1%) than cash offers (0.4%). This implies that making an all-equity offer does not in this case indicate to the market any negative signal. Furthermore, Eckbo and Thorburn (2000) found that the returns to shareholders of US acquirer firms were on average 3.1% for deals paid with cash, 3% for deals financed by stock, and 5.1% for deals financed with a mixed payment (cash and stock). Also, Andre' et al. (2004) found for a sample of Canadian acquirers involved in domestic and cross-border mergers that deals which were financed by equity underperform relative to deals financed with cash.

2.2.5.2 Public vs. Private Targets

Previous studies show that the market reacts differently to the acquisition of private targets in comparison with public acquisitions. Therefore, there have been many reasons to expect some differences between the returns to bidder firms in private and public targets whether being in domestic or cross-border deals. Some of these reasons have been explained by the liquidity

hypothesis, the managerial hypothesis and the bargaining power hypothesis (Draper and Paudyal, 2006).

According to the liquidity hypothesis, the market for privately held companies is usually illiquid. This means that in comparison with listed targets where most of the information is available and bidders may compete for control, the opposite can be said about private targets. It means that information is likely to be poor on unlisted targets and competition over them is weak, which makes buying and selling them more difficult than public firms. As a result, this enhances the bargaining power of the acquirer and may possibly cause underpayment by bidding firms for privately held targets which makes it more likely for the bidder returns to be positive as a result of this discount (Fuller et al. 2002; Conn et al., 2005). Therefore, the lack of liquidity in the non-public firms makes them less attractive than more liquid investments, which gives the acquirers the ability to capture this discount in purchasing non-public targets for a better price. Therefore, private firms usually offer their shares at a discount in order to create an incentive for potential acquirers as a profitable investment opportunity (Antoniou et al., 2007). This as a result may lead to more gains for the acquirers of private targets.

On the other hand, the managerial motive hypothesis assumes that there are two types of managers. The first type are those who may seek to maximise their private benefits and increase the size and prestige of the firms they manage, and the other type are those who have the desire to enhance and increase their shareholders' wealth. Those who are motivated by a desire for prestige and size will be prepared to buy publicly listed firms which are generally larger and more prestigious than private firms. This as a result will require a payment of higher premiums for those large firms, which will have an adverse effect on the share price of the bidder. Conversely, the acquisition of smaller private firms will be motivated by the desire to increase the synergies and maximize shareholders' wealth rather than managers' private

benefits. These kind of managers will be unwilling to pay high premiums for the private firms they are bidding for so as not to affect the price of the acquiring firm adversely at the time of the bid announcement. Also, smaller private targets may be easier to integrate into the business of the acquiring firm than larger listed firms which may result in a more favourable perception by the market and more gains for the takeover of privately held companies than listed companies (Draper and Paudyal, 2006).

The last hypothesis, which is the bargaining power hypothesis, assumes that privately held companies don't suffer from high agency problems since they are often controlled by a small group of partners or a family. The reduced agency considerations give them the opportunity to control the sale more closely and to choose the timing of the sale and the buyer they like. This means more significant bargaining strength for the sellers which allows them to ask for and receive a better price for their firm and may result in more gains for the bidder of private firms than for the bidder of public firms.

Therefore, generally speaking, the results show higher returns when acquiring a private firm compared to acquiring a public firm (Conn et al., 2005). Antoniou et al. (2007) examined the shareholders' wealth effects of a sample of UK frequent acquirers over the period 1987 to 2004. They found that, in the short-term, acquirer firms broke even when acquiring public targets and gained significantly (a significant positive CAR of 1.59%) when buying private and subsidiary targets. This finding is to a great extent consistent with other studies such as those of Ang and Kohers (2001) and Draper and Paudyal (2006) who documented substantial gains from acquiring privately held firms.

Fuller et al. (2002) found that for the five days (-2, 2) around the announcement day, bidder shareholders experienced losses when acquiring a public firm with significant negative CAR

of -1%, whereas experience gains when buying a private firm showed a significant positive CAR of 2.08%.

Conn et al. (2005) found that the announcement returns from acquiring domestic public firms were significantly negative -0.99%, whereas the returns from acquiring domestic private targets resulted in significant positive returns of 1.05%. The negative significant returns from acquiring domestic public targets are consistent with some previous studies such as (Sudarsanam and Mahate, 2003). However, in cross-border acquisitions, Conn et al. (2005) found that the returns from acquiring public targets were an insignificant -0.09%, whereas the returns from acquiring private targets were significantly positive 0.38%. For the whole sample, returns for public acquisitions were significantly negative -0.82%, compared to a significantly positive 0.86% in all private acquisitions.

2.2.5.3 Relative Size of Target and Bidder

In addition to the method of payment and the public status of the target, some studies suggest that certain joint characteristics of the target and bidder firms may influence the performance of the acquirers whether being domestic or cross-border (Tuch and O'Sullivan, 2007). For example, some researchers propose that acquiring larger targets might end in better post-acquisition performance than buying smaller targets. One of the proposed reasons for that is the difficulty of integrating large targets into a combined organization, which makes the competition on targets between potential acquirers much smaller. As a result, this gives more advantageous terms to acquirers of large targets due to the lack of competition (Roll, 1986). Also, acquiring a larger target may have stronger economic impact on the post-acquisition performance for the combined firm (Bruner, 2002).

However, Moeller et al. (2004) argue that the concentration on the size effect should be turned to smaller acquirers rather than to larger targets since the economic impact on the small

acquirers will be very high. Therefore, small acquirers need to take high levels of care when making decisions about any bid.

Empirically, most of the studies which focused on the relative size of target and bidder firms found that it has a strong impact on bidders at the announcement period with greater gains from acquiring large targets (Asquith et al., 1983; Franks and Harris, 1989; Tuch and O'Sullivan, 2007).

In general, the previous studies which have been discussed in this section show mixed results about the impact of cross-border and domestic M&A announcement on the returns to acquirers' shareholders. Some of them report significant increase in the returns to acquirers' shareholders (Fuller et al., 2002; Conn et al., 2005; Ben-Amar and Andre, 2006), some show significant decrease in the abnormal returns (Sudarsanam, 2003; 2006), whereas others show insignificant abnormal returns (Campa and Hernando, 2004; Gregory and McCorriston, 2005).

The difference in the results of the previous studies could be as a result of the examination of different samples and time periods as well as from using different benchmark models in the analysis. Also, some of the previous studies, such as Aw and Chatterjee (2004) and Goergen and Renneboog (2004), constrained their examinations through limiting their samples by only selecting the large mergers, which may lead to results that cannot be generalized across all sizes of mergers.

Moreover, it can be seen from the literature that most of the previous studies were conducted using acquisition transactions based on data and samples covering the 1980s and early 1990s, such as Conn et al. (2005) who used a sample of UK acquirers between 1984 and 1998, Gregory and McCorriston (2005) who used a sample between 1984 and 1994 of UK acquirers

and Moeller and Schlingemann (2005) who examined a sample of US acquirers between 1985 and 1995. Therefore, the results of these studies are not up-to-date in reflecting the rapid changes in today's global business environment. Goergen and Renneboog (2004) examine a sample of European acquirers which is more recent than other previous studies and covers the years 1993 to 2000, but the main reason for their study was to examine a specific time period that covered the fifth merger wave, which may have effects on the results of their study.

Also, previous studies have been conducted to examine the returns to shareholders of acquirer firms by examining either a domestic sample or cross-border sample of merger and acquisition deals without giving any clear evidence about the difference between the returns to shareholders of acquirer firms in domestic and cross-border acquisitions.

Therefore, this chapter will fill this gap in the literature and examine the returns to shareholders of acquirer firms in general and whether there are any significant differences in them between cross-border and domestic deals. Also, the sample in this study is distinguished in covering a time period that is more recent than other previous studies in order to be more up-to-date with changes in the global world and to check whether the results have changed with the changes in the surrounding conditions, especially with the increase in the number and value of merger and acquisition deals.

2.3 The Regulation of Takeover Bids in the UK

A takeover is a way that the acquirer company can use in order to achieve a controlling interest in the target company. Therefore, there should be some regulations and rules to monitor and govern this process properly.

In privately held companies the shares are not widely held, therefore, there is less need for the regulations to control them than for public and listed companies (Sudarsanam, 2003).

However, when the takeover is for a public target in the UK, it is regulated by the City Panel on Takeovers and Mergers (the Panel) under the City Code on Takeovers and Mergers (the Code).

Therefore, in order to make a comparison between the impact of the announcement of domestic and cross-border acquisitions on the shareholders' returns, there should be some understanding of the rules and regulations which monitor these deals, because the corporate governance regulations differ substantially between countries. Therefore, these differences in the regulations may contribute to the differences in the impact of the announcement of domestic and cross-border merger and acquisition deals on the shareholders' returns (Goergen and Renneboog, 2004).

Goergen and Renneboog (2004, p.13) state that:

''In addition to product and factor market imperfections, differences in takeover legislation and regulations may contribute to the differences in wealth effects of domestic and cross-border acquisitions ''.

2.3.1 The Panel on Takeovers and Mergers (the Panel)

The Panel on Takeovers and Mergers (the Panel) was supported by the Bank of England to come into being due to the rising concern about some of the market manipulative activities of bidders and target managements (Sudarsanam, 2010). It was established in 1968 as an independent body consisting of representatives from UK financial institutions and professional associations. This panel is selected to be a supervisory authority with the main purpose of issuing and administering the City Code on Takeovers and Mergers (the Code) and supervising takeovers and other issues related to the Code rules.

The panel aims to provide a speedy response to takeover situations, and to ensure that the transfer of ownership of companies in the stock market is done in a fair and orderly way. Therefore, its philosophy is not to have only minimal acceptable conduct among those involved in the takeover, but to promote them to achieve best practices (Sudarsanam, 2003).

2.3.2 Nature and Purpose of the City Code on Takeovers and Mergers (the Code)

The City Code on Takeovers and Mergers (the Code) governs how takeover bids in the UK are carried out and it is primarily enforced by the takeover panel.

It exists principally to supervise the overall conduct of bids and to ensure a fairly equal treatment of shareholders in relation to takeovers. This Code does not cover the financial or commercial advantages or disadvantages of a takeover. Neither is it concerned with other issues such as the competition policy and other public policy issues, which are the responsibility of the government and other bodies.

The Code attempts to attain a fair balance between the interests of the bidder company and that of the target company and its shareholders. Following implementation of the EU Takeover Directive in the UK, the City Code now has statutory effect. The rules set out in the Code have jurisdiction over bids for UK resident public companies whether being listed or unlisted and certain statutory, chartered and private companies (Sudarsanam, 2010).

The Code consists of a number of General Principles which govern the conduct of takeover offers and other matters to which the Code applies. They are essentially statements of standards of commercial behaviour. The Code also contains a series of rules covering each stage of a takeover or merger which seek to implement the general Principles and are clarified by notes which supplement them.

The General Principles of the City Code as stated in The City Code on Takeovers and Mergers, Freshfields Bruckhaus Deringer (2006, Appendix 1, p. 22) are as follows:

1. "All holders of the securities of an offeree company of the same class must be afforded equivalent treatment; moreover, if a person acquires control of a company, the other holders of securities must be protected.

2. The holders of the securities of an offeree company must have sufficient time and information to enable them to reach a properly informed decision on the bid; where it advises the holders of securities, the board of the offeree company must give its views on the effects of implementation of the bid on employment, conditions of employment and the locations of the company's places of business.

3. The board of an offeree company must act in the interests of the company as a whole and must not deny the holders of securities the opportunity to decide on the merits of the bid.

4. False markets must not be created in the securities of the offeree company, of the offeror company or of any other company concerned by the bid in such a way that the rise or fall of the prices of the securities becomes artificial and the normal functioning of the markets is distorted.

5. An offeror must announce a bid only after ensuring that he/she can fulfil in full any cash consideration, if such is offered, and after taking all reasonable measures to secure the implementation of any other type of consideration.

6. An offeree company must not be hindered in the conduct of its affairs for longer than is reasonable by a bid for its securities."

2.3.3 Antitrust Regulation

Since 1965, mergers in the UK have been the subject of antitrust regulations. The main purpose of the antitrust regulation is to maintain a level of effective competition. However, other issues are also considered in determining whether a merger should be allowed or not, such as the issue of the public interest (Sudarsanam, 2003).

The emergence of some other issues has to be considered while conducting the antitrust regulations such as the globalization and the privatization aspects. Due to the globalization of product and services markets, the cross-border takeover activity has increased to a high scale. This has resulted in an increase in the scope for multiple antitrust jurisdictions over a proposed merger and sometimes in conflicts between those jurisdictions among different national and regional regulators (Sudarsanam, 2003).

The other development is the privatization of the monopolies that were previously owned by the Government, the setting up of sector-specific regulators such as the Office of Telecommunications (OFTEL) or the Office of Water (OFWAT). In the case of mergers involving such privatized companies, those mergers have to be cleared by both sector-specific regulators as well as the antitrust regulators.

Therefore, companies contemplating mergers must carefully evaluate their antitrust implications and evolve strategies to minimize the regulatory risk as well as the cost of a deal being blocked on antitrust grounds.

2.3.4 The UK Antitrust Regime

The merger control regime in the UK is considered as neutral in its attitude towards mergers. In general, merger regulation is part of the UK government's competition policy which aims to maintain effective competition in various product markets within the UK or a substantial part of it.

Although the government has been responsible for the restrictive trade practices since 1948, mergers became the focus of government competition policy in an explicit way only in 1965, with the enactment of the Monopolies and Mergers Act. This Act controls mergers in an administrative way in the form of a Monopolies and Mergers Commission (MMC) for the reason of investigating mergers when called upon to do so.

The Monopolies and Mergers Commission (MMC) became the Competition Commission (CC) under the Competition Act 1998. This resulted in an amendment in the powers of the Commission and the Office of Fair Trading (OFT), which is responsible for administering competition law.

In the UK, merger investigation consists of a two-stage process. The first stage includes a preliminary screening done by the Office of Fair Trading (OFT), which was created under the Fair Trading Act (FTA) in 1973 as an independent supervisory body which monitors all merger proposals or actual mergers in the UK. This first stage may result in a recommendation to the Secretary of State for Trade and Industry for a more detailed investigation. However, there are no specific rules for the OFT recommendation, since they judge each case by taking into account the impact of the proposed merger on the following factors as summarised in Sudarsanam (2003, p.415): "Competition in the UK, efficiency of the merging firms, employment and regional distribution of industry, international

competitiveness of UK firms, national strategic interest, the viability of the merging firms as a result of the method of financing , and the scope for turning around the acquired firm."

The second stage is done by the Competition Commission (CC), which is an independent advisory body, which undertakes this kind of detailed investigation and presents a report to the Secretary, who then takes a decision of either accepting or rejecting its recommendation. However, the Secretary's decision may be challenged in the court.

The recommendation given by the CC to the Secretary as shown in Sudarsanam (2003, p. 416) is one of three conclusions which are:

- "The merger does not operate against the public interest and can, therefore, be allowed to proceed or stand.

- The merger operates against the public interest and should, therefore, be prevented.

- The merger can be allowed subject to the adverse effects on competition being remedied."

One of these three decisions will be taken after considering whether the merger as a whole or in parts operates against the public interest, using the following criteria as listed in Sudarsanam (2003, p.416): "Maintenance of effective competition in the UK, promotion of consumer interests, promotion of cost reduction, new techniques and products, and new competitors, balanced UK distribution of industry/employment and promotion of UK companies' international competitiveness".

The competition regime in the UK was changed substantially by the 2002 Enterprise Act, which took effect from June 2003. Under the Enterprise Act 2002, the Competition Commission's (CC's) decision was changed from making recommendations to the Secretary of State for Trade and Industry to a determinative decision which makes it as a final decision that might be changed only by a legal appeal. However, since the 1980s the concentration of the Commission's reports has been turned towards the competitive effects of the mergers (Arnold and Parker, 2007).

Empirically, some previous studies have found that when the City values a share during a merger enquiry, this will have an important effect on the shareholders' wealth. Also, competition regimes have been suggested by some studies as one of the reasons that may lead to substantial losses to shareholders through share price movements. For example, Arnold and Parker (2007) studied a sample of 50 mergers in the UK which were investigated by the MMC/CC between 1989 and 2002 in order to examine the impact of UK competition policy on shareholder value and whether the competition regimes could destroy shareholder value or not, and if the regulatory process decreased efficient market behaviour or not. They used the market model focusing on a three-day window around the announcement day for their examination. Their empirical results supported the findings of earlier work in the USA and UK regarding the general level of shareholder value created for the bidder and target companies with target company shareholders being the main beneficiaries. They also found that high abnormal losses are incurred by target company shareholders when a decision is announced by competition authorities prohibiting a merger but didn't find evidence which supported the idea of the overall loss to shareholders of target company shareholders when the merger is prohibited. Instead, a small gain to target company shareholder value was recorded. They also found that the capital market behaves in an efficient way in response to new information when the regulatory regime is well understood and stable, whereas it operates less

efficiently when the regulatory regime is new and the capital market has little or no experience with respect to mergers.

Thus, it can be seen that the regulatory systems in any country may affect the impact of the announcement of mergers and acquisitions on returns. And since those regulations differ between countries, this may give an explanation for the difference in the outcome of the merger and its impact on the shareholders' returns between domestic and cross-border deals. For example, UK domestic deals will be more affected by the UK regulations than cross-border deals, whereas cross-border transactions will be affected by the regulations of other countries which may have an effect on their returns and cause differences between them.

However, the reason for this chapter is not to examine those regulations and their effects, but to present an overview of them in order to help in understanding them, which may in turn help to explain the difference between the returns in domestic and cross-border deals if present.

2.4 Data Sample and Methodology

This section describes the sample used in this chapter followed by a detailed description of the event study methodology which is applied in the analysis of the returns to shareholders of acquirer firms.

2.4.1 Sample Selection and Data Sources

This chapter examines a sample of UK public acquirer companies that are engaged in domestic and cross-border mergers and acquisitions, announced and completed between January 1, 1996 and December 31, 2003.

The information about the firms involved in the merger activities was collected manually from the Thomson Financial magazine Acquisitions Monthly. The deals section of this magazine mostly records the announcement dates, the names of the firms involved in the

acquisition, the means of payment in the offer and the industry codes. Daily stock returns for the acquirer firms in the sample and daily market index returns (FTSE-All Share Index) are extracted from the Datastream database.

Also to be included in the sample, transactions must fulfil the following conditions:

- Acquirers are UK firms publicly traded on the London Stock Exchange (LSE) and have returns data for at least 240 days prior to the announcement date and 40 days after the announcement date of the acquisition for the short-term analysis available from the Thomson Financial Datastream database.

- Deals values are available, which are defined by the acquisitions monthly as the total value of consideration paid by the acquirer, excluding fees and expenses.
- The targets are UK firms for the domestic analysis and non-UK firms for the cross-border analysis.

2.4.2 Sample Description

The preliminary total number of completed merger and acquisition deals collected from the Acquisitions Monthly magazine for the period from 1996 to 2003 is 1,171 deals, but only 585 of them have all the data required for the study on the Datastream database. That's why the sample used for the study has only 585 observations engaged in cross-border mergers and acquisitions. Appendix 2.A provides a list of the names of acquirer and target firms used in the sample and indicates whether they are cross-border or domestic deals.

A description of the sample used in this chapter is provided in Table 2.1 which highlights the salient features of the sample and breaks down the full sample into two parts according to whether the deal is a cross-border or domestic acquisition made by a UK acquirer firm.

Table 2.1: Distribution of Sample M&As by Year and Deal Characteristics

	Cross-border M&A		Domestic M&A		Total	
	Number	%	Number	%	Number	%
Panel A: By Year of M&A:						
1996	28	9.24	35	12.41	63	10.77
1997	31	10.23	48	17.02	79	13.50
1998	58	19.14	74	26.24	132	22.56
1999	61	20.13	49	17.38	110	18.80
2000	54	17.83	31	11.00	85	14.53
2001	26	8.58	11	3.90	37	6.32
2002	20	6.60	8	2.84	28	4.80
2003	25	8.25	26	9.21	51	8.72
Total	303	100.00	282	100.00	585	100.00
Panel B: By Deal Characteristics:						
Payment Method						
All Cash	105	34.65	108	38.30	213	36.41
All Shares	11	3.63	13	4.61	24	4.10
Mix	77	25.41	111	39.36	188	32.14
Not Available	110	36.31	50	17.73	160	27.35
Total	303	100.00	282	100.00	585	100.00
Country of Target						
UK	0	0.00	282	100.00	282	48.21
US	126	41.58	0	0.00	126	21.54
EU	108	35.65	0	0.00	108	18.46
RoW	69	22.77	0	0.00	69	11.79
Total	303	100.00	282	100.00	585	100.00
Relatedness						
Same SIC code	151	49.84	155	54.96	306	52.31
Different SIC code	139	45.87	103	36.53	242	41.37
Not Available	13	4.29	24	8.51	37	6.32
Total	303	100.00	282	100.00	585	100.00
Target Status						
Public	89	29.37	77	27.30	166	28.38
Private	214	70.63	205	72.70	419	71.62
Total	303	100.00	282	100.00	585	100.00

Panel A of Table 2.1 shows the distribution over time of cross-border, domestic and total transactions. Consistent with the UNCTAD numbers, the sample shows that the number of merger and acquisition transactions by UK acquirer firms increases over the years, then a decrease happens after the millennium followed by another increase.

The increase and decrease in the number of M&A deals over the years can be explained by the existence of the merger waves, since M&As usually occur in cyclical waves (Goergen and Renneboog, 2004). Thus, the increase over the first years of the sample is due to their coincidence with the fifth merger wave which occurred from 1993 till 2000 (Goergen and Renneboog, 2004). The fifth merger wave was known for its mega deals, where firms were motivated to conduct M&A transactions and increase their size due to a global view of competition, which means that companies have to be big in order to compete (Lipton, 2006).

The wave also emerged coinciding with a growth in the telecommunications and internet industries (Goergen and Renneboog, 2004), where most of the mergers are from the telecommunications, media and technology industries (Lipton, 2006). After the millennium, there has been a reduction in the M&A activity due to the "collapse of consumer confidence in these industries as well as overcapacity in the traditional sectors" (Goergen and Renneboog, 2004, p. 10). However, there has been a recovery in the acquisition activity from the previous crash in the number of M&As in subsequent years with another new merger wave (Sudarsanam, 2010).

Panel B of Table 2.1 presents the distribution of the sample over some of the deal characteristics which are the payment method, country of target, relatedness and the status of the target. With regard to the method of payment, the takeovers here are classified into three groups which are pure cash, pure equity and mixed payment. The pure cash (equity) offer is the one where the final consideration paid from the bidder to the target firm shareholders is

100% cash (equity), whereas the mixed offer is the one where the final consideration paid is a mixture of equity, cash or any other form of payment.

It is clear that cash is the main method of payment in cross-border acquisitions and equity is less often used as a form of payment, which is consistent with other previous studies such as Conn et al. (2005) and Moeller and Schlingemann (2005).

Concerning the country of the target, it is clearly seen that the UK acquirers in cross-border deals show a preference for targets in the industrialized and English speaking countries, with the majority of their targets located in the United States (41.58%) followed by Europe (35.63%).

Acquisitions between firms in related industries (which are defined here as the same 2-digit standard industrial trade classification code or SIC code) occur in 49.84% of the cross-border sample and 54.96% of the domestic sample.

Finally, consistent with other previous studies, private targets are much more numerous than public targets with more than 70% of the transactions involving privately held target companies.

2.4.3 Event Study Methodology

In this section, the event study methodology is applied to derive the short-term returns around the event date and to calculate the cumulative abnormal returns (CARs) for different periods around the announcement date using three different approaches to calculate the normal returns. The event study methodology as well as the three models applied in this chapter are described below.

The history of the event study methodology is a very long one which might go back to the early 1930s. It was started by the work of James Dolley (1933) who conducted a stock split study, which was perhaps the first published event study (MacKinlay, 1997).

The level of sophistication of event studies increased over the years from the early 1930s until the late 1960s (MacKinlay, 1997). Examples of some of the event studies that have been conducted during that time period included Myers et al. (1948), Barker (1956, 1957, 1958), and Ashley (1962). In addition, some seminal studies have been conducted in the late 1960s by Ball and Brown (1968) and Fama et al. (1969). The methodology that was introduced in these previous two studies is said to be the same as the one which is in use these days (MacKinlay, 1997; Solibakke, 2002).

In the years since those pioneering studies, other useful papers made some practical modifications to the event study methodology, such as the work done by Brown and Warner (1980, 1985) for data sampled at monthly and daily intervals.

In the case of some events like merger and acquisition announcements, the event study methodology is usually conducted to measure the share price performance of the combined firms. This has been used to analyze the impact of takeovers on the shareholders' wealth in both the short term and long term periods taking into consideration the requirement of the assumption of the market efficiency which means that "share prices react in a timely and unbiased manner to new information and that the extent of the gains reflect the value of the firm in the forthcoming periods" (Tuch and O'Sullivan, 2007, pp.142-143). Thus, event studies are used to capture the flow of information about an event to the market and how it affects the stock returns and the resulting impact on the value of the firm (Sudarsanam, 2003). Therefore, given rationality in the marketplace, the changes in security prices will

immediately reflect the effects of the event and thus allow us to measure the impact of the event over a relatively short time period (Solibakke, 2002).

As a result, the popularity of this methodology comes from the reality that it examines stock price changes which are supposed to incorporate all relevant information without the need to analyze accounting-based measures (Sudarsanam, 2003).

In general, the first step in conducting an event study is to define the event of interest which is associated with the announcement of the merger and acquisition deal, whether being domestic or cross-border. Then, to identify the event window, which covers the period over which the share prices of the firms involved in the merger and acquisition event will be examined, which will allow for capturing all the effects of the event on the stock prices.

The event period is usually centred on the announcement date, which is designated day 0 in event time. Normally, the event window is chosen to be larger than the specific period that we're interested in. This allows for better examination of periods that surrounds the event (MacKinlay, 1997).

Although there is no consistency between the event windows used in existing studies, ranging from short- to long-term windows, we will apply here the short-term window which is relatively "straight forward and trouble free" (Tuch and O'Sullivan, 2007, p. 148), but also it may be at risk of bias, since announcement returns tend to reflect the investors' expectations (Tuch and O'Sullivan, 2007). However, even though longer periods will try to capture all the effects of the event, but the estimates may be subject to more noise in the data. Also, the long-term event studies are associated with more significant problems (Tuch and O'Sullivan, 2007).

In this study, five event windows around the announcement date will be taken into consideration in order to capture some of the windows used in previous studies for the later comparison of results. These windows are (-1, +1), (-2, +2), (-5, +5), (-10, +10) and (-40, +40) in days.

These windows contain the eleven-day window (-5, +5), which was suggested by Brown and Warner (1985), along with two longer windows and two smaller windows. The application of the longer windows with an eighty-one (-40, +40) and twenty-one day interval (-10, +10) aim in capturing the effects of any information leakage to the market if present and the fact that the market may take some time to react to the news, but without distorting the effect of the acquisition due to any noise. Some researchers show that the capital markets have become more efficient recently having the ability to incorporate the effects contained in the announcement in a fast way (Comment and Jarrel, 1995). Others suggest that the existence of tougher regulations on insider trading and information leakage nowadays prevent the market from reacting in advance to the announcement (Grill and Jaskow, 2007). As a consequence, the use of the smaller five-day window (-2, +2) would be reasonable. Also, to be more accurate about the market reaction to the announcement of the merger and to avoid the sensitivity of the results to the model chosen for expected returns, a three-day window (-1, +1) around the announcement date is also used. This window is said to be one of the most commonly used event windows in merger studies (Conn et al., 2005). Also, Arnold and Parker (2007) show that using a three-day window should encompass immediate lead effects (stock market anticipation of the announcement content, rumors) and lag effects (time needed for the market to understand the full likely effect on the share price of the announcement) while excluding the chance of including changes in share price resulting from events unrelated to the regulatory process.

After deciding the event windows chosen for examination, the abnormal return of the firms is calculated, which is defined as the return for the firm in day t minus the expected or normal return for the firm in day t,

$$(2.1)$$

The return on day t is calculated as the percentage change in the return index between two successive days

$$\overline{} \qquad (2.2)$$

The definition of the return index (RI) which is collected from the Datastream database and the other variables used in this chapter are included in appendix 2.B as provided by Datastream.

It is well known that the performance of any security can only be considered abnormal with reference to some benchmark. Therefore, an important step here is to specify a model to generate the normal or expected returns before the abnormal returns can be measured.

The next step is to calculate the predicted or normal return for each day and each firm in the event period. These normal returns represent those returns that would be expected if no event occurs. In generating these normal returns, some of the previous merger and acquisition event studies used an estimation period that covered either the pre-event period or an estimation period covering both sides of the event (Aw and Chatterjee, 2004). This study uses the pre-event estimation period since this will be consistent with most of the other studies especially

those that are concerned with international acquisitions which would make the comparison of results with previous studies much easier.

To calculate the normal or predicted returns there are basically three known methods that will be used in this chapter. These are the mean adjusted return method, the market model method and the market adjusted return method. Calculating abnormal returns using these three different benchmark models gives the ability to compare the results with previous studies as well as to ensure that the conclusions are not model-specific. Each of the three methods that will be used to calculate the expected returns are described below based on Weston et al. (2004).

2.4.3.1 The Mean Adjusted Return Method

The expected return for security j in time t is given by:

$$(2.3)$$

According to this method, the expected return on any security is constant across time but can differ across securities.

The first step for this method is to choose a clean period which includes days on which no information related to the event is released. This period may be before or after the event period or both. In this chapter, a pre event clean period is used which covers the days from -240 to -41 days which is similar to that used by many other previous studies, such as the 250-days prior to the announcement used by Gregory and McCorriston (2005) and Sudarsanam and Mahate (2003).

The average daily return for every firm in the sample is estimated for this clean period and is called the expected return.

$$\overline{} = \qquad\qquad\qquad\qquad\qquad\qquad (2.4)$$

Following that, the abnormal return (residual) for the event period is calculated by subtracting the expected return obtained above from the daily return for each firm. The average abnormal returns (AAR) and cumulated average abnormal returns (CAAR) are then calculated for different event windows.

Some researchers, such as Sudarsanam and Mahate (2003), used this method recently along with some other methods in examining the returns to shareholders in domestic acquisitions.

Brown and Warner (1980, 1985) found that even though the constant mean return method is perhaps the simplest model, it often yields results that are similar to those of more sophisticated models.

2.4.3.2 The Market Model Method

This model assumes that stock returns are determined by using the following ordinary least squares (OLS) equation:

$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad (2.5)$$

with the expected stock returns being given by:

$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad (2.6)$$

where:

E (R_{jt}): the expected return on security j in time period t

$\hat{\alpha}_j, \hat{\beta}_j$: coefficients estimated using an ordinary least squares regression of returns on security j against the returns on the market index, and

R_{mt} : the return on the market index.

Since this model involves a regression of the firm returns series against the market index, the calculation must have a clean period that is not included in the event window, as in the previous method which is the returns for 200 trading days before the announcement day from -240 to -41 days. These returns are then regressed against the market index which is represented here by the FTSE All Share from the Datastream.

The abnormal returns (residuals) in the market model are given by:

$AR_{jt} = R_{jt} - E(R_{jt})$ which is equal to $AR_{jt} = R_{jt} - \hat{\alpha}_j - \hat{\beta}_j R_{mt}$

(2.7)

where:

AR_{jt} = abnormal return of stock j on day **t**

R_{jt} = actual return on the jth stock on day **t**

R_{mt} = return on the market index, FTSE All Share.

$\hat{\alpha}$ and $\hat{\beta}$ = the market model parameter estimates for stock j for the control period (event day - 241 through - 41). The estimated coefficients are used to compute the daily abnormal returns for the test period (event day -40 to +40) where event day +t (-t) represents the trading day after (before) the announcement date (t=0) (Weston et al., 2004).

The average abnormal returns are then calculated and accumulated over the entire event period to obtain the cumulative average abnormal returns CAAR which has been extensively used in event studies.

2.4.3.3 The Market- Adjusted Return Method (MAR)

It is suggested by Brown and Warner (1980, 1985) that even though the market-adjusted model is very simple, it leads to deriving expected and abnormal returns in a more powerful way than other more complex models. The MAR assumes that the securities' expected return in any period is the same as the expected market return in that period. Thus, the expected return for a security in period t, would be equal to the market return in period t.

The market return is defined as the percentage change in the FTSE All Share return in two successive days, which is collected from the Datastream.

$$\overline{} \qquad (2.8)$$

Moreover, it can be said that the MAR is an approximation to the market method except that the α and β coefficients in the ordinary least squares regression are set to 0 and 1 respectively. As a result, the market model equation turns into the market adjusted returns model equation, as follows:

$$E(R_{jt}) = \hat{\alpha}_j + \hat{\beta}_j R_{mt}$$

(2.9)

When   and   , the market model becomes the market adjusted model

$$E(R_{jt}) = R_{mt}$$

(2.10)

Once the measures of abnormal returns are estimated using the three different methods, average abnormal returns and cumulative average abnormal returns are calculated and the results are presented and interpreted. Then, within a certain level of confidence we can infer whether these abnormal returns and cumulative abnormal returns are different from zero. This can be done by calculating the t-statistic for different time periods for the domestic, cross-border and full samples.

Following Weston et al. (2004), the corresponding test statistic for the hypothesis that the cumulative average abnormal returns equals zero for *n* number of firms and over an event period extending from t = **t** to t = **T** is as follows:

t=―――   ―――――   ――――――

(2.11)

2.5 Empirical Results

This section presents the results of the tests conducted for the whole sample, domestic sample and cross-border sample of UK acquisitions. The analyses begin by examining acquirer announcement returns as measured by the CAR around the announcement period with the examination of the significance of the CAR for the whole, cross-border and domestic acquisitions. After that, an equality test is conducted with mean and median-difference tests for the cross-border and domestic samples. Then, a regression equation is estimated to

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examine the impact of some of the deal and acquirer characteristics on the returns to shareholders of bidding firms.

2.5.1 Short-term Returns and Significance Test

The empirical results presented in Table 2.2 show the short-term cumulative average abnormal returns for different time intervals around the announcement day using three models for the whole sample of UK acquisitions, cross-border acquisitions and domestic acquisitions with the t-statistics shown in brackets.

Table 2.2: Announcement Period Cumulative Average Abnormal Returns (CAAR) of UK Acquirers

Event Window	CAAR All	CAAR Cross-border	CAAR Domestic
Mean -Adjusted Model			
(-1,+1)	0.0205	0.0338	0.0064 ***
	(0.2624)	(0.2226)	(3.4170)
(-2,+2)	0.0398	0.0690	0.0089 ***
	(0.3946)	(0.3516)	(3.6942)
(-5,+5)	0.0907	0.1725	0.0044
	(0.6071)	(0.5927)	(1.2286)
(-10,+10)	-0.3242	-0.6395	0.0085 *
	(-1.5708)	(-1.5905)	(1.7197)
(-40,+40)	-0.4399	-0.8346	-0.0233 **
	(-1.0850)	(-1.0569)	(-2.3980)
Market Model			
(-1,+1)	0.0194	0.0308	0.0074 ***
	(0.2506)	(0.2040)	(4.0555)
(-2,+2)	0.0310	0.0507	0.0102 ***
	(0.3098)	(0.2602)	(4.3192)
(-5,+5)	0.0802	0.1525	0.0040
	(0.5402	(0.5272)	(1.1278)
(-10,+10)	-0.3497 *	-0.6869 *	0.0061
	(-1.7043)	(-1.7186)	(1.2515)
(-40,+40)	-0.4758	-0.9084	0.0192 **
	(-1.1805)	(-1.1573)	(-2.0195)
Market-Adjusted Model			
(-1,+1)	-0.0013	-0.0109	0.0088 ***
	(-0.0170)	(-0.0716)	(4.3132)
(-2,+2)	0.0034	-0.0055	0.0129 ***
	(0.0341)	(-0.0282)	(4.9217)
(-5,+5)	0.0074	0.0060	0.0090 **
	(0.0497)	(0.0205)	(2.3106)
(-10,+10)	-0.4847 **	-0.9574 **	0.0142 ***
	(-2.3464)	(-2.3803)	(2.6388)
(-40,+40)	-1.0599 ***	-2.0803 ***	0.0171
	(-2.6126)	(-2.6336)	(1.6209)

Values between brackets are t-statistics, ***= significant at the 1% level, **= significant at the 5% level, *= significant at the 10% level

The results shown in Table 2.2 are mostly similar across the three models used, with the market adjusted model showing more negative results for the cross-border sample even though not all of them are statistically significant. In general, the results show insignificant cumulative abnormal returns to acquirer shareholders in both the whole sample and cross-border sample of acquirer firms, whereas significant positive abnormal returns for acquirer shareholders involved in domestic acquisitions.

More specifically, when the mean-adjusted model is used, the results show insignificant positive returns for both the whole sample and the cross-border sample for the first three event windows, whereas insignificant negative returns for the twenty-one and eighty-one day windows. However, the domestic sample shows significant positive returns of 0.64%, 0.89% and 0.85% for the three-, five- and twenty-one-day windows respectively, significant negative returns of -2.33% for the eighty-one day window, whereas insignificant positive abnormal returns for the eleven-day window.

The market model shows similar results as the mean-adjusted model, with insignificant positive returns to the whole sample and the cross-border sample for the first three windows, insignificant negative returns for the last window while significant negative returns for the twenty-one-day window. The domestic sample shows significant positive returns of 0.74%, 1.02% and 1.92% for the three-day, five-day and eighty-one-day windows respectively, whereas insignificant positive returns for the eleven-day and twenty-one-day windows.

The market-adjusted model gives more significant results especially for the domestic sample being 0.88%, 1.29%, 0.90% and 1.42% for the three-day, five-day, eleven-day and the twenty-one-day windows respectively whereas insignificant positive returns for the eighty-one day window. For the whole and cross-border samples, the results show significant negative returns for the twenty-one- and eighty-one-day windows whereas there are

insignificant results for the other windows, which is similar to the insignificant CARs for the cross-border sample in the study of foreign acquisitions by UK acquirers done by Gregory and McCorriston (2005).

Figures 2.3, 2.4 and 2.5 show the results of Table 2.2 for the cross-border, domestic and full sample of UK acquirer firms.

Figure 2.3: CAAR for Cross-Border UK Acquirers
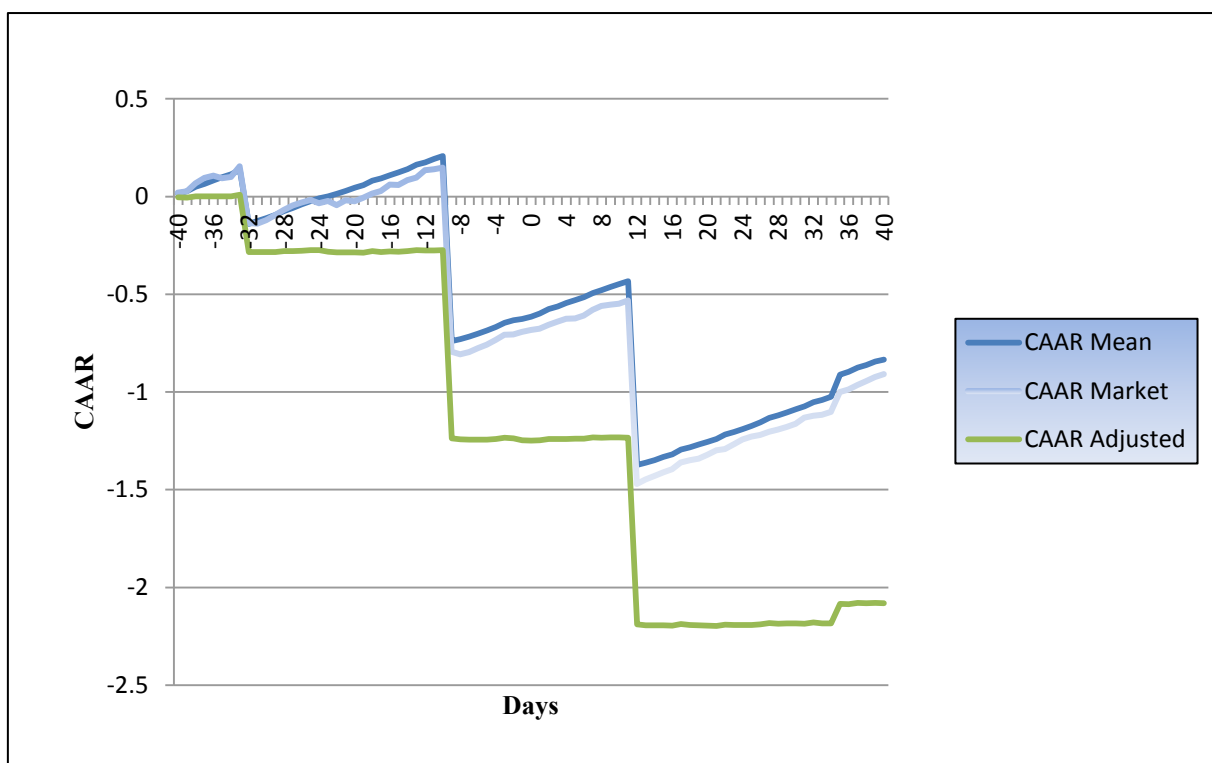
Figure 2.3 shows a decrease in CAAR for acquirer firms involved in cross-border M&As using the mean, market and market-adjusted model. However, the market-adjusted model shows more negative returns than the two other models.

Figure 2.4: CAAR for Domestic UK Acquirers
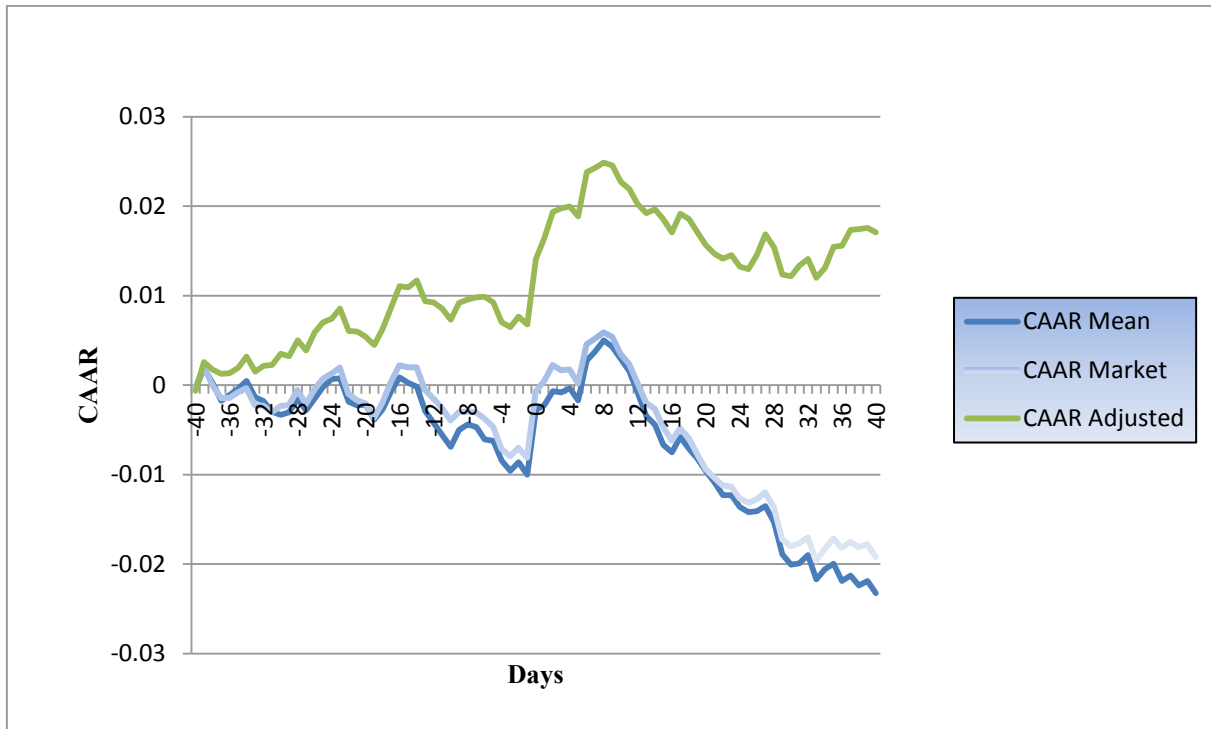
Figure 2.4 shows an increase in the cumulative abnormal returns of acquirer firms involved in domestic acquisitions using the mean, market and market-adjusted model. The market-adjusted model show more positive results than the other two models.

Figure 2.5: CAAR for All UK Acquirers
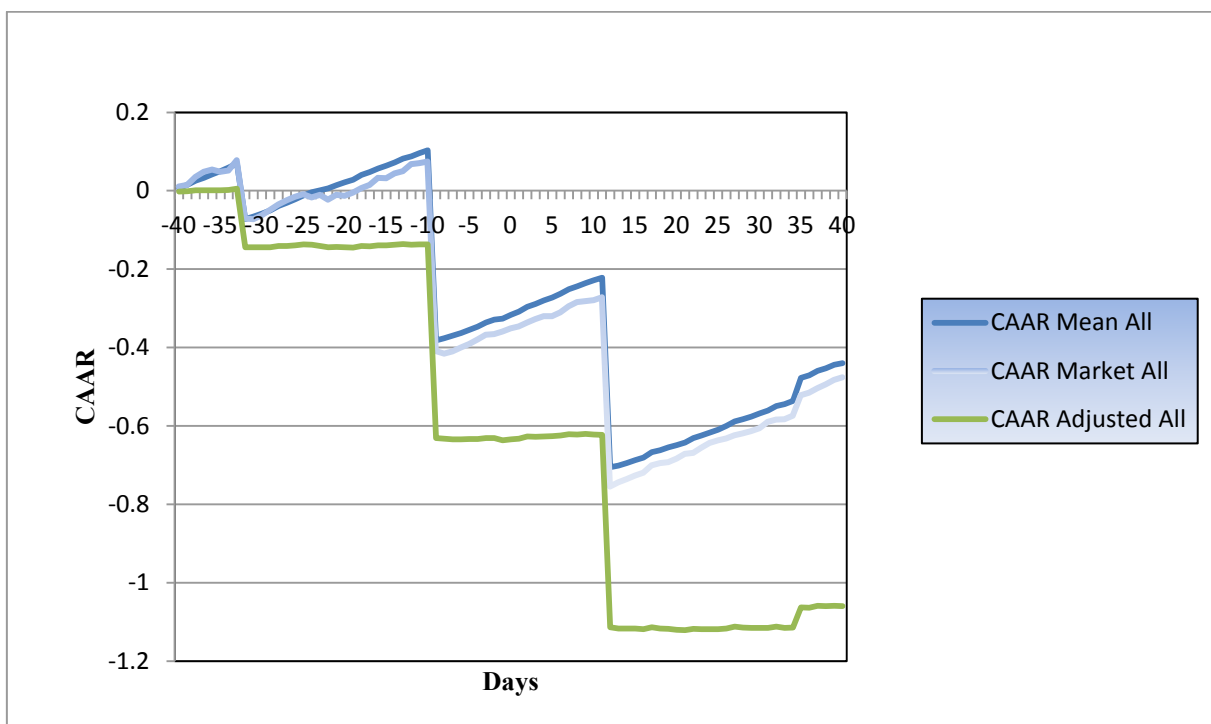
The results of the full sample of acquirer firms shown in figure 2.5 are of great similarity to the results of acquirer firms involved in cross-border M&As, since they show a decrease in the cumulative abnormal returns of acquirer firms using the mean, market and market-adjusted model being more negative using the adjusted model.

2.5.2 Equality Test

Table 2.3 presents means and medians of the cumulative abnormal returns (CARs) for the sample of 303 cross-border transactions and compares these with the means (medians) of the 282 domestic transactions. To test the significance of differences between means and medians of the two samples, t-tests are used for equality in means and a Wilcoxon /Mann–Whitney test is used for equality of medians.

Table 2.3: Univariate Analysis

% Cumulative Abnormal Return				
	Cross-border Acquisitions (1)	**Domestic Acquisitions (2)**	**Difference (1-2)**	**p-value**
Panel A: Mean-Adjusted Model				
(-1,+1)	3.447	0.602	2.845	0.480
	(-0.151)	(0.125)	(-0.276) *	(0.076)
(-2,+2)	6.947	0.878	6.069	0.438
	(-0.598)	(0.529)	(-1.127) ***	(0.006)
(-5,+5)	7.380	0.411	6.969	0.354
	(0.253)	(0.018)	(0.235)	(0.652)
(-10,+10)	-6.361	0.816	-7.177	0.322
	(-0.321)	(0.588)	(-0.909)	(0.166)
(-40,+40)	-0.838	-0.024	-0.814	0.323
	(-0.021)	(-0.003)	(-0.018)	(0.249)
Panel B: Market Model				
(-1,+1)	3.218	0.693	2.525	0.483
	(-0.256)	(0.036)	(-0.292)**	(0.047)
(-2,+2)	5.006	1.043	3.963	0.482
	(-0.623)	(0.487)	(-1.11)***	(0.004)
(-5,+5)	5.373	0.423	4.950	0.347
	(0.713)	(0.169)	(0.544)	(0.764)
(-10,+10)	-69.060	0.630	-69.69	0.328
	(-6.36e-05)	(0.389)	(-0.309)	(0.380)
(-40,+40)	-0.912	-0.019	-0.893	0.327
	(-0.028)	(0.000)	(-0.028)	(0.154)
Panel C: Market- Adjusted Model				
(-1,+1)	-1.069	0.826	-1.895 *	0.086
	(-0.103)	(0.180)	(-0.283)*	(0.051)
(-2,+2)	-0.616	1.310	-1.926 **	0.011
	(-0.230)	(0.545)	(-0.775)***	(0.010)
(-5,+5)	0.520	0.937	-0.417	0.564
	(0.359)	(0.564)	(-0.205)	(0.754)
(-10,+10)	-9.474	1.521	-10.995	0.332
	(0.687)	(0.386)	(0.301)	(0.924)
(-40,+40)	-2.097	0.021	-2.118	0.331
	(0.003)	(0.025)	(-0.022)	(0.121)

The table shows mean values of cumulative abnormal returns for the domestic and cross-border samples with the median values in brackets for different event windows using three models. The difference tests are based on t-tests for equality in means and a Wilcoxon/Mann-Witney test for equality of medians.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

Table 2.3 shows the difference between the means and medians of cumulative abnormal

returns for acquirer firms in cross-border and domestic acquisitions using the three models

and different windows around the announcement date. Panel A in Table 2.3, which presents

the test results for the mean-adjusted model, shows no significant difference between means for cross-border and domestic acquisitions whereas there are significant negative differences between medians using the three-day and five-day windows.

In Panel B and for the market model returns, the results are similar to the ones in Panel A with insignificant differences between the means for the two samples and significant negative differences in medians for the three- and five-day windows around the announcement date.

Panel C gives more significant results for the differences between the means and medians of cross-border and domestic cumulative abnormal returns. It shows significant negative differences in means for the three- and five-day windows around the announcement day, with similar results when the comparison of the abnormal returns is done using the median difference tests. When the market-adjusted model is used, the results show that there are some significant results for the underperformance of the cross-border acquisitions in comparison with domestic acquisitions which is similar to the previous results of the studies conducted for UK acquirers such as Conn et al. (2005).

2.5.3 Regression Analysis

The theoretical and empirical literature on acquisition activity generally presented some of the bids' characteristics that may affect the bidders' returns. Therefore, it would be very useful to examine the impact of some of these characteristics on the bidders' returns by running a regression test with event period (short-term) abnormal returns, which includes employing standard ordinary least squares analysis.

The variables which are examined here are: whether the merger is a domestic or cross-border, the payment method, whether the target is a public or private firm, the country of the target in cross-border deals, the size of the deal value, acquirer size, relative size and the industrial relatedness.

The dependent variable is the cumulative abnormal return (CAR) for each company using the mean, market and market-adjusted models over different windows around the announcement day. The independent variables (explanatory variables) are as follows:

Cross-border = dummy variable equal to one, if target is cross-border, zero if domestic

The cross-border dummy variable examines the impact of cross-border M&As on the returns to shareholders of acquirer firms around the announcement date, after controlling for the other factors that are expected to affect acquirer returns.

Some of the previous studies expect a positive impact of international acquisitions on the gains and returns of acquirer firms in comparison with domestic acquisitions. The reason for that stems from the assumption that acquirer firms are likely to benefit from expanding into new markets and by internalizing the capabilities of target firms and taking advantage of imperfections in the international capital market (Martynova et al., 2007).

However, other researchers expect lower returns to acquirer shareholders involved in cross-border M&As in comparison with domestic M&As due to some differences between acquirer and target countries in the economic, regulatory and cultural structures (Shimizu et al., 2004).

Moeller and Schlingemann (2005) and Conn et al. (2005) found significant negative impact of cross-border M&As on the announcement returns to acquirer firms.

US = dummy variable equal to one if the acquisition is made in the US, zero if not

EU = dummy variable equal to one if the acquisition is made in the EU, zero if not

Those two variables segment the data by geographical region for the cross-border regression analysis, since some of the previous studies have shown that international acquirers experience cross-country variation in returns due to some differences between countries such as the variation in the corporate governance. For example, while the corporate governance structure of the US is similar to that of the UK; the EU has some differences (Gregory and McCorriston, 2005).

Cash Payment = dummy variable equal to one, if payment is made with cash, zero if not

Mixed Payment = dummy variable equal to one if payment is made with a mix of cash, shares or other payments, zero if not

The cash payment and mixed payment dummy variables examines the impact of the payment method on the returns to shareholders of acquirer firms. The examination of the choice of payment method is of significant importance due to the existence of a large amount of theoretical literature which suggests that cash acquisitions generate higher returns to acquirer firm shareholders than other payment methods (Goergen and Renneboog, 2004; Tuch and O'Sullivan, 2007).

This is consistent with Myers and Majluf's hypothesis (1984) which assumes that the method of payment represents an information signal to the market. This means that the announcement of the cash bid is viewed by the market as a signal that the management of the acquiring firm is expecting an increase in the firm's value following the acquisitions, which may have good results for the bidder returns. On the other hand, the announcement of the equity bid may be viewed by the market as a signal that the bidding firm's management believes that their firm's shares are overpriced which may impact the returns to acquirer shareholders negatively.

The signalling hypothesis of Myers and Majluf (1984) was supported by the empirical studies which reported positive abnormal returns for acquisitions financed with cash whereas

negative abnormal returns for acquisitions financed with equity and mixed payments (Travlos, 1987; Eckbo and Thorburn, 2000; Andre' et al., 2004).

Related = dummy variable equal to one if the acquisition is made in an industry with the same two-digit SIC code, zero if not

The related dummy variable examines the impact of the industrial relatedness between the acquirer and target firms on the returns to shareholders of acquirer firms.

Some researchers expect more synergies for takeovers conducted between acquirer and target firms that share similar industrial sectors (Tuch and O'Sullivan, 2007). As a result of this synergy, the takeover should result in positive results for the shareholders of acquirer firms.

Empirically, Gregory and McCorriston (2005) and Conn et al. (2005) didn't find any significant impact for the industrial relatedness on the short-term cumulative abnormal returns.

Private = dummy variable equal to one if target is privately held firm, zero if publicly traded

The private dummy variable examines the impact of the status of target firms on the returns to acquirer firm's shareholders. The reason for the examination is based on the previous studies which have shown that the market reacts differently to the announcement of the acquisition of private targets in comparison with public targets (Draper and Paudyal, 2006).

Empirical studies in general show a positive impact from acquiring private targets on the announcement returns to acquirer shareholders (Sudarsanam and Mahate, 2003; Conn et al., 2005; Moeller and Schlingemann, 2005).

Deal value = the log of the total value of consideration paid by the bidder excluding fees and expenses

Acquirer Size = the log of the market value of equity of the acquirer firm (MV)

Relative Size = the relative size of the target, which is the ratio of the deal value to the acquirers' size.

Those three variables examine the impact of the size of target firm, the size of acquirer firm and the relative size of the target to acquirer firm on the returns to shareholders of acquirer firms.

Some researchers propose that acquiring larger targets result in better post-acquisition performance than buying smaller targets due to the lack of competition on large targets which gives more advantageous terms to acquirer firms of large targets (Roll, 1986). The size of acquirer firms may also have effect on the performance of firms as argued by Moeller et al. (2004) who suggested that the concentration should be turned to the size of acquirers rather than the targets when examining the size effect.

Empirically, most of the studies which examined the relative size of target to acquirer firms around the announcement period found greater gains from acquiring large targets (Fuller et al., 2002; Moeller and Schlingemann, 2005; Tuch and O'Sullivan, 2007).

Tables 2.4, 2.5, 2.6, 2.7 and 2.8 present the results of the regression estimates obtained for the (-1, +1), (-2, +2), (-5, +5), (-10, +10) and (-40, +40) windows around the announcement dates for the full, cross-border and domestic samples.

Table 2.4: Regression Tests of Determinants of Event Period Returns (-1, +1)

Panel A: Mean Model (-1, +1)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.216865	-0.413874	-0.031008
	(-1.025221)	(-0.988470)	(-0.879276)
CB	-0.022730		
	(-0.306689)		
US	0.089099	0.070437	
	(1.100121)	(0.604293)	
EU	0.014928	0.025981	
	(0.184178)	(0.227736)	
Cash Payment	0.070253	0.145562	0.001313
	(1.275327)	(1.416483)	(0.151569)
Mix Payment	0.013496	0.010440	-0.000848
	(0.234376)	(0.092703)	(-0.098438)
Relatedness	0.050707	0.082148	0.003073
	(1.146776)	(0.933158)	(0.464811)
Private	-0.064748	-0.135530	-0.004255
	(-1.308295)	(-1.385425)	(-0.578876)
Log (Deal Value)	0.011258	0.017223	0.004499*
	(0.818665)	(0.676701)	(1.914895)
Log(MV)	0.004157	0.015185	-0.005803***
	(0.299477)	(0.541939)	(-2.671215)
Relative Size	-0.000132	-8.54E-05	-0.007610 *
	(-0.268920)	(-0.117678)	(-1.923303)
Adjusted R-squared	-0.001416	-0.005874	0.008835
F-statistic	0.924218	0.822851	1.333645
Sample Size	585	303	282

Panel B: Market Model (-1, +1)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.202275	-0.380761	-0.033534
	(-1.069047)	(-1.017151)	(-0.946167)
CB	-0.023359		
	(-0.352356)		
US	0.084655	0.068060	
	(1.168555)	(0.653097)	
EU	0.017251	0.026855	
	(0.237952)	(0.263290)	
Cash Payment	0.062216	0.129401	-0.000138
	(1.262660)	(1.408441)	(-0.015835)
Mix Payment	0.013760	0.012741	-0.000951
	(0.267145)	(0.126540)	(-0.109848)
Relatedness	0.044515	0.072262	0.002501
	(1.125499)	(0.918135)	(0.376370)
Private	-0.057325	-0.119451	-0.004488
	(-1.294944)	(-1.365760)	(-0.607423)
Log (Deal Value)	0.010974	0.016355	0.004688 **
	(0.892179)	(0.718728)	(1.985319)
Log(MV)	0.002825	0.012344	-0.005585 **
	(0.227466)	(0.492742)	(-2.558336)
Relative Size	-0.000127	-8.75E-05	-0.006233
	(-0.287843)	(-0.134881)	(-1.567379)
Adjusted R-squared	-0.001279	-0.006093	0.005131
F- Statistic	0.931543	0.816287	1.193048
Sample Size	585	303	282

Panel C: Market-adjusted Model (-1, +1)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	0.070669	0.138042	-0.032421
	(1.230814)	(1.258718)	(-0.902575)
CB	-0.000513		
	(-0.025522)		
US	-0.025655	-0.024014	
	(-1.166999)	(-0.786572)	
EU	1.93E-05	-0.004000	
	(0.000879)	(-0.133858)	
Cash Payment	-0.007645	-0.019193	-0.001363
	(-0.511324)	(-0.713055)	(-0.154420)
Mix Payment	0.007999	0.019446	-0.001418
	(0.511782)	(0.659208)	(-0.161475)
Relatedness	-0.017610	-0.033270	0.004067
	(-1.467281)	(-1.442868)	(0.603890)
Private	0.008630	0.022502	-0.001834
	(0.642459)	(0.878203)	(-0.244967)
Log (Deal Value)	-0.001672	-0.004723	0.004426 *
	(-0.447925)	(-0.708523)	(1.849416)
Log (MV)	-0.005451	-0.007430	-0.005280 **
	(-1.446497)	(-1.012386)	(-2.386464)
Relative Size	-9.65E-06	-1.24E-05	-0.004014
	(-0.072283)	(-0.065435)	(-0.995905)
Adjusted R-squared	0.005156	-0.001107	-0.000776
F- statistic	1.277794	0.966455	0.970988
Sample Size	585	303	282

Dependent variables are the cumulated abnormal returns CARs over the period (-1, +1) around the announcement period using the mean, market and market-adjusted models. Independent variables are explained within the text. Numbers in parentheses are t-statistics.
*** Statistical significance at the 1% level,
** Statistical significance at the 5% level and
* Statistical significance at the 10% level.

Table 2.4 which is conducted for the three-day window (-1, +1) around the announcement date shows significant positive results for the effect of the deal value, negative significant results for the effect of acquirer size and the relative size on the domestic returns using the mean adjusted model. The market model and the market-adjusted model also show significant positive results for the effect of the deal value and negative significant results for the effect of acquirer size on the returns of acquirer shareholders involved in domestic acquisitions. However, the results for the whole and cross-border samples do not show any significant impact from the deal and acquirer's characteristics on the returns to acquirer's shareholders.

The results of the market-adjusted model for the whole sample of M&As differ from the results of Conn et al. (2005) which showed that the announcement returns of acquirer firms are positively influenced by noncash methods of payment and private targets and negatively influenced by cross-border M&As. The difference in the results may be related to the different samples and time periods covered by the two studies.

Table 2.5: Regression Tests of Determinants of Event Period Returns (-2, +2)

Panel A: Mean Model (-2, +2)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.436746	-0.829044	-0.049211
	(-1.062601)	(-1.017216)	(-1.226541)
CB	-0.045860		
	(-0.318458)		
US	0.181445	0.147046	
	(1.152996)	(0.648098)	
EU	0.029311	0.051246	
	(0.186114)	(0.230767)	
Cash Payment	0.129203	0.270213	0.002753
	(1.207103)	(1.350861)	(0.279224)
Mix Payment	0.024715	0.009337	0.007314
	(0.220897)	(0.042590)	(0.745948)
Relatedness	0.100053	0.163204	0.005859
	(1.164532)	(0.952419)	(0.778974)
Private	-0.121908	-0.255645	-0.009534
	(-1.267735)	(-1.342534)	(-1.139981)
Log (Deal Value)	0.021463	0.033754	0.005768 **
	(0.803247)	(0.681321)	(2.158133)
Log (MV)	0.011392	0.032191	-0.005955 **
	(0.422337)	(0.590187)	(-2.409619)
Relative Size	-0.000221	-0.000135	-0.008426 *
	(-0.230797)	(-0.095838)	(-1.871950)
Adjusted R-squared	-0.001084	-0.005948	0.016826
F-statistic	0.941934	0.820656	1.640536
Sample Size	585	303	282

Panel B: Market Model (-2, +2)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.321987	-0.598358	-0.061226
	(-1.087301)	(-1.019831)	(-1.517898)
CB	-0.036654		
	(-0.353271)		
US	0.130966	0.105196	
	(1.155085)	(0.644051)	
EU	0.024889	0.040265	
	(0.219345)	(0.251872)	
Cash Payment	0.094718	0.198974	-0.000262
	(1.228214)	(1.381755)	(-0.026412)
Mix Payment	0.021363	0.014032	0.004159
	(0.265001)	(0.088912)	(0.421853)
Relatedness	0.069990	0.114557	0.003690
	(1.130655)	(0.928645)	(0.487896)
Private	-0.088451	-0.186023	-0.005632
	(-1.276635)	(-1.357025)	(-0.669839)
Log (Deal Value)	0.016663	0.024906	0.006821**
	(0.865551)	(0.698324)	(2.538488)
Log(MV)	0.006732	0.021818	-0.006436 ***
	(0.346412)	(0.555658)	(-2.590279)
Relative Size	-0.000174	-0.000112	-0.008234 *
	(-0.251956)	(-0.110050)	(-1.819510)
Adjusted R-squared	-0.001350	-0.006073	0.015794
F- Statistic	0.927715	0.816905	1.600619
Sample Size	585	303	282

Panel C: Market-adjusted Model (-2, +2)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	0.039300	0.089130	-0.061615
	(1.015241)	(1.303289)	(-1.515081)
CB	-0.006423		
	(-0.473543)		
US	-0.017916	-0.019559	
	(-1.208808)	(-1.027328)	
EU	0.004308	0.001274	
	(0.290424)	(0.068356)	
Cash Payment	0.001486	-0.000639	-0.000371
	(0.147384)	(-0.038074)	(-0.037177)
Mix Payment	0.014513	0.023866	0.004724
	(1.377256)	(1.297435)	(0.475272)
Relatedness	-0.014418 *	-0.028904 **	0.004728
	(-1.781856)	(-2.010193)	(0.620074)
Private	0.000402	0.003605	-0.000511
	(0.044410)	(0.225613)	(-0.060330)
Log (Deal Value)	4.65E-05	-0.002565	0.006450 **
	(0.018479)	(-0.617121)	(2.380719)
Log (MV)	-0.004385 *	-0.005146	-0.005746 **
	(-1.726005)	(-1.124332)	(-2.293557)
Relative Size	-2.04E-05	-1.91E-05	-0.005773
	(-0.226525)	(-0.161266)	(-1.265239)
Adjusted R-squared	0.015340	0.009241	0.006117
F- statistic	1.835037 *	1.282929	1.230363
Sample Size	585	303	282

Dependent variables are the cumulated abnormal returns CARs over the period (-2, +2) around the announcement period using the mean, market and market-adjusted models. Independent variables are explained within the text. Numbers in parentheses are t-statistics.
*** Statistical significance at the 1% level,
** Statistical significance at the 5% level and
* Statistical significance at the 10% level.

For the five-day window (-2, +2) around the announcement date, Table 2.5 shows similar results to the previous three-day window using the mean and market models with the returns being significantly positive for the impact of the deal value, and negatively significant for the impact of the market value of acquirers and the relative size on the returns of acquirers in the domestic sample and insignificant results for the whole and cross-border samples.

However, the market-adjusted model shows positive significant impacts from the deal value and negative significant results for the impact of the acquirer size on the domestic sample, negative significant results for the effect of the relatedness on returns to acquirers in the cross-border sample, and negative significant results for the impact of relatedness and acquirer size on the returns to shareholders in the whole sample.

Table 2.6: Regression Tests of Determinants of Event Period Returns (-5, +5)

Panel A: Mean Model (-5, +5)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-1.093158	-2.058366	-0.034132
	(-1.136097)	(-1.078490)	(0.5727)
CB	-0.080989		
	(-0.240234)		
US	0.426659	0.351826	
	(1.158126)	(0.662177)	
EU	0.057476	0.112094	
	(0.155894)	(0.215555)	
Cash Payment	0.287112	0.613419	-0.003819
	(1.145814)	(1.309542)	(-0.257191)
Mix Payment	0.054613	0.022533	0.012658
	(0.208502)	(0.043894)	(0.857024)
Relatedness	0.236006	0.402570	-0.008823
	(1.173376)	(1.003224)	(-0.778723)
Private	-0.267632	-0.575797	-0.011150
	(-1.188843)	(-1.291268)	(-0.885019)
Log (Deal Value)	0.053080	0.084710	0.006632 *
	(0.848577)	(0.730154)	(1.647118)
Log(MV)	0.027044	0.076762	-0.010006 ***
	(0.428258)	(0.600987)	(-2.687738)
Relative Size	-0.000498	-0.000291	-0.005562
	(-0.222325)	(-0.087800)	(-0.820291)
Adjusted R-squared	-0.001019	-0.005905	0.020067
F-statistic	0.945412	0.821939	1.766469 *
Sample Size	585	303	282

Panel B: Market Model (-5, +5)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.972603	-1.812183	-0.047559
	(-1.163710)	(-1.093292)	(-0.811532)
CB	-0.069502		
	(-0.237345)		
US	0.372104	0.306682	
	(1.162829)	(0.664622)	
EU	0.053225	0.100785	
	(0.166201)	(0.223159)	
Cash Payment	0.251287	0.536862	-0.004231
	(1.154546	(1.319670)	(-0.293860)
Mix Payment	0.052038	0.028049	0.011261
	(0.228722)	(0.062912)	(0.786241)
Relatedness	0.203780	0.350924	-0.011979
	(1.166417)	(1.006956)	(-1.090298)
Private	-0.228400	-0.497656	-0.003535
	(-1.168043)	(-1.285040)	(-0.289376)
Log (Deal Value)	0.047817	0.075238	0.007414 *
	(0.880068)	(0.746719)	(1.899112)
Log(MV)	0.021948	0.065292	-0.010416 ***
	(0.400140	(0.588603)	(-2.885445)
Relative Size	-0.000447	-0.000268	-0.005497
	(-0.229921)	(-0.093105)	(-0.836073)
Adjusted R-squared	-0.001079	-0.005889	0.023366
F- Statistic	0.942226	0.822423	1.895464 *
Sample Size	585	303	282

Panel C: Market-adjusted Model (-5, +5)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	-0.034460	-0.027470	-0.057611
	(-0.978913)	(-0.547823)	(-1.006615)
CB	0.003592		
	(0.291210)		
US	-0.012992	-0.014764	
	(-0.963950)	(-1.057668)	
EU	0.007465	0.007691	
	(0.553408)	(0.562935)	
Cash Payment	0.007564 *	0.015873	-0.004286
	(1.825106)	(1.289777)	(-0.30479)
Mix Payment	-0.031048 ***	0.051642	0.009094
	(3.240010)	(3.828898)	(0.650144)
Relatedness	-0.010906	-0.015320	-0.006240
	(-1.482150)	(-1.453174)	(-0.581516)
Private	-0.007366	-0.014556	0.000808
	(-0.894406)	(-1.242460)	(0.067687)
Log (Deal Value)	0.004900 **	0.003290	0.007581 **
	(2.141397)	(1.079294)	(1.988383)
Log (MV)	-0.006731 ***	-0.003409	-0.009465 ***
	(-2.913667)	(-1.015822	(-2.684860)
Relative Size	-6.03E-05	-2.58E-05	0.001434
	(-0.736315)	(-0.296403)	(0.223273)
Adjusted R-squared	0.037597	0.050990	0.023699
F- statistic	3.093899 ***	2.629791 ***	1.908569 *
Sample Size	585	303	282

Dependent variables are the cumulated abnormal returns CARs over the period (-5, +5) around the announcement period using the mean, market and market-adjusted models. Independent variables are explained within the text. Numbers in parentheses are t-statistics.
*** Statistical significance at the 1% level,
** Statistical significance at the 5% level and
* Statistical significance at the 10% level.

Table 2.6 which is conducted for the eleven-day window (-5, +5) around the announcement day shows significant positive impact of deal value and significant negative impact of the market value on domestic returns, while insignificant results for the whole and cross-border samples using the mean and market models. The market-adjusted model shows similar results with significant positive impact of deal value and significant negative impact of the market value on domestic returns. The results for the whole sample show significant positive impacts of cash payment method and deal value and significant negative impacts from the mix payment method and the acquirer size on the abnormal returns of acquirer firms. However, the results for the cross-border sample do not show any significant impact of acquirer and deal characteristics on acquirers' returns.

Table 2.7: Regression Tests of Determinants of Event Period Returns (-10, +10)

Panel A: Mean Model (-10, +10)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	3.869513	7.341189	-0.103100
	(1.117543)	(1.068371)	(-1.292887)
CB	0.270839		
	(0.223252)		
US	-1.581767	-1.309187	
	(-1.193145)	(-0.684399)	
EU	-0.178575	-0.368188	
	(-0.134598)	(-0.196656)	
Cash Payment	-1.020074	-2.152666	-0.020127
	(-1.131282)	(-1.276442)	(-1.027284)
Mix Payment	-0.084319	0.092852	0.003231
	(-0.089456)	(0.050238)	(0.165794)
Relatedness	-0.893313	-1.486752	-0.015833
	(-1.234223)	(-1.029099)	(-1.059082)
Private	0.869221	1.966064	-0.029771*
	(1.072980)	(1.224636)	(-1.790981)
Log (Deal Value)	-0.176098	-0.302040	0.012462 **
	(-0.782329)	(-0.723116)	(2.345737)
Log (MV)	-0.115828	-0.272250	-0.008976 *
	(-0.509717)	(-0.592038)	(-1.827314)
Relative Size	0.001564	0.001046	-0.004426
	(0.194133)	(0.087846)	(-0.494746)
Adjusted R-squared	-0.000661	-0.006141	0.037369
F-statistic	0.964618	0.814874	2.452956 **
Sample Size	585	303	282

Panel B: Market Model (-10, +10)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	4.173468	7.929301	-0.112099
	(1.115273)	(1.067737)	(-1.455006)
CB	0.298802		
	(0.227900)		
US	-1.700061	-1.405120	
	(-1.186564)	(-0.679665)	
EU	-0.195251	-0.400295	
	(-0.136172)	(-0.197830)	
Cash Payment	-1.098038	-2.321963	-0.018180
	(-1.126763)	(-1.273953)	(-0.960380)
Mix Payment	-0.093030	0.099362	0.000546
	(-0.091325)	(0.049744)	(0.029009)
Relatedness	-0.962720	-1.602842	-0.015774
	(-1.230739)	(-1.026557)	(-1.092093)
Private	0.951161	2.138317	-0.022136
	(1.086405)	(1.232409)	(-1.378354)
Log(Deal Value)	-0.190360	-0.326291	0.012977 **
	(-0.782502)	(-0.722807)	(2.528288)
Log(MV)	-0.125979	-0.295456	-0.010097 **
	(-0.512964)	(-0.594496)	(-2.127503)
Relative Size	0.001677	0.001113	-0.005308
	(0.192581)	(0.086464)	(-0.614098)
Adjusted R-squared	-0.000716	-0.006150	0.033738
F- Statistic	0.961674	0.814596	2.306846 **
Sample Size	585	303	282

Panel C: Market-adjusted Model (-10, +10)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	5.934079	11.26019	-0.094169
	(1.117363)	(1.068409)	(-1.261688)
CB	0.439181		
	(0.236026)		
US	-2.417387	-2.001710	
	(-1.188858)	(-0.682252)	
EU	-0.282524	-0.575770	
	(-0.138837)	(-0.200504)	
Cash Payment	-1.555581	-3.299262	-0.019799
	(-1.124773)	(-1.275491)	(-1.079659)
Mix Payment	-0.128959	0.150930	-0.003250
	(-0.089201)	(0.053242)	(-0.178180)
Relatedness	-1.359663	-2.279826	-0.005666
	(-1.224769)	(-1.028861)	(-0.404893)
Private	1.360320	3.041269	-0.021556
	(1.094803)	(1.235094)	(-1.385524)
Log (Deal Value)	-0.271491	-0.461005	0.010829 **
	(-0.786363)	(-0.719588)	(2.177951)
Log (MV)	-0.178424	-0.422955	-0.006784
	(-0.511917)	(-0.599671)	(-1.475528)
Relative Size	0.002406	0.001572	0.006381
	(0.194781)	(0.086029)	(0.761963)
Adjusted R-squared	-0.000707	-0.006041	0.028617
F- statistic	0.962118	0.817846	2.102643 **
Sample Size	585	303	282

Dependent variables are the cumulated abnormal returns CARs over the period (-10, +10) around the announcement period using the mean, market and market-adjusted models. Independent variables are explained within the text. Numbers in parentheses are t-statistics.
*** Statistical significance at the 1% level,
** Statistical significance at the 5% level and
* Statistical significance at the 10% level.

Table 2.7 shows the results for the regression analysis conducted for the twenty-one days window (-10, +10) around the announcement day. The results show significant negative impact of the target's private status on the returns to acquirer shareholders involved in domestic acquisitions using the mean model, positive impact of deal value and negative impact of market value on acquirers' returns in domestic sample using both the mean and the market model. The market-adjusted model shows significant positive impact of deal value on the returns to acquirer shareholders in domestic transactions.

Table 2.8: Regression Tests of Determinants of Event Period Returns (-40, +40)

Panel A: Mean Model (-40, +40)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	4.858134	2.54262 **	-0.175127
	(1.120987)	(2.468060)	(-0.919544)
CB	0.369772		
	(0.243523)		
US	-2.032362	0.287459	
	(-1.224827)	(0.080391)	
EU	-0.284121	-3.318836	
	(-0.171098)	(-0.925062)	
Cash Payment	-1.243599	-0.855751	0.013977
	(-1.101901)	(-0.387289)	(0.298687)
Mix Payment	-0.128855	-2.291644	0.001635
	(-0.109223)	(-0.989603)	(0.035131)
Relatedness	-1.137258	-1.691911	-0.057310
	(-1.255371)	(-0.967427)	(-1.605106)
Private	1.040147	-1.509872	-0.098269 **
	(1.025839)	(-0.762098)	(-2.475297)
Log (Deal Value)	-0.221036	-1.122634 ***	0.020077
	(-0.784550)	(-1.764063)	(1.582425)
Log (MV)	-0.143253	-0.336998	-0.010998
	(-0.503665)	(-0.565548)	(-0.937438)
Relative Size	0.001929	-0.003516	-0.030758
	(0.191362)	(-0.239518)	(-1.439478)
Adjusted R-squared	-0.000974	0.011985	0.035696
F-statistic	0.947869	1.337218	2.385488 **
Sample Size	585	303	282

Panel B: Market Model (-40, +40)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	5.395427	2.12134	-0.165618
	(1.126980)	(1.295005)	(-0.910897)
CB	0.392014		
	(0.233705)		
US	-2.219011	0.660221	
	(-1.210577)	(0.163658)	
EU	-0.265450	-4.356028	
	(-0.144704)	(-1.073657)	
Cash Payment	-1.390579	-3.360486	0.013405
	(-1.115365)	(-1.455412)	(0.300073)
Mix Payment	-0.152427	-0.137085	0.004724
	(-0.116958)	(-0.053462)	(0.106313)
Relatedness	-1.244081	-1.528695	-0.046519
	(-1.243143)	(-0.765213)	(-1.364714)
Private	1.191096	3.228037	-0.080022 **
	(1.063385)	(1.508679)	(-2.111385)
Log(Deal Value)	-0.247522	-0.587497	0.017821
	(-0.795301)	(-1.016343)	(1.471294)
Log(MV)	-0.157496	-0.241107	-0.009163
	(-0.501263)	(-0.378424)	(-0.818110)
Relative Size	0.002159	0.005810	-0.030965
	(0.193849)	(0.350618)	(-1.517984)
Adjusted R-squared	-0.000733	0.004365	0.023311
F- Statistic	0.960759	1.119238	1.893327 ***
Sample Size	585	303	282

Panel C: Market-adjusted Model (-40, +40)

Independent Variable	Full Sample	Cross-border Sample	Domestic Sample
Constant	12.87019	2.86652	-0.133898
	(1.123235)	(1.170272)	(-0.901065)
CB	0.968662		
	(0.241287)		
US	-5.267661	-0.366142	
	(-1.200732)	(-0.060210)	
EU	-0.637063	-12.62759 **	
	(-0.145103)	(-2.057799)	
Cash Payment	-3.333826	-8.275931	0.012185
	(-1.117274)	(-1.503450)	(0.333735)
Mix Payment	-0.293662	0.625049	0.008301
	(-0.094148)	(0.102534)	(0.228580)
Relatedness	-2.921443	-4.392072	0.003999
	(-1.219733)	(-0.924142)	(0.143543)
Private	2.953510	7.729358	-0.057338 ***
	(1.101736)	(1.531183)	(-1.851036)
Log (Deal Value)	-0.595022	-1.273561	0.010219
	(-0.798814)	(-0.921391)	(1.032283)
Log (MV)	-0.375765	-0.521185	0.004226
	(-0.499698)	(-0.345340)	(0.461629)
Relative Size	0.005335	0.015760	0.005581
	(0.200132)	(0.398094)	(0.334730)
Adjusted R-squared	-0.000653	0.009071	0.003286
F- statistic	0.965001	1.276668	1.123379
Sample Size	585	303	282

Dependent variables are the cumulated abnormal returns CARs over the period (-40, +40) around the announcement period using the mean, market and market-adjusted models. Independent variables are explained within the text. Numbers in parentheses are t-statistics.
*** Statistical significance at the 1% level,
** Statistical significance at the 5% level and
* Statistical significance at the 10% level.

Finally, the results in Table 2.8 do not show any significant results for the impact of the deal and acquirer characteristics on the returns to shareholders in the full sample using the mean, market and market-adjusted method. However, the results show a significant negative impact of the deal value on cross-border returns using the mean-adjusted model and significant negative impact of the acquisitions in Europe on returns to shareholders using the market-adjusted model. Also, the results show significant negative impact from the targets' private status on the returns to shareholders involved in domestic acquisitions for the three models used.

2.6 Summary of the Results and Conclusions

This chapter examines the returns to shareholders of UK public acquirer firms around the announcement date using a sample of 585 acquisitions announced between 1996 and 2003. The sample includes acquisitions of both domestic and cross-border targets for reasons of comparison between the reactions of the share prices of acquirer firms to the announcements of each kind of acquisition. The examination is conducted by focusing on the returns to acquirers' shareholders involved in cross-border and domestic acquisitions around the announcement date.

The sample period in this study is distinguished in being more recent than the periods used in previous studies and not studied before which may make it more up to date with the rapid changes in today's global world. This sample also allows domestic and cross-border acquisitions to be directly contrasted with each other, and permits us to reach conclusions on the impacts of the merger announcement on the returns to shareholders of UK acquirer firms.

Event study methodology is conducted in this chapter and three different benchmark models are applied to calculate abnormal returns which are the mean-adjusted model, the market model and the market-adjusted model.

In general, the results show insignificant cumulative abnormal returns of acquirer firms in the whole sample and in the cross-border sample, compared with significant positive cumulative abnormal returns of acquirer firms involved in domestic acquisitions. The results show great similarities to those achieved by Moeller and Schlingemann (2005) in their examination of US acquirer firms. Also, the insignificant cumulative abnormal returns of acquirer firms involved in cross-border acquisitions is similar to the insignificant returns achieved by Gregory and McCorriston (2005) in their examination of foreign UK acquisitions. Moreover, the significant positive cumulative abnormal returns of acquirer firms involved in domestic

acquisitions is similar to that of Conn et al. (2005) in their examination of domestic UK acquirer firms, whereas it contradicts the results of Sudarsanam and Mahate (2003, 2006) who found significant negative returns to UK acquirer firms in domestic acquisitions.

The potential reasons for the differences in the results with those of Sudarsanam and Mahate (2003, 2006) could be resulted from the differences between them in terms of the time periods and models used. For example, their sample of M&As took place during 1983-1995 whereas the sample here is more recent covering the years 1996-2003. Also, Sudarsanam and Mahate (2003, 2006) used the buy and hold abnormal returns BHARs) in their analysis, whereas the cumulative abnormal returns (CARs) are used in this chapter.

Equality tests show no significant differences in means using the mean-adjusted model and the market model. However, the market-adjusted model shows significant negative differences in means and medians for the three-day and five-day windows around the announcement day, which may be a signal for the underperformance of cross-border acquisitions in comparison with domestic acquisitions.

Regression tests were conducted over different event windows to check the impact of some of the deal and acquirers' characteristics on the bidders' returns. The results do not show any significant differences between the returns to shareholders of acquirer firms involved in cross-border and domestic acquisitions, which may imply that the UK capital market is highly integrated with the world's capital market.

The regression analysis results show significant positive effects from the deal value on the domestic acquirers' returns, whereas there is a negative significant impact from the market value of equity (which represents the acquirers' size) on the domestic acquirers' returns using all the three methods and during all event windows.

Other issues, such as the operating performance of firms, are also important and need to be examined and explored alongside the shareholders' returns in order to have a wider view about the difference between domestic and cross-border mergers and acquisitions over the long term. To examine the difference between the operating performance of acquirer and combined firms involved in domestic and cross-border mergers and acquisitions therefore becomes the major work in chapters three and four respectively.

CHAPTER THREE

THE DIFFERENCE BETWEEN THE OPERATING PERFORMANCES OF THE UK ACQUIRERS INVOLVED IN CROSS-BORDER AND DOMESTIC MERGERS AND ACQUISITIONS

3.1. Introduction

The performance of firms involved in merger and acquisition transactions has for a long time been an important area of study and research. In spite of the increasing amount of literature, the issue of whether those transactions are wealth creating or wealth reducing events for the acquirers, targets or combined firms is still of great importance and an ongoing debate.

Previous studies have made several attempts to shed light on this issue in order to have a better understanding of whether mergers and acquisitions have led to better performance or not, since only such an improvement can justify using mergers and acquisitions as a tool of corporate strategic expansion (Ramakrishnan, 2008).

There have been many previous studies concentrating on the effects of merger and acquisition deals. Some of those have tried to evaluate the impact of M&As by using an approach which was provided by Healy et al. (1992). The approach depends on examining the operating performance of the combined firm over the pre- and post-acquisition periods. In general, the results have shown an improvement in the post-merger operating performance of the combined firm in comparison with non-merging firms from the same industry (Powell and Stark, 2005).

Other studies have followed the Healy et al. (1992) approach and added to it with results showing positive, negative or no significant improvements in the operating performance of the combined firms depending on the measures and benchmarks used (Ghosh, 2001; Powell and Stark, 2005).

The majority of the previous studies which examined the operating performance of firms concentrated on the combined firms rather than the target or acquirer firms separately. The problem with this approach is that it doesn't give a clear idea about the impact of the merger and acquisition on the acquirer firm only or the target firm only.

To the best of my knowledge, there has been no empirical evidence on the difference in operating performance of acquirer firms between cross-border and domestic acquisitions, especially in the UK. Most of the previous studies which examined the post-acquisition performance of firms focused on the combined firms rather than acquirer firms and also didn't differentiate between cross-border and domestic deals.

The previous chapter has dealt with the issue of the reaction of share price performance due to the announcement of M&A deals using different methods and event windows in order to check the difference between the shareholders' returns of acquirer firms involved in cross-border and domestic M&As. The results show insignificant changes in the abnormal returns of acquirers involved in cross-border M&As, compared with a significant increase in the abnormal returns of acquirer firms involved in domestic M&As. However, the results do not show significant differences in the returns to shareholders of acquirer firms involved in cross-border and domestic M&As.

The overall results from the previous chapter do not show strong evidence about whether the share market prices on the London Stock Exchange respond significantly less or more

favourably to the announcement of cross-border acquisitions in comparison with domestic acquisitions. This could be interpreted as an indication that investors in the market may have felt that cross-border acquisitions would not be less or more profitable than domestic acquisitions. Thus, the study in this chapter is conducted to check whether the cross-border acquisitions have less or more favourable impacts on the operating performance of the bidders than the domestic acquisitions by examining the same sample of acquirer firms used in the previous chapter.

More specifically, this chapter aims to complement the results which have been presented on the stock return performance in the previous chapter and to provide further insight into the difference between cross-border and domestic M&As by examining the operating performance of UK acquirer firms over a longer time period and checking whether there are any significant differences between the performance of acquirer firms who engage in domestic acquisitions and the acquirers who go for cross-border acquisitions.

Therefore, the main objective of this chapter is to examine the difference between the impacts of cross-border and domestic M&As on the operating performance of UK acquirer firms only and not the combined firms. Thus, the appropriate approach that would achieve this objective is by examining the performance of acquirer firms before and after the acquisition and comparing the results between cross-border and domestic acquisitions.

More specifically, the purposes and contributions of this chapter are as follows:

- Firstly, to provide a clearer idea and further insight into the impacts of merger and acquisition deals by examining the operating performance of acquirer firms only, rather than the combined firms, and thus have the advantage of not mixing the results of the target and acquirer firms together.

- Secondly, to examine whether there are any changes or improvements in the operating performance of acquirer firms three years after the acquisition relative to three years before the acquisition using different performance measures and benchmarks.

- Thirdly, to check whether there is any difference in the operating performance of acquirer firms involved in cross-border and domestic acquisitions.

- Fourthly, to investigate whether there is any significant impact of some of the deal characteristics such as the method of payment, relative size and industrial relatedness on the post-acquisition operating performance of acquirer firms.

- Finally, in order to avoid any methodological or benchmark problem and to have a degree of comparability with other previous studies, different models and benchmarks are used in this study which are also up to date methodologies.

The analysis in this chapter generally examines the acquirer firms for the sample that have the operating performance data available for at least one year before and one year after the acquisition. This comprises 555 acquirer firms consisting of 286 acquirers involved in cross-border acquisitions and 269 acquirers involved in domestic acquisitions.

Different measures of operating performance are used in this study to examine the impact of M&As on the operating performance of acquirer firms and whether there is any significant difference in those operating performances between domestic and cross-border M&As. The results show some variations in terms of the impacts on changes in the operating performances following mergers and acquisitions depending on the type of firm acquired - whether being domestic or cross-border. However, most of the measures used show insignificant differences between the operating performances of acquirer firms involved in

cross-border and domestic acquisitions, which is similar to the results achieved in the previous chapter using share price returns data.

This chapter is organised as follows: Section 3.2 discusses the previous theoretical and empirical literature on the operating performance of acquirers in domestic and cross-border mergers and acquisitions. Section 3.3 describes the data sample selection procedure and methodology used to measure changes in operating performance. Section 3.4 presents the main empirical results of the analysis about changes in the operating performance of UK acquirer firms following acquisitions. Section 3.5, which is the final section, summarizes the key findings and results.

3.2. Literature Review

The theories which are discussed in the previous chapter also apply to the study reported in this chapter. Therefore, this section starts with an overview of some of the methodological issues and then presents the previous empirical studies that are conducted on the operating performance of acquirer firms following corporate acquisitions.

3.2.1 Review of Some of the Methodological Issues

Previous studies have shown that it is preferable to use operating cash flow measures rather than other measures to assess the performance of firms after or around some significant corporate events such as mergers and acquisitions, since they are less likely to be affected by managers' decisions and cannot be manipulated by them (Powell and Stark, 2005). The following sections will provide an overview of the performance measures, deflators and benchmarks used in this chapter.

3.2.1.1 Performance Measures

Previous studies have presented different definitions of cash flows in their examination of post-acquisition operating performance. Some of those studies used accrual definitions of cash flows such as the pre-depreciation profit or the pre-tax operating cash flow (see, e.g., Healy et al., 1992; Ghosh, 2001; Heron and Lie, 2002; etc.).

However, this measure may give inaccurate results since it is likely to be affected by the accounting policies used by the firm (Powell and Stark, 2005). Also, this measure is argued by other researchers as not being a pure cash flow performance measure, since it doesn't take into consideration changes in working capital (Rahman and Limmack, 2004; Martynova et al., 2007).

Therefore, other measures have been employed by the researchers who made an adjustment for the accounting accruals such as changes in working capital in order to achieve a 'pure' cash flow measure and to guarantee that the operating performance is not impacted by the accounting policies that are used by the firm.

3.2.1.2 Deflator Choice

Different deflators have been used in the previous studies. For example, Healy et al. (1992) and Ghosh (2001) use the total market value (TMV) as a deflator in their studies. They define TMV as the sum of the market value of equity plus the book value of debt plus the book value of preferred stock.

The reason for them to use this market-based measure is that it is not affected directly by the accounting policy variations over time and between companies (Powell and Stark, 2005). However, the disadvantage of using this measure stems from the fact of being a forward-

looking measure, which results in reflecting all the assets that the firm is likely to acquire and not only the existing assets (Powell and Stark, 2005).

Therefore, in order to address and solve this issue other deflators have been used in previous studies, such as sales, which have been used as an alternative deflator by Ghosh (2001). The advantage of using this measure stems from it being a current measure (Powell and Stark, 2005) and it is appropriately matched with the numerator as both the numerator and the denominator of the return measure are extracted from the income statement (Barber and Lyon, 1996).

However, using sales as a deflator may not detect the firm's operational improvements since it does not measure the productivity of the assets in a direct way (Powell and Stark, 2005). Therefore, using the book value of assets as a deflator as suggested by other researchers may be one of the ways to overcome the problems from using the other previous deflators (Powell and Stark, 2005).

3.2.1.3 Performance Benchmark

Previous literature shows that the operating performance of firms is affected by the takeover as well as some other factors. Those factors include the industry trend as well as the asset size and pre-acquisition performance. Healy et al., (1992) show that it is essential to adjust for the industry trend in order to control for the changes in the industry and economy-wide conditions and thus separate the firm specific from industry-specific effects (Powell and Stark, 2005).

However, recent studies reveal evidence which suggests that acquirers differ from their industry peers in terms of size and performance. Acquirers are expected to be larger than industry median firms and time their takeovers in the periods of their superior performance.

Therefore, it is important to control for the size and pre-acquisition operating performance in addition to the industry factor (Ghosh, 2001; Powell and Stark, 2005).

This control is done by matching the sample of acquirer firms with non-merging firms by industry, asset size and a pre-acquisition performance measure in order to check whether acquirer firms differ from their non-merging peers before and after the bid.

Previous literature and especially studies prior to Barber and Lyon (1996) have usually employed the industry median performance as a benchmark for evaluating the corporate performance of firms engaged in merger and acquisition transactions. The explanation for them to use the industry performance measures as a benchmark is that it permits them to separate firm-specific from economy- and industry-specific effects (Powell and Stark, 2005).

However, Barber and Lyon (1996) conclude the importance of comparing the performance of combining firms in relation to control firms matched on size and pre-event performance in order to achieve well specified and powerful test statistics. This is also related to the presence of potential bias when using industry median firms as a benchmark for evaluating improvements in operating performance of merging firms. The reason for the bias is the existence of differences in the size and performance between acquirer firms and their industry peers, since acquirer firms are expected to be larger than industry median firms and time their M&A transactions during periods of superior performance (Ghosh, 2001). Therefore, most of the recent studies apply the industry, size and pre-event performance based matching procedure.

3.2.2 Review of the Previous Empirical Studies

Previous literature has presented some of the empirical studies that were conducted to examine the operating performance of firms. Most of those previous studies concentrated on

the operating performance of acquirer and target combined firms. Only a very few of those studies were conducted to examine the operating performance of acquirer firms only. Therefore, this section will discuss those few studies carried out to examine the operating performance of acquirer firms only.

Pazarskis et al. (2006) examined the impact of merger and acquisition transactions on the operating performance of 50 acquiring firms that were involved in domestic and international acquisitions in Greece in the period from 1998 to 2002. They conducted their study by examining some of the financial ratios of the companies over a time period of three years pre-acquisition and three years after the acquisition. The financial ratios which they used are classified into three groups which are Profitability ratios (Earnings before taxes/net worth, Return on assets, Gross profit margin), Liquidity ratios (Quick ratio, Current ratio), and Solvency ratios (Net worth/total assets, total debt/net worth). After comparing the means from the sum of each company ratio for the pre-acquisition years and post-acquisition years, the results in general show a significant decrease in the profitability and solvency ratios whereas there are insignificant changes in the liquidity ratios.

Pazarskis et al. (2006) used different financial ratios in their examination of the operating performance of Greek firms. However, they used the raw firm data only in their examination and didn't use a benchmark or control group in order to compare their results with, which might be considered as a weakness in their study.

Francis et al. (2008) examined a comprehensive sample of large US firms engaged in cross-border acquisitions during the period from 1990 to 2003. The main objective of their study was to check whether there was any significant difference in the abnormal returns and operating performance of acquirer firms acquiring targets from segmented financial markets in comparison to acquirers acquiring targets from integrated financial markets. They defined

Integrated as the country which has a fully integrated financial market. Other markets were all defined as *Segmented*.

In their examination of the acquiring firms' operating performance, they used a pre-tax cash flow measure scaled by the market value of assets as a measure of firm operating performance. They defined the firm's pre-tax cash flows as "after-tax income before extraordinary items plus depreciation and amortization charges, net interest expense (interest expense- interest income) and total income taxes" (Francis et al., 2008,p.1534). The deflator market value of assets was defined as the sum of the market value of equity, book value of preferred stock, book value of long-term debt and book value of current long-term debt.

In their examination they presented the raw and industry-adjusted operating performance changes and used the acquirers' firm data only in calculating both the pre- and post-merger operating cash flows covering the period from one year before the merger until three years after the merger. Their results showed significant improvements in the post-acquisition industry-adjusted performance of acquirer firms, especially for those acquirers taking over segmented-market targets. However, acquirer firms taking over integrated-market targets experienced significant decreases in both the firm and industry-adjusted mean performance.

The study of Francis et al. (2008) was based on large US firms with size value of at least $10 million, which may make their results not generalizable across other studies that contain a mix of firms with different size values.

Mantravadi and Reddy (2008) studied the effect of mergers on the operating performance of acquirer firms involved in domestic mergers in India for a sample of 68 mergers between 1991 and 2003. The study also undertook to examine whether the type of industry had any impact on the operating performance of acquirer firms.

They examined three-year pre- and three-year post-merger financial ratios which are : Operating Profit Margin (PBDIT / Net Sales), Gross Profit Margin (PBIT / Net Sales), Net Profit Margin (PAT / Net Sales), Return on Net Worth (PBIT / Net Worth), Return on Capital Employed (PAT / Capital Employed), and Debt Equity Ratio (Book Value of Debt / Book Value of Equity).

Their results revealed that all the mergers in the sample showed a decline in the operating financial performance after the mergers, since there was a decline both in the profitability ratios and returns on net worth and invested capital. Therefore, the full sample showed a negative impact of mergers on the performance of acquirer firms in terms of profitability as well as returns on investment.

Furthermore, they found that the type of industry had an impact on the changes in operating performance of acquiring companies after the merger, since they found different results for merger samples in different industry sectors in terms of their impact on operating performance, although some of the differences were not statistically significant. However, even though different measures of operating performance have been used in this study, there hasn't been any use of benchmark or control group in the examination similarly to the study of Pazarskis et al. (2006).

Ismail et al. (2011) examined a sample of nine Egyptian companies in the construction and technology sectors that were involved in domestic merger and acquisition deals during the period 1996 to 2003. The main reason for conducting their study was to check whether there was any significant improvement in the operating performance following mergers and acquisitions and whether there was an impact from the industry sector on the companies' operating performance.

In order to examine the operating performance of firms they compared pre- and post-merger performances of merged firms using financial-based measures consisting of 26 ratios representing profitability, efficiency, liquidity, solvency and cash flow position. The results from comparing the operating performance ratios of the whole sample in the pre- and post-merger periods didn't show any significant difference in the average mean of profitability, efficiency, solvency and cash flow position.

When the sector level was examined, empirical results showed that mergers and acquisitions in the construction sector have resulted in significant improvements in the firms' profitability whereas there were no significant changes in the efficiency, liquidity, solvency and cash flow position. In the technology sector, the results didn't show any significant improvements following mergers. However, this study suffers from the very small sample size and from not using any benchmark or control group in the examination.

Selcuk and Yelmaz (2011) examined the performance of 62 acquirer Turkish companies engaged in cross-border and domestic M&As between 2003 and 2007. In order to measure the changes in operating performance of acquirer firms, they used three profitability ratios which are ROA (Net Income/ Total Assets), ROE (Net Income/ Total Equity) and ROS (Net Income/ Net Sales). They also used the change model and the intercept model in order to compute the changes in the industry-adjusted performance of acquirer firms over a period of two years before and after the acquisition.

When the change model was used, the results revealed a significant decrease in the profitability of firms by 2.01% and 1.64% using the ROA and ROS measures respectively. However, when the ROE measure was used, the results showed insignificant changes in the performance of acquirer firms. On the other hand, when the intercept model was used, the

results showed insignificant difference between post-acquisition and pre-acquisition performance of Turkish acquirer firms for all the three measures used.

However, Selcuk and Yelmaz (2011) conducted their analysis by using accounting measures based on the net income instead of pure cash flows, which might be impacted by taxation and depreciation methods and can be manipulated by managers as shown by a lot of researchers.

In general, the previous studies that have been discussed in this section have shown mixed results regarding the impact of merger and acquisition transactions on the operating performance of acquirer firms. Some of the studies show significant positive improvements in the operating performance of acquirers (Francis et al., 2008), some show significant decline in the operating performance (Pazarskis et al., 2006; Mantravadi and Reddy, 2008), others show insignificant changes in the operating performance of firms (Ismail et al., 2011), whereas the rest show mixed results depending on the method and measure used (Selcuk and Yelmaz, 2011). The difference in the results of the previous studies may have resulted from the different performance measures used as well as the different samples and time periods covered by the examination.

However, none of the previous studies has been conducted for examining the operating performance of UK acquirer firms. Nor have the previous studies differentiated between cross-border and domestic deals or shown any clear evidence about the difference between the operating performance of acquirer firms involved in cross-border and domestic M&As. Therefore, this chapter will fill this gap and examine the changes in operating performance of acquirer firms in general and whether there are any significant differences in them between cross-border and domestic deals.

3.3 Data Sample and Methodology

This section describes the sample used in this chapter followed by a detailed description of the methodology applied in the analysis of the operating performance of acquirer firms.

3.3.1 Sample and Data Sources

The sample used in this chapter includes UK public acquirer firms involved in domestic and cross-border M&As. The sample consists of takeovers that were announced and completed between January 1, 1996 and December 31, 2003.

The names of acquirer firms are extracted manually from the Thomson Financial Publication *Acquisitions Monthly.* To be included in the sample, the acquirer firm's accounting data, such as the operating performance measures should be available on the Datastream database for a minimum of one year before and one year after the takeover.

Excluded from the sample are acquisitions for which data necessary for the calculation of their performance measures, industry median benchmarks or their matched control firms based on industry, size and pre- acquisition performance is not available.

3.3.2 Sample Selection and Description

Within the existing sample of 585 acquisitions, the number of acquirer firms that have the operating performance data available on the Datasteam database is 555, as shown in Table 3.1 below. Appendix 3.A provides a list of the names of all the acquirer firms used in this chapter with their industry medians and industry, size and pre-acquisition peers.

Table 3.1: Sample Selection Procedure

	Number	Percentage
Completed deals (1996-2003)	585	100%
Deals where Acquirer firms have at least 1 year pre- and 1 year post-acquisition data available on Datastream	555	95%

The analysis in this chapter includes firms that have data for a period of a minimum of one year before and one year after the acquisition and a maximum of three years before and three years after the acquisition. Therefore, the number of acquisitions using different performance measures will differ from one year to the other for the raw, industry-adjusted and industry, size and pre-acquisition adjusted performance. Appendix 3.B provides a table which shows the minimum and maximum number of acquisitions included for different time periods.

This chapter examines the operating performance of acquirer firms that have the required data available and uses the acquirer firms' measures in the pre-acquisition period as well as in the post-acquisition period. Table 3.2 below provides a description of the sample and breaks down the full sample into two parts according to whether the deal is a cross-border or domestic acquisition made by UK acquirer firm.

Table 3.2: Distribution of Sample M&As by Year and Deal Characteristics

	Cross-border M&A		Domestic M&A		Total	
	Number	%	Number	%	Number	%
Panel A: By Year of M&A						
1996	27	9.44	32	11.90	59	10.63
1997	30	10.50	45	16.73	75	13.51
1998	55	19.23	72	26.77	127	22.88
1999	57	19.93	48	17.84	105	18.92
2000	50	17.48	28	10.41	78	14.05
2001	23	8.04	11	4.09	34	6.13
2002	19	6.64	8	2.97	27	4.87
2003	25	8.74	25	9.29	50	9.01
Total	286	100.00	269	100.00	555	100.00
Panel B: By Deal Characteristics						
Payment Method						
All Cash	101	35.315	102	37.92	203	36.58
All Shares	11	3.85	12	4.46	23	4.14
Mix	73	25.52	104	38.66	177	31.89
Not Available	101	35.315	51	18.96	152	27.39
Total	286	100.00	269	100.00	555	100.00
Relatedness						
Same Industry	141	49.30	151	56.13	292	52.61
Different Industry	136	47.55	93	34.58	229	41.26
Not Available	9	3.15	25	9.29	34	6.13
Total	286	100.00	269	100.00	555	100.00
Relative Size of Target						
Target size < 10%	202	70.63	184	68.40	386	69.54
Target size 10%-50%	39	13.64	54	20.07	93	16.76
Target size > 50%	22	7.69	13	4.83	35	6.31
Not Available	23	8.04	18	6.70	41	7.39
Total	286	100.00	269	100.00	555	100.00

Panel A of Table 3.2 shows the distribution over time of cross-border, domestic and total transactions. Within the existing sample of 555 M&As, 51.53% of them represent cross-border mergers and acquisitions and 48.47% of them are domestic mergers and acquisitions.

Consistent with the previous chapter numbers, the sample shows an increase in the number of M&A transactions over the years, then a decrease happens after the millennium followed by another increase in subsequent years.

Panel B of Table 3.2 presents the distribution of the sample over some of the deal characteristics which are the payment method, industrial relatedness and the relative size of the target to the acquirer firm. With regard to the method of payment, the takeovers here are classified into three groups which are pure cash, pure equity and mixed payment. The pure cash (equity) offer is the one where the final consideration paid from the bidder to the target firm shareholders is 100% cash (equity), whereas the mixed offer is the one where the final consideration paid is a mixture of equity, cash or any other form of payment.

Within the existing sample, it is clear that pure cash is the main method of payment in cross-border acquisitions whereas the pure equity is the least method of payment. The reason for the acquirer firms to use cash as the main method of payment might be caused by the unwillingness of foreign target firms to accept foreign equity, which will force the acquirer firms to pay with cash (Conn et al., 2005).

Considering the industrial relatedness, acquisitions are defined as related when acquirer and target firms have the same two digit Standard Industrial Classification Code (SIC code). Panel B of table 3.2 shows that acquisitions between firms in related industries occur in 49.30% of the cross-border sample and 56.13% of the domestic sample.

Finally, the relative size of targets to acquirers, which is calculated by multiplying the deals' value by the market value of acquirer firms, shows that the majority of the sample represent small takeovers with 69.54% of the targets are less than 10% of the acquirer's size.

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3.3.3 Measuring the Operating Performance of Firms

In order to identify the adopted methodology in this chapter, it is essential as a first step to define the operating performance measures used. Therefore, this section will describe the performance measures and benchmarks used in the analysis in this chapter.

Different operating performance measures are employed in this chapter in order to ensure a degree of comparability with other previous studies, to check whether the conclusions are different across the various measures as well as to ensure that the assessment of the operating performance is not affected by the accounting policies adopted by the firms.Those different measures are cash flow performance measures and accrual performance measures.

The cash flow performance measures are defined firstly as the earnings before interest, taxes, depreciation and amortization (EBITDA). The other cash flow measure is defined as the earnings before interest, taxes, depreciation and amortization adjusted for changes in working capital (EBITDA – $\square$WC), which is described by some previous studies as a 'pure' cash flow measure (Powell and Stark, 2005). The adjustment for changes in working capital can guarantee that the measure is not affected by the managers' personal decisions, since working capital accruals might be subject to management manipulation (Rahman and Limmack, 2004). The accrual performance measure is defined generally as earnings before interest and taxes (EBIT) and is similar to the pre-tax performance measure used in previous studies.

After deciding the operating performance measures to be used, those measures are then deflated before and after the takeover in order to construct a cash flow return on assets or sales margin that is comparable across firms.

In this chapter, different deflators are used in order to avoid any bias from using a specific deflator over the others. Those deflators are the book value of total assets, total sales, book

value of equity and the total market value, which is defined as the book value of assets plus the market value of equity less the book value of equity.

Therefore, when applying those different deflators to the cash flow numerator the result will be three cash flow measures, three 'pure' cash flow measures of operating performance and two accrual performance measures as shown in the following figure :

Figure 3.1: Performance Measures
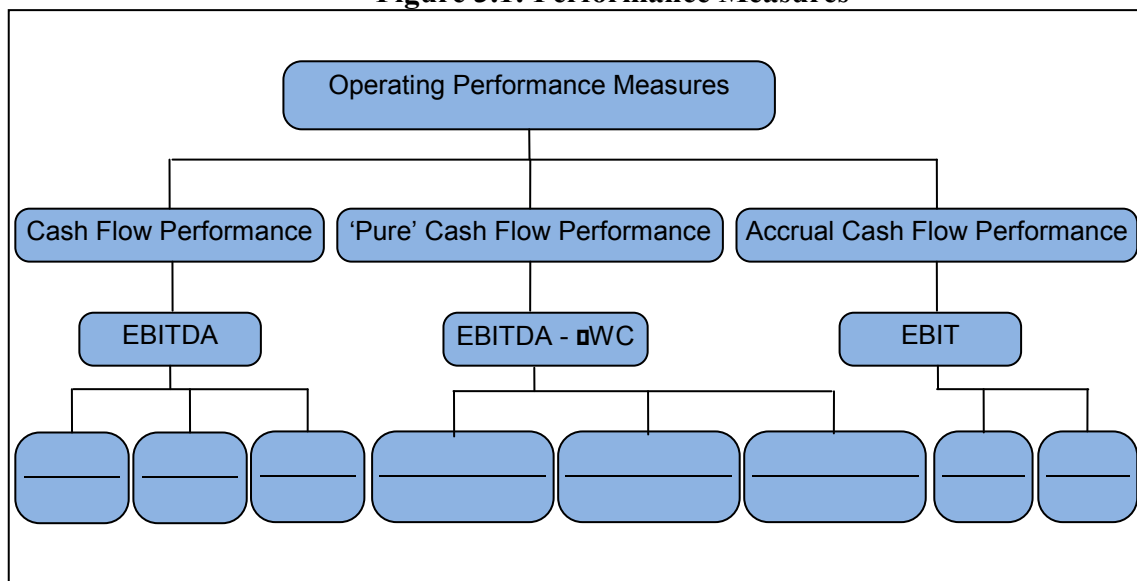
3.3.4 Benchmark Construction

In order to measure changes in operating performance of firms following takeovers, a comparison is conducted between the realized performance and the benchmark performance that might be generated in case the takeover bid had not taken place.

In order to have a degree of comparability with previous studies and to check whether the choice of the benchmark affects the results, two adjustment methods are employed in this chapter which control for the industry trend as well as the industry, asset size and pre-acquisition performance of firms.

Also, in order to construct the operating performance benchmark with which will be compared with the merging firms' operating performance, some steps are followed for each type of benchmark as follows.

3.3.4.1 Adjustment for the Industry-median Operating Performance

Datastream database is used to collect the required data in order to construct industry median benchmarks in this chapter. The benchmarks are chosen from the list of all companies on the Datastream database that have the same industrial classification as the acquirer firms in the sample in the year preceding the acquisition. Industrial classification is identified as the Datastream Industrial Classification Code at Level Four (Financial Times All Shares Index) as is used in Cosh et al. (2006).

From those industry groupings, the firm with the median EBITDA-to-Assets ratio in the year preceding the acquisition is selected as the industry median peer. Also, care has been taken to make sure that peer companies are not engaged in any merger and acquisition activity during the period under examination.

3.3.4.2 Matched Firms Based on Industry, Size and Pre-acquisition Performance

In order to construct the matching performance benchmark in this chapter, the Datastream database is used to identify the industry, size and pre-acquisition performance matched peer companies for each of the acquirer firms in the sample.

Similar to the procedure used to select the industry median benchmarks, those companies that have the same Datastream Industrial Classification Code at Level Four as the acquirer firms in the year preceding the acquisition are selected. Then, those industry groupings are filtered down to those companies that have size values of between 25% and 200% of acquirer firms which are represented by total assets in the year prior to the acquisition. From this list, firms

with the operating performance closest to the acquirer firms, measured as the EBITDA-to-Assets ratio in the year prior to the acquisition, are selected as the benchmark firms. Also, caution is taken to make sure that benchmark firms selected are not engaged in any merger and acquisition activity over the period studied.

3.3.4.3 Adjusted Cash- flow Performance

The analysis in this chapter focuses on the changes in operating performance of acquirer firms by examining a time period from three years before the acquisition until three years after the acquisition (-3 to +3). Consistent with other previous studies, year 0, which is the year of the acquisition, is excluded from the analysis in order to avoid any distortions caused by any accounting differences and one-time merger costs incurred during that year, that might make it difficult to compare with the results of other years (Healy et al., 1992; Kumar and Rajib, 2007).

For the pre-acquisition period, the operating performance cash flow measures of acquirer firms are constructed for each of the three years (-3 to -1) prior to the takeover, wherever available. This measure is deflated or scaled by the acquirer specific deflator. That is, the raw pre-acquisition operating performance cash flow of the acquirer firm is calculated as follows:

$$\overline{} \tag{3.1}$$

Similarly, for the post-acquisition period, the actual or realized operating performance reported by the acquirer firm for each of the three years (+1 to +3) after the acquisition is scaled by its deflator at the same year. The raw post-acquisition operating performance or cash flow of the acquirer firm is calculated as follows:

$$\overline{\hspace{3em}}$$ (3.2)

The control benchmark operating performance measure is also calculated in each of the three years prior and post the acquisition for the acquirer control companies, wherever available. In the pre-acquisition period, the performance of the control company is calculated as the operating performance of the acquirer's peer company scaled by its own deflator. The peer pre-acquisition operating performance of the acquirer firm is calculated as follows:

$$\overline{\hspace{4em}}$$ (3.3)

The post-acquisition benchmark is calculated similarly to the pre-acquisition years by scaling the operating performance of the acquirer's peer company by its own deflator. The peer post-acquisition operating performance of the acquirer firm is calculated as follows:

$$\overline{\hspace{4em}}$$ (3.4)

The control adjusted operating performance is calculated as the difference between the raw performance measures of the acquirer firms and the relevant benchmark operating performance measures. The acquirer's operating performance adjusted for the industry trend is calculated as follows:

(3.5)

Also, the acquirer's operating performance adjusted for the industry, size and pre-acquisition performance is calculated in a similar way as follows:

Median annual performance measures are then reported for all the acquirer firms in the pre- and post-acquisition years. The median performance measures are also reported for each acquirer firm in the pre-acquisition and post-acquisition periods. An assessment of the changes in operating performance of acquirer firms caused by the takeover is then conducted by using the change and intercept models, which are described below.

3.3.5 Models to Assess Changes in Performance

In order to assess the changes in operating performance of acquirer firms caused by the takeover, two models are employed in this chapter, which are the change model and the intercept model.

3.3.5.1 Change Model

In this model, the median operating performance of the acquirer firms is computed for three years prior to the takeover, and the median operating performance of the acquirer firms is calculated over the three years after the takeover. However, when the operating performance data is available for only two years, then the median value for the two years is equal to the mean value. If the performance data is available for only one year, then the median value is equal to the value of that year. The change in operating performance of each acquirer firm is then calculated as the difference between the median operating performance of the years subsequent to the merger and the median of the years prior to the acquisition.

The Wilcoxon signed rank test technique is then used to check whether there is any significant difference between the median post-acquisition performance and the median pre-acquisition performance of acquirer firms.

3.3.5.2 Intercept Model

In this model, changes in operating performance of acquirer firms are estimated by regressing the median post-acquisition performance of acquirer firms on the median pre-acquisition performance, as shown in the following regression:

$$OP_{post} = \alpha_0 + \alpha_1 * OP_{pre} + \varepsilon \tag{3.7}$$

OP_{post} = median post-acquisition operating performance of acquirer firms.

OP_{pre} = median pre-acquisition operating performance of acquirer firms.

α_0 = represents changes in operating performance of acquirer firms.

α_1 = reflects the relation between pre-acquisition operating performance and post-acquisition operating performance of acquirer firms.

Standard t-test is applied to test for the significance of the changes in operating performance of acquirer firms. Figure 3.2 below summarizes the procedure followed in applying the methodology.

Figure 3.2: Methodology Applied to Measure Changes in Operating Performance of Acquirer Firms

| Acquirer Firm (A) Pre-acquisition | Minus | Acquirer's Peer * Pre-acquisition | | Acquirer Firm (A) Post-acquisition | Minus | Acquirer's Peer * Post-acquisition |

Pre-acquisition adjusted performance

Post-acquisition adjusted performance

Median of years -3, -2, -1

Median of years 1, 2, 3

Median pre-acquisition adjusted performance

Median post-acquisition adjusted performance

Changes

$t= -3$ $t= -2$ $t= -1$ $t= 0$ Year of acquisition $t= 1$ $t= 2$ $t= 3$

*Peer firms or benchmarks are selected on: (1) Industry median, or (2) Industry, size and pre-acquisition performance.

Source: The idea of the figure is based on Martynova et al. (2007) and Sharma and Ho (2002).

3.4 Empirical Results

This section presents the results of the empirical analysis conducted for the whole sample, cross-border sample and domestic sample of UK acquirers. Firstly, the change model results are reported for the full, cross-border and domestic samples of acquirer firms using different operating performance measures and benchmarks. Secondly, the regression-based results related to the intercept model are presented for the full, cross-border and domestic samples for different performance measures and two different benchmarks. Then, the results of an extended version of the intercept model are presented which include the impact of cross-border acquisitions on changes in operating performance of acquirer firms. This version gives

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a comparison between the operating performance of acquirer firms involved in domestic and cross-border acquisitions and whether they are significantly different or not. Thirdly, a comparison between the change model and intercept model results is presented. Fourthly, the results of a regression analysis are presented to show the impact of some of the deal characteristics on the post-acquisition performance of acquirer firms.

3.4.1 Change Model Results

This section presents the results of the change model that shows the size of the improvements in the acquirer firms' operating performance measured as the difference between the median post-takeover performance and the median pre-takeover performance for the full, cross-border and domestic samples of acquirer firms using different measures and benchmarks.

3.4.1.1 Full Sample

The empirical results for the change model are shown in Table 3.3 for the full sample of acquirers.

Table 3.3: Operating Performance Changes of UK Acquirer Firms (Full Sample)

		Raw Performance		Industry-adjusted		Industry, Size and Performance - adjusted	
	Year	median (%)	Nr. Obs.	median (%)	Nr. Obs.	median (%)	Nr. Obs.
Measure 1: $\frac{EBITDA}{Total\ Assets}$							
	-3	16.44	516	0.44	415	-0.11	403
	-2	16.57	536	1.98	446	0.12	454
	-1	17.21	542	2.14	502	0.30	483
Median pre-acquisition performance		16.62	542	1.96	502	0.03	483
	1	14.59	542	0.68	502	-0.25	483
	2	13.61	542	0.22	495	-0.59	475
	3	12.50	542	-1.09	496	-0.77	480
Median post-acquisition performance		13.62	542	0.06	502	-0.20	483
Median difference		**7.41***	**542**	**4.86***	**502**	**1.71***	**483**
Measure 2: $\frac{EBITDA}{Sales}$							
	-3	14.12	515	-1.45	412	-0.94	403
	-2	13.45	535	-1.68	444	-1.44	454
	-1	14.01	544	-1.30	500	-1.60	483
Median pre-acquisition performance		13.52	544	-1.07	500	-1.04	483
	1	12.88	544	-2.03	499	-1.82	483
	2	12.75	544	-1.59	493	-1.75	475
	3	12.31	544	-3.31	495	-1.92	480
Median post-acquisition performance		12.97	544	-2.03	500	-1.31	483
Median difference		**1.81***	**544**	**1.17**	**500**	**0.24**	**483**
Measure 3: $\frac{EBITDA}{TMV}$							
	-3	0.01	510	-0.003	407	-0.0002	383
	-2	0.01	529	-0.002	437	-0.002	429
	-1	0.01	543	-0.003	483	-0.002	463
Median pre-acquisition performance		0.01	543	-0.002	483	-0.002	465
	1	0.01	543	-0.002	483	-0.001	465
	2	0.01	543	-0.01	476	-0.001	465
	3	0.01	543	-0.002	478	-0.001	465
Median post-acquisition performance		0.01	543	-0.01	483	-0.001	462
Median difference		**4.66***	**543**	**2.85****	**483**	**2.35****	**465**

	Year	Raw Performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs.	median (%)	Nr. Obs.	median (%)	Nr. Obs.
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$							
	-3	15.58	468	1.93	346	0.73	331
	-2	15.76	482	2.81	390	-0.88	372
	-1	16.59	504	2.20	409	1.67	420
Median pre-acquisition performance		16.24	504	2.37	409	0.19	420
	1	15.01	504	1.13	409	1.25	420
	2	13.26	504	-0.19	403	-0.65	415
	3	12.55	504	1.32	388	-0.14	414
Median post-acquisition performance		13.56	504	1.28	409	-0.04	420
Median difference		**5.72*****	**504**	**2.01****	**409**	**0.99**	**420**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$							
	-3	12.49	467	-2.32	345	-0.99	331
	-2	11.93	480	-1.58	390	-2.49	373
	-1	12.76	503	-1.73	409	-0.82	420
Median pre-acquisition performance		11.95	503	-1.73	409	-1.99	420
	1	13.19	503	-0.43	409	-0.31	420
	2	11.57	503	-2.38	403	-1.64	414
	3	11.91	503	0.22	389	0.21	413
Median post-acquisition performance		11.82	503	-1.26	409	0.14	420
Median difference		**1.31**	**503**	**7.61**	**409**	**1.16**	**420**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$							
	-3	0.01	467	-0.004	346	-0.001	317
	-2	0.01	481	-0.003	387	-0.002	358
	-1	0.01	503	-0.004	409	-0.003	406
Median pre-acquisition performance		0.01	503	-0.002	409	-0.002	406
	1	0.01	503	-0.002	409	0.001	406
	2	0.01	503	-0.002	403	-0.001	400
	3	0.01	503	0.001	389	0.0001	398
Median post-acquisition performance		0.01	503	-0.01	409	-0.0002	406
Median difference		**4.62*****	**503**	**2.07****	**409**	**2.45****	**406**

	Year	Raw Performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs.	median (%)	Nr. Obs.	median (%)	Nr. Obs.
Measure 7: $\dfrac{EBIT}{BV_{assets}}$							
	-3	11.60	527	0.97	413	-0.09	402
	-2	12.36	547	1.47	445	-0.40	456
	-1	12.36	555	1.40	501	0.06	485
Median pre-acquisition performance		12.29	555	1.47	501	0.02	485
	1	10.02	555	0.55	501	-0.32	485
	2	8.74	555	0.19	494	-1.14	478
	3	8.46	555	-1.15	495	-0.61	483
Median post-acquisition performance		8.99	555	0.09	501	-0.32	485
Median difference		**9.01*****	**555**	**4.74*****	**501**	**1.87***	**485**
Measure 8: $\dfrac{EBIT}{BV_{equity}}$							
	-3	29.76	524	5.50	415	3.87	402
	-2	31.29	546	8.65	447	2.08	456
	-1	33.44	555	8.63	503	3.12	485
Median pre-acquisition performance		31.56	555	8.49	503	3.33	485
	1	27.85	555	-0.77	503	2.77	485
	2	26.33	555	6.64	496	2.71	478
	3	24.32	555	1.62	498	3.22	483
Median post-acquisition performance		26.43	555	3.12	503	3.01	485
Median difference		**4.29*****	**555**	**3.13****	**503**	**0.12**	**485**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results presented in Table 3.3 for the raw performance of acquirer firms (without adjustment) show significant positive changes in operating performance of acquirers for all the measures used except measure 5 which is the 'pure' cash flow measure deflated by sales. The positive significant difference between medians ranges between 1.81% and 9.01%. However, the result for measure 5 shows statistically insignificant positive changes in operating performance of acquirer firms.

Also, when the acquirer firm performance is adjusted for the industry median performance, the results show significant positive changes for all the measures used, except measures 2 and 5 which are the cash flow measure deflated by sales and the 'pure' cash flow measure deflated by sales. Those two measures do not show any significant differences between the median post- and median pre-acquisition performance of acquirer firms.

On the other hand, when the control is done for the industry, size and pre-acquisition performance, the results show less significant results with four out of the eight measures showing positive significant changes in the operating performance of acquirer firms and the other four measures showing statistically insignificant positive differences between the median post- and median pre-acquisition performance of acquirer firms. The measures which show positive significant changes are the cash flow deflated by total assets, the cash flow measure deflated by total market value, the 'pure' cash flow deflated by total market value and the accrual measure deflated by total assets.

In general, the results for the full sample show significant positive changes in the raw and adjusted operating performance of acquirer firms for different performance measures and benchmarks used.

3.4.1.2 Cross-border Sample

Table 3.4 presents the empirical results from using the change model for the cross-border sample of acquirer firms using different performance measures and benchmarks.

Table 3.4: Operating Performance Changes of UK Acquirer Firms (Cross-border Sample)

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 1: $\frac{EBITDA}{Total\ Assets}$							
	-3	16.62	271	1.06	216	0.03	217
	-2	16.51	275	1.56	229	-0.43	233
	-1	17.19	276	2.07	256	0.03	247
Median pre-acquisition performance		16.73	276	1.78	256	-0.11	247
	1	14.27	276	0.35	256	-1.50	247
	2	13.32	276	0.37	252	-1.90	245
	3	12.20	276	-1.18	255	-1.35	246
Median post-acquisition performance		13.12	276	0.11	256	-1.14	247
Median difference		**6.41*****	**276**	**3.68*****	**256**	**1.43**	**247**
Measure 2: $\frac{EBITDA}{Sales}$							
	-3	16.22	271	-0.21	215	-0.21	217
	-2	15.10	274	-1.31	229	-1.62	233
	-1	15.78	277	0.12	256	-1.62	247
Median pre-acquisition performance		15.31	277	0.22	256	-0.21	247
	1	13.58	277	-1.47	256	-1.68	247
	2	13.05	277	-0.68	252	-1.39	245
	3	12.55	277	-2.68	255	-2.19	246
Median post-acquisition performance		13.94	277	-1.11	256	-0.99	247
Median difference		**1.89***	**277**	**1.06**	**256**	**0.66**	**247**
Measure 3: $\frac{EBITDA}{TMV}$							
	-3	0.01	269	-0.003	214	0.0002	203
	-2	0.01	273	-0.003	225	-0.001	217
	-1	0.01	276	-0.004	244	-0.002	234
Median pre-acquisition performance		0.01	276	-0.003	244	-0.002	234
	1	0.01	276	-0.003	244	-0.001	234
	2	0.01	276	-0.002	240	-0.001	232
	3	0.01	276	-0.002	243	-0.001	233
Median post-acquisition performance		0.01	276	-0.002	244	-0.001	234
Median difference		**3.08*****	**276**	**2.08****	**244**	**0.72**	**234**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA-\Delta WC)}{Total\ Assets}$							
	-3	16.18	256	2.84	186	0.81	186
	-2	16.19	259	2.90	213	-1.83	201
	-1	16.31	262	2.89	216	1.41	221
Median pre-acquisition performance		16.31	262	2.53	216	-0.45	221
	1	14.33	262	0.16	216	-1.26	221
	2	11.78	262	-0.69	213	-2.75	219
	3	11.83	262	1.28	211	-0.29	220
Median post-acquisition performance		12.58	262	0.57	216	-1.54	221
Median difference		**5.44*****	**262**	**2.50****	**216**	**0.92**	**221**
Measure 5: $\dfrac{(EBITDA-\Delta WC)}{Sales}$							
	-3	13.40	255	-1.12	185	-0.22	185
	-2	13.18	257	-0.95	213	-2.97	201
	-1	14.38	261	0.26	216	-0.55	220
Median pre-acquisition performance		12.81	261	-0.31	216	-2.08	220
	1	13.88	261	0.77	216	-0.72	220
	2	11.78	261	-2.17	213	-1.95	218
	3	12.68	261	0.75	211	1.09	219
Median post-acquisition performance		12.15	261	0.60	216	0.75	220
Median difference		**1.40**	**261**	**0.40**	**216**	**0.61**	**220**
Measure 6: $\dfrac{(EBITDA-\Delta WC)}{TMV}$							
	-3	0.01	256	-0.01	187	-0.001	177
	-2	0.01	259	-0.003	212	-0.004	191
	-1	0.01	261	-0.003	215	-0.003	211
Median pre-acquisition performance		0.01	261	-0.003	215	-0.001	211
	1	0.01	261	-0.004	215	-0.0004	211
	2	0.01	261	-0.002	212	-0.002	209
	3	0.01	261	0.001	210	-0.001	209
Median post-acquisition performance		0.01	261	-0.002	215	-0.001	211
Median difference		**3.39*****	**261**	**1.53**	**215**	**1.37**	**211**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 7: $\dfrac{EBIT}{BV_{assets}}$							
	-3	12.39	280	1.24	218	0.06	217
	-2	11.90	283	1.08	230	-1.11	233
	-1	12.26	286	1.38	258	-0.75	248
Median pre-acquisition performance		12.26	286	1.33	258	-0.65	248
	1	9.06	286	0.46	258	-1.32	248
	2	8.48	286	0.17	254	-1.92	246
	3	7.14	286	-1.44	257	-1.79	247
Median post-acquisition performance		8.53	286	-0.06	258	-1.33	248
Median difference		**7.29*****	**286**	**3.37**	**258**	**1.51**	**248**
Measure 8: $\dfrac{EBIT}{BV_{equity}}$							
	-3	31.46	278	5.07	219	3.77	217
	-2	33.84	282	7.68	231	1.88	233
	-1	34.66	286	11.76	259	3.15	248
Median pre-acquisition performance		34.32	286	8.31	259	3.72	248
	1	28.37	286	-0.46	259	3.12	248
	2	27.59	286	7.08	259	3.27	246
	3	25.12	286	3.37	255	3.12	247
Median post-acquisition performance		27.79	286	3.41	258	3.13	248
Median difference		**2.32****	**286**	**1.45**	**259**	**0.97**	**248**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results presented in Table 3.4 for the raw performance of acquirer firms involved in cross-border acquisitions show similar results to the raw performance of acquirers in the full sample, with statistically significant positive changes in operating performance of acquirer firms for all the performance measures used except measure 5 which is the 'pure' cash flow measure deflated by sales.

However, the industry-adjusted performance of the cross-border sample show significant positive changes in the operating performance of acquirer firms for three out of the eight performance measures used, which are the cash flow measure deflated by total assets, cash flow measure deflated by total market value, as well as the 'pure' cash flow measure deflated by total assets. The other five measures show insignificant positive changes between the median post- and median pre-acquisition performance of acquirer firms.

However, when the control is made for the industry, size and pre-acquisition performance of firms, the results reveal insignificant positive differences between the median post- and median pre-acquisition performance of acquirer firms for all the performance measures used. Therefore, the type of the control or benchmark used seems to have a different impact on the results.

In general, the results for the cross-border sample show significant positive changes in the raw operating performance of acquirer firms, compared with insignificant changes in the adjusted operating performance of acquirer firms for different performance measures and benchmarks.

3.4.1.3 Domestic Sample

Table 3.5 presents the empirical results of the change model for acquirer firms involved in domestic acquisitions using different performance measures and benchmarks.

Table 3.5: Operating Performance Changes of UK Acquirer Firms (Domestic Sample)

Year	Raw' performance median (%)	Raw' performance Nr. Obs	Industry-adjusted median (%)	Industry-adjusted Nr. Obs	Industry, Size and Performance - adjusted median (%)	Industry, Size and Performance - adjusted Nr. Obs
Measure 1: $\dfrac{EBITDA}{Total\ Assets}$						
-3	15.39	245	0.14	199	-0.15	186
-2	16.61	261	2.43	217	0.55	221
-1	17.32	266	2.34	246	0.81	236
Median pre-acquisition performance	16.54	266	2.18	246	0.29	236
1	15.24	266	1.11	246	0.14	236
2	13.96	266	-0.11	243	-0.16	230
3	13.28	266	-0.86	241	0.05	234
Median post-acquisition performance	14.22	266	-0.06	246	0.34	236
Median difference	**4.01***	**266**	**3.15****	**246**	**1.04**	**236**
Measure 2: $\dfrac{EBITDA}{Sales}$						
-3	12.53	244	-3.99	197	-1.37	186
-2	12.53	261	-1.70	215	-1.03	221
-1	12.78	267	-1.45	244	-1.43	236
Median pre-acquisition performance	12.52	267	-1.68	244	-1.33	236
1	12.58	267	-2.35	244	-1.88	236
2	12.57	267	-2.53	241	-3.08	230
3	11.97	267	-3.86	240	-1.34	234
Median post-acquisition performance	12.32	267	-3.63	244	-1.31	236
Median difference	**0.66**	**267**	**0.61**	**244**	**0.29**	**236**
Measure 3: $\dfrac{EBITDA}{TMV}$						
-3	0.01	241	-0.003	193	-0.001	180
-2	0.01	256	-0.002	212	-0.002	212
-1	0.01	267	-0.003	239	-0.002	231
Median pre-acquisition performance	0.01	267	-0.002	239	-0.002	231
1	0.01	267	-0.002	239	-0.001	231
2	0.01	267	-0.0004	236	-0.0004	224
3	0.01	267	-0.001	235	-0.0003	229
Median post-acquisition performance	0.01	267	-0.001	239	-0.004	231
Median difference	**3.51***	**267**	**2.01****	**239**	**2.47****	**231**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$							
	-3	15.17	212	0.61	160	0.14	145
	-2	15.40	223	2.72	177	0.78	171
	-1	16.90	242	1.67	193	1.67	199
Median pre-acquisition performance		16.16	242	1.82	193	1.01	199
	1	16.42	242	2.19	193	2.61	199
	2	13.77	242	0.76	190	0.12	196
	3	13.98	242	2.13	177	-0.03	194
Median post-acquisition performance		14.65	242	2.19	193	0.64	199
Median difference		**2.61****	**242**	**0.27**	**193**	**0.48**	**199**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$							
	-3	11.14	212	-4.15	160	-1.46	146
	-2	10.77	223	-2.11	177	-1.97	172
	-1	11.49	242	-2.79	193	-0.94	200
Median pre-acquisition performance		11.40	242	-3.08	193	-1.76	200
	1	12.22	242	-1.60	193	0.34	200
	2	11.25	242	-2.94	190	-1.15	196
	3	10.97	242	-0.22	178	-0.96	194
Median post-acquisition performance		11.33	242	-2.08	193	-0.44	200
Median difference		**0.39**	**242**	**0.47**	**193**	**0.99**	**200**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$							
	-3	0.01	211	-0.002	159	-0.001	140
	-2	0.01	222	-0.003	175	-0.002	167
	-1	0.01	242	-0.01	194	-0.003	195
Median pre-acquisition performance		0.01	242	-0.002	194	-0.002	195
	1	0.01	242	-0.001	194	0.001	195
	2	0.01	242	-0.002	191	-0.001	191
	3	0.01	242	0.002	179	0.001	189
Median post-acquisition performance		0.01	242	0.0001	194	0.0003	195
Median difference		**3.18****	**242**	**1.30**	**194**	**2.11****	**195**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 7:	$\dfrac{EBIT}{BV_{assets}}$						
	-3	11.58	247	0.06	195	-0.38	185
	-2	12.39	264	1.51	215	0.38	223
	-1	12.82	269	1.41	243	0.43	237
Median pre-acquisition performance		12.29	269	1.86	243	0.53	237
	1	10.97	269	0.82	243	0.26	237
	2	9.39	269	0.23	240	-0.69	232
	3	9.22	269	-1.04	238	0.11	236
Median post-acquisition performance		9.73	269	0.11	243	0.06	237
Median difference		**5.36*****	**269**	**3.28*****	**243**	**1.15**	**237**
Measure 8:	$\dfrac{EBIT}{BV_{equity}}$						
	-3	27.31	246	5.78	196	3.87	185
	-2	30.97	264	9.85	216	2.64	223
	-1	31.83	269	6.27	244	3.08	237
Median pre-acquisition performance		30.95	269	8.51	244	3.00	237
	1	27.39	269	-0.91	244	2.31	237
	2	24.54	269	6.11	241	2.11	232
	3	23.44	269	0.41	240	3.73	236
Median post-acquisition performance		25.39	269	2.56	244	2.62	237
Median difference		**3.66*****	**269**	**2.99*****	**244**	**1.15**	**237**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results for the domestic sample presented in Table 3.5 show that the changes in the raw performance of acquirer firms (without adjustment) is significantly positive for six out of the eight measures used and ranges between 2.61% and 5.36%. The other two measures which are the cash flow measure deflated by sales and 'pure' cash flow measure deflated by sales show insignificant positive changes in operating performance of acquirer firms.

However, when the adjustment is made for the industry median performance, the results for the domestic sample show significant positive differences between the median post- and median pre-acquisition performance of acquirer firms using four out of the eight performance measures used, which are the cash flow measure deflated by total assets, the cash flow measure deflated by total market value, the accrual measure deflated by total assets and the accrual measure deflated by the book value of equity. The other four measures show insignificant positive changes in the operating performance of acquirer firms.

When the adjustment is made for the industry, size and pre-acquisition performance, the results reveal significant positive improvements in operating performance of acquirer firms for only two out of the eight measures used, which are the cash flow measure and the 'pure' cash flow measure both deflated by total market value. However, the other measures show insignificant positive changes in the operating performance of acquirer firms.

In general, the results for the domestic sample show significant positive changes in the raw performance of acquirer firms, whereas insignificant changes in the industry-adjusted and industry, size and pre-acquisition adjusted performance of acquirer firms.

3.4.2 Intercept Model Results

The results of the intercept model are presented in Table 3.6 using different performance measures with different deflators and two performance benchmarks for UK acquirers using the full, cross-border and domestic samples.

Models 1, 3 and 4 show the results of acquirer firms from the intercept model using an industry-adjusted median performance for the full, cross-border and domestic acquisitions respectively. Models 5, 7 and 8 show the results for the full, cross-border and domestic

samples of acquirer firms respectively from using matched firms based on the industry, size and pre-acquisition performance.

However, models 2 and 6 in Table 3.6 extend the intercept model results by adding the cross-border dummy for the reason of checking the impact of cross-border acquisitions on the post-acquisition operating performance of acquirer firms using the industry-adjusted and industry, size and pre-acquisition adjusted performance respectively.

Table 3.6: Regression of Post-takeover-adjusted Performance of Acquirer Firms on Pre-takeover-adjusted Performance

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.019*** (-4.41)	-0.014** (-2.35)	-0.025*** (-4.29)	-0.010* (-1.70)	-0.006 (-0.59)	0.012 (0.82)	-0.020*** (-3.04)	0.016 (0.85)
Pre-performance	0.369*** (10.39)	0.367*** (10.33)	0.497*** (10.26)	0.223*** (4.38)	0.146** (2.31)	0.140** (2.22)	0.619*** (3.08)	0.183* (-1.75)
Cross-border		-0.009 (-1.05)				-0.035* (-1.73)		
F-statistic	10.80***	5.46***	10.52***	19.21***	5.335**	4.18**	17.10***	3.05*
p.value	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.08
Adjusted R^2	0.18	0.18	0.29	0.07	0.009	0.01	0.41	0.01
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	-0.045*** (-4.99)	-0.050*** (-3.86)	-0.041*** (-3.48)	-0.045*** (-3.32)	0.001 (0.04)	-0.008 (-0.17)	0.010 (0.16)	-0.013 (-0.92)
Pre-performance	0.0003 (0.32)	0.0003 (0.34)	-0.001 (-0.01)	0.036*** (3.72)	0.077*** (3.64)	0.077*** (3.47)	0.078*** (3.12)	0.038*** (3.98)
Cross-border		0.009 (0.52)				0.018 (0.28)		
F-statistic	0.10	0.18	0.01	13.82***	28.77***	14.36***	15.30***	15.87***
p.value	0.75	0.83	0.99	0.00	0.00	0.00	0.00	0.00
Adjusted R^2	-0.002	-0.003	-0.004	0.05	0.86	0.86	0.86	0.06
Measure 3: $\frac{EBITDA}{TMV}$								
Intercept	-0.002** (-2.53)	-0.001 (-1.22)	-0.003** (-2.03)	-0.0001 (0.41)	-0.0001 (-0.11)	0.001 (0.67)	-0.001 (-0.61)	0.001 (0.85)
Pre-performance	0.001 (0.58)	0.001 (0.54)	0.001 (0.40)	0.411*** (3.00)	0.275*** (5.22)	0.27*** (5.19)	0.324*** (3.09)	0.245*** (4.92)
Cross-border		-0.001 (-0.79)				-0.002 (-1.07)		
F-statistic	0.33	0.48	0.16	5.69***	27.27***	14.21***	9.57***	24.17***
p.value	0.56	0.62	0.69	0.00	0.00	0.00	0.002	0.00
Adjusted R^2	-0.001	-0.002	-0.003	0.19	0.05	0.05	0.04	0.09

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.004 (-0.61)	0.015 (1.44)	-0.023** (-2.12)	-0.020** (2.14)	-0.001 (-0.11)	0.012 (1.14)	-0.011 (-0.98)	0.013 (1.40)
Pre-performance	0.261*** (5.41)	0.254*** (5.29)	0.353*** (5.25)	0.099 (1.49)	0.150*** (7.16)	0.150*** (7.07)	0.352*** (6.33)	0.147*** (3.62)
Cross-border		-0.037** (-2.57)				-0.025* (-1.68)		
F-statistic	29.26***	18.13***	27.55***	2.22	7.38***	37.18***	40.08***	9.99***
p.value	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00
Adjusted R^2	0.06	0.08	0.11	0.01	0.64	0.64	0.15	0.83

Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.041*** (-3.38)	-0.036** (-2.03)	-0.046** (-2.44)	-0.025* (-1.77)	-0.009 (-0.38)	-0.028 (-0.77)	0.007 (0.35)	-0.028 (-0.59)
Pre-performance	0.026*** (18.48)	0.026*** (18.42)	0.026*** (16.33)	0.241*** (5.43)	0.052*** (11.16)	0.052*** (11.93)	0.052*** (18.41)	0.136* (1.68)
Cross-border		-0.010 (-0.41)				0.035 (0.70)		
F-statistic	34.15***	17.05***	26.68***	29.50***	13.03***	6.51***	35.50***	2.49
p.value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Adjusted R^2	0.45	0.45	0.55	0.13	0.97	0.97	0.99	0.01

Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.002 (-1.63)	-0.001 (-0.39)	-0.003* (-1.76)	0.001 (0.53)	0.001 (0.90)	0.002 (1.37)	-0.0001 (-0.05)	0.002 (1.48)
Pre-performance	0.0003 (0.60)	0.0003 (0.55)	0.0003 (0.50)	0.318*** (3.81)	0.196*** (3.11)	0.194*** (3.18)	0.199* (1.74)	0.191*** (2.68)
Cross-border		-0.002 (-1.02)				-0.002 (-1.03)		
F-statistic	0.36	0.70	0.25	14.53***	9.69***	5.38**	3.04*	7.17**
p.value	0.55	0.50	0.62	0.00	0.002	0.01	0.08	0.01
Adjusted R^2	-0.002	-0.001	-0.004	0.07	0.02	0.02	0.01	0.03

Measure 7: $\dfrac{EBIT}{BV_{assets}}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.022*** (-4.62)	-0.018*** (-2.69)	-0.028*** (-4.02)	-0.012** (-1.98)	-0.006 (-0.57)	0.012 (0.82)	-0.019** (-2.42)	0.017 (0.94)
Pre-performance	0.443*** (11.29)	0.440*** (11.20)	0.604*** (10.61)	0.259*** (5.03)	0.041* (1.67)	0.033 (0.55)	0.582*** (9.63)	0.226** (-2.48)
Cross-border		-0.007 (-0.74)				-0.035* (-1.70)		
F-statistic	12.75***	63.98***	11.26***	25.28***	0.45	1.67	9.28***	6.13**
p.value	0.00	0.00	0.00	0.00	0.50	0.19	0.00	0.01
Adjusted R^2	0.20	0.20	0.30	0.09	-0.11	0.003	0.27	0.02

Measure 8: $\dfrac{EBIT}{BV_{equity}}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.073** (2.29)	0.009 (0.20)	0.133** (2.45)	0.009 (0.28)	0.070* (1.92)	-0.022 (-0.43)	0.158*** (2.63)	-0.022 (-0.54)
Pre-performance	0.041 (1.54)	0.043 (1.60)	0.037 (0.79)	0.048* (1.86)	0.037 (1.31)	0.040 (1.43)	0.036 (0.79)	0.045 (1.42)
Cross-border		0.124* (1.95)				0.181** (2.51)		
F-statistic	2.37	3.09*	0.62	3.45*	1.72	4.03**	0.62	2.00
p.value	0.12	0.05	0.43	0.06	0.19	0.02	0.43	0.16
Adjusted R^2	0.003	0.01	-0.001	0.01	0.001	0.01	-0.002	0.004

***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

3.4.2.1 Full Sample

The results for model (1), which represents the full sample, show contradictory results for different performance measures. For example, measures 1, 2, 3, 5 and 7 which are all the cash flow measures whatever the deflator is, the 'pure' cash flow measure deflated by sales and the accrual measure deflated by total assets show significant negative differences between the post-acquisition and pre-acquisition industry-adjusted performance of acquirer firms. Measures 4 and 6 which are the 'pure' cash flow measure deflated by total assets and by total market value show insignificant changes in the industry-adjusted performance. However, measure 8, which is the accrual measure deflated by the book value of equity, shows significant positive changes in the operating performance of acquirer firms.

When the control is made for the industry, size and pre-acquisition performance of firms, the results for the full sample shown by model (5) yield no significant changes in the operating performance of acquirer firms between the post- and pre-acquisition adjusted performance for seven out of the eight measures used. However, measure 8 which is the accrual performance measure deflated by the book value of equity, shows positive changes in the operating performance of acquirer firms.

In general, the results for the full sample show significant negative changes in the industry-adjusted performance of acquirer firms, compared with insignificant changes in the industry, size and pre-acquisition adjusted performance of acquirer firms.

The use of different benchmarks seems to impact greatly on the results of the analysis in terms of the existence and size of the changes in the operating performance of acquirer firms. For example, the results have shown that the use of industry benchmarks achieves lower changes in the operating performance of acquirers in comparison with industry, size and pre-performance benchmarks.

Also, the reason for the contradictory results may be the use of different performance measures in conducting the analysis. For example, the significant decrease in the industry-adjusted performance of acquirer firms is mostly supported by the use of cash flow measures. Moreover, the deflator used may also affect the results, since the book value of equity scale has shown higher estimates than other deflators as evidenced by the significant positive changes in the operating performance of acquirers using the accrual measure deflated by the book value of equity.

3.4.2.2 Cross-border Sample

The examination of the cross-border sample presented by model (3) shows significant negative changes in the industry-adjusted operating performance of acquirer firms for seven out of the eight measures used. However, measure 8, which is the accrual measure deflated by the book value of equity, shows significant positive changes in the industry-adjusted performance of acquirer firms.

However, the results for the industry, size and pre-acquisition adjusted performance give mixed results with insignificant changes in the operating performance of acquirer firms for five out of the eight measures used, significant negative changes in operating performance of acquirer firms for measures 1 and 7 which are the cash flow measure deflated by total assets and the accrual measure deflated by total assets, whereas there are significant positive changes in operating performance of acquirer firms using the accrual measure deflated by the book value of equity.

In general, the results for the cross-border sample show similar results to the full sample with significant negative changes in the industry-adjusted performance of acquirer firms, whereas there are insignificant changes in the industry, size and pre-acquisition adjusted performance of acquirer firms.

3.4.2.3 Domestic Sample

When the adjustment is made for the industry median performance, the results show significant negative changes between the post-acquisition and pre-acquisition performance of acquirer firms for measures 1, 2, 4, 5 and 7, which are the cash flow measure deflated by total assets and by sales, 'pure' cash flow measure deflated by total assets and sales and the accrual measure deflated by total assets. However, measures 3, 6 and 8 show insignificant changes in the operating performance of acquirer firms.

However, when the control is made for the industry, size and pre-acquisition performance in model (8) the results show insignificant changes in the operating performance of acquirer firms for all the eight performance measures used.

In general, the results for the domestic sample show significant negative changes in the industry-adjusted performance of acquirer firms, whereas there are insignificant changes in the industry, size and pre-acquisition adjusted performance of acquirer firms.

The overall results show that when the adjustment is made for the industry median performance, the majority of the results show significant negative changes between the post-acquisition and pre-acquisition performance of acquirer firms for the full, cross-border and domestic samples, which suggests a decrease in the operating performance of acquirer firms.

Alternatively, when a matching benchmark that controls for the industry, size and pre-acquisition performance of firms is used, most of the results show insignificant changes in the operating performance of acquirer firms for the full, cross-border and domestic samples of acquirer firms. This implies that the type of benchmark used in the analysis may have an impact on the results.

3.4.2.4 Cross-border Effect

When the examination is conducted for the impact of cross-border M&As on the post-acquisition performance of acquirer firms using model (2), the industry-adjusted operating performance of acquirer firms shows insignificant impact of cross-border deals on post-acquisition performance of acquirer firms for six out of the eight measures used. However, measure 4, which is the 'pure' cash flow measure deflated by total assets, shows a significant negative impact of cross-border deals on post-acquisition performance of acquirer firms, whereas measure 8, which is the accrual measure deflated by the book value of equity, shows a significant positive impact of cross-border deals on post- acquisition performance of acquirer firms.

When the matching is conducted on the basis of the industry, size and pre-acquisition performance of firms as shown in model (6), the results show significant negative impact of cross-border acquisitions on post-acquisition operating performance of acquirer firms using measures 1, 4 and 7, which are the cash flow, the 'pure' cash flow and the accrual measure all deflated by the book value of total assets. Measure 8, which is the accrual measure deflated by the book value of equity, shows a significant positive impact of cross-border acquisitions on post-acquisition operating performance of acquirer firms, whereas measures 2, 3, 5 and 6 show insignificant impact.

The results of the industry-adjusted performance as well as the industry, size and pre-acquisition adjusted performance show insignificant impact of cross-border acquisitions on the post-acquisition performance of acquirer firms. This means that there is no significant difference between the impacts of cross-border and domestic acquisitions on the operating performance of acquirer firms.

3.4.2.5 The Relationship between Pre- and Post-acquisition Performance

The pre-performance shown in Table 3.6, which is the slope coefficient, shows the relationship between the post-acquisition adjusted performance and pre-acquisition adjusted performance of acquirer firms. Some of those slope coefficients are significant which suggests a relationship between the post- and pre-acquisition performance of acquirer firms.

When the adjustment of the operating performance is made only by industry, the results for the full and cross-border samples show that four out of the eight measures used have a significant positive relationship between the pre- and post-acquisition performance of acquirer firms. Those measures are the cash flow, the 'pure' cash flow and the accrual measure deflated all by total assets, as well as the 'pure' cash flow measure deflated by sales. However, the other four measures show an insignificant relationship between the post-acquisition adjusted performance and pre-acquisition adjusted performance of acquirer firms.

The results for the domestic sample show that all the measures have positive significant relationships between the pre- and post-acquisition performance of acquirer firms except measure 4 which shows an insignificant relationship. The positive significant relationship suggests that high pre-acquisition performance of acquirer firms is associated with higher post-acquisition performance.

When the adjustment is made on the basis of industry, size and pre-acquisition performance, the results for the full, cross-border and domestic samples show a positive relationship between the pre- and post-acquisition performance of acquirer firms for all the measures used except measure 8, which is the accrual measure scaled by book value of equity, which shows an insignificant relationship.

The difference in the results between the two performance benchmarks highlights the importance of the adjustment approach and may help in explaining the contradictory results across many of the previous studies.

3.4.3 Change Model vs. Intercept Model Results

Table 3.7 compares the results of the change and intercept models in order to check whether or not the intercept model yields conclusions different from the change model.

Table 3.7: Change Model vs. Intercept Model

Measure	Industry adjusted						Industry, Size and Performance adjusted					
	Change model			Intercept model			Change model			Intercept model		
	Full	CB	D	Full	CB	D	Full	CB	D	Full	CB	D
Measure 1	+4.9***	+3.7***	+3.2**	-1.9***	-2.5***	-1.0*	+1.7*	+1.4	+1.0	-0.6	-2.0***	+1.6
Measure 2	+1.2	+1.1	+0.6	-4.5***	-4.1***	-4.5***	+0.2	+0.7	+0.3	+0.1	+1.0	-1.3
Measure 3	+2.9**	+2.1**	+2.0**	-0.2**	-0.3**	-0.01	+2.4**	+0.7	+2.5**	-0.01	-0.1	+0.1
Measure 4	+2.0**	+2.5**	+0.3	-0.4	-2.3**	+2.0**	+1.0	+0.9	+0.5	-0.1	-1.1	+1.3
Measure 5	+7.6	+0.4	+0.5	-4.1***	-4.6**	-2.5*	+1.2	+0.6	+1.0	-0.9	+0.7	-2.8
Measure 6	+2.1**	+1.5	+1.3	-0.2	-0.3*	+0.1	+2.5**	+1.4	+2.1**	+0.1	-0.01	+0.2
Measure 7	+4.7***	+3.4	+3.3***	-2.2***	-2.8***	-1.2**	+1.9*	+1.5	+1.2	-0.6	-1.9**	+1.7
Measure 8	+3.1**	+1.5	+3.0***	+7.3**	+13.3**	+0.9	+0.1	+1.0	+1.2	+7.0*	+15.8***	-2.2

The results presented in Table 3.7 show that the change model gives higher estimates of improvements in the industry-adjusted operating performance of acquirer firms than the intercept model for the full, cross-border and domestic samples for the majority of the measures used. However, measure 8 for the full and cross-border samples which is the accrual measure deflated by the book value of equity, shows higher improvements using the intercept model over the change model. Meanwhile, measure 4 for the domestic sample, which is the

'pure' cash flow deflated by the book value of total assets, shows higher improvements using the intercept model compared to the change model.

When the matching is done on the basis of the industry, size and pre-acquisition performance, mixed results are revealed regarding whether the estimates of operating performance improvements are higher when the change model is used versus the intercept model. In general, most of the measures show higher estimates of performance improvements for the change model in comparison with the intercept model. However, measure 8 for the full sample, measures 2, 5 and 8 for the cross-border sample and measures 1, 4 and 7 for the domestic sample, show higher estimates of performance improvements for the intercept model in comparison with the change model.

The results from comparing the changes in operating performance of acquirer firms between the change model and the intercept model show higher estimates of operating performance improvements for the change model in comparison with the intercept model for most of the measures used when the adjustment is made for the industry median as well as on the basis of the industry, size and pre-acquisition performance.

3.4.4 Regression Analysis

The results of the regression tests are presented in Table 3.8 which is conducted using different performance measures and benchmarks for the full, cross-border and domestic samples of UK acquirers. It investigates whether the post-acquisition performance of acquirer firms can be explained by some of the deals' characteristics using a multiple regression analysis. Therefore, the dependent variable is the post-acquisition operating performance of acquirer firms adjusted for the industry trends and industry, size and pre-acquisition performance respectively. The independent variables include some of the deals' characteristics such as the method of payment, industrial relatedness, relative size of target to

acquirer firm and whether the acquisition is cross-border or domestic deal. The results are summarised in the following table.

Table 3.8: Regression Analysis of Determinants of Post-acquisition Performance of Acquirer Firms

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.025*** (-2.77)	-0.012 (-1.13)	-0.015 (-1.29)	-0.029** (-2.16)	-0.016 (-0.71)	0.016 (0.62)	0.001 (0.06)	-0.028 (-0.58)
Pre-performance	0.352*** (9.45)	0.189*** (3.61)	0.511 (0.98)	0.184*** (3.62)	0.104 (1.51)	-0.214*** (-2.62)	0.662 (1.25)	-0.213* (-1.94)
Controls								
Cross-border		-0.018** (-2.06)				-0.041* (-1.96)		
Cross-border*Pre-performance		0.316*** (4.36)				0.881*** (6.43)		
Cash Payment	0.015 (1.38)	0.011 (1.04)	-0.003 (-0.24)	0.032** (2.05)	0.012 (0.45)	-0.004 (-0.15)	-0.019 (-1.17)	0.026 (0.49)
Mix Payment	0.001 (0.12)	-0.004 (-0.35)	-0.032** (-2.07)	-0.029* (1.89)	-0.005 (-0.20)	-0.019 (-0.71)	-0.068*** (-3.93)	0.038 (0.71)
Industrial Relatedness	0.001 (0.14)	0.001 (0.17)	-0.003 (-0.22)	0.002 (0.19)	0.019 (0.89)	0.022 (1.07)	0.008 (0.55)	0.039 (0.99)
Relative Size	-0.001 (-1.27)	-0.001 (-1.42)	-0.001 (-1.13)	-0.026 (-1.60)	-0.001 (-0.40)	-0.002 (-0.70)	-0.001 (-1.12)	-0.004 (-0.070)
F-statistic	20.01***	17.77***	2.10***	4.65***	0.77	6.98***	3.55***	1.04
p.value	0.00	0.00	0.00	0.001	0.57	0.00	0.00	0.39
Adjusted R^2	0.17	0.20	0.29	0.07	-0.003	0.08	0.43	0.001
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	-0.030* (-1.74)	-0.025 (-1.40)	-0.012 (-0.79)	-0.016 (-0.55)	-0.007 (-0.36)	0.004 (0.16)	-0.018 (-0.73)	0.019 (0.58)
Pre-performance	0.031*** (3.69)	0.016** (2.21)	0.60* (1.72)	0.016* (1.78)	0.064 (1.46)	0.023** (2.55)	0.065 (1.52)	0.023** (2.47)
Controls								
Cross-border		0.020 (1.37)				-0.013 (-0.67)		
Cross-border*Pre-performance		0.585*** (12.44)				0.041*** (4.52)		
Cash Payment	0.006 (0.30)	-0.005 (-0.28)	-0.009 (-0.54)	0.008 (0.25)	0.013 (0.54)	0.009 (0.39)	0.017 (0.58)	0.005 (0.13)
Mix Payment	-0.007 (-0.35)	-0.016 (-0.86)	-0.035* (-1.79)	0.009 (0.27)	-0.015 (-0.63)	-0.025 (-1.04)	-0.041 (-1.28)	-0.007 (-0.18)
Industrial Relatedness	-0.018 (-1.06)	-0.021 (-1.47)	0.007 (0.47)	-0.054** (-2.17)	-0.011 (-0.59)	-0.015 (-0.81)	0.006 (0.23)	-0.038 (-1.39)
Relative Size	-0.001 (-0.01)	0.007 (0.04)	0.001 (0.14)	-0.036 (-1.06)	-0.001 (-0.22)	-0.0003 (-0.14)	-0.001 (-0.03)	-0.062* (-1.69)
F-statistic	3.23**	25.18***	5.98***	1.86	4.29***	3201.37***	4.69***	2.34**
p.value	0.01	0.00	0.00	0.10	0.00	0.00	0.00	0.04
Adjusted R^2	0.02	0.26	0.55	0.02	0.98	0.98	0.99	0.03

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 3: $\dfrac{EBITDA}{TMV}$								
Intercept	-0.005***	-0.003	-0.001**	-0.001	-0.001	0.0003	-0.002	0.001
	(-2.62)	(-1.27)	(-2.39)	(-0.24)	(-0.42)	(0.14)	(-0.79)	(0.55)
Pre-performance	0.001	0.406***	0.0002	0.418***	0.298***	0.288***	0.299***	0.29***
	(0.42)	(5.44)	(0.21)	(7.64)	(5.10)	(3.76)	(2.74)	(5.08)
Controls								
Cross-border		-0.002				-0.002		
		(-1.08)				(-0.89)		
Cross-border*Pre-performance		-0.405***				0.021		
		(-5.43)				(0.18)		
Cash Payment	0.002	0.001	0.002	0.001	0.001	-0.0002	-0.0004	0.001
	(0.81)	(0.59)	(0.67)	(0.52)	(0.07)	(-0.07)	(-0.001)	(0.14)
Mix Payment	-0.001	-0.001	-0.002	0.001	-0.002	-0.002	-0.003	-0.001
	(-0.64)	(-0.50)	(-0.53)	(0.06)	(-0.73)	(-0.90)	(-0.79)	(-0.38)
Industrial Relatedness	0.004**	0.004**	0.001***	-0.001	0.002	0.002	0.005	-0.001
	(2.51)	(2.14)	(2.69)	(-0.33)	(1.19)	(1.13)	(1.47)	(-0.25)
Relative Size	0.0001	0.0001	0.001	-0.001	0.0001	-0.0004	0.0001	-0.001
	(0.41)	(0.47)	(0.36)	(-0.65)	(0.29)	(-0.25)	(0.29)	(-0.55)
F-statistic	1.71	5.52	1.63	12.40***	5.94***	6.88***	2.27**	5.52***
p.value	0.13	0.00	0.15	0.00	0.00	0.00	0.05	0.00
Adjusted R^2	0.01	0.06	0.01	0.20	0.05	0.10	0.03	0.09
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$								
Intercept	-0.005	0.030	-0.008	0.023	0.009	0.036*	0.003	0.038
	(-0.33)	(1.56)	(-0.35)	(1.01)	(0.55)	(1.79)	(0.13)	(1.49)
Pre-performance	0.260***	0.074	0.363***	0.084	0.151***	0.149***	0.375***	0.148***
	(4.95)	(0.92)	(4.92)	(1.18)	(2.69)	(26.89)	(6.34)	(3.10)
Controls								
Cross-border		-0.048***				-0.033**		
		(-3.06)				(-2.12)		
Cross-border*Pre-performance		0.296***				0.229***		
		(2.86)				(4.29)		
Cash Payment	0.015	0.009	0.018	-0.006	0.017	0.008	0.020	-0.005
	(0.78)	(0.48)	(0.66)	(-0.23)	(0.89)	(0.40)	(0.74)	(-0.19)
Mix Payment	-0.019	-0.031	-0.048*	-0.018	-0.037*	-0.047**	-0.063**	-0.033
	(-0.99)	(-1.59)	(-1.67)	(-0.69)	(-1.85)	(-2.34)	(-2.15)	(-1.22)
Industrial Relatedness	0.001	-0.003	-0.022	0.017	-0.008	-0.013	-0.012	-0.011
	(0.07)	(-0.20)	(-0.94)	(0.89)	(-0.54)	(-0.84)	(-0.53)	(-0.55)
Relative Size	-0.0004	-0.0004	-0.001	-0.031	0.0004	0.005	0.0003	-0.022
	(-0.27)	(-0.25)	(-0.02)	(-1.33)	(0.27)	(0.03)	(0.15)	(-0.92)
F-statistic	6.46***	6.88***	6.95***	1.10	1.45***	112.65***	10.23***	19.33***
p.value	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00
Adjusted R^2	0.07	0.10	0.13	0.003	0.65	0.67	0.18	0.84

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.008	-0.006	0.011	-0.026	0.093	0.087	0.048	0.193
	(-0.33)	(-0.21)	(0.35)	(-0.73)	(1.62)	(1.23)	(1.11)	(1.46)
Pre-performance	0.293	0.216***	0.321***	0.218***	0.052	0.123*	0.052*	0.123
	(1.08)	(4.18)	(9.34)	(4.56)	(1.12)	(1.77)	(1.83)	(1.35)
Controls								
Cross-border		0.002				0.011		
		(0.08)				(0.20)		
Cross-border*Pre-performance		0.106*				-0.071		
		(1.75)				(-1.03)		
Cash Payment	-0.008	-0.010	-0.013	0.002	-0.013	-0.013	0.029	-0.088
	(-0.28)	(-0.35)	(-0.34)	(0.04)	(-0.19)	(-0.19)	(0.55)	(-0.62)
Mix Payment	-0.025	-0.028	-0.071*	0.020	-0.138*	-0.137*	-0.068	-0.224
	(-0.87)	(-0.98)	(-1.70)	(0.50)	(-2.04)	(-1.96)	(-1.19)	(-1.58)
Industrial Relatedness	-0.015	-0.018	-0.024	-0.014	-0.103	-0.102	-0.068	-0.144
	(-0.68)	(-0.79)	(-0.73)	(-0.47)	(-1.95)	(-1.92)	(-1.54)	(-1.42)
Relative Size	-0.001	-0.0002	0.0002	-0.038	0.002	0.002	0.002	-0.098
	(-0.05)	(-0.09)	(0.09)	(-1.04)	(0.39)	(0.37)	(0.56)	(-0.76)
F-statistic	23.89***	17.56***	18.51***	4.83***	2.50***	1782.61***	6.81***	1.53
p.value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Adjusted R^2	0.23	0.23	0.30	0.09	0.97	0.97	0.99	0.01

Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.001	-0.001	-0.001**	0.001	0.001	0.003	-0.003	0.001**
	(-1.41)	(-0.40)	(-2.13)	(1.06)	(0.35)	(0.97)	(-1.03)	(2.45)
Pre-performance	0.0003	0.340***	0.0002	0.319***	0.191***	0.208**	0.157	0.218***
	(0.52)	(2.96)	(0.31)	(3.16)	(2.90)	(2.52)	(1.32)	(2.88)
Controls								
Cross-border		-0.003				-0.003		
		(-1.35)				(-1.20)		
Cross-border*Pre-performance		-0.339***				-0.053		
		(-2.96)				(-0.38)		
Cash Payment	0.001	0.001	0.001	-0.001	0.002	0.002	0.001	-0.001
	(0.48)	(0.54)	(1.27)	(-0.84)	(0.62)	(0.41)	(1.34)	(-1.23)
Mix Payment	-0.003	-0.003	-0.001	-0.001	-0.004	-0.005*	-0.001	-0.001**
	(-0.92)	(-0.89)	(-0.33)	(-1.24)	(-1.51)	(-1.75)	(-0.59)	(-2.38)
Industrial Relatedness	0.004	0.003	0.001*	0.001	0.006	0.0004	0.001	-0.001
	(1.62)	(1.48)	(1.69)	(0.28)	(0.29)	(0.20)	(0.89)	(-0.73)
Relative Size	0.002	0.0002	0.002	-0.001	0.002	0.0002	0.001	-0.001
	(0.66)	(0.73)	(0.67)	(-1.24)	(0.92)	(1.02)	(0.91)	(-0.94)
F-statistic	1.03	2.12**	1.11	3.02**	3.09**	2.41**	1.38	3.26**
p.value	0.40	0.04	0.36	0.01	0.01	0.02	0.24	0.01
Adjusted R^2	0.0003	0.02	0.003	0.05	0.03	0.03	0.01	0.06

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 7: $\frac{EBIT}{BV_{assets}}$								
Intercept	-0.027***	-0.012	-0.011	-0.042***	-0.017	0.013	0.002	-0.039
	(-2.68)	(-1.03)	(-0.81)	(-2.89)	(-0.76)	(0.49)	(0.15)	(-0.82)
Pre-performance	0.427	0.225***	0.616	0.227***	0.009	-0.247***	0.662***	-0.253***
	(1.04)	(3.89)	(1.02)	(4.42)	(0.13)	(-3.38)	(9.72)	(-2.65)
Controls								
Cross-border		-0.019*				-0.040*		
		(-1.90)				(-1.92)		
Cross-border*Pre-performance		0.385***				0.916***		
		(4.80)				(6.53)		
Cash Payment	0.021*	0.015	-0.006	0.050***	0.016	0.001	-0.019	0.040
	(1.73)	(1.30)	(-0.38)	(3.15)	(0.59)	(0.06)	(-0.98)	(0.77)
Mix Payment	-0.003	-0.008	-0.051***	-0.045***	-0.008	-0.016	-0.076***	0.053
	(-0.21)	(-0.63)	(-2.83)	(2.84)	(-0.29)	(-0.61)	(-3.65)	(1.04)
Industrial Relatedness	-0.002	-0.001	-0.002	-0.003	0.022	0.026	0.012	0.042
	(-0.18)	(-0.10)	(-0.16)	(-0.28)	(1.02)	(1.25)	(0.72)	(1.09)
Relative Size	-0.001	-0.001	-0.001	-0.027*	-0.001	-0.001	-0.001	-0.007
	(-1.23)	(-1.33)	(-0.93)	(-1.67)	(-0.35)	(-0.61)	(-0.74)	(-0.13)
F-statistic	24.39***	21.62***	23.91***	7.01***	0.39	6.86***	22.45***	1.78
p.value	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.12
Adjusted R^2	0.20	0.23	0.32	0.12	-0.01	0.08	0.32	0.02
Measure 8: $\frac{EBIT}{BV_{equity}}$								
Intercept	0.168**	0.096	0.334***	-0.086	0.157	0.051	0.317**	-0.109
	(2.40)	(1.15)	(3.08)	(-1.05)	(1.94)	(0.51)	(2.64)	(-1.01)
Pre-performance	0.047*	0.052	0.042	0.039	0.048*	0.050	0.041	0.036
	(1.71)	(1.35)	(0.87)	(1.44)	(1.66)	(1.18)	(0.85)	(1.07)
Controls								
Cross-border		0.107				0.156**		
		(1.57)				(1.99)		
Cross-border*Pre-performance		-0.009				-0.002		
		(-0.16)				(-0.04)		
Cash Payment	-0.030	-0.016	-0.139	0.148	-0.023	0.002	-0.134	0.169
	(-0.36)	(-0.19)	(-1.04)	(1.62)	(-0.25)	(0.02)	(-0.90)	(1.43)
Mix Payment	-0.089	-0.068	-0.181	0.092	-0.132	-0.095	-0.113	-0.008
	(-1.05)	(-0.79)	(-1.26)	(1.01)	(-1.36)	(-0.95)	(-0.71)	(-0.07)
Industrial Relatedness	-0.099	-0.09	-0.209	0.019	-0.059	-0.048	-0.168	0.059
	(-1.48)	(-1.35)	(-1.82)	(0.28)	(-0.77)	(-0.63)	(-1.33)	(0.69)
Relative Size	-0.001	-0.002	-0.001	-0.048	-0.001	-0.002	-0.001	-0.021
	(-0.16)	(-0.27)	(-0.09)	(-0.53)	(-0.05)	(-0.19)	(-0.13)	(-0.18)
F-statistic	1.26	1.26	1.24	1.25	1.07	1.35	0.75	1.32
p.value	0.28	0.27	0.29	0.29	0.38	0.23	0.59	0.26
Adjusted R^2	0.003	0.004	0.01	0.01	0.001	0.01	-0.01	0.01

Values between brackets are t-statistics.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level
CB: Cross-border sample
D: Domestic sample

3.4.4.1 Full Sample

Models (1) and (5) in Table 3.8 present the results of the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms for the full sample using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

Models (2) and (6) expand the examination conducted by models (1) and (5) by including a cross-border dummy variable and another variable which is a cross-border dummy variable multiplied by the pre-acquisition adjusted performance which examines whether there is any significant difference between the impact of pre-acquisition adjusted performance on post-acquisition adjusted performance between domestic mergers and acquisitions and cross-border mergers and acquisitions.

The results for the industry-adjusted performance shown by model (1) show significant positive impact from industrial relatedness for measure 3, which is the cash flow measure deflated by total market value, and positive impact from the cash payment method using measures 7, which is the accrual measure deflated by total assets. However, other measures didn't show any significant impact of the deal characteristics on the post-acquisition adjusted performance of acquirer firms.

Moreover, model (2) shows a significant negative impact of cross-border acquisitions on the post-acquisition performance of firms using measures 1, 4 and 7, which are the cash flow measure deflated by total assets, the 'pure' cash flow measure deflated by total assets and the accrual measure deflated by total assets.

Also, the difference between the impact of pre-acquisition performance on post-acquisition performance between cross-border and domestic acquirers presented in model (2) shows a

positive significant impact for five out of the eight measures used, insignificant impact for measure 8, whereas there is significant negative impact for measures 3 and 6, which are the cash flow and 'pure' cash flow measures deflated both by total market value.

The results for the industry, size and pre-acquisition adjusted performance presented by model (5) show significant negative impact from the mixed payment method on the post-acquisition performance of acquirer firms using measures 4 and 5, which are the 'pure' cash flow measure deflated by total assets and sales respectively.

The results for model (6) also show significant negative impact of cross-border acquisition on post-acquisition performance using measures 1, 4 and 7, which are the cash flow, 'pure' cash flow and accrual measures all deflated by total assets. However, measure 8, which is the accrual measure deflated by the book value of equity, shows positive impact of cross-border acquisitions on post-acquisition performance of acquirer firms. The results for the difference between the impacts of pre-acquisition performance on post-acquisition performance of acquirer firms for cross-border and domestic acquisitions show significant positive impacts using four out of the eight measures used, which are the cash flow measures deflated by total assets and sales, the 'pure' cash flow measure deflated by total assets and the accrual measure deflated by total assets. However, the other measures show insignificant results.

3.4.4.2 Cross-border Sample

Models (3) and (7) in Table 3.8 examine the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms involved in the cross-border M&As using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

The results for the industry-adjusted performance shown by model (3) show significant negative impact from the mixed payment method on the post-acquisition performance of acquirer firms for measures 1, 2, 4, 5 and 7. Meanwhile, measures 3 and 6, which are the cash flow and 'pure' cash flow measures deflated by total market value, show a significant positive impact from the industrial relatedness on post-acquisition performance of acquirer firms.

However, the results for the industry, size and pre-acquisition adjusted performance presented by model (7) show a significant negative impact from the mixed payment method on the post-acquisition performance of firms using measures 1, 4 and 7, which are the cash flow, the 'pure' cash flow and the accrual measure all deflated by total assets.

3.4.4.3 Domestic Sample

Models (4) and (8) in Table 3.8 examine the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms involved in domestic acquisitions using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

When the adjustment is made for the industry, the results presented in model (4) show a positive impact of the cash payment method and a significant negative impact of the mixed payment method using measures 1 and 7, which are the cash flow and the accrual measure both deflated by total assets. Also, measures 2 and 7, which are the cash flow measure deflated by sales and the accrual measure deflated by total assets, show a significant negative impact from the industrial relatedness and the relative size respectively on the post acquisition performance of acquirer firms.

When the adjustment is made for the industry, size and pre-acquisition performance as shown in model (8), the results show a significant negative impact from the relative size of targets to

acquirers for measure 2, which is the cash flow deflated by sales. Measure 6, which is the 'pure' cash flow deflated by total market value, shows a significant negative impact from the mixed payment method on the post-acquisition performance of acquirer firms. However, other measures don't show any significant impact of the deal characteristics on the post-acquisition performance of acquirer firms.

The overall results of the regression analysis show a negative impact of cross-border acquisitions on the post-acquisition performance of acquirer firms when the book value of total assets is used as a deflator. However, the other measures do not show any significant difference between the impacts of cross-border and domestic acquisitions on the operating performance of acquirer firms.

The results show an impact of the payment method on the post-acquisition performance of acquirer firms being positive for the cash method of payment and negative for other means of payment, especially when the industry benchmark is used. However, the remaining results have provided little evidence about the ability of any of the other deal characteristics to explain the post-acquisition performance of acquirer firms across all the different performance measures, deflators and benchmarks used.

3.5 Summary of the Results and Conclusions

This chapter examines the changes in operating performance of acquirer firms using a sample of 555 acquirer firms in the period 1996-2003 with the main emphasis on testing whether the type of acquisition being domestic or cross-border has a different impact on the acquirer firms' performance. The pre- and post-acquisition operating performance of acquirer firms is examined using cash flow, 'pure' cash flow and accrual performance measures relative to benchmarks which control for the industry as well as the industry, size and pre-acquisition performance. Two models have been used in assessing changes in operating performance for

the full, cross-border and domestic samples of acquirer firms, which are the change model and the intercept model.

The results from the examination of the operating performance of 555 acquirer firms show insignificant differences between the impacts of domestic and cross-border acquisitions on the operating performance of acquirer firms for most of the measures used.

Considering the changes in operating performance of acquirer firms, the results show that when the adjustment is made for the industry median performance, the change model shows significant improvements in the operating performance of acquirer firms for the full and domestic samples compared with insignificant changes for the cross-border sample. When the intercept model is used, the results show the opposite with significant decrease in the operating performance of acquirer firms in the full, domestic and cross-border samples.

However, when the adjustment is made for the industry, size and pre-acquisition performance, most of the results for the change model and the intercept model show insignificant changes in the operating performance of acquirer firms in the full, cross-border and domestic samples.

The results show that the type of acquisition being domestic or cross-border does make a difference in the variations between the operating performance of companies, since cross-border acquisitions show either a negative impact on the post-acquisition operating performance of acquirer firms or an insignificant impact depending on the performance measure and deflator used. However, most of the measures do not show any significant differences between the impacts of cross-border and domestic acquisitions on the operating performance of acquirer firms.

The results for the regression analysis show some significant results for the payment method on the post-acquisition operating performance of acquirer firms being significantly positive for the cash method of payment and significantly negative for the mixed payment method for most of the measures used, whereas the other characteristics have shown little impact on the post-acquisition performance of acquirer firms. Therefore, the significant impact of the payment method on the post-acquisition performance of firms supports the Myers and Majluf's hypothesis (1984) who considered that the method of payment represents an information signal to the market.

The results in this chapter show some differences with the previous literature such as Pazarskis et al. (2006), Mantravadi and Reddy (2008) and Ismail et al. (2011) since they do not adjust for the impacts of the industry median or the industry, size and pre-acquisition performance in their analysis and they examine non-UK acquirers which may affect the results.

Also, the results for the industry-adjusted operating performance of acquirer firms in the full sample contradict with those of Selcuk and Yelmaz (2011). Their results show significant decrease in the industry-adjusted operating performance of acquirer firms using the change model, whereas insignificant changes using the intercept model. On the other hand, the results for the full sample of acquirers presented in this chapter show significant increase in the industry-adjusted operating performance of acquirers using the change model, whereas significant decrease in the operating performance using the intercept model.

The potential reason for the contradictory results stems from the difference in the performance measures used as well as the country of the acquirer, since Selcuk and Yelmaz (2011) examine Turkish acquirer firms whereas this study examines acquirer firms from the UK, which may impact the results.

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In general, the differences in the results show that the type of the benchmark as well as the model used in the analysis, whether being the change model or the intercept model, has different impacts on the results, which may help to explain the contradictory results of the previous studies.

CHAPTER FOUR

THE DIFFERENCE BETWEEN THE IMPACTS OF CROSS-BORDER AND DOMESTIC MERGERS AND ACQUISITIONS ON THE OPERATING PERFORMANCE OF COMBINED FIRMS

4.1. Introduction

Within the increased levels of globalisation in the world's economies nowadays, the need for improving the competitiveness and the competitive advantage for the corporates worldwide has become an important issue so as to grow profitably. Building these new competencies may be achieved by entering new markets and geographies and by gaining greater market share through mergers and acquisitions which represent important corporate strategy actions (Ramakrishnan, 2008).

Therefore, it is important to understand the possible consequences of merger and acquisition deals and whether or not they have resulted in better performance, since only this improvement makes the use of mergers reasonable as a corporate strategy (Ramakrishnan, 2008).

Few studies have been conducted to examine the operating performance of firms following M&A transactions (Sudarsanam, 2010), especially those involved in cross-border M&As. Moreover, those studies haven't given a clear idea as to whether takeovers result in operating performance improvements or not (Powell and Stark, 2005) and whether M&A transactions affect the operating performance of firms involved in cross-border deals differently than domestic M&As.

Healy et al. (1992) reported significant improvements in the post-takeover industry adjusted operating performance of US firms involved in domestic acquisitions between 1979 and 1984. They measured the operating performance using the intercept model by regressing the post-takeover industry-adjusted performance on the pre-takeover adjusted performance of the combined acquirer and target firms. Other studies have followed Healy et al. (1992) by using the industry benchmarks such as Linn and Switzer (2001) but using a different methodology, which is the change model, in order to estimate improvements in the performance of firms reflected by the differences between the post-acquisition adjusted performance and the combined acquirer and target pre-acquisition adjusted performance. Their results have shown significant improvements in the industry-adjusted operating performance of firms similarly to Healy et al. (1992).

Other studies have adopted the same procedures and documented improvements in the industry-adjusted operating performance of firms. The existence of such improvements has been questioned by Ghosh (2001) who argued that using industry benchmarks in the examination caused a bias in the results because industry benchmarks have no control for the firm size and pre-acquisition performance.

Ghosh (2001) examined a sample of US domestic M&As by using the change model and controlled for the industry, size and pre-acquisition performance with results showing no significant changes between post- and pre-acquisition performance of firms, which contradicts with the previous studies results.

Previous studies which were conducted to examine the operating performance of combined firms have shown mixed results regarding changes in operating performance of firms following M&As. Some of them document significant improvements in the post-acquisition performance of firms (Healy et al., 1992; Powell and Stark, 2005), others report significant

decreases in the operating performance of firms (Dickerson et al., 1997), whereas the others show insignificant changes in performance of firms (Ghosh, 2001; Sharma and Ho, 2002).

Those previous studies haven't differentiated between domestic and cross-border M&As in their examinations and haven't provided any clear idea about whether there is any difference between the impacts of cross-border and domestic M&As on the operating performance of combined firms, which makes it a major gap in the literature that needs to be filled.

The previous chapter has dealt with the issue of the operating performance of acquirer firms only and whether there is any significant difference in those operating performances between cross-border and domestic acquisitions. The examination has been conducted using different performance measures and techniques with the results in general showing insignificant differences between the impacts of domestic and cross-border acquisitions on the operating performance of acquirer firms for most of the measures used.

The examination in the previous chapter concerns the changes in the operating performance of acquirer firms only. However, this chapter will include both the acquirer and target firms in order to examine the impact of mergers and acquisitions on the operating performance of the combined firms. The examination is conducted by using some pre- acquisition and post-acquisition operating performance measures to check whether there is any difference in the changes in operating performance of combined firms engaged in domestic and foreign acquisitions.

More specifically, the aims and purposes of this chapter are as follows:

- Firstly, to examine whether there are any significant differences between the impacts of domestic and cross-border M&As on the operating performances of UK acquirers and targets combined.

- Secondly, to find out whether the impacts of domestic and cross-border M&As on the operating performance of UK acquirers only are different from their impacts on the operating performance of UK acquirers and targets combined.

- Thirdly, is to investigate whether there is any significant impact of some of the deal characteristics such as the method of payment, relative size and industrial relatedness on the post-acquisition operating performance of combined firms.

In order to achieve the objectives of this chapter, the examination will be based on two types of analyses. Analysis (A) examines the operating performance of acquirer and target firms that have operating performance data available on the Datastream database for at least one year before and one year after the acquisition. The sample for this analysis is based on 98 pairs of acquirer and target firms comprising 59 pairs engaged in domestic mergers and acquisitions and 39 pairs involved in cross-border mergers and acquisitions.

Analysis (B) examines the operating performance of acquirer firms only that have been included in the examination in analysis (A) for the main reason of checking whether or not excluding the target firms from the analysis has any impact on the results, especially with all the related complicated and time consuming issues from including the target firms and their peers in the analysis. The sample for this analysis is based on 98 acquirer firms comprising 59 acquirers engaged in domestic mergers and acquisitions and 39 acquirers involved in cross-border mergers and acquisitions.

The reason for splitting the sample and carrying out Analysis (A) and Analysis (B) in this chapter is to check whether adding the data of the targets to the data of acquirers would make a difference to the results that will be obtained with the data of the acquirers only. The comparison is conducted in order to find out whether the impacts of domestic and cross-border M&As on the operating performance of UK acquirers only are qualitatively different from their impacts on the operating performance of UK acquirers and targets combined.

The chapter is organised as follows: Section 4.2 discusses the previous empirical literature on the operating performance of combined firms involved in domestic and cross-border mergers and acquisitions. Section 4.3 describes the data sample selection procedure and methodology used to measure changes in the operating performance of combined firms. Section 4.4 presents the main empirical results for both analysis (A) and analysis (B) regarding changes in the operating performance of firms. Section 4.5, which is the final section, summarizes the key findings and results of the chapter.

4.2. Literature Review

Since the theories discussed in chapter two also apply to this chapter, this section will include only an overview of the previous empirical studies conducted on the operating performance of combined firms following corporate acquisitions.

The assessment of the performance of mergers and acquisitions has been conducted using different measures and methods in the previous studies. It has been done through either the examination of some market-based financial measures, such as stock returns, or through the examination of some accounting measures, such as cash flow returns and other financial ratios (Ramakrishnan, 2008).

Very few studies have examined changes in operating performance post-mergers, taking into consideration that Healy et al. (1992) had perhaps conducted the most notable study in examining the changes in operating performance around the acquisition (Ghosh, 2001).

The reason why a number of previous researches which used share price data in studying the takeover performance of firms exceeded that which used accounting data measures may be related to a number of reasons. Tuch and O'Sullivan (2007) mentioned two such suggested reasons, which are the difficulty of comparing the accounting performance measures and the sensitivity of accounting information measures which could be easily influenced by any managerial manipulation and any changes in the accounting policies.

However, a number of other researchers argue that the firm's accounting records will reflect any benefit resulting from the takeover activity and therefore prefer the use of accounting information in measuring long-term effect of acquisition on the operating performance of firms (Tuch and O'Sullivan, 2007). Studies which are conducted using accounting performance measures use statutory accounting returns. Thus, the minimum period used is twelve months after the bid and, in some studies, performance is tracked up to seven years after that (Tuch and O'Sullivan, 2007).

Previous studies have been carried out to examine the performance of the merged firms and whether their performance has enhanced or deteriorated after the announcement or completion of the merger deals as compared to before the event. However, those studies haven't differentiated between the impacts of domestic and cross-border M&As on the operating performance of combined firms. Therefore, the results of those previous studies which yielded different conclusions for different countries will be discussed below for the US, Europe, other countries and the UK.

4.2.1 Performance of US Mergers and Acquisitions

Some studies have been conducted to check the impact of takeovers on the operating performance of firms in the US. However, the previous studies on post-takeover performance for US corporates show contradictory results (Martynova et al., 2007). Earlier studies in the US, such as those conducted by Ravenscraft and Scherer (1987) and Herman and Lowenstein (1988), didn't show any operating performance enhancement following M&A transactions. However, the most recent US studies conducted for bidding and target firms show either significant improvements in the profitability (Heron and Lie, 2002; Linn and Switzer, 2001) or insignificant changes in the operating performance of bidding and target firms (Ghosh, 2001; Moeller and Schlingemann, 2005).

Healy et al. (1992) argued that those earlier studies that didn't show improvements in operating performance following mergers had some methodological problems that made their results difficult to interpret. In order to avoid those various problems, Healy et al. (1992) used a different research design than earlier studies and concluded that there was a significant improvement in the operating performance of merging firms.

Healy et al. (1992) examined the post-acquisition performance of 50 US domestic mergers for the period between 1979 and mid-1984. In their examination, they used pre-tax operating cash flow returns on assets in order to measure operating performance improvements. They defined the operating cash flow as "sales, minus cost of goods sold and selling and administrative expenses, plus depreciation and goodwill expenses" (Healy et al., 1992, p.139). They deflated the cash flow measure by the market value of assets and focused in their analysis on the median values for the five years pre- and five years post-acquisition. They regressed the post-acquisition industry-adjusted cash flow of merging firms on the adjusted pre-acquisition cash flow and estimated cash flow performance improvements as the intercept of this regression.

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Using this methodology, their results showed that merged firms had an increase in post-acquisition cash flow performance in comparison with their industries by 2.8%.

Healy et al. (1992) also examined the impact of the payment method on changes in operating performance of the merging firms using a sample that included 13 mergers out of 50 which involved cash offers. Their results didn't show any relation between the method of payment and the changes in performance. However, their results might be affected by the small and selective sample that they examined (Linn and Switzer, 2001).

Linn and Switzer (2001) examined the change in operating performance of merging firms and the relationship between this change and whether the acquiring firms offered cash or stock as a payment method. They used in their examination a sample which included 413 combinations occurring between 1967 and 1987 in the US.

As a measure of operating performance they used a pre-tax cash flow return on assets which was defined as "after tax income before extraordinary items, plus depreciation and amortization charges, net interest expense (interest expense – interest income) and total income taxes" (Linn and Switzer, 2001, p.1118). This cash flow measure was also scaled by the market value of assets to create the cash flow return on assets.

They used the change model to estimate improvements in the operating performance of firms for two overlapping samples. One of them was when the bidder and target firms had operating performance data for at least one common year of the five years preceding the merger, and for which the merged firm had operating data available for at least one of the five years following the merger. The other sample contained bidders and targets that had operating data over the five consecutive years prior the merger and where the merged firm had operating data for

each of the five consecutive years following the combination. However, Linn and Switzer (2001) showed that this latter sample comes at a cost of some ''potential selection bias''.

Their results generally showed significant improvements in the industry-adjusted operating cash flows by 1.8 % per year with the change in operating performance of merging firms being significantly higher for deals in which the acquiring firm offered cash (3.145%) in comparison to stock offers (0.77%). Also, Linn and Switzer (2001) showed better performance from acquiring large targets than the acquisition of small targets.

However, the results which showed improvements in operating performance of firms following mergers, especially those measured relative to industry benchmarks, were questioned by Ghosh (2001) who argued that these results might be biased because of the existence of some permanent and temporary factors over the pre-acquisition years that may cause merging firms to outperform industry-median firms. The argument for this is that acquiring firms in general tend to be larger than their industry counterparts in size and they try to time their takeover strategy during periods of superior performance which will affect the results.

The arguments of Ghosh (2001) are very similar to the previous suggestions of Barber and Lyon (1996) who concluded on the importance of choosing control firms matched on pre-event performance and size in order to achieve powerful and well specified test statistics.

Ghosh (2001) examined a sample of 315 pairs of domestic target and acquiring firms in the United States for mergers completed during the period 1981 and 1995. In order to examine the operating performance of merging firms, he used an operating cash flow measure defined in a similar way as the one used in Healy et al. (1992), which is "sales minus cost of goods sold, minus selling and administrative expenses, plus depreciation and goodwill amortization

expenses" (Ghosh, 2001, p.154). Also, he deflated the cash flow measure by the market value of assets and sales and used a benchmark of control firms matched on similar operating cash flow performance and total asset size before the acquisition in order to compare the pre- and post-acquisition performance of merging firms.

The results of the examination didn't show any evidence of operating performance improvements following acquisitions, which contrasts Healy et al. (1992) results. Therefore, Ghosh (2001) concluded the importance of the adjustment for the size and pre-acquisition performance in the examination in order to avoid drawing biased results.

Ghosh (2001) also analyzed whether the method of payment used in the acquisition had any impact on the performance of merging firms. He found significant increases in operating performance of merging firms following cash acquisitions, whereas there were decreases in cash flows for stock acquisitions.

Heron and Lie (2002) examined a sample of US takeovers comprising 859 acquisitions made by 657 different acquirers between January 1985 and December 1997. Their main consideration was to investigate the relationship between the operating performance of firms and the method of payment in acquisitions.

They measured operating performance as operating income scaled by sales and compare the operating performance of their sample firms with two benchmarks that control for the industry and the industry and pre-event performance. They used a change model to examine a time period of three years before and three years after the acquisition. The results suggested that acquiring firms significantly outperform industry-median firms and control firms matched on industry and pre-event performance following the acquisition.

Considering the method of payment, the results didn't show any significant difference in the operating performance of firms across the different payment methods whether being cash, mixed or stock payments, which contradicts other previous studies that reported operating performance improvements for firms using cash payment methods in comparison with firms paying in stock.

Ramaswamy and Waegelein (2003) examined the long-term post-merger financial performance of US combined firms by using a sample of 162 publicly traded firms involved in domestic acquisitions between 1975 and 1990. Their study also aimed to determine the factors which may affect the performance of firms by examining whether there was any difference in the post-merger financial performance of the combined firms across different methods of payment, relative size of target to acquirer firm, industrial relatedness, compensation plans, hostile acquisitions, and time.

In their examination, they covered a five-year pre-merger and five-year post-merger period and used cash flow returns on market value of assets as a measure of operating performance. They defined operating cash flows as "sales revenues minus cost of goods sold and selling, general and administration expenses. This operating cash flow is arrived at before deducting depreciation, interest expense, income taxes and extraordinary losses as well as before adding extraordinary gains, interest income and non-operating revenues" (Ramaswamy and Waegelein, 2003, p. 119). The market value of assets was computed as the sum of the market value of common stock, the book value of debt and the preferred stock.

After using the industry median values as a benchmark, the results showed positive significant improvements in the post-merger performance of the full sample of firms as in Healy et al. (1992). Also, they found a negative significant relationship between the relative size of targets to acquirers, from industrial relatedness of acquirer and target firms and from the merger year

on the post-merger performance of firms. However, they found a significant positive impact on the post-merger performance of firms from the existence of long-term incentive compensation plans for managers, whereas there was no significant impact from the method of payment and the hostile acquisitions on the post-merger performance. Ramaswamy and Waegelein (2003) concluded that their results might have been affected by the operating performance measure used in their analysis.

4.2.2 Performance of European Mergers and Acquisitions

Martynova et al. (2007) examined the long-term profitability of a sample of 155 pairs of acquirer and target firms involved in intra-European domestic and cross-border M&As between 1997 and 2001.

In their examination they applied four measures of operating performance which were EBITDA and EBITDA adjusted for changes in working capital, each scaled by the book value of total assets and by sales as follows: EBITDA / $BV_{assets,}$ EBITDA / Sales, (EBITDA – $\square$WC) / BV_{assets} & (EBITDA – $\square$WC) / Sales.

They employed the change model and the intercept model to assess the changes in the operating performance of the combined firm. Their results showed an outperformance of both acquiring and target firms over their industry median peers in the pre-takeover period, whereas a significant decrease in the profitability of combined firms following the takeover. However, when the control is done on the basis of the industry, size and pre-event performance, the decrease in the operating performance became insignificant.

When the examination was carried out for the impact of deal characteristics, Martynova et al. (2007) found insignificant differences in the profitability of firms that employed different

methods of payment and insignificant difference in the post-merger profitability of related and unrelated acquisitions.

Considering the relative size of acquirers to targets, Martynova et al., (2007) have results which show significant outperformance of relatively large takeovers over smaller peers. However, although there is an increase in the post-merger profitability with the size, the increase is not linear since they find that the very large acquisitions are less profitable than the medium-sized acquisitions whereas the smallest acquisitions have a significant negative impact on the operating performance of the combined firms.

They explain the lower results for the very large mergers and acquisitions by the idea that managing a very large newly created firm might have problems that outweigh the benefits of the takeover and thus worsen the profitability of the combined firm.

4.2.3 Performance of Mergers and Acquisitions in Other Countries

Sharma and Ho (2002) examined the operating performance of a sample of 36 Australian public companies which occurred during the period 1986 to 1991. They used operating cash flow before tax as the primary measure of performance which was represented by four accrual (earnings based) performance measures and four cash flow operating performance measures. The accrual measures were Return on Total Assets (ROA), Return on Ordinary Shareholders' Equity (ROE), Profit Margin (PM) and Earnings Per Share (EPS).The cash flow measures are Cash Flow Return on Assets (CFFO/TA), Cash Flow Return from Sales (CFFO/SALES), Cash Flow Return on Average Ordinary Shareholders' Equity (CFFO/AOSE) and (Cash Flow from Operations Minus Preference Dividends) on Number of Ordinary Shares (CFFO/NOS).

They made an observation over three years prior and three years after the acquisition and used control firms matched on industry and asset size. The results were uniform across both accrual

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and cash flow performance measures since they didn't show any improvement in corporate operating performance for the sample and period examined.

Kumar and Rajib (2007) examined a sample of 57 large mergers in India which took place in the period 1995-2002. They conducted their study by comparing the pre- and post-acquisition cash flow performance of merging firms with that of matched firms and used the pre-acquisition performance and asset size as the basis for their matching.

As a performance measure, they used cash flow measure deflated by the market value of assets, book value of assets and sales value. Their results showed performance improvements following mergers using measures based on book value of assets and sales whereas the market value of assets-based measure didn't show any improvement in operating performance after mergers.

Ramakrishnan (2008) examined the impact of mergers and acquisitions on the operating performance of 87 pairs of acquirer and target firms who were involved in domestic mergers and acquisitions in India between 1993 and 2005. In their examination, they used the operating cash flow measure scaled by the operating assets over a period of three years before and three years after the acquisition.

After adjusting for the median industry operating performance, their results showed that in general, there was an improvement in the long-term post-acquisition operating performance of Indian firms reflected in the significant positive mean difference of 2.8% between the post-acquisition and pre-acquisition industry-adjusted cash flows.

Yen and Andre (2010) examined the impact of concentrated ownership on corporate performance of firms using a sample of 69 deals made by 46 acquiring firms over the time

period 1998-2004. The sample included acquiring firms from thirteen emerging market countries which were Argentina, Brazil, Chile, Hungary, India, Indonesia, Malaysia, Mexico, Philippines, Russian Fed, South Africa, Taiwan and Thailand.

As a measure of operating performance, they used pre-tax operating cash flow which was defined as "operating income after depreciation plus depreciation and goodwill amortization, i.e. EBITDA" (Yen and Andre, 2010, p.222). They divided the cash flow measure by the market value of assets then computed operating cash flow returns for each company up to three years pre- and three years after the acquisition event and used a benchmark with controls for the industry, size and pre-performance.

The results showed that firms with controlling shareholders (especially holding ownership between 25%-30%) experienced improvements in post-acquisition operating performance over the three year period after the acquisition, whereas holders of less than 25% or more than 30% ownership experienced insignificant changes in operating performance.

4.2.4 Performance of UK Mergers and Acquisitions

Very few studies have been conducted for the UK companies and they have shown more contradictory results than those conducted for the US with some results showing a significant decrease in the post-acquisition performance, such as Dickerson et al. (1997), and others showing a significant growth, such as Powell and Stark (2005).

Meeks (1977) made one of the earliest studies on the accounting performance of 233 UK acquirers who were engaged in mergers and acquisitions between 1964 and 1972. His study was on the post-bid accounting performance over the period 0 to +7 years after the bid. He found significant positive abnormal profits of 0.114% in the year of the takeover which reflected an increase in the profitability. However, the results showed a decrease in the

profitability over the years +1 to +5 with significant abnormal losses between -0.035% and -0.109% and insignificant returns over the years 6 and 7 following the bid.

Dickerson et al. (1997) examined the performance of UK companies using a comprehensive sample of acquisitions which took place between 1948 and 1977. They studied the post-bid performance of acquirers over the period 0 to +18 years. They found that on average, a firm's profitability decreased by approximately 2.04% per year in the post-bid period. Also, they found that acquirer firms underperformed non-acquirers and had significant lower returns.

Powell and Stark (2005) examined the post-acquisition operating performance of a sample of 191 takeovers made by UK acquirers over the period January 1985 to July 1993 for the purpose of comparing between the different performance measures and benchmarks.

In their examination they used two performance measures which were a pre-depreciation profit and a pre-depreciation profit corrected for changes in working capital. As a deflator for those measures, they employed four different deflators, which were total market value, total market value adjusted for market reaction to the takeover, total sales and book value of total assets.

Two performance benchmarks were used, which were an industry median benchmark and another benchmark with controls for industry, size and prior operating performance. Also, two models have been used in examining changes in operating performance which are the Healy et al. (1992) regression-based model as well as the change model.

In general, their results show significant improvements in the operating performance of firms with improvements being higher for the regression-based method in comparison with the

change model. Also, they concluded that their results were sensitive to the performance measures, deflators, methodologies and models of expected performance used.

Previous empirical studies which examined changes in operating performance following corporate acquisitions have yielded contradictory results, with findings ranging from slightly positive (Healy et al., 1992; Powell and Stark, 2005) to significantly negative impact on operating performance of combined firms following mergers (Dickerson, 1997), and others showing insignificant changes in operating performance of firms (Ghosh, 2001; Martynova et al., 2007).

Martynova et al. (2007) argued that the main reason for the contradictory results in previous studies lay in the different methodologies used in comparing pre- and post-acquisition operating performance.

Furthermore, after their review of some of the previous empirical studies, Sharma and Ho (2002) and Martynova and Renneboog (2008) concluded that the results observed in those studies depended on the operating performance measures used. For example, they showed that studies which employed earnings-based measures in their measurement of operating performance showed losses in their results, whereas studies using cash flow based performance measures showed gains.

Previous studies have been conducted for examining M&A transactions whether being domestic, cross-border or both of them together. However, those previous studies didn't provide any empirical evidence on the difference between the impacts of cross-border and domestic M&As on the operating performance of combined firms, which is the main focus of this chapter in order to fill this gap in the literature.

4.3 Data Sample and Methodology

This section describes the sample used in this chapter followed by a brief description of the methodology applied in the analysis of the operating performance of combined firms.

4.3.1 Sample and Data Sources

The sample used in this chapter includes acquirer and target firms involved in domestic and cross-border M&As during the period January 1, 1996 to December 31, 2003. The names of the acquirer and target companies are extracted manually from the Thomson Financial Publication *Acquisitions Monthly.* To be included in the sample, both acquirer and target accounting data, such as the operating performance measures should be held on the Datastream database for a minimum of one, two or three years before the takeover and one, two or three years after the takeover. Also, to be included in the sample, data necessary for the calculation of the industry median benchmarks or the matched control firms based on industry, size and pre-acquisition performance should be available.

4.3.2 Sample Selection and Description

Within the existing sample of 585 acquisitions, most of the targets are foreign or private targets. Therefore, due to the limitation of the financial information of those targets on the Datastream database, there is inability to find the required data for most of them which reduces the number of acquirers and targets in the sample to 98 pairs as shown in Table 4.1. Also, Appendix 4.A provides a list of the names of acquirer and target firms with their benchmarks.

In order to avoid any survivorship bias in collecting the data of target firms, the search for the financial data has been conducted using the lists of both "live" and "dead" firms on the Datastream database in order to guarantee that they are all included in the sample. Also, in order to check for the existence of any sample selection bias in the final sample of 98 M&As,

a comparison has been conducted between the main characteristics of the 98 M&As with the characteristics of the other firms that haven't got data for their targets on the Datastream database, which represent 487 M&As. The characteristics which were checked are the size of acquirer firms and the industrial relatedness between acquirer and target firms.

In terms of the size of acquirer firms which is measured as the market value of equity (in millions of sterling), the results show that the mean value of equity for the 98 M&As is 2790.68 whereas for the 487 M&As being 4309.54. The median value of equity for the 98 M&As is 689.92 whereas being 713.41 for the 487 M&A deals. To test for the significance of differences between means and medians of the two samples, t-tests are used for equality in means and a Wilcoxon/Mann-Witney test is used for equality of medians. The results have shown no significant differences in means and medians of the two samples of M&As.

In relation to the industrial relatedness which is defined as the same two-digit standard industrial trade classification code (SIC code), the two samples of M&As have shown that the majority of M&A transactions occur between firms in related acquisitions. For example, the 98 M&A sample show that acquisitions between firms in related industries occur in 48% of the sample whereas 43% occur in different industries. Similarly, the sample of 487 M&As show that acquisitions in the same industry occur in 56% of the sample whereas 41% occur in different industries.

Table 4.1: Sample Selection Procedure

	Number	Percentage
Completed deals (1996-2003)	585 Deals	100%
Analysis (A) : Number of deals where Acquirers and Targets have at least 1 year pre- and combined firms have at least 1 year post-acquisition data available on Datastream	98 Pairs	17%
Analysis (B) : Acquirer firms that were used in analysis (A)	98 Acquirers	17%

As shown in Table 4.1, analysis (A), which is the main analysis in this chapter, examines the operating performance of acquirer and target combined firms that have data for at least one year pre- and one year after the acquisition. On the other hand, analysis (B) examines the operating performance of acquirer firms only which were used as part of analysis (A).

The examination in this chapter includes firms that have operating performance data available on the Datastream database for a period of a minimum of one year before and one year after the acquisition and a maximum of three years before and three years after the acquisition. Therefore, the minimum and maximum number of acquisitions will differ from one year to the other for the raw and adjusted performance of firms in the sample. Appendix 4.B provides a table showing the minimum and maximum number of acquisitions within different time periods.

The analysis in this chapter examines the operating performance of the acquirers and targets that have the required data available and use their measures in the pre-acquisition period with the combined firm data for the post-acquisition period.

A description of the sample is provided in Table 4.2, which highlights the main features of the sample and breaks down the full sample into two parts according to whether the deal is a cross-border or domestic acquisition made by a UK acquirer.

Panel A of Table 4.2 shows the distribution over time of the cross-border, domestic and total transactions. Consistent with the previous chapters, the sample shows that the number of merger and acquisition transactions increases over the years then a decrease happens after the millennium followed by another increase again.

Panel B of Table 4.2 presents the distribution of the sample over some of the deal characteristics, which are the payment method, industrial relatedness and the relative size of the target to the acquirer. With regard to the method of payment, the takeovers here are classified into three groups which are pure cash, pure equity and mixed payment.

It is clear that cash is the main method of payment in cross-border and domestic acquisitions whereas equity is the least method of payment. The preference of the cash payments may indicate that acquirer firms felt that their shares are undervalued and that they are worth more than their current market price, which made them prefer to pay for the M&A deals with cash instead of equity. This may have a positive impact on the performance of firms according to the signalling hypothesis of Myers and Majluf (1984), since cash bids may be viewed by the market as a signal that the management of the acquiring firm is expecting an increase in the value of the firm over the post-acquisition period.

Considering the industrial relatedness, acquisitions are defined as related when acquirer and target firms have the same Datastream Industrial Classification Code at Level Four, which is similar to the classification used by Powell and Stark (2005) and Cosh et al. (2006). Within

the existing sample, acquisitions between firms in related industries occur in 38.46% of the cross-border sample and 61.37% of the domestic sample.

Finally, the majority of the sample represent significant takeovers with 59.18% of the targets are at least 50% of the acquirer's size (total assets).

Table 4.2: Distribution of Sample M&As by Year and Deal Characteristics

	CB M&A		Domestic M&A		Total	
	N	%	N	%	N	%
Panel A: By Year of M&A						
1996	1	2.56	5	8.48	6	6.12
1997	1	2.56	5	8.48	6	6.12
1998	2	5.13	7	11.86	9	9.18
1999	7	17.95	17	28.81	24	24.50
2000	12	30.77	9	15.25	21	21.43
2001	6	15.385	5	8.48	11	11.22
2002	4	10.26	4	6.78	8	8.16
2003	6	15.385	7	11.86	13	13.27
Total	39	100.00	59	100.00	98	100.00
Panel B: By Deal Characteristics						
Payment Method						
All Cash	12	30.77	31	52.54	43	43.88
All Shares	3	7.69	3	5.08	6	6.12
Mix	8	20.51	16	27.12	24	24.49
Not Available	16	41.03	9	15.26	25	25.51
Total	39	100.00	59	100.00	98	100.00
Relatedness						
Same Industry	15	38.46	34	61.37	49	50
Different Industry	22	56.41	25	38.63	47	47.96
Not Available	2	5.13	0	0	2	2.04
Total	39	100.00	59	100.00	98	100.00
Relative Size of Target						
Target size < 10%	7	17.95	7	11.86	14	14.29
Target size 10%-50%	3	7.69	10	16.96	13	13.265
Target size > 50%	21	53.85	37	62.71	58	59.18
Not Available	8	20.51	5	8.47	13	13.265
Total	39	100.00	59	100.00	98	100.00

4.3.3 Methodology

The operating performance measures applied in this chapter are the same as the ones applied in the previous chapter which include the cash flow, pure cash flow and accrual measures of operating performance. Also, the same benchmarks that adjust for the industry as well as the industry, size and pre-acquisition performance are used in this chapter in order to have a degree of comparability with the previous chapter as well as the other previous studies and to check whether the choice of the benchmark affects the results. Therefore, only a brief description is provided for the methods applied.

4.3.3.1 Benchmark Construction

In order to construct the operating performance benchmarks with which will be compared with the combined firms' operating performance, some steps are followed for each type of benchmark as follows.

The benchmarks are chosen from the pool of all companies on the Datastream database that have the same industrial classification as the acquirer and target firms in the sample in the year prior to the acquisition and is identified as the Datastream Industrial Classification Code at Level Four (Financial Times All Shares Index) as is used in Powell and Stark (2005). From those industry groupings, the firm with the median EBITDA-to-Assets ratio in the year prior to the acquisition is selected as the industry median peer.

Similarly, in order to choose matched firms based on industry, size and pre-acquisition performance, industry groupings are filtered down to those companies that have a size of between 25% and 200% of acquirer and target firms, which is represented by total assets in the year before the acquisition. From this list, firms with the closest operating performance of the acquirer and target firms measured as the EBITDA-to-Assets ratio in the year prior to the acquisition are selected as the benchmark firms. Also, care is taken to select benchmark firms

from the same country as the acquirer and target firms and are not involved in merger and acquisition activities over the period studied.

4.3.3.2 Adjusted Cash-flow Performance

The analysis in this chapter differs from the previous chapter since it concentrates on examining the changes in the operating performance of acquirer and target combined firms and not only acquirer firms. Following Martynova et al. (2007), the operating performance cash flow measure of acquirer and target firms is used for each of the three years (-3 to -1) prior the takeover wherever available in the pre-acquisition period. This measure is weighted or scaled by the sum of the acquirer and target specific deflator. That is, the raw pre-acquisition operating performance cash flow of the combined firm is calculated as follows:

$$\overline{\hspace{2cm}} \tag{4.1}$$

For the post-acquisition period, the actual or realized operating performance reported by the combined firm for each of the three years (+1 to +3) after the acquisition is scaled by its deflator at the same year. That is, the raw post-acquisition operating performance or cash flow of the combined firm is calculated as follows:

$$\overline{\hspace{1cm}} \tag{4.2}$$

Following Martynova et al. (2007), the control benchmark operating performance measure is also calculated in each of the three years prior and post the acquisition for each pair of control companies, wherever available. In the pre-acquisition period, the control company performance is calculated as a weighted average of the operating performance of the acquirer's and target's peer companies where the weights being the relative size of the

acquirer's and target's deflator. That is, the peer pre-acquisition operating performance of the combined firm is calculated as follows:

$$\text{_____} \quad \text{\_\_\_\_\_} \quad \text{_____} \quad \text{\_\_\_\_\_}$$ (4.3)

The post-acquisition combined benchmark is calculated similarly to the pre-acquisition years by weighting the average performance measure of the acquirer's and target's peers. However, the weights for the post-acquisition period are the relative size of the acquirer and target firms at the end of the year prior to the acquisition (year -1). That is, the peer post-acquisition operating performance of the combined firm is calculated as follows:

$$\text{_____} \quad \text{\_\_\_\_\_} \quad \text{_____} \quad \text{\_\_\_\_\_}$$ (4.4)

The control adjusted operating performance is calculated as the difference between the raw performance measures of the acquirers and targets and the relevant benchmark operating performance measures. That is, the company's operating performance adjusted for the industry trend is calculated as follows:

(4.5)

The firm's operating performance adjusted for the industry, size and pre-acquisition performance is calculated in a similar way as follows:

(4.6)

Median annual performance measures are then reported for all the firms in the pre- and post-acquisition years. Also, the median performance measures are reported for each firm in the pre-acquisition and post-acquisition periods. Then, an assessment of the changes in operating performance of combined firms caused by the takeover is conducted by using the change model and the intercept model which are explained in the previous chapter. Figure 4.1 summarizes the procedure followed in applying the methodology.

Figure 4.1: Methodology Applied to Measure Changes in Operating Performance of Combined Firms

A: Acquirer firm, T: Target firm, AT: Combined firm

Peer firms or benchmarks are selected on the basis of: (1) Industry median, or (2) Industry, size and pre-acquisition performance.

Source: The idea of the figure is based on Martynova et al. (2007) and Sharma and Ho (2002).
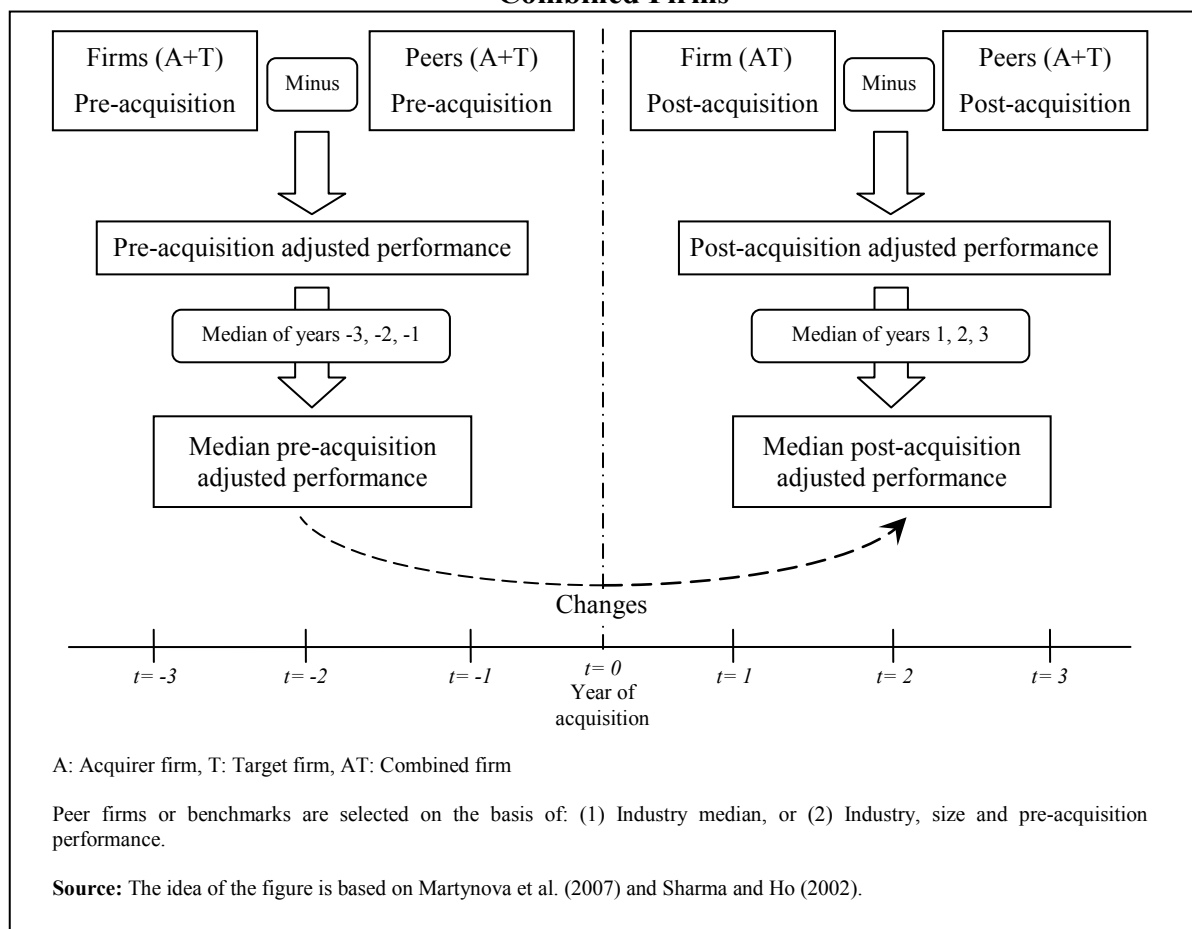
4.4 Empirical Results

This section presents the results of the empirical tests conducted for both analysis (A) and (B) respectively for the whole, cross-border and domestic samples of UK acquisitions. All the results are presented for analysis (A) first followed by the results of analysis (B). Firstly, the

change model results are reported for the full, cross-border and domestic samples of acquisitions using different operating performance measures and benchmarks. Secondly, the intercept model results are presented for the full, cross-border and domestic samples for different performance measures and two different benchmarks. The results of the impact of cross-border acquisitions on changes in operating performance of combined firms are also presented. Thirdly, a comparison between the change model results and the intercept model results is presented. Fourthly, the results of a regression analysis are presented to show the impact of some of the deal characteristics on the post-acquisition performance of combined firms.

4.4.1 Results of Analysis (A)

The results of analysis (A) are presented below which contains the examination of the operating performance of a sample of 98 pairs of acquirer and target firms using different models and benchmarks.

4.4.1.1 Change Model Results

This section presents the results of the change model that shows the size of the improvements in the firms' operating performance measured as the difference between the median post-takeover performance and the median pre-takeover performance for the full, cross-border and domestic samples using different measures and benchmarks.

4.4.1.1.1 Full Sample

The empirical results for the change model are shown in Table 4.3 for the full sample of acquisitions.

Table 4.3: Analysis (A) Operating Performance Changes of Combined Firms (Full Sample)

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance - adjusted median (%)	Nr. Obs
Measure 1: $\frac{EBITDA}{Total\ Assets}$						
-3	13.61	81	1.65	57	-0.48	59
-2	12.63	85	-0.06	62	-0.92	62
-1	12.76	92	-0.10	75	-1.23	72
Median pre-acquisition performance	13.52	92	0.37	75	-0.96	72
1	13.11	92	-0.24	75	-1.47	72
2	10.74	92	-0.50	73	-1.33	71
3	10.78	92	-1.41	73	-1.58	71
Median post-acquisition performance	11.67	92	0.07	75	-1.37	72
Median difference	**1.71 ***	**92**	**0.98**	**75**	**0.28**	**72**
Measure 2: $\frac{EBITDA}{Sales}$						
-3	14.86	81	0.88	57	-2.39	59
-2	14.91	85	-1.64	62	-3.99	62
-1	14.00	93	-0.34	75	-4.87	72
Median pre-acquisition performance	14.86	93	-0.09	75	-3.17	72
1	12.75	93	0.47	75	-0.05	72
2	13.04	93	1.76	72	0.16	71
3	12.69	93	-0.22	71	1.09	71
Median post-acquisition performance	13.31	93	2.24	75	0.94	72
Median difference	**0.85**	**93**	**0.97**	**75**	**1.74 ***	**72**
Measure 3: $\frac{EBITDA}{TMV}$						
-3	0.01	76	-0.00	52	-0.00	55
-2	0.01	82	-12.54	57	-0.00	57
-1	0.02	92	-0.00	72	-0.00	71
Median pre-acquisition performance	0.01	92	-0.01	72	-0.00	71
1	0.02	92	-0.00	72	-0.00	71
2	0.02	92	-12.73	70	-0.00	70
3	0.02	92	0.00	70	-0.00	70
Median post-acquisition performance	0.02	92	-0.01	72	-0.00	71
Median difference	**0.86**	**92**	**0.23**	**72**	**1.1**	**71**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$							
	-3	14.30	66	5.66	43	1.78	40
	-2	14.67	73	1.69	48	-3.93	50
	-1	11.81	78	1.12	52	-4.97	58
Median pre-acquisition performance		12.95	78	1.15	52	-3.08	58
	1	11.89	78	3.26	52	0.88	58
	2	10.89	78	-2.15	50	0.36	58
	3	11.76	78	0.57	47	-0.92	58
Median post-acquisition performance		11.79	78	1.13	52	0.01	58
Median difference		**1.75 ***	**78**	**0.46**	**52**	**1.47**	**58**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$							
	-3	15.57	68	1.33	42	-3.34	40
	-2	12.71	74	0.58	47	-3.28	50
	-1	14.03	80	0.69	53	-6.23	58
Median pre-acquisition performance		13.03	80	0.69	53	-5.69	58
	1	12.84	80	1.65	53	1.67	58
	2	11.45	80	1.64	51	5.15	57
	3	12.39	80	-1.89	49	2.61	57
Median post-acquisition performance		12.02	80	1.41	53	2.28	58
Median difference		**1.03**	**80**	**0.23**	**53**	**2.54 ****	**58**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$							
	-3	0.01	67	0.01	40	-0.00	38
	-2	0.02	72	-0.05	43	-0.00	45
	-1	0.02	78	-0.01	51	-0.01	56
Median pre-acquisition performance		0.01	78	-0.01	51	-0.01	56
	1	0.02	78	0.00	51	0.00	56
	2	0.02	78	-0.05	49	0.00	55
	3	0.02	78	0.00	47	-0.01	55
Median post-acquisition performance		0.02	78	-0.01	51	0.00	56
Median difference		**0.34**	**78**	**0.39**	**51**	**2.11 ****	**56**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 7: $\frac{EBIT}{BV_{assets}}$							
	-3	8.87	85	0.58	57	-0.76	58
	-2	8.27	91	0.09	62	-0.76	62
	-1	8.37	98	0.07	75	-1.32	72
Median pre-acquisition performance		8.73	98	0.33	75	-0.76	72
	1	8.06	98	0.62	75	-1.52	72
	2	6.40	98	-0.04	73	-2.07	71
	3	6.98	98	-1.80	70	-0.89	71
Median post-acquisition performance		7.20	98	0.22	75	-0.99	72
Median difference		**1.79 ***	**98**	**1.08**	**75**	**0.09**	**72**
Measure 8: $\frac{EBIT}{BV_{equity}}$							
	-3	25.16	86	2.04	56	-5.39	58
	-2	24.89	90	0.57	62	-1.65	62
	-1	23.90	98	-3.28	75	0.16	72
Median pre-acquisition performance		25.59	98	0.49	75	-1.48	72
	1	23.82	98	-19.02	75	-4.09	72
	2	22.63	98	-2.87	73	-1.00	71
	3	22.12	98	-8.89	73	-1.42	71
Median post-acquisition performance		24.49	98	-5.7	75	-0.67	72
Median difference		**1.27**	**98**	**1.77 ***	**75**	**0.53**	**72**

Median difference between the median post- acquisition performance and median pre-acquisition performance of combined firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The raw performance of the firms (without adjustment) show significant positive changes in operating performance ranging within 1.71% and 1.79% when the book value of total assets is used as a deflator whatever the performance measure is. However, the results for the other five measures show statistically insignificant positive changes in operating performance.

When the firm performance is adjusted for the industry median performance, the results in general didn't show any significant differences between the median post- and median pre-acquisition performance for all the measures used except measure 8 which is the accrual measure (EBIT) deflated by the book value of equity which shows a significant increase in operating performance by 1.77%.

When the industry, size and pre-acquisition performance is controlled for, the results reveal statistically insignificant positive differences between the median post- and median pre-acquisition performance for five out of the eight performance measures used, whereas there is a positive significant increase of 1.74%, 2.54% and 2.11% for measures 2, 5 and 6 respectively.

The majority of the results for the raw, industry-adjusted and industry, size and pre-acquisition adjusted performance for the full sample show insignificant positive changes in the operating performance of combined firms which is similar to the results of Ghosh (2001).

4.4.1.1.2 Cross-border Sample

Table 4.4 presents the empirical results of the change model from the examination of the cross-border sample of acquisitions using different performance measures and benchmarks.

Table 4.4: Analysis (A) Operating Performance Changes of Combined Firms (Cross-border Sample)

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 1: $\frac{EBITDA}{Total\ Assets}$							
	-3	12.43	30	2.85	18	0.19	18
	-2	12.63	33	-1.33	22	-0.38	20
	-1	13.70	36	1.48	26	1.07	24
Median pre-acquisition performance		13.62	36	1.34	26	0.51	24
	1	14.31	36	-0.14	26	-0.36	24
	2	11.26	36	-0.12	26	-0.38	24
	3	8.40	36	-0.22	25	0.06	24
Median post-acquisition performance		11.44	36	0.49	26	0.11	24
Median difference		**1.14**	**36**	**1.22**	**26**	**0.79**	**24**
Measure 2: $\frac{EBITDA}{Sales}$							
	-3	18.17	30	6.54	17	0.63	18
	-2	18.55	33	0.74	22	-0.68	20
	-1	20.15	36	4.43	26	4.57	24
Median pre-acquisition performance		19.53	36	2.36	26	2.34	24
	1	13.15	36	3.49	26	1.90	24
	2	13.04	36	2.10	25	-0.93	24
	3	13.31	36	1.18	24	1.79	24
Median post-acquisition performance		13.30	36	3.02	26	0.76	24
Median difference		**0.94**	**36**	**0.10**	**26**	**0.22**	**24**
Measure 3: $\frac{EBITDA}{TMV}$							
	-3	0.01	26	-0.003	14	-0.003	16
	-2	0.02	31	-17.19	19	-0.01	18
	-1	0.01	35	-0.01	23	-0.01	23
Median pre-acquisition performance		0.02	35	-0.01	23	-0.01	23
	1	0.02	35	-0.01	23	-0.01	23
	2	0.02	35	-18.84	23	-0.01	23
	3	0.01	35	-0.003	22	-0.004	23
Median post-acquisition performance		0.02	35	-0.01	23	-0.004	23
Median difference		**0.32**	**35**	**0.73**	**23**	**0.31**	**23**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\,Assets}$							
	-3	14.08	25	7.79	14	3.29	12
	-2	15.00	28	7.67	19	-0.23	16
	-1	12.67	30	-0.29	20	-3.49	18
Median pre-acquisition performance		13.99	30	1.40	20	0.30	18
	1	13.62	30	6.28	20	3.70	18
	2	11.74	30	-5.98	20	-1.67	18
	3	11.19	30	1.35	19	-2.31	18
Median post-acquisition performance		11.87	30	2.83	20	-1.67	18
Median difference		**1.26**	**30**	**0.80**	**20**	**1.05**	**18**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$							
	-3	17.22	27	5.75	13	11.63	12
	-2	17.93	29	3.81	18	-0.68	16
	-1	20.11	31	5.14	20	-2.36	18
Median pre-acquisition performance		16.99	31	2.86	20	2.25	18
	1	12.95	31	9.16	20	8.89	18
	2	11.65	31	1.54	20	2.98	18
	3	11.99	31	-0.66	20	3.32	18
Median post-acquisition performance		12.27	31	3.00	20	4.31	18
Median difference		**1.09**	**31**	**0.28**	**20**	**0.24**	**18**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$							
	-3	0.02	26	-0.004	12	0.002	12
	-2	0.02	27	-0.30	16	-0.01	15
	-1	0.02	30	-0.01	18	-0.01	17
Median pre-acquisition performance		0.02	30	-0.01	18	-0.01	17
	1	0.02	30	0.01	18	-0.01	17
	2	0.02	30	-0.85	18	-0.01	17
	3	0.01	30	0.001	18	-0.01	17
Median post-acquisition performance		0.02	30	-0.002	18	-0.01	17
Median difference		**0.02**	**30**	**0.68**	**18**	**0.76**	**17**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 7: $\frac{EBIT}{BV_{assets}}$							
	-3	8.43	32	4.02	19	1.15	17
	-2	7.30	36	-2.27	23	-1.05	20
	-1	9.24	39	1.88	26	1.18	24
Median pre-acquisition performance		8.49	39	2.88	26	0.82	24
	1	8.30	39	1.48	26	-1.98	24
	2	8.61	39	1.77	26	-2.38	24
	3	4.59	39	-1.09	26	-0.41	24
Median post-acquisition performance		7.40	39	1.36	26	0.02	24
Median difference		**1.10**	**39**	**1.13**	**26**	**0.98**	**24**
Measure 8: $\frac{EBIT}{BV_{equity}}$							
	-3	26.85	31	2.36	17	-5.68	17
	-2	31.70	35	0.54	22	3.55	20
	-1	34.71	39	4.09	26	2.17	24
Median pre-acquisition performance		32.49	39	6.70	26	2.92	24
	1	25.52	39	-20.67	26	-5.63	24
	2	24.94	39	-16.15	26	-6.52	24
	3	19.84	39	-14.24	25	-8.51	24
Median post-acquisition performance		27.08	39	-17.96	26	-5.84	24
Median difference		**1.04**	**39**	**3.14 *****	**26**	**1.62**	**24**

Median difference between the median post- acquisition performance and median pre-acquisition performance of combined firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The raw performance of the firms (without adjustment) show statistically insignificant positive changes in the operating performance of combined firms for all the performance measures and benchmarks used.

Similar to the results of the industry-adjusted performance for the full sample, the results for the cross-border sample didn't show any significant differences between the median post- and

median pre-acquisition performance for all the measures used except measure 8 which shows a significant increase in operating performance by 3.14%.

When the adjustment is made for the industry, size and pre-acquisition performance, the results reveal insignificant positive differences between the median post- and median pre-acquisition performance for all the performance measures used.

The results for the cross-border sample whether being raw, industry-adjusted or industry, size and pre-acquisition adjusted performance show insignificant positive changes in the operating performance of combined firms.

4.4.1.1.3 Domestic Sample

Table 4.5 presents the empirical results of the change model for the domestic sample of acquisitions using different performance measures and benchmarks.

Table 4.5: Analysis (A) Operating Performance Changes of Combined Firms (Domestic Sample)

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 1: $\frac{EBITDA}{Total\ Assets}$							
	-3	13.65	52	0.21	40	-2.12	42
	-2	12.60	53	0.30	41	-1.28	43
	-1	11.70	57	-0.82	50	-3.41	49
Median pre-acquisition performance		13.02	57	0.21	50	-2.02	49
	1	11.81	57	-0.24	50	-1.85	49
	2	10.22	57	-0.50	48	-1.81	48
	3	11.38	57	-1.45	49	-1.84	48
Median post-acquisition performance		11.70	57	-0.50	50	-1.69	49
Median difference		**1.15**	**57**	**0.33**	**50**	**0.96**	**49**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 2: $\dfrac{EBITDA}{Sales}$							
	-3	13.82	52	-1.87	40	-7.12	42
	-2	12.65	53	-3.26	41	-6.23	43
	-1	12.29	58	-2.89	50	-5.85	49
Median pre-acquisition performance		12.83	58	-2.06	50	-6.45	49
	1	11.98	58	-0.06	50	-1.68	49
	2	12.66	58	1.43	48	1.41	48
	3	11.55	58	-0.22	48	1.03	48
Median post-acquisition performance		13.31	58	1.66	50	1.11	49
Median difference		**0.27**	**58**	**1.32**	**50**	**2.32 ****	**49**
Measure 3: $\dfrac{EBITDA}{TMV}$							
	-3	0.01	51	-0.003	39	-0.002	40
	-2	0.01	52	-7.13	39	-0.002	40
	-1	0.01	58	-0.01	50	-0.002	49
Median pre-acquisition performance		0.01	58	-0.01	50	-0.001	49
	1	0.02	58	-0.001	50	-0.001	49
	2	0.01	58	-10.19	47	0.001	48
	3	0.02	58	0.002	48	0.001	48
Median post-acquisition performance		0.02	58	-0.01	50	0.001	49
Median difference		**0.90**	**58**	**0.20**	**50**	**1.59**	**49**
Measure 4: $\dfrac{(EBITDA-\Delta WC)}{Total\ Assets}$							
	-3	14.72	42	4.92	30	-3.79	29
	-2	13.86	45	-1.47	30	-5.61	35
	-1	11.45	48	1.19	33	-5.22	41
Median pre-acquisition performance		12.24	48	1.13	33	-4.55	41
	1	11.39	48	-1.60	33	0.77	41
	2	10.65	48	-1.45	31	0.79	40
	3	12.25	48	-0.05	29	-0.54	40
Median post-acquisition performance		11.60	48	-0.05	33	0.48	41
Median difference		**1.38**	**48**	**0.06**	**33**	**2.50 ****	**41**

	Year	Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$							
	-3	13.28	43	-3.56	-30	-8.13	29
	-2	10.91	46	-1.71	30	-7.17	35
	-1	12.18	49	-3.29	34	-6.23	41
Median pre-acquisition performance		11.54	49	-5.15	34	-7.30	41
	1	12.15	48	0.74	34	1.41	40
	2	11.45	49	1.75	32	5.15	40
	3	12.85	49	-1.89	30	0.64	40
Median post-acquisition performance		11.74	49	0.74	34	1.81	41
Median difference		**0.55**	**49**	**0.37**	**34**	**3.24 *****	**41**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$							
	-3	0.01	43	0.01	29	-0.001	27
	-2	0.01	46	-0.01	28	-0.002	31
	-1	0.02	49	-0.002	34	-0.01	40
Median pre-acquisition performance		0.01	49	-0.001	34	-0.01	40
	1	0.02	48	-0.002	34	0.003	40
	2	0.02	49	-0.01	32	0.004	39
	3	0.02	49	-0.01	30	0.01	39
Median post-acquisition performance		0.02	49	-0.002	34	0.003	40
Median difference		**0.46**	**49**	**0.03**	**34**	**2.99 *****	**40**
Measure 7: $\dfrac{EBIT}{BV_{assets}}$							
	-3	9.25	54	-0.08	40	-1.39	42
	-2	8.58	56	0.80	41	-0.65	43
	-1	7.58	60	-0.82	50	-2.60	49
Median pre-acquisition performance		9.02	60	-0.06	50	-1.07	49
	1	7.63	60	0.22	50	-1.32	49
	2	6.02	60	-0.20	48	-1.57	48
	3	7.45	60	-2.87	46	-0.97	48
Median post-acquisition performance		6.98	60	-0.76	50	-1.27	49
Median difference		**1.37**	**60**	**0.64**	**50**	**0.82**	**49**

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		Raw' performance		Industry-adjusted		Industry, Size and Performance - adjusted	
	Year	median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 8:	$\dfrac{EBIT}{BV_{equity}}$						
	-3	24.83	54	1.73	40	-5.10	42
	-2	22.61	56	0.57	41	-2.21	43
	-1	19.60	60	-4.01	50	-6.02	49
Median pre-acquisition performance		23.74	60	-3.92	50	-2.75	49
	1	19.09	60	-11.05	50	-3.85	49
	2	20.42	60	1.87	48	1.69	48
	3	22.39	60	-0.48	48	0.13	48
Median post-acquisition performance		23.48	60	0.37	50	3.30	49
Median difference		**0.53**	**60**	**0.28**	**50**	**1.99 ****	**49**

Median difference between the median post- acquisition performance and median pre-acquisition performance of combined firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results for the domestic sample show that the changes in the raw performance of firms (without adjustment) is not significant for all the performance measures used, similarly to the results of cross-border sample.

Also, when the adjustment is made for the industry median performance, the results for the domestic sample do not show any significant differences between the median post- and median pre-acquisition performance of combined firms for all the performance measures used.

However, when the adjustment is made for the industry, size and pre-acquisition performance the results reveal significant positive improvements in the operating performance of combined firms for five out of the eight measures used including all the three 'pure' cash flow measures.

The results of the change model are of great similarity to the results presented by Powell and Stark (2005) since they found that UK takeovers generate significant as well as insignificant improvements in operating performance of firms. However, their results as well as the results presented previously in Tables 4.3, 4.4 and 4.5 show some sensitivity to the performance measures, performance benchmarks and deflators used.

The results show that the use of a 'pure' cash flow measure of performance, which adjusts for changes in working capital, results in larger improvements in post-takeover performance than other accrual and cash flow measures. Also, the performance benchmark used seems to have a significant impact on the results. For example, using a benchmark of matched firms that controls for the industry, size and pre-acquisition performance usually gives higher improvements in the estimated performance relative to benchmarks which control for the industry performance only.

The results for the domestic sample show more significant improvements in the operating performance of combined firms than cross-border sample, especially when the adjustment is made for the industry, size and pre-acquisition performance. This suggests that cross-border acquisitions yield less cash flow and operating performance than domestic acquisitions.

4.4.1.2 Intercept Model Results

Table 4.6 presents the results of the intercept model using different performance measures with different deflators and two performance benchmarks for the full, cross-border and domestic samples.

Models 1, 3 and 4 show the results of the intercept model using an industry-adjusted median performance for the full, cross-border and domestic acquisitions respectively. Models 5, 7 and

8 show the results for the full, cross-border and domestic samples respectively from using a matched group based on the industry, size and pre-acquisition performance.

Models 2 and 6 in Table 4.6 extend the intercept model results by adding the cross-border dummy in order to check the impact of cross-border acquisitions on the changes in operating performance of firms for the industry-adjusted and industry, size and pre-acquisition-adjusted performance respectively.

Table 4.6: Regression of Post-takeover-adjusted Performance of Combined Firms on Pre-takeover-adjusted Performance/ Analysis (A)

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.022* (-1.86)	-0.014 (-0.96)	-0.039 (-1.53)	-0.013 (-1.07)	-0.010 (-1.14)	0.002 (0.22)	-0.030* (-1.65)	0.007 (0.82)
Pre-acquisition performance	0.203* (1.67)	0.204* (1.68)	0.126 (0.55)	0.269** (1.96)	0.398*** (6.09)	0.429*** (6.51)	0.329*** (3.02)	0.566*** (6.78)
Cross-border		-0.022 (-0.97)				-0.033** (-1.97)		
F-statistic	2.79	1.86	0.30	3.85**	37.09***	21.25***	9.12**	45.95***
p.value	0.10	0.16	0.59	0.06	0.00	0.00	0.01	0.00
Adjusted R^2	0.02	0.02	-0.03	0.06	0.34	0.36	0.26	0.49
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	0.033 (1.16)	0.047 (1.33)	0.011 (0.16)	0.053** (2.10)	0.020 (0.79)	0.032 (1.08)	-0.007 (-0.13)	0.083*** (3.57)
Pre-acquisition performance	0.163*** (3.06)	0.161*** (2.98)	0.129* (1.67)	0.506*** (3.89)	0.052* (1.81)	0.056* (1.92)	0.043 (1.24)	1.001*** (5.76)
Cross-border		-0.038 (-0.67)				-0.038 (-0.76)		
F-statistic	9.33***	4.85**	2.80	15.11***	3.29*	1.92	1.53	33.22***
p.value	0.00	0.01	0.11	0.00	0.07	0.15	0.23	0.00
Adjusted R^2	0.101	0.09	0.07	0.23	0.03	0.03	0.02	0.41
Measure 3: $\frac{EBITDA}{TMV}$								
Intercept	-0.002 (-0.75)	-0.003 (-1.08)	0.001 (0.36)	-0.002 (-0.64)	-0.003 (-0.94)	0.002 (0.58)	-0.002 (-1.61)	0.003 (1.63)
Pre-acquisition performance	0.260*** (3.80)	0.28*** (4.11)	0.278*** (4.80)	16.30 (1.28)	-0.002** (-2.20)	-0.002** (-2.07)	-0.044 (-0.12)	-0.002*** (-4.55)
Cross-border		-0.004 (0.84)				-0.0002** (-2.47)		
F-statistic	16.52***	8.58***	23.09***	1.63	4.81**	5.62**	0.02	20.71***
p.value	0.00	0.00	0.00	0.21	0.03	0.01	0.90	0.00
Adjusted R^2	0.18	0.18	0.50	0.01	0.05	0.12	-0.05	0.30

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition performance adjusted			
	Full		**CB**	**D**	**Full**		**CB**	**D**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Measure 4: $\frac{(EBITDA - \Delta WC)}{Total\ Assets}$								
Intercept	-0.007 (-0.40)	0.001 (0.04)	-0.020 (-0.57)	0.001 (0.07)	-0.001 (-0.04)	0.016 (1.03)	-0.024 (-1.01)	0.026* (1.68)
Pre-acquisition performance	-0.129 (-1.05)	-0.128 (-1.04)	-0.106 (-0.38)	-0.137 (-1.12)	0.161* (1.69)	0.222** (2.24)	-0.029 (-0.21)	0.43*** (3.36)
Cross-border		-0.021 (-0.58)				-0.048* (-1.80)		
F-statistic	1.11	0.71	0.15	1.25	0.55	3.10*	0.04	11.26***
p.value	0.30	0.49	0.71	0.27	53.05	0.05	0.84	0.00
Adjusted R^2	0.002	-0.01	-0.05	0.01	0.03	0.07	-0.06	0.21
Measure 5: $\frac{(EBITDA - \Delta WC)}{Sales}$								
Intercept	-0.021 (-0.45)	0.020 (0.35)	-0.081 (-0.93)	0.006 (0.12)	0.017 (0.57)	0.022 (0.62)	0.004 (0.06)	0.112*** (3.87)
Pre-acquisition performance	1.062*** (12.72)	1.05*** (12.58)	1.112*** (10.86)	0.384* (1.67)	-0.423*** (-8.65)	-0.420*** (-8.27)	-0.451*** (-8.20)	1.034*** (4.39)
Cross-border		-0.109 (-1.16)				-0.016 (-0.26)		
F-statistic	16.17***	8.21***	11.79***	2.79	7.48***	36.83***	6.72***	19.31***
p.value	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
Adjusted R^2	0.76	0.76	0.86	0.05	0.56	0.56	0.80	0.32
Measure 6: $\frac{(EBITDA - \Delta WC)}{TMV}$								
Intercept	-0.002* (-1.81)	-0.004 (-0.27)	-0.001* (-1.73)	-0.003 (-0.79)	-0.002 (-0.60)	-0.004 (0.91)	-0.002** (-2.17)	0.005 (1.54)
Pre-acquisition performance	-0.002 (-0.39)	-0.005 (-0.95)	-0.005 (-0.57)	0.365 (1.51)	-0.001 (-0.55)	-0.001 (-0.34)	0.065 (0.82)	-0.001 (-0.45)
Cross-border		-0.001** (-2.21)				-0.002*** (-2.66)		
F-statistic	0.15	2.51*	0.32	2.29	0.31	3.70**	0.67	0.20
p.value	0.70	0.09	0.58	0.14	0.58	0.03	0.42	0.66
Adjusted R^2	-0.02	0.06	-0.04	0.04	-0.01	0.09	-0.02	-0.02
Measure 7: $\frac{EBIT}{BV_{assets}}$								
Intercept	-0.020* (-1.72)	-0.013 (-0.92)	-0.036 (-1.31)	-0.013 (-1.09)	-0.010 (-1.10)	0.002 (0.18)	-0.027 (-1.50)	0.009 (0.96)
Pre-acquisition performance	0.324*** (2.68)	0.331*** (2.73)	0.332 (1.42)	0.328** (2.48)	0.304*** (4.25)	0.335*** (4.64)	0.183* (1.72)	0.596*** (6.03)
Cross-border		-0.020 (-0.86)				-0.034* (-1.88)		
F-statistic	7.19**	3.95**	2.02	6.16**	18.03***	11.11***	2.97*	36.40***
p.value	0.01	0.02	0.17	0.02	0.00	0.00	0.09	0.00
Adjusted R^2	0.08	0.07	0.04	0.10	0.19	0.22	0.08	0.43

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 8: $\frac{EBIT}{BV_{equity}}$								
Intercept	-0.036 (-0.57)	0.033 (0.43)	-0.196 (-1.20)	0.029 (0.56)	0.021 (0.47)	0.078 (1.44)	-0.098 (-1.11)	0.086 (1.64)
Pre-acquisition performance	0.376* (1.93)	0.464** (2.31)	0.598 (1.52)	0.294 (1.50)	0.074 (0.89)	0.100 (1.20)	0.101 (0.54)	0.112 (1.23)
Cross-border		-0.197 (0.13)				-0.159* (-1.80)		
F-statistic	3.73*	3.09*	2.30	2.24	0.79	2.02	0.29	1.52
p.value	0.06	0.05	0.14	0.14	0.38	0.14	0.59	0.22
Adjusted R^2	0.04	0.05	0.05	0.03	-0.003	0.03	-0.03	0.01

***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

4.4.1.2.1 Full Sample

The results for the full sample presented by model (1) show no significant changes between the post- and pre-acquisition industry-adjusted performance of firms for five out of the eight measures used. However, measures 1, 6 and 7, which are the cash flow measure deflated by total assets, the 'pure' cash flow measure deflated by the total market value and the accrual measure deflated by total assets, show negative changes in performance that are statistically significant at the 10% level.

Moreover, when controlling for the industry, size and pre-acquisition performance of firms the results for the full sample shown by model (5) yield no significant changes in the operating performance of combined firms between the post- and pre-acquisition adjusted performance for all the eight performance measures used whether being cash flow, 'pure' cash flow or accrual measures. Those insignificant results are different from the results of Powell and Stark (2005) that show some significant improvements in the operating

performance of combined firms evidenced by some positive intercepts, but are similar to the results of Ghosh (2001).

4.4.1.2.2 Cross-border Sample

The results for the examination of the cross-border sample show insignificant changes in the industry-adjusted operating performance of combined firms for all the measures used except measure 6, which is the 'pure' cash flow deflated by total market value, which shows significant negative changes in the operating performance of combined firms as shown in model (3). When the adjustment is made for the industry, size and pre-acquisition performance, the results show insignificant changes in the operating performance of combined firms except for measures 1 and 6, which are the cash flow deflated by total assets and the 'pure' cash flow deflated by total market value, that show negative changes in the operating performance of combined firms.

4.4.1.2.3 Domestic Sample

The results for the domestic sample presented in model (4) also show insignificant changes between the post- and pre-acquisition industry-adjusted performance of firms for all the performance measures used except measure 2, which is the cash flow deflated by sales, that shows significant positive changes in the operating performance of combined firms. However, when the control is made for the industry, size and pre-acquisition performance of firms, the results show insignificant changes in the operating performance of combined firms for five out of the eight measures used as shown in model (8). The other three measures, which are the cash flow measure deflated by sales and the 'pure' cash flow measure deflated by total assets and sales, respectively show statistically significant positive improvements in operating performance of combined firms.

4.4.1.2.4 Cross-border Effect

The examination of the impact of cross-border M&As on changes in operating performance of combined firms is presented by models (2) and (6) for the industry and industry, size and pre-acquisition adjusted performance of combined firms respectively. When the adjustment is made for the industry median performance, the results do not show any significant impact of cross-border deals on post-acquisition adjusted performance of combined firms for all the measures used except measure 6, which is the 'pure' cash flow scaled by total market value, that shows a significant negative impact of cross-border acquisitions on post-acquisition performance of combined firms.

On the other hand, when the matching is done by the industry, size and pre-acquisition performance of firms, the results have shown significant negative impact of cross-border acquisitions on post-acquisition performance of combined firms for all the measures used except the cash flow and 'pure' cash flow measures scaled by sales, which show a statistically insignificant negative impact.

The results for the industry, size and pre-acquisition adjusted performance show more significant negative impacts for the cross-border acquisitions on the post-acquisition performance of combined firms than the industry-adjusted performance results. Also, the results of the intercept model show that combined firms involved in cross-border mergers and acquisitions have a significantly lower operating performance than combined firms involved in domestic mergers and acquisitions, especially when the benchmark controls for the industry, size and pre-acquisition performance of firms.

4.4.1.2.5 The Relationship between Post- and Pre-acquisition Performance

The slope coefficients presented by the pre-acquisition performance in Table 4.6 show the relationship between the post-acquisition adjusted performance and pre-acquisition adjusted

performance of combined firms. The majority of those slope coefficients are significant, which suggests a relationship between the post- and pre-acquisition performance.

When the adjustment of the operating performance is made only by industry, the results of the measures for the full, cross-border and domestic samples show either insignificant relationships between the post- and pre-acquisition performance of firms or a significant positive relationship, which suggests that high pre-acquisition performance of acquirer and target firms is associated with higher post-acquisition performance for combined firms.

When the adjustment is made on the basis of industry, size and pre-acquisition performance, the results for the full, cross-border and domestic samples are mixed with some of them being significantly positive, other being significantly negative whereas the others show an insignificant relationship between post-and pre-acquisition performance of firms.

The difference in the performance benchmark used may explain the contradictory results across many of the previous studies and highlights the importance of the adjustment approach.

4.4.1.3 Change Model vs. Intercept Model Results

Table 4.7 compares between the results of the change model and the intercept model in order to check whether or not the intercept model yields conclusions different from the change model.

Table 4.7: Change Model vs. Intercept Model

Analysis A: Median change in operating performance (%)

| Measure | Industry adjusted | | | | | | Industry, Size and Performance adjusted | | | | | |
| | Change model | | | Intercept model | | | Change model | | | Intercept model | | |
	Full	CB	D	Full	CB	D	Full	CB	D	Full	CB	D
Measure 1	+1	+1.2	+0.3	-2.2*	-3.9	-1.3	+0.3	+0.8	+1.0	-1	-3*	+0.7
Measure 2	+1	+0.1	+1.3	+3.3	+1.1	+5.3**	+1.7*	+0.2	+2.3**	+2.0	-0.7	+8.3***
Measure 3	+0.2	+0.7	+0.2	-0.2	+0.1	-0.2	+1.1	+0.3	+1.6	-0.3	-0.02	+0.3
Measure 4	+0.5	+0.8	+0.1	-0.7	-2	+0.1	+1.5	+1.1	+2.5**	-0.1	-2.4	+2.6*
Measure 5	+0.2	+0.3	+0.4	-2.1	-8.1	+0.6	+2.5**	+0.2	+3.2***	+1.7	+0.4	+11.2***
Measure 6	+0.4	+0.7	+0.0	-0.02*	-0.1*	-0.3	+2.1**	+0.8	+3.0***	-0.2	-0.02**	+0.5
Measure 7	+1.1	+1.1	+0.6	-2.0*	-3.6	-1.3	+0.1	+1.0	+0.8	-1	-2.7	+0.9
Measure 8	+1.8*	+3.1***	+0.3	-3.6	-19.6	+2.9	+0.5	+1.6	+2.0**	+2.1	-9.8	+8.6

The results presented in Table 4.7 show that the change model gives higher estimates of improvements in the industry-adjusted operating performance of firms than the intercept model for the full, cross-border and domestic samples for most of the measures used. However, measure 2, which is the cash flow measure deflated by sales, shows higher improvements for the full, cross-border and domestic samples using the intercept model over the change model even though the results are not significant. Also, measures 5 and 8, which are the 'pure' cash flow measure deflated by sales and the accrual measure deflated by the book value of equity, respectively show higher improvements for the domestic sample using the intercept model.

When the adjustment is made on the basis of the industry, size and pre-acquisition performance, the change model also shows higher estimates of operating performance improvements than the intercept model for the full, cross-border and domestic samples for

most of the measures used. However, measures 2 and 5, which are the cash flow and 'pure' cash flow measures scaled by sales for the domestic sample, show higher significant estimates of performance improvements using the intercept model over the change model.

The comparison of the changes in adjusted-operating performance of combined firms between the change model and intercept model results show higher estimates of operating performance improvements when the change model is used in comparison with the intercept model. This differs from the results of Powell and Stark (2005) and Martynova et al. (2007) who show higher estimates of operating performance from the intercept model in comparison with the change model. Those contradictory results may be related to the different samples and different time periods examined.

4.4.1.4 Regression Analysis

Table 4.8 presents the results of the regression analysis tests conducted for different performance measures and benchmarks for the whole, cross-border and domestic samples. It investigates whether any improvements in the performance of combined firms can be explained by some of the deals' characteristics using a multiple regression analysis. The variables which are examined are: whether the merger is a domestic or cross-border, the payment method, relative size and the industrial relatedness.

The dependent variable is the median post-acquisition operating performance of combined firms adjusted for the industry and industry, size and pre-acquisition performance for the full, cross-border and domestic samples using eight different measures of operating performance.

The independent variables (explanatory variables) are as follows:

Cross-border = dummy variable equal to one, if target is cross-border, zero if domestic

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Cross-border*Pre-performance = cross-border dummy multiplied by the pre-acquisition adjusted performance (shows whether there is a significant difference between the effect of pre-acquisition adjusted performance on post-acquisition adjusted performance for domestic mergers and acquisitions and cross-border mergers and acquisitions)

Cash Payment = dummy variable equal to one, if payment is made with cash, zero if not

Mixed Payment = dummy variable equal to one if payment is made with a mix of cash, shares or other payments, zero if not

Related = dummy variable equal to one if the acquirer and target firms are from the same industrial group (Datastream Industrial Classification Level 4) in year -1, zero if not

Relative Size = the relative size of the target to the acquirer, which is the ratio of the total assets of the target in year -1 to the total assets of acquirer in year -1.

Table 4.8: Regression Analysis of Determinants of Post-acquisition Performance/Analysis (A)

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition adjusted performance			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.044*	-0.026	-0.046	-0.032	-0.026	0.006	-0.012	-0.017
	(-1.66)	(-0.80)	(-0.98)	(-0.95)	(-1.40)	(0.27)	(-0.41)	(-0.77)
Pre-acquisition adj. performance	0.256*	0.355*	0.272	0.336**	0.415***	0.606***	0.290***	0.581***
	(1.83)	(1.88)	(0.85)	(2.14)	(6.46)	(6.23)	(2.83)	(6.88)
Controls								
Cross-border		-0.028				-0.037**		
		(-1.02)				(-2.10)		
Cross-border*Pre-performance		-0.164				-0.283**		
		(-0.58)				(-2.16)		
Cash Payment	0.032	0.024	0.009	0.027	0.029	0.011	-0.024	0.033
	(1.06)	(0.74)	(0.10)	(0.80)	(1.42)	(0.57)	(-0.56)	(1.46)
Mix Payment	-0.006	-0.013	-0.079	0.025	-0.016	-0.034	-0.092**	0.014
	(-0.17)	(-0.37)	(-1.07)	(0.66)	(-0.72)	(-1.57)	(-2.38)	(0.57)
Industrial Relatedness	0.015	0.009	0.030	-0.007	0.012	0.009	0.024	-0.003
	(0.60)	(0.34)	(0.51)	(-0.25)	(0.70)	(0.57)	(0.69)	(-0.16)
Relative Size	0.007	0.007	0.006	0.0005	0.006	0.007*	0.006	0.0005*
	(1.03)	(1.12)	(0.68)	(1.30)	(1.39)	(1.68)	(1.11)	(1.94)
F-statistic	1.37	1.21	0.63	1.61	9.20***	8.53***	3.91	11.74***
p.value	0.25	0.31	0.68	0.18	0.00	0.00	0.01	0.00
Adjusted R^2	0.03	0.02	-0.09	0.06	0.37	0.43	0.39	0.53
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	0.041	0.100	0.029	0.057	-0.038	0.021	-0.012	0.023
	(0.70)	(1.50)	(0.28)	(0.84)	(-0.70)	(0.35)	(-0.14)	(0.38)
Pre-acquisition adj. performance	0.177***	0.524***	0.162**	0.556***	0.050*	0.887***	0.034	1.020***
	(3.46)	(3.11)	(2.18)	(4.25)	(1.74)	(3.00)	(1.01)	(5.51)
Controls								
Cross-border		-0.105*				-0.057		
		(-1.86)				(-1.16)		
Cross-border*Pre-performance		-0.385**				-0.846***		
		(-2.18)				(-3.84)		
Cash Payment	0.019	-0.002	-0.065	0.073	0.067	0.043	0.080	0.060
	(0.29)	(-0.03)	(-0.38)	(1.05)	(1.13)	(0.76)	(0.65)	(0.99)
Mix Payment	-0.090	-0.088	-0.257*	0.039	-0.042	-0.023	-0.194*	0.095
	(-1.22)	(-1.21)	(-1.65)	(0.52)	(-0.65)	(-0.38)	(-1.74)	(1.47)
Industrial Relatedness	-0.002	-0.017	0.040	-0.055	0.065	0.059	0.074	0.012
	(-0.04)	(-0.31)	(0.29)	(-1.06)	(1.31)	(1.28)	(0.73)	(0.27)
Relative Size	0.0001	0.0001	0.0001	-0.001	0.0002	0.0002	0.0002	-0.001
	(0.74)	(0.99)	(0.67)	(-0.97)	(1.43)	(1.58)	(1.28)	(-0.74)
F-statistic	3.17**	3.54***	1.53	4.21***	2.03*	3.90***	1.91	7.05***
p.value	0.01	0.00	0.23	0.00	0.09	0.00	0.14	0.00
Adjusted R^2	0.13	0.20	0.10	0.26	0.07	0.22	0.17	0.39

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition adjusted performance			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 3: $\dfrac{EBITDA}{TMV}$								
Intercept	0.002 (0.47)	0.002 (0.28)	0.001 (0.26)	0.004 (0.55)	-0.010 (-1.26)	-0.001 (-0.09)	-0.0001 (-0.77)	0.0005 (0.09)
Pre-acquisition adj. performance	0.269*** (3.95)	15.785 (1.23)	0.279*** (4.47)	16.894 (1.24)	-0.002** (-2.28)	-0.002** (-2.20)	-0.008 (-0.02)	-0.002*** (-4.16)
Controls								
Cross-border		0.001 (0.22)				-0.0001* (-1.87)		
Cross-border*Pre-performance		-15.507 (-1.21)				-0.028 (-0.13)		
Cash Payment	-0.004 (-0.72)	-0.003 (-0.49)	0.009 (0.99)	-0.006 (-0.89)	0.008 (0.97)	0.003 (0.35)	0.0001 (0.56)	0.001 (0.24)
Mix Payment	-0.003 (-0.54)	-0.002 (-0.39)	-0.009 (-1.15)	0.0004 (0.05)	-0.007 (-0.80)	-0.0001 (-1.14)	-0.0004 (-1.41)	0.003 (0.55)
Industrial Relatedness	-0.003 (-0.63)	-0.002 (-0.50)	0.001 (0.17)	-0.005 (-0.87)	0.0001 (1.50)	0.009 (1.16)	0.0001 (0.56)	0.001 (0.23)
Relative Size	-0.0001 (-0.07)	-0.0001 (-0.09)	-0.0002 (-0.23)	0.005 (0.62)	-0.00002 (-0.84)	-0.000 (-0.53)	-0.00001 (-0.36)	0.00004 (0.74)
F-statistic	3.32**	2.58**	5.17**	0.71	2.32*	2.20*	0.85	4.05***
p.value	0.01	0.02	0.01	0.62	0.05	0.05	0.54	0.00
Adjusted R^2	0.15	0.14	0.50	-0.03	0.09	0.11	-0.04	0.24
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$								
Intercept	-0.035 (-0.97)	-0.033 (-0.65)	-0.043 (-0.62)	-0.065 (-1.37)	-0.010 (-0.33)	0.023 (0.67)	0.033 (1.05)	0.007 (0.15)
Pre-acquisition adj. performance	-0.111 (-0.80)	-0.109 (-0.67)	0.497 (0.74)	-0.058 (-0.46)	0.152 (1.56)	0.405*** (3.13)	-0.186 (-1.46)	0.407** (2.84)
Controls								
Cross-border		-0.004 (-0.07)				-0.029 (-0.95)		
Cross-border*Pre-performance		0.002 (0.01)				-0.432** (-2.39)		
Cash Payment	0.059 (1.37)	0.057 (1.05)	-0.003 (-0.02)	0.089* (1.87)	0.016 (0.49)	-0.004 (-0.12)	0.015 (0.28)	0.003 (0.06)
Mix Payment	-0.010 (-0.21)	-0.012 (-0.20)	-0.211 (-1.50)	0.079 (1.44)	-0.005 (-0.14)	-0.035 (-0.97)	-0.148*** (-3.12)	0.007 (0.13)
Industrial Relatedness	0.028 (0.74)	0.028 (0.69)	0.071 (0.74)	0.024 (0.65)	0.013 (0.49)	0.023 (0.87)	-0.020 (-0.54)	0.030 (0.95)
Relative Size	-0.0004 (-0.86)	-0.0004 (-0.78)	-0.0001 (-0.15)	-0.001 (-1.39)	-0.0003 (-1.07)	-0.0002 (-0.81)	-0.004 (-0.16)	-0.001 (-0.87)
F-statistic	0.80	0.55	0.68	1.09	0.94	1.88	2.39	2.47*
p.value	0.56	0.79	0.65	0.39	0.47	0.09	0.10	0.05
Adjusted R^2	-0.02	-0.07	-0.10	0.02	-0.01	0.10	0.29	0.16

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition adjusted performance			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 5: $\frac{(EBITDA - \Delta WC)}{Sales}$								
Intercept	-0.093 (-0.97)	0.005 (0.04)	-0.038 (-0.27)	-0.107 (-0.81)	0.011 (0.16)	0.036 (0.53)	0.046 (0.477)	0.063 (0.85)
Pre-acquisition adj. performance	1.097*** (12.51)	0.440 (1.52)	1.182*** (11.12)	0.477* (1.87)	-0.458 (-0.56)	0.598** (2.19)	-0.480*** (-8.57)	0.895*** (3.62)
Controls								
Cross-border		-0.109 (-0.99)				-0.010 (-0.17)		
*Cross-border*Pre-performance*		-0.707** (2.35)				-1.074*** (-3.92)		
Cash Payment	0.080 (0.70)	-0.0003 (-0.003)	-0.053 (-0.18)	0.128 (0.97)	-0.038 (-0.53)	0.006 (0.09)	0.001 (0.01)	0.003 (0.04)
Mix Payment	-0.139 (-1.05)	-0.198 (-1.54)	-0.507* (-2.24)	0.057 (0.37)	-0.190** (-2.42)	-0.124* (-1.66)	-0.281** (-1.99)	-0.050 (-0.61)
Industrial Relatedness	0.142 (1.43)	0.097 (1.00)	0.117 (0.64)	0.090 (0.85)	0.136** (2.31)	0.122** (2.32)	0.072 (0.61)	0.101* (1.87)
Relative Size	-0.001 (-1.002)	-0.001 (-0.60)	-0.0004 (-0.22)	-0.002 (-1.09)	-0.010 (-0.19)	-0.0003 (-0.60)	0.0002 (0.32)	-0.001 (-1.35)
F-statistic	32.93***	27.14***	26.12***	1.01	19.40***	19.62***	15.54***	5.01***
p.value	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
Adjusted R^2	0.77	0.79	0.88	0.002	0.62	0.70	0.81	0.34
Measure 6: $\frac{(EBITDA - \Delta WC)}{TMV}$								
Intercept	-0.0005* (-1.82)	-0.007 (-0.23)	-0.001 (-1.15)	0.005 (0.42)	-0.0001 (-1.59)	-0.000 (-0.01)	-0.0002 (-1.39)	0.005 (0.48)
Pre-acquisition adj. performance	-0.003 (-0.53)	0.464 (0.56)	-0.007 (-0.59)	0.477* (1.87)	-0.001 (-0.60)	-0.001 (-0.50)	0.044 (0.40)	-0.001 (-0.36)
Controls								
Cross-border		-0.001* (-1.85)				-0.0002** (-2.38)		
*Cross-border*Pre-performance*		-0.470 (-0.57)				0.071 (1.20)		
Cash Payment	0.0004 (1.37)	0.0002 (0.47)	0.001 (0.59)	-0.006 (-0.46)	0.0001 (1.16)	-0.002 (-0.15)	0.010 (0.26)	-0.003 (-0.33)
Mix Payment	0.0003 (0.88)	0.0002 (0.57)	0.0004 (0.43)	-0.001 (-0.07)	-0.005 (-0.47)	-0.0001 (-1.29)	-0.0004 (-1.55)	-0.005 (-0.45)
Industrial Relatedness	-0.001 (-0.04)	-0.0001 (-0.46)	-0.0004 (-0.46)	-0.002 (-0.26)	0.0001* (1.88)	0.0001* (1.85)	0.0002 (0.79)	0.006 (0.86)
Relative Size	-0.0001 (-0.14)	0.00002 (0.07)	-0.0001 (-0.08)	-0.0001 (-0.74)	-0.0001 (-1.07)	-0.000 (-0.26)	0.00002 (0.20)	-0.0001 (-0.51)
F-statistic	0.43	0.84	0.17	0.82	1.69	2.16*	1.17	0.27
p.value	0.82	0.56	0.97	0.54	0.15	0.06	0.38	0.93
Adjusted R^2	-0.06	-0.02	-0.35	-0.03	0.06	0.13	0.05	-0.11

Independent variables	Industry-adjusted median				Industry, size and pre-acquisition adjusted performance			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 7: $\dfrac{EBIT}{BV_{assets}}$								
Intercept	-0.040	-0.018	-0.044	-0.033	-0.027	0.013	-0.002	-0.017
	(-1.54)	(-0.55)	(-0.88)	(-1.06)	(-1.34)	(0.60)	(-0.06)	(-0.67)
Pre-acquisition adj. performance	0.410**	0.423**	0.578*	0.408***	0.318***	0.639***	0.147	0.589***
	(3.02)	(2.32)	(1.66)	(2.84)	(4.38)	(5.56)	(1.44)	(5.55)
Controls								
Cross-border		-0.036				-0.041**		
		(-1.23)				(-2.21)		
*Cross-border*Pre-performance*		0.069				-0.459***		
		(0.24)				(-3.14)		
Cash Payment	0.032	0.016	-0.029	0.037	0.024	0.002	-0.031	0.031
	(1.09)	(0.50)	(-0.31)	(1.18)	(1.10)	(0.11)	(-0.71)	(1.22)
Mix Payment	0.003	-0.008	-0.062	0.031	-0.003	-0.030	-0.094**	0.025
	(0.08)	(-0.23)	(-0.82)	(0.89)	(-0.13)	(-1.28)	(-2.39)	(0.89)
Industrial Relatedness	0.006	0.003	0.022	-0.008	0.010	0.006	0.012	-0.001
	(0.25)	(0.10)	(0.35)	(-0.34)	(0.55)	(0.37)	(0.34)	(-0.07)
Relative Size	0.005	0.006	0.006	0.0001	0.005	0.006	0.005	0.0003
	(0.76)	(0.94)	(0.62)	(0.43)	(1.18)	(1.46)	(0.96)	(1.04)
F-statistic	2.28*	1.84*	0.78	2.17*	4.24***	5.57***	2.22	7.84***
p.value	0.06	0.09	0.58	0.08	0.00	0.00	0.10	0.00
Adjusted R^2	0.08	0.08	-0.05	0.11	0.19	0.31	0.21	0.42
Measure 8: $\dfrac{EBIT}{BV_{equity}}$								
Intercept	-0.165	0.030	-0.138	-0.003	-0.112	-0.037	-0.079	-0.094
	(-1.46)	(0.22)	(-0.77)	(-0.02)	(-1.15)	(-0.30)	(-0.52)	(-0.67)
Pre-acquisition adj. performance	0.148	0.280	0.537	0.378*	0.051	0.076	0.124	0.045
	(0.88)	(1.19)	(1.55)	(1.87)	(0.629)	(0.76)	(0.66)	(0.48)
Controls								
Cross-border		-0.289**				-0.114		
		(-2.25)				(-1.15)		
*Cross-border*Pre-performance*		0.074				-0.005		
		(0.22)				(-0.03)		
Cash Payment	0.214*	0.084	0.241	0.069	0.259**	0.215*	0.362	0.261*
	(1.68)	(0.61)	(0.80)	(0.49)	(2.44)	(1.84)	(1.62)	(1.83)
Mix Payment	0.186	0.086	-0.408	-0.298*	-0.216*	0.191	-0.080	-0.362**
	(1.30)	(0.57)	(-1.33)	(1.94)	(1.88)	(1.61)	(-0.39)	(2.47)
Industrial Relatedness	-0.070	-0.111	-0.299	-0.119	-0.070	-0.089	-0.186	-0.091
	(-0.66)	(-1.05)	(-1.31)	(-1.10)	(-0.79)	(-0.98)	(-1.02)	(-0.90)
Relative Size	-0.001	0.0001	0.008	-0.0002	-0.006	-0.001	-0.002	-0.002
	(-0.04)	(0.38)	(0.24)	(-0.001)	(-0.28)	(-0.06)	(-0.09)	(-1.06)
F-statistic	0.98	1.52	1.26	1.68	1.62	1.34	0.95	1.84
p.value	0.44	0.18	0.32	0.16	0.17	0.24	0.47	0.13
Adjusted R^2	-0.002	0.05	0.05	0.07	0.04	0.03	-0.01	0.08

Values between brackets are t-statistics.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level
CB: Cross-border sample
D: Domestic sample

4.4.1.4.1 Full Sample

Models (1) and (5) in Table 4.8 examine the impact of some of the deal characteristics on the post-acquisition operating performance of combined firms for the full sample using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

Models (2) and (6) extend the examination conducted by models (1) and (5) by adding a cross-border dummy and another variable (cross-border*pre-performance) in order to examine the impact of cross-border acquisition on the post-acquisition adjusted performance of firms, as well as to check whether there is a significant difference between the effect of pre-acquisition adjusted performance on post-acquisition adjusted performance for domestic mergers and acquisitions and cross-border mergers and acquisitions.

The results for the industry-adjusted performance model (1) do not show any significant impact for the deal characteristics on the post-acquisition adjusted performance of combined firms for all the measures used except measure 8, which is the accrual measure deflated by the book value of equity, which shows a positive impact from the cash method of payment on operating performance, which is significant at the 10% level.

On the other hand, model (2) shows a significant negative impact of cross-border acquisitions on the post-acquisition performance of firms in three out of the eight measures used, which are measures 2, 6 and 8. The results also show a negative impact from the pre-acquisition performance of cross-border deals on the post-acquisition performance of combined firms in comparison with domestic acquisitions using two performance measures, which are the cash flow and 'pure' cash flow measures scaled by sales.

The results for the industry, size and pre-acquisition adjusted performance presented by model (5) show a significant positive impact from the industrial relatedness on the post-acquisition performance of combined firms for measures 5 and 6, which are the 'pure' cash flow measures deflated by sales and total market value respectively. Also, measures 5 and 8 show a significant negative impact from the mixed payment method on the post-acquisition performance of combined firms. Moreover, measure 8 shows a significant positive impact of the cash payment method on post-acquisition performance of combined firms.

On the other hand, model (6) shows a significant negative impact of cross-border acquisitions on the post-acquisition performance of firms for four out of the eight measures used, which are measures 1, 3, 6 and 7. The results also show a negative impact from the pre-acquisition adjusted performance of cross-border deals on the post-acquisition adjusted performance of combined firms in comparison with domestic acquisitions using five performance measures, which are measures 1, 2, 4, 5 and 7.

4.4.1.4.2 Cross-border Sample

Models (3) and (7) in Table 4.8 examine the impact of some of the deal characteristics on the post-acquisition operating performance of combined firms who are involved in cross-border mergers and acquisitions using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

When the adjustment is made on the basis of the industry median performance, the results show insignificant impact of the deal characteristics on the post-acquisition adjusted performance of firms for all the measures used except measures 2 and 5, which are the cash flow and 'pure' cash flow measures scaled by sales that show significant negative impacts from the mixed method of payment on the post-acquisition performance of combined firms.

However, the results for the industry, size and pre-acquisition adjusted performance presented by model (7) show significant negative impacts from the mixed payment method on the post-acquisition performance of combined firms for five out of the eight measures used, which are the cash flow measures deflated by total assets and sales, the 'pure' cash flow measure scaled by total assets and sales and the accrual measure deflated by total assets. Those negative results from the mixed payment method on the post-acquisition adjusted performance support the arguments in the previous literature which suggest better results for takeovers financed by cash payments than takeovers involving equity or mixed payment methods (Ghosh, 2001 and Martynova et al., 2007).

4.4.1.4.3 Domestic Sample

Models (4) and (8) in Table 4.8 show the impact of some of the deal characteristics on the post-acquisition operating performance of combined firms involved in domestic M&As using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

The results for the industry-adjusted performance model (4) show an insignificant impact of the deal characteristics on the post-acquisition adjusted performance of firms for six out of the eight measures used. However, measure 4, which is the 'pure' cash flow measure scaled by total assets, shows a positive impact from the cash method of payment on the post-acquisition performance of combined firms and measure 8, which is the accrual measure deflated by the book value of equity, shows a significant negative impact of the mixed payment method.

The results for the industry, size and pre-acquisition adjusted performance presented by model (8) show a significant positive impact from the relative size of targets to acquirers on the post-acquisition performance of combined firms using the cash flow measure deflated by total assets, significant positive impact from the industrial relatedness between acquirer and target

firms using the 'pure' cash flow measure deflated by sales and a significant impact of the payment method using the accrual measure deflated by the book value of equity being positive for the cash and negative for the mixed payment method.

Most of the results show a significant positive impact of the cash payment method, a negative significant impact from the mixed payment method and a significant negative impact of cross-border acquisitions on the post-acquisition performance of combined firms.

However, the overall results of the regression analysis have provided little evidence about the ability of the other deal characteristics to explain the post-acquisition performance of combined firms across most of the performance measures, deflators and benchmarks used.

4.4.1.5 Summary of Analysis (A) Results

Analysis (A) examines the changes in the operating performance of acquirer and target firms combined using a sample of 98 pairs of acquirers and targets. The results for the full, cross-border and domestic samples are mixed, with some of them being significantly positive, others being significantly negative, whereas others are insignificant. Those inconsistencies in the results might be related to the different performance measures, benchmarks and methods used in the analysis. However, the majority of those results show insignificant changes in the operating performance of acquirer and target firms combined.

More specifically, when the adjustment is made for the industry median performance, the change model results show insignificant positive changes in the industry-adjusted operating performance of combined firms for all the measures used in the full, cross-border and domestic samples. However, measure 8, which is the accrual measure deflated by the book value of equity, shows significant positive changes in the operating performance of combined firms in the full and cross-border samples.

When the intercept model is used, the results show insignificant changes in the industry-adjusted operating performance of combined firms for most of the measures used for the full, cross-border and domestic samples. More specifically, the results for the full sample show insignificant changes in the operating performance of firms for five out of the eight measures used. However, measures 1, 6 and 7, which are the cash flow deflated by the book value of assets, the 'pure' cash flow deflated by total market value and the accrual measure deflated by the book value of total assets, show significant negative changes in the operating performance of combined firms.

For the cross-border sample, the results show insignificant changes for all the measures used except measure 6, which is the 'pure' cash flow deflated by total market value, which shows significant negative changes in the operating performance of firms. However, the domestic sample show insignificant changes for all the measures used except measure 2, which is the cash flow deflated by sales, which shows significant positive changes in the operating performance of combined firms.

When the control is made for the industry, size and pre-acquisition performance, most of the change model results show either insignificant or significant positive changes in the operating performance of combined firms. The results for the full sample show insignificant positive changes in the operating performance of acquirers for five out of the eight measures used. However, measures 2, 5 and 6, which are the cash flow and 'pure' cash flow measures both deflated by sales and the 'pure' cash flow deflated by total market value, show significant positive changes. The cross-border sample shows insignificant positive changes in the operating performance of combined firms for all the measures used. On the other hand, the domestic sample show significant positive changes in the operating performance of firms for

five out of the eight measures used, which are measures 2, 4, 5, 6 and 8, whereas there are insignificant changes for the other measures.

When the intercept model is used, the results of the different measures are contradictory with insignificant changes in the operating performance of firms for the full sample, insignificant negative changes in the operating performance of firms for the cross-border sample whereas there are insignificant positive changes in the operating performance of combined firms for the domestic sample.

The results for the change and intercept models suggest lower operating performance improvements for combined firms involved in cross-border M&As in comparison with domestic M&As and being significant when the adjustment is made on the basis of industry, size and pre-acquisition performance.

4.4.2 Results of Analysis (B)

This section presents the results of analysis (B) which contains the examination of the operating performance of 98 UK acquirer firms that are included in Analysis (A) in order to check whether or not the results from examining acquirer firms only are different from those of acquirer and target firms combined. Similar to the previous analysis, several measures, models and benchmarks were used in conducting the tests.

4.4.2.1 Change Model Results

The results of the change model show the difference between the median post-takeover performance and the median pre-takeover performance of UK acquirers for the full, cross-border and domestic samples using eight different measures and two performance benchmarks.

4.4.2.1.1 Full Sample

The empirical results for the change model are shown in Table 4.9 for the full sample of acquisitions.

Table 4.9: Analysis (B) Operating Performance Changes of UK Acquirer Firms (Full Sample)

Year	Raw' performance		Industry-adjusted		Industry, Size and Performance -adjusted	
	median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 1: $\dfrac{EBITDA}{Total\ Assets}$						
-3	15.80	81	2.29	57	-1.45	59
-2	15.66	85	2.29	62	-1.36	62
-1	14.28	92	1.07	75	-1.55	72
Median pre-acquisition performance	15.68	92	1.89	75	-1.20	72
1	13.11	92	0.04	75	-1.87	72
2	10.74	92	0.01	73	-3.47	71
3	10.78	92	-0.78	73	-2.16	71
Median post-acquisition performance	11.67	92	0.37	75	-1.73	72
Median difference	**3.10 ****	**92**	**2.00 ***	**75**	**0.63**	**72**
Measure 2: $\dfrac{EBITDA}{Sales}$						
-3	15.69	81	1.25	57	-2.52	59
-2	14.87	85	1.59	62	-1.23	62
-1	15.61	93	0.07	75	-2.24	72
Median pre-acquisition performance	14.91	93	1.10	75	-1.53	72
1	12.75	93	-0.58	75	-1.57	72
2	13.04	93	1.40	72	-0.35	71
3	12.69	93	-0.71	71	-1.01	71
Median post-acquisition performance	13.31	93	0.63	75	-0.004	72
Median difference	**1.16**	**93**	**0.06**	**75**	**0.08**	**72**
Measure 3: $\dfrac{EBITDA}{TMV}$						
-3	0.01	76	-0.001	52	0.001	55
-2	0.01	82	-24.50	57	0.001	57
-1	0.01	92	-0.003	72	-0.004	71
Median pre-acquisition performance	0.01	92	-0.01	72	-0.002	71
1	0.02	92	-0.001	72	-0.001	71
2	0.02	92	-22.56	70	-0.001	70
3	0.02	92	0.001	70	-0.001	70
Median post-acquisition performance	0.02	92	-0.004	72	-0.001	71
Median difference	**2.68 ****	**92**	**1.01**	**72**	**1.51**	**71**

	Raw' performance		Industry-adjusted		Industry, Size and Performance -adjusted	
Year	median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$						
-3	18.10	66	19.90	43	3.72	40
-2	15.40	73	4.47	48	0.19	50
-1	13.66	78	1.26	52	-0.02	58
Median pre-acquisition performance	15.75	78	6.09	52	0.52	58
1	8.74	78	2.92	52	0.56	58
2	7.95	78	0.28	50	-0.60	58
3	7.32	78	0.37	48	-1.47	58
Median post-acquisition performance	8.48	78	1.61	52	-0.70	58
Median difference	**6.26 *****	**78**	**2.30 ****	**52**	**0.67**	**58**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$						
-3	13.93	68	17.97	42	0.68	40
-2	13.13	74	1.42	47	-0.34	50
-1	11.70	80	-2.85	53	-1.26	58
Median pre-acquisition performance	12.76	80	3.15	53	-0.39	58
1	24.17	80	1.66	53	2.94	58
2	23.49	80	1.54	51	1.23	57
3	22.53	80	0.10	49	1.15	57
Median post-acquisition performance	24.71	80	1.06	53	2.24	58
Median difference	**3.89 *****	**80**	**0.66**	**53**	**1.29**	**58**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$						
-3	0.01	67	0.01	40	0.004	38
-2	0.01	72	-27.14	43	-0.002	45
-1	0.01	78	-0.003	51	-0.004	56
Median pre-acquisition performance	0.01	78	-0.01	51	-0.003	56
1	12.24	78	0.001	51	0.003	56
2	11.02	78	-21.31	49	0.00004	55
3	11.86	78	0.01	47	0.004	55
Median post-acquisition performance	11.79	78	-0.002	51	0.002	56
Median difference	**9.67 *****	**78**	**0.46**	**51**	**2.23 ****	**56**
Measure 7: $\dfrac{EBIT}{BV_{assets}}$						
-3	10.39	85	1.47	57	-1.56	58
-2	10.68	91	1.34	62	-1.09	62
-1	9.52	98	0.43	75	-1.15	72
Median pre-acquisition performance	10.50	98	1.45	75	-1.06	72
1	13.12	98	0.62	75	-1.43	72
2	11.40	98	-0.04	73	-3.05	71
3	12.40	98	-1.75	70	-0.90	71
Median post-acquisition performance	12.02	98	0.31	75	-1.34	72
Median difference	**1.99 ***	**98**	**1.72 ***	**75**	**0.64**	**72**

Year		Raw' performance		Industry-adjusted		Industry, Size and Performance -adjusted	
		median (%)	Nr. Obs	median (%)	Nr. Obs	median (%)	Nr. Obs
Measure 8:	$\dfrac{EBIT}{BV_{equity}}$						
-3		26.26	86	4.52	56	-3.22	58
-2		27.98	90	2.72	62	-0.07	62
-1		27.60	98	1.91	75	-1.48	72
Median pre-acquisition performance		26.98	98	3.81	75	-0.56	72
1		0.02	98	-4.30	75	-0.25	72
2		0.02	98	4.29	73	1.82	71
3		0.02	98	0.91	73	0.56	71
Median post-acquisition performance		0.02	98	2.68	75	2.38	72
Median difference		**10.61 *****	**98**	**1.37**	**75**	**0.07**	**72**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results for the raw performance of acquirers (without adjustment) presented in Table 4.9 show significant positive changes in operating performance of acquirers for all the measures used except measure 2, which is the cash flow measure deflated by sales. The positive significant results range between 1.99% and 10.61%. However, the result for measure 2 shows statistically insignificant positive changes in operating performance.

When the adjustment is made for the industry median performance, the results show significant positive changes in the operating performance of acquirer firms for three out of the eight measures used which are measures 1, 4 and 7, which all have a book value of total assets scale. However, the other measures didn't show any significant differences between the median post- and median pre-acquisition performance of acquirer firms.

On the other hand, when the control is made for the industry, size and pre-acquisition performance, the results show statistically insignificant positive differences between the median post- and median pre-acquisition performance of acquirer firms for all the measures

used except measure 6, which is the 'pure' cash flow deflated by total market value, which shows positive improvements of 2.23% and is significant at the 5% level.

4.4.2.1.2 Cross-border Sample

Table 4.10 presents the empirical results from using the change model for examining the cross-border sample of UK acquirer firms using different performance measures and benchmarks.

Table 4.10: Analysis (B) Operating Performance Changes of UK Acquirer Firms (Cross-border Sample)

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance -adjusted median (%)	Nr. Obs
Measure 1:	$\frac{EBITDA}{Total\ Assets}$					
-3	16.19	30	2.43	18	-1.45	18
-2	14.85	33	2.65	22	1.41	20
-1	14.64	36	1.31	26	-0.07	24
Median pre-acquisition performance	14.64	36	2.78	26	0.45	24
1	14.32	36	0.30	26	-2.01	24
2	11.37	36	0.37	26	-4.33	24
3	8.62	36	-0.61	25	-2.16	24
Median post-acquisition performance	11.52	36	0.37	26	-2.16	24
Median difference	**2.01 ****	**36**	**1.75 ***	**26**	**1.08**	**24**
Measure 2:	$\frac{EBITDA}{Sales}$					
-3	17.34	30	4.22	17	7.38	18
-2	17.30	33	0.84	22	2.94	20
-1	15.61	36	0.07	26	-1.62	24
Median pre-acquisition performance	16.13	36	2.67	26	2.94	24
1	13.56	36	0.39	26	0.06	24
2	13.05	36	1.36	25	-5.63	24
3	13.94	36	0.57	24	-3.31	24
Median post-acquisition performance	13.56	36	0.39	26	-3.49	24
Median difference	**0.95**	**36**	**13.58**	**26**	**1.38**	**24**

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance -adjusted median (%)	Nr. Obs
Measure 3: $\dfrac{EBITDA}{TMV}$						
-3	0.01	26	-0.003	14	0.003	16
-2	0.01	31	-27.92	19	0.001	18
-1	0.01	35	-0.003	23	-0.003	23
Median pre-acquisition performance	0.01	35	-0.01	23	-0.001	23
1	0.02	35	-0.002	23	-0.004	23
2	0.02	35	-20.70	23	-0.01	23
3	0.01	35	-0.002	23	-0.001	23
Median post-acquisition performance	0.02	35	-0.01	23	-0.004	23
Median difference	**1.71 ***	**35**	**1.19**	**23**	**0.69**	**23**
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$						
-3	18.14	25	33.35	14	7.44	12
-2	17.63	28	8.80	19	0.49	16
-1	11.70	30	2.46	20	-3.31	18
Median pre-acquisition performance	15.63	30	8.75	20	5.49	18
1	9.38	30	3.95	20	-3.23	18
2	8.90	30	-0.33	20	-0.65	18
3	4.77	30	0.37	20	-1.79	18
Median post-acquisition performance	9.38	30	2.03	20	-3.23	18
Median difference	**3.42 *****	**30**	**2.29 ***	**20**	**0.79**	**18**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$						
-3	11.53	27	24.42	13	8.88	13
-2	15.46	29	4.63	18	0.29	16
-1	11.67	31	4.05	20	-6.70	18
Median pre-acquisition performance	12.43	31	5.91	20	-2.36	18
1	25.52	31	8.89	20	6.88	18
2	24.53	31	1.22	20	0.83	18
3	19.84	31	1.19	20	3.12	18
Median post-acquisition performance	25.52	31	1.90	20	3.49	18
Median difference	**1.89 ***	**31**	**0.74**	**20**	**0.55**	**18**

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance -adjusted median (%)	Nr. Obs
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$						
-3	0.01	26	0.01	12	0.003	12
-2	0.01	27	-23.95	16	-0.01	15
-1	0.01	30	-0.01	18	-0.01	17
Median pre-acquisition performance	0.01	30	-0.02	18	-0.01	17
1	13.56	30	0.004	18	0.002	17
2	11.91	30	-24.59	18	-0.002	17
3	11.20	30	-0.002	18	-0.01	17
Median post-acquisition performance	11.91	30	-0.004	18	-0.001	17
Median difference	**5.18 *****	**30**	**1.34**	**18**	**0.47**	**17**
Measure 7: $\dfrac{EBIT}{BV_{assets}}$						
-3	10.29	32	2.36	19	1.42	17
-2	10.55	36	2.41	23	1.12	20
-1	9.02	39	1.30	26	0.45	24
Median pre-acquisition performance	9.90	39	2.34	26	2.04	24
1	13.31	39	1.54	26	-1.57	24
2	14.28	39	1.77	26	-3.37	24
3	12.43	39	-0.85	26	-0.61	24
Median post-acquisition performance	13.21	39	1.54	26	-1.36	24
Median difference	**1.75 ***	**39**	**1.22**	**26**	**1.34**	**24**
Measure 8: $\dfrac{EBIT}{BV_{equity}}$						
-3	29.35	31	3.89	17	-7.73	17
-2	33.94	35	3.46	22	6.76	20
-1	32.50	39	11.71	26	10.33	24
Median pre-acquisition performance	31.30	39	13.39	26	4.30	24
1	0.02	39	-2.22	26	2.62	24
2	0.02	39	4.29	26	-14.23	24
3	0.02	39	4.76	26	-1.83	24
Median post-acquisition performance	0.02	39	4.76	25	-11.26	24
Median difference	**5.92 *****	**39**	**1.92 ***	**26**	**1.63**	**24**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results presented in Table 4.10 for the raw performance of firms (without adjustment) show statistically significant positive changes in the operating performance of acquirer firms for all the performance measures used except measure 2, which is the cash flow measure deflated by sales. Therefore, the results for the raw performance of acquirers in cross-border acquisitions are similar to the raw performance of acquirers in the full sample.

Similarly to the results of the industry-adjusted performance for the full sample, the results for the cross-border sample show significant positive changes in operating performance of acquirers for three out of the eight performance measures, which are the cash flow and 'pure' cash flow measures both deflated by total assets as well as the accrual measure deflated by book value of equity. However, the other five measures show insignificant positive changes between the median post- and median pre-acquisition performance of acquirer firms.

When the adjustment is made for the industry, size and pre-acquisition performance of firms, the results reveal insignificant positive differences between the median post- and median pre-acquisition performance of acquirer firms for all the eight performance measures used.

4.4.2.1.3 Domestic Sample

Table 4.11 presents the empirical results of the change model for examining the domestic sample of UK acquirers using different performance measures and benchmarks.

Table 4.11: Analysis (B) Operating Performance Changes of UK Acquirer Firms (Domestic Sample)

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance - adjusted median (%)	Nr. Obs
Measure 1: $\frac{EBITDA}{Total\ Assets}$						
-3	15.69	52	1.28	40	-1.27	42
-2	16.47	53	1.78	41	-1.48	43
-1	13.78	57	0.87	50	-2.08	49
Median pre-acquisition performance	16.35	57	1.48	50	-1.51	49
1	11.70	57	-0.10	50	-1.56	49
2	10.22	57	-0.12	48	-2.58	48
3	11.36	57	-0.97	49	-1.96	48
Median post-acquisition performance	11.70	57	0.45	50	-1.06	49
Median difference	**2.30 ****	**57**	**1.32**	**50**	**0.00**	**49**
Measure 2: $\frac{EBITDA}{Sales}$						
-3	15.54	52	1.12	40	-4.13	42
-2	14.62	53	2.31	41	-2.58	43
-1	14.67	58	0.04	50	-2.45	49
Median pre-acquisition performance	14.80	58	1.04	50	-2.52	49
1	11.62	58	-1.62	50	-2.35	49
2	12.61	58	1.40	48	0.28	48
3	11.51	58	-1.49	48	-0.86	48
Median post-acquisition performance	12.82	58	1.14	50	0.21	49
Median difference	**0.83**	**58**	**0.09**	**50**	**1.16**	**49**
Measure 3: $\frac{EBITDA}{TMV}$						
-3	0.01	51	-0.001	39	-0.001	40
-2	0.01	52	-24.14	39	-0.001	40
-1	0.01	58	-0.003	50	-0.004	49
Median pre-acquisition performance	0.01	58	-0.004	50	-0.003	49
1	0.01	58	0.001	50	-0.0004	49
2	0.02	58	-23.33	47	0.002	48
3	0.02	58	0.002	48	-0.001	48
Median post-acquisition performance	0.02	58	-0.003	50	0.001	49
Median difference	**1.99**	**58**	**0.49**	**50**	**2.25 ****	**49**

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance - adjusted median (%)	Nr. Obs
Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$						
-3	18.07	42	16.13	30	0.14	29
-2	15.17	45	2.35	30	0.19	35
-1	14.76	49	0.57	33	0.27	41
Median pre-acquisition performance	15.87	49	3.10	33	0.27	41
1	8.65	49	2.25	33	2.61	41
2	6.45	49	1.46	31	-0.55	41
3	7.60	49	0.48	29	-1.15	41
Median post-acquisition performance	7.20	49	1.52	33	-0.11	41
Median difference	**5.32 *****	**49**	**1.31**	**33**	**0.16**	**41**
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$						
-3	15.01	43	13.16	30	-0.95	29
-2	12.76	46	-0.48	30	-1.41	35
-1	11.74	49	-4.8	34	-0.72	41
Median pre-acquisition performance	12.76	49	2.95	34	0.17	41
1	23.76	48	0.76	34	2.50	41
2	23.48	49	1.76	32	1.65	40
3	22.86	49	-1.89	30	-0.23	40
Median post-acquisition performance	24.43	49	0.76	34	1.75	41
Median difference	**3.55 *****	**49**	**0.37**	**34**	**1.11**	**41**
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$						
-3	0.01	43	0.01	29	0.004	27
-2	0.01	46	-27.14	28	-0.001	31
-1	0.02	49	-0.003	34	-0.003	40
Median pre-acquisition performance	0.01	49	-0.002	34	-0.002	40
1	11.79	48	0.001	34	0.004	40
2	10.65	49	-18.31	32	0.003	39
3	12.25	49	0.01	30	0.01	39
Median post-acquisition performance	11.60	49	-0.002	34	0.004	40
Median difference	**8.18 *****	**49**	**0.41**	**34**	**2.23 ****	**40**

Year	Raw' performance median (%)	Nr. Obs	Industry-adjusted median (%)	Nr. Obs	Industry, Size and Performance - adjusted median (%)	Nr. Obs
Measure 7:	$\frac{EBIT}{BV_{assets}}$					
-3	10.84	54	1.10	40	-1.75	42
-2	11.54	56	1.24	41	-1.11	43
-1	10.58	60	0.38	50	-2.33	49
Median pre-acquisition performance	11.74	60	1.09	50	-1.53	49
1	12.67	60	0.36	50	-1.23	49
2	11.35	60	-0.12	48	-3.00	48
3	12.40	60	-2.77	46	-1.37	48
Median post-acquisition performance	11.44	60	-0.38	50	-1.32	49
Median difference	**0.99**	**60**	**1.49**	**50**	**0.13**	**49**
Measure 8:	$\frac{EBIT}{BV_{equity}}$					
-3	25.49	54	5.15	40	-1.22	42
-2	25.02	56	2.72	41	-3.34	43
-1	23.56	60	0.90	50	-2.30	49
Median pre-acquisition performance	24.43	60	2.35	50	-2.70	49
1	0.02	60	-5.54	50	-0.26	49
2	0.02	60	4.01	48	2.12	48
3	0.02	60	-0.40	48	0.71	48
Median post-acquisition performance	0.02	60	2.05	50	2.62	49
Median difference	**8.81 *****	**60**	**0.32**	**50**	**1.24**	**49**

Median difference between the median post- acquisition performance and median pre-acquisition performance of acquirer firms is conducted using Wilcoxon signed rank test.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

The results for the domestic sample presented in Table 4.11 show that the change in the raw performance of acquirer firms (without adjustment) is significantly positive for measures 1, 4, 5, 6 and 8 and ranges between 2.30% and 8.81%. The other three measures, which are the cash flow measures deflated by sales and total market value as well as the accrual measure

deflated by total assets, show insignificant positive changes in operating performance of acquirer firms.

However, when the adjustment is made for the industry median performance, the results for the domestic sample do not show any significant differences between the median post- and median pre-acquisition performance of acquirer firms for all the performance measures used.

When the adjustment is made for the industry, size and pre-acquisition performance, the results reveal significant positive improvements in operating performance of acquirer firms for only two out of the eight measures used, which are the cash flow measure and the 'pure' cash flow measure both deflated by total market value. The overall results of the change model show insignificant positive changes in the adjusted operating performance of acquirer firms involved in domestic mergers and acquisitions.

4.4.2.2 Intercept Model Results

Table 4.12 presents the results of the intercept model of analysis (B) using different performance measures with different deflators and two performance benchmarks for the full, cross-border and domestic samples of UK acquirers.

Models 1, 3 and 4 show the results of acquirer firms from the intercept model using an industry-adjusted median performance for the full, cross-border and domestic acquisitions respectively. Models 5, 7 and 8 show the results for the full, cross-border and domestic samples of acquirer firms respectively using a matched group based on the industry, size and pre-acquisition performance.

Moreover, models 2 and 6 in Table 4.12 extend the intercept model results by adding the cross-border dummy for the purpose of checking the impact of cross-border acquisitions on

the changes in operating performance of acquirer firms for the industry- adjusted and industry, size and pre-acquisition adjusted performance of acquirer firms respectively.

Table 4.12: Regression of Post-takeover-adjusted Performance of Acquirer Firms on Pre-takeover-adjusted Performance / Analysis (B)

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.019 (-1.60)	-0.010 (-0.68)	-0.039 (-1.36)	-0.009 (-0.85)	-0.021** (-2.13)	-0.006 (-0.55)	-0.052*** (-2.94)	-0.009 (-0.80)
Pre-performance	0.117 (1.29)	0.124 (1.37)	0.173 (0.57)	0.115 (1.45)	0.399*** (6.53)	0.413*** (6.90)	0.553*** (5.39)	0.329*** (4.56)
Cross-border		-0.028 (-1.10)				-0.045** (-2.17)		
F-statistic	1.65	1.44	0.33	2.10	42.69***	24.82***	29.09***	20.79***
p.value	0.20	0.24	0.57	0.15	0.00	0.00	0.00	0.00
Adjusted R^2	0.01	0.01	-0.03	0.02	0.37	0.40	0.56	0.29
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	0.004 (0.19)	0.017 (0.60)	-0.022 (-0.40)	0.013 (0.90)	-0.015 (-0.61)	0.006 (0.19)	-0.063 (-1.11)	0.017 (0.63)
Pre-performance	0.008 (0.11)	-0.002 (-0.02)	-0.003 (-0.03)	0.717*** (8.02)	0.148*** (13.42)	0.148*** (13.10)	0.148*** (10.43)	0.285*** (2.91)
Cross-border		-0.038 (-0.77)				-0.069 (-1.26)		
F-statistic	0.01	0.30	0.001	6.44***	18.34***	9.25***	11.54***	8.47**
p.value	0.91	0.74	0.98	0.00	0.00	0.00	0.00	0.01
Adjusted R^2	-0.01	-0.02	-0.04	0.56	0.99	0.99	0.99	0.13
Measure 3: $\frac{EBITDA}{TMV}$								
Intercept	-0.004 (-1.03)	-0.005 (-1.21)	-0.002 (-0.16)	-0.004 (-0.74)	-0.001 (-0.40)	0.003 (0.71)	-0.0001 (-1.17)	0.003* (1.74)
Pre-performance	-0.015 (-0.14)	0.009 (0.08)	0.008*** (3.91)	12.876 (0.83)	-0.002** (-2.30)	-0.002** (-2.18)	0.352 (1.04)	-0.002*** (-5.39)
Cross-border		0.005 (0.65)				-0.0001* (-1.86)		
F-statistic	0.02	0.22	15.30***	0.69	5.27**	4.46**	1.08	29.01***
p.value	0.89	0.80	0.001	0.41	0.02	0.02	0.31	0.00
Adjusted R^2	-0.01	-0.02	0.39	-0.01	0.06	0.09	0.004	0.37
Measure 4: $\frac{(EBITDA - \Delta WC)}{Total\ Assets}$								
Intercept	-0.014 (-0.72)	-0.003 (-0.13)	-0.045 (-1.20)	-0.0004 (-0.02)	-0.011 (-0.83)	-0.001 (-0.07)	-0.036 (-1.24)	-0.001 (-0.09)
Pre-performance	-0.027 (-0.29)	-0.028 (-0.30)	0.242 (0.82)	-0.072 (-0.80)	0.101 (1.46)	0.110 (1.57)	0.138 (0.80)	0.102 (1.36)
Cross-border		-0.027 (-0.72)				-0.035 (-1.15)		
F-statistic	0.08	0.30	0.67	0.64	2.12	1.72	0.64	1.85
p.value	0.78	0.74	0.42	0.43	0.15	0.19	0.43	0.18
Adjusted R^2	-0.02	-0.03	-0.02	-0.01	0.02	0.02	-0.02	0.02

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.002	-0.003	-0.002	0.001	0.006	0.015	-0.019	0.051*
	(-0.07)	(-0.06)	(-0.03)	(0.02)	(0.19)	(0.42)	(-0.33)	(1.79)
Pre-performance	0.006***	0.006***	0.006***	-0.156	-0.28***	-0.276***	-0.276***	0.199**
	(17.47)	(17.02)	(18.98)	(-1.36)	(-23.11)	(-22.82)	(-22.94)	(2.23)
Cross-border		0.001				-0.034		
		(0.01)				(-0.49)		
F-statistic	30.52***	14.96***	3.61***	1.86	5.29***	26.11***	4.93***	4.99**
p.value	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.03
Adjusted R^2	0.85	0.85	0.95	0.03	0.99	0.99	0.99	0.09

Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.008	-0.012**	-0.0003	-0.012	-0.001	0.004	-0.006	0.004
	(-1.45)	(-1.80)	(-1.09)	(-1.45)	(-0.16)	(0.88)	(-0.63)	(1.24)
Pre-performance	0.002	0.004	0.004	0.004	-0.001	-0.001	1.20	-0.001
	(0.19)	(0.31)	(0.11)	(0.25)	(-0.54)	(-0.39)	(1.43)	(-0.56)
Cross-border		0.012				-0.0002		
		(1.06)				(-0.39)		
F-statistic	0.03	0.57	0.01	0.06	0.30	1.96	2.03	0.31
p.value	0.85	0.57	0.91	0.80	0.59	0.15	0.18	0.58
Adjusted R^2	-0.02	-0.02	-0.06	-0.03	-0.01	0.03	0.06	-0.02

Measure 7: $\dfrac{EBIT}{BV_{assets}}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.018	-0.009	-0.039	-0.009	-0.020*	-0.006	-0.050***	-0.006
	(-1.48)	(-0.61)	(-1.36)	(-0.78)	(-1.96)	(-0.48)	(-2.61)	(-0.53)
Pre-performance	0.179**	0.186**	0.325	0.146*	0.324***	0.344***	0.367***	0.328***
	(2.06)	(2.15)	(1.32)	(1.89)	(4.99)	(5.35)	(3.39)	(4.04)
Cross-border		-0.027				-0.043**		
		(-1.04)				(-1.99)		
F-statistic	4.26**	2.67*	1.73	3.59*	24.98***	15.01***	11.47***	16.33***
p.value	0.04	0.08	0.20	0.06	0.00	0.00	0.003	0.00
Adjusted R^2	0.04	0.04	0.03		0.25	0.28	0.32	0.24

Measure 8: $\dfrac{EBIT}{BV_{equity}}$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.016	0.021	-0.187	0.025	-0.004	0.053	-0.135	0.053
	(0.32)	(0.34)	(-1.55)	(0.52)	(-0.09)	(0.96)	(-1.59)	(1.02)
Pre-performance	0.025	0.025	0.790***	0.005	0.052	0.054	0.185**	0.020
	(0.67)	(0.66)	(2.87)	(0.17)	(1.41)	(1.47)	(2.17)	(0.52)
Cross-border		-0.015				-0.179*		
		(-0.15)				(-1.84)		
F-statistic	0.44	0.23	8.26**	0.03	1.99	2.72*	4.70**	0.27
p.value	0.51	0.79	0.01	0.86	0.16	0.07	0.04	0.60
Adjusted R^2	-0.01	-0.02	0.23	-0.02	0.01	0.05	0.14	-0.02

***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level

4.4.2.2.1 Full Sample

The results for model (1), which represents the full sample, show no significant changes between the post-acquisition and pre-acquisition industry-adjusted performance of acquirer firms for all the eight measures used, whether being cash flow, 'pure' cash flow or accrual measures.

Moreover, when the control is done for the industry, size and pre-acquisition performance of firms the results for the full sample shown by model (5) show no significant changes in operating performance between the post- and pre-acquisition adjusted performance for six out of the eight measures used. However, measures 1 and 7, which are the cash flow measure deflated by total assets and the accrual measure deflated by total assets, show negative changes in operating performance of acquirer firms that are statistically significant at the 5% and 10% levels respectively.

4.4.2.2.2 Cross-border Sample

The examination of the cross-border sample shows similar results as those of the full sample with insignificant changes in the industry-adjusted operating performance of acquirer firms as shown in model (3). The results for the industry, size and pre-acquisition adjusted performance are similar to the full sample with insignificant changes in the operating performance of acquirer firms for six out of the eight measures used. However, measures 1 and 7, which are the cash flow measure deflated by total assets and the accrual measure deflated by total assets, show negative changes in operating performance of acquirer firms that are both significant at the 1% level.

4.4.2.2.3 Domestic Sample

The results for the domestic sample presented by model (4) also didn't show any significant changes between the post-acquisition and pre-acquisition industry-adjusted performance of acquirer firms for all the performance measures used.

However, when the control is made for the industry, size and pre-acquisition performance in model (8) the results show insignificant changes in the operating performance of acquirer firms for six out of the eight measures used. The other two measures, which are the cash flow measure deflated by total market value and the 'pure' cash flow measure deflated by sales, show significant positive improvements in operating performance by 0.30% and 5.10% respectively and are both significant at the 10% level.

In general, whether the adjustment is made for the industry median performance or the industry, size and pre-acquisition performance, most of the intercept model results do not show any significant changes in the operating performance of acquirer firms for the full, cross-border and domestic samples.

4.4.2.2.4 Cross-border Effect

When the examination is done for the impact of cross-border acquisitions on the post-acquisition performance of acquirer firms using models (2) and (6), the industry-adjusted operating performance of acquirer firms do not show any significant impact of cross-border deals on post-acquisition adjusted performance of acquirer firms for all the eight measures used.

On the other hand, when the matching is done on the basis of industry, size and pre-acquisition performance of firms, the results show a significant negative impact of cross-border acquisitions on post-acquisition performance of acquirer firms for four out of the eight

measures used, which are the cash flow measure deflated by total assets and total market value and the accrual measure deflated by total assets and the book value of equity.

The results for the industry, size and pre-acquisition adjusted performance show more significant negative impacts for the cross-border acquisitions on the post-acquisition performance of acquirer firms in comparison with the industry-adjusted performance and suggest lower operating performance for acquirer firms involved in cross-border M&As in comparison with domestic M&As.

4.4.2.2.5 The Relationship between Pre- and Post-acquisition Performance

The relationship between the post-acquisition adjusted performance and pre-acquisition adjusted performance of acquirer firms is presented by the slope coefficients as the pre-acquisition performance in Table 4.12. Some of those slope coefficients are significant which suggests a relationship between the post- and pre-acquisition performance of acquirer firms.

When the adjustment of the operating performance is made only by industry, the results for the full, cross-border and domestic acquirers show either an insignificant relationship or a significant positive relationship between the pre- and post-acquisition performance of acquirer firms depending on the measure used. However, when the adjustment is made on the basis of the industry, size and pre-acquisition performance, the results show mixed results with some of the measures showing an insignificant relationship, others showing a significant positive relationship, while others show a significant negative relationship between pre-acquisition and post-acquisition performance of acquirer firms.

The difference in the results between the two performance benchmarks highlights the importance of the adjustment approach and may help in explaining the contradictory results across many of the previous studies.

4.4.2.3 Change Model vs. Intercept Model Results

Table 4.13 presents a comparison between the previous results of the change model and the intercept model in order to check whether or not the intercept model yields conclusions that are different from the change model.

Table 4.13: Change Model vs. Intercept Model / Analysis (B)

Analysis B: Median change in operating performance (%)

Measure	Industry adjusted						Industry, Size and Performance adjusted					
	Change model			Intercept model			Change model			Intercept model		
	Full	CB	D	Full	CB	D	Full	CB	D	Full	CB	D
Measure 1	+2.0*	+1.8*	+1.3	-1.9	-3.9	-0.9	+0.6	+1.1	0.0	-2.1**	-5.2***	-0.9
Measure 2	+0.1	+13.6	+0.1	+0.4	-2.2	+1.3	+0.1	+1.4	+1.2	-1.5	-6.3	+1.7
Measure 3	+1.0	+1.2	+0.5	-0.4	-0.2	-0.4	+1.5	+0.7	+2.3**	-0.1	-0.01	+0.3*
Measure 4	+2.3**	+2.3*	+1.3	-1.4	-4.5	-0.04	+0.7	+0.8	+0.2	-1.1	-3.6	-0.1
Measure 5	+0.7	+0.7	+0.4	-0.2	-0.2	+0.1	+1.3	+0.6	+1.1	+0.6	-1.9	-5.1*
Measure 6	+0.5	+1.3	+0.4	-0.8	-0.03	-1.2	+2.2**	+0.5	+2.2**	-0.1	-0.6	+0.4
Measure 7	+1.7*	+1.2	+1.5	-1.8	-3.9	-0.9	+0.6	+1.3	+0.1	-2.0*	-5.0**	-0.6
Measure 8	+1.4	+1.9*	+0.3	+1.6	-18.7	+2.5	+0.1	+1.6	+1.2	-0.4	-13.5	+5.3

The results presented in Table 4.13 show that the change model gives higher estimates of improvements in the industry-adjusted operating performance of acquirer firms than the intercept model for the full, cross-border and domestic samples for the majority of the measures used. However, measures 2 and 8, which are the cash flow measure deflated by sales and the accrual measure deflated by the book value of equity, show higher improvements using the intercept model over the change model for the full and domestic samples.

Moreover, when the matching is done on the basis of the industry, size and pre-acquisition performance, the change model also shows higher estimates of operating performance improvements than the intercept model for the full, cross-border and domestic samples for most of the measures used. However, measures 2 and 8, which are the cash flow measure scaled by sales, and the accrual measure scaled by the book value of equity for the domestic sample of acquirers, show higher estimates of performance improvements using the intercept model over the change model.

The results from comparing the changes in adjusted-operating performance of acquirer firms between the change model and the intercept model show higher estimates of operating performance improvements when the change model is used in comparison with the intercept model for most of the measures used. Those results are of great similarity to the results shown in the previous chapter for the combined firms.

4.4.2.4 Regression Analysis

The results of the regression analysis tests are presented in Table 4.14 which is conducted by using different performance measures and benchmarks for the full, cross-border and domestic samples. It investigates whether any improvements in the performance of acquirer firms can be explained by some of the deals' characteristics using a multiple regression analysis. The dependent variable is the post-acquisition operating performance of acquirer firms adjusted for the industry median and industry, size and pre-acquisition performance respectively. The independent variables include some of the deals' characteristics such as the method of payment, industrial relatedness, relative size of target to acquirer firm and whether the acquisition is cross-border or domestic deal. The results are summarised in the following table.

Table 4.14: Regression Analysis of Determinants of Post-acquisition Performance of Acquirer Firms / Analysis (B)

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 1: $\frac{EBITDA}{Total\ Assets}$								
Intercept	-0.049* (-1.87)	-0.034 (-0.99)	-0.058 (-1.12)	-0.037 (-1.13)	-0.037* (-1.75)	-0.020 (-0.77)	-0.033 (-1.07)	-0.043 (-1.44)
Pre-performance	0.125 (1.32)	0.136 (1.29)	0.087 (0.20)	0.124 (1.47)	0.410*** (6.84)	0.357*** (4.72)	0.446*** (3.97)	0.339*** (4.55)
Controls								
Cross-border		-0.024 (-0.72)				-0.033 (-1.44)		
Cross-border*Pre-performance		-0.015 (-0.05)				0.164 (1.26)		
Cash Payment	0.039 (1.30)	0.028 (0.82)	0.034 (0.32)	0.034 (1.02)	0.026 (1.11)	0.016 (0.65)	-0.039 (-0.80)	0.054* (1.75)
Mix Payment	0.007 (0.21)	0.001 (0.03)	-0.030 (-0.38)	0.024 (0.65)	-0.034 (-1.34)	-0.030 (-1.13)	-0.086** (-1.98)	0.015 (0.45)
Industrial Relatedness	0.021 (0.84)	0.017 (0.67)	0.040 (0.60)	0.005 (0.19)	0.030 (1.53)	0.019 (0.94)	0.041 (1.09)	0.006 (0.25)
Relative Size	0.002 (0.34)	0.003 (0.42)	0.002 (0.23)	0.0001 (0.40)	-0.001 (-0.31)	0.001 (0.19)	0.0003 (0.06)	-0.0002 (-0.48)
F-statistic	0.87	0.70	0.22	0.72	10.89***	8.52***	7.40***	4.93***
p.value	0.50	0.67	0.95	0.61	0.00	0.00	0.00	0.00
Adjusted R^2	-0.01	-0.03	-0.21	-0.03	0.41	0.43	0.60	0.29
Measure 2: $\frac{EBITDA}{Sales}$								
Intercept	-0.033 (-0.63)	-0.030 (-0.55)	-0.079 (-0.80)	-0.015 (-0.35)	-0.099* (-1.88)	-0.049 (-0.76)	-0.057 (-0.69)	-0.106 (-1.49)
Pre-performance	0.0001 (0.12)	0.751*** (5.01)	0.0001 (0.11)	0.738*** (8.07)	0.147 (1.41)	0.286*** (2.69)	0.147*** (11.86)	0.289*** (2.96)
Controls								
Cross-border		-0.036 (-0.70)				-0.071 (-1.20)		
Cross-border*Pre-performance		-0.751*** (-5.01)				-0.139 (-1.30)		
Cash Payment	0.032 (0.55)	0.029 (0.54)	0.070 (0.42)	0.025 (0.60)	0.062 (1.06)	0.036 (0.58)	0.065 (0.49)	0.087 (1.21)
Mix Payment	-0.008 (-0.12)	-0.013 (-0.22)	-0.052 (-0.35)	0.009 (0.19)	-0.049 (-0.79)	-0.061 (-0.96)	-0.229** (-2.08)	0.054 (0.70)
Industrial Relatedness	0.041 (0.83)	0.058 (1.33)	0.101 (0.78)	0.031 (0.97)	0.112** (2.33)	0.100* (2.01)	0.064 (0.61)	0.102* (1.88)
Relative Size	0.0002 (1.26)	0.0002* (1.66)	0.0002 (1.02)	-0.008 (-0.18)	0.0003** (2.53)	0.0003*** (2.69)	0.0003** (2.10)	-0.008 (-0.10)
F-statistic	0.52	4.23***	0.43	13.05***	41.89***	30.26***	31.91***	2.65**
p.value	0.76	0.00	0.82	0.00	0.00	0.00	0.00	0.04
Adjusted R^2	-0.04	0.24	-0.15	0.56	0.99	0.99	0.99	0.15

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

Measure 3: $\dfrac{EBITDA}{TMV}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.003 (0.43)	0.003 (0.31)	-0.005 (0.80)	0.007 (0.47)	-0.004 (-0.50)	0.007 (0.77)	-0.005 (-0.26)	0.002 (0.46)
Pre-performance	0.003 (0.02)	10.754 (0.79)	0.008*** (3.45)	9.300 (0.56)	-0.002** (-2.49)	-0.002** (-2.42)	0.318 (0.79)	-0.002*** (-5.20)
Controls								
Cross-border		0.0002 (0.02)				-0.0002 (-1.86)		
Cross-border*Pre-performance		-10.75 (-0.79)				0.348 (1.68)		
Cash Payment	-0.008 (-0.96)	-0.008 (-0.79)	0.0001 (0.45)	-0.012 (-0.85)	0.006 (0.67)	-0.003 (-0.38)	-0.001 (-0.04)	0.003 (0.69)
Mix Payment	0.0003 (0.03)	0.001 (0.08)	-0.0003 (-1.08)	0.001 (0.001)	-0.0001 (-1.10)	-0.0001 (-1.57)	-0.0004 (-1.39)	0.002 (0.30)
Industrial Relatedness	-0.007 (-0.92)	-0.006 (-0.73)	0.0002 (0.82)	-0.009 (-0.80)	0.005 (0.72)	0.0002 (0.34)	0.008 (0.35)	-0.002 (-0.70)
Relative Size	0.00003 (0.02)	0.00003 (0.01)	-0.00001 (-0.21)	0.007 (0.44)	0.000003 (0.17)	0.000003 (0.20)	0.000002 (0.06)	0.00001 (0.14)
F-statistic	0.43	0.39	3.38**	0.45	1.84	2.19	0.72	5.72***
p.value	0.83	0.90	0.03	0.81	0.12	0.05	0.62	0.00
Adjusted R^2	-0.04	-0.07	0.36	-0.06	0.06	0.11	-0.07	0.33

Measure 4: $\dfrac{(EBITDA - \Delta WC)}{Total\ Assets}$

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	-0.052 (-1.35)	-0.028 (-0.54)	-0.042 (-0.67)	-0.062 (-1.07)	0.001 (0.05)	0.035 (0.84)	0.055 (1.31)	-0.018 (-0.38)
Pre-performance	0.006 (0.05)	-0.046 (-0.36)	0.304 (0.77)	-0.018 (-0.15)	0.094 (1.30)	0.119 (1.48)	-0.080 (-0.42)	0.111 (1.43)
Controls								
Cross-border		-0.037 (-0.70)				-0.042 (-1.09)		
Cross-border*Pre-performance		0.313 (0.96)				-0.096 (-0.46)		
Cash Payment	0.049 (1.12)	0.029 (0.55)	0.052 (0.38)	0.054 (0.94)	0.006 (0.19)	-0.022 (-0.52)	-0.027 (-0.33)	0.023 (0.49)
Mix Payment	-0.045 (-0.89)	-0.060 (-1.10)	-0.134 (-1.35)	0.001 (0.02)	-0.048 (-1.28)	-0.070 (-1.64)	-0.199*** (-3.17)	-0.002 (-0.05)
Industrial Relatedness	0.060 (1.56)	0.054 (1.34)	0.025 (0.30)	0.069 (1.53)	0.0002 (0.01)	-0.004 (-0.15)	-0.065 (-1.38)	0.019 (0.56)
Relative Size	-0.001 (-1.16)	-0.0004 (-0.92)	-0.0004 (-0.46)	-0.001 (-1.15)	-0.0001 (-0.43)	-0.006 (-0.18)	0.0001 (0.34)	-0.001 (-1.41)
F-statistic	1.25	1.01	0.65	0.89	1.05	0.96	2.67*	0.84
p.value	0.30	0.44	0.67	0.50	0.40	0.47	0.08	0.53
Adjusted R^2	0.03	0.001	-0.12	-0.02	0.004	-0.01	0.34	-0.02

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 5: $\dfrac{(EBITDA - \Delta WC)}{Sales}$								
Intercept	-0.045	-0.048	-0.038	-0.048	0.041	0.092	0.066	0.031
	(-0.59)	(-0.47)	(-0.44)	(-0.33)	(0.63)	(1.33)	(0.82)	(0.40)
Pre-performance	0.006***	-0.162	0.006***	-0.150	-0.275***	0.181*	-0.276***	0.195**
	(16.3)	(-1.29)	(17.99)	(-1.07)	(-23.42)	(1.99)	(-24.85)	(2.33)
Controls								
Cross-border		0.030				-0.087		
		(0.32)				(-1.32)		
Cross-border*Pre-performance		0.168				-0.456***		
		(1.33)				(-5.04)		
Cash Payment	0.039	0.030	0.008	0.072	-0.079	-0.090	-0.106	-0.028
	(0.44)	(0.28)	(0.04)	(0.50)	(-1.10)	(-1.29)	(-0.61)	(-0.36)
Mix Payment	-0.082	-0.096	-0.208	-0.003	-0.218***	-0.208***	-0.354***	-0.125
	(-0.79)	(-0.89)	(-1.50)	(-0.02)	(-2.79)	(-3.04)	(-2.99)	(-1.50)
Industrial Relatedness	0.097	0.096	0.202	0.037	0.106*	0.102**	0.031	0.131**
	(1.24)	(1.21)	(1.40)	(0.34)	(1.79)	(2.06)	(0.30)	(2.38)
Relative Size	-0.001	-0.001	-0.001	-0.001	0.008	0.0002	0.001	-0.002
	(-0.80)	(-0.78)	(-0.66)	(-0.75)	(0.16)	(0.38)	(1.08)	(-1.58)
F-statistic	5.61***	4.03***	6.88***	0.52	11.85***	12.45***	13.48***	3.16**
p.value	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.02
Adjusted R^2	0.85	0.85	0.95	-0.09	0.99	0.99	0.99	0.21
Measure 6: $\dfrac{(EBITDA - \Delta WC)}{TMV}$								
Intercept	-0.002	-0.10	-0.0002	-0.006	-0.003	0.0001	-0.001	0.005
	(-0.19)	(-0.60)	(-0.49)	(-0.22)	(-0.42)	(0.99)	(-0.06)	(0.55)
Pre-performance	-0.001	0.001	0.005	-0.001	-0.001	-0.001	0.955	-0.001
	(-0.10)	(0.06)	(1.08)	(-0.07)	(-0.83)	(-0.75)	(1.09)	(-0.66)
Controls								
Cross-border		0.010				-0.0002		
		(0.67)				(-1.55)		
Cross-border*Pre-performance		-0.050				1.094*		
		(-0.36)				(1.92)		
Cash Payment	-0.011	-0.006	0.001	-0.013	0.006	-0.006	-0.005	0.001
	(-0.77)	(-0.36)	(0.93)	(-0.48)	(0.61)	(-0.57)	(-0.13)	(0.15)
Mix Payment	-0.019	-0.017	0.001	-0.030	-0.010	-0.0002*	-0.0004*	-0.005
	(-1.15)	(-0.96)	(1.11)	(-0.99)	(-0.98)	(-1.70)	(-1.68)	(-0.47)
Industrial Relatedness	0.004	0.007	-0.001	0.009	0.004	0.002	-0.002	0.001
	(0.34)	(0.51)	(-1.23)	(0.49)	(0.50)	(0.22)	(-0.09)	(0.08)
Relative Size	0.006	0.003	0.0001	0.0001	0.00004	0.0001	0.0001	-0.0001
	(0.41)	(0.20)	(0.21)	(0.41)	(0.66)	(1.17)	(1.19)	(-0.95)
F-statistic	0.32	0.32	0.45	0.29	0.76	1.86	1.17	0.34
p.value	0.90	0.94	0.80	0.91	0.58	0.10	0.39	0.88
Adjusted R^2	-0.08	-0.11	-0.21	-0.13	-0.02	0.10	0.05	-0.09

Independent variables	Industry-adjusted median				Industry, size and pre-performance adjusted			
	Full		CB	D	Full		CB	D
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Measure 7: $\dfrac{EBIT}{BV_{assets}}$								
Intercept	-0.047*	-0.025	-0.051	-0.044	-0.047**	-0.026	-0.031	-0.057*
	(-1.75)	(-0.73)	(-0.95)	(-1.35)	(-2.11)	(-0.94)	(-0.94)	(-1.74)
Pre-performance	0.196**	0.156	0.460	0.149*	0.341***	0.356***	0.268**	0.335***
	(2.14)	(1.52)	(1.26)	(1.84)	(5.25)	(4.15)	(2.29)	(3.98)
Controls								
Cross-border		-0.039				-0.032		
		(-1.19)				(-1.27)		
*Cross-border*Pre-performance*		0.282				-0.012		
		(1.13)				(-0.087)		
Cash Payment	0.042	0.022	-0.005	0.044	0.032	0.018	-0.043	0.061
	(1.38)	(0.63)	(-0.05)	(1.34)	(1.27)	(0.68)	(-0.81)	(1.86)
Mix Payment	0.018	0.010	-0.033	0.046	-0.013	-0.019	-0.085*	0.034
	(0.52)	(0.30)	(-0.42)	(1.26)	(-0.47)	(-0.69)	(-1.86)	(0.94)
Industrial Relatedness	0.012	0.006	0.014	0.002	0.033	0.027	0.042	0.016
	(0.46)	(0.25)	(0.20)	(0.09)	(1.61)	(1.24)	(1.04)	(0.66)
Relative Size	0.003	0.004	0.004	0.004	0.001	0.002	0.001	-0.0002
	(0.48)	(0.67)	(0.38)	(0.11)	(0.14)	(0.37)	(0.22)	(-0.45)
F-statistic	1.34	1.25	0.50	1.18	6.30***	4.70***	3.42**	4.02***
p.value	0.26	0.29	0.77	0.33	0.00	0.00	0.03	0.00
Adjusted R^2	0.02	0.02	-0.13	0.02	0.27	0.27	0.35	0.24
Measure 8: $\dfrac{EBIT}{BV_{equity}}$								
Intercept	-0.103	0.022	-0.161	-0.089	-0.105	-0.024	-0.073	-0.142
	(-1.16)	(0.20)	(-1.35)	(-0.67)	(-1.03)	(-0.19)	(-0.46)	(-1.01)
Pre-performance	0.017	0.009	0.704***	0.007	0.047	0.016	0.157	0.009
	(0.52)	(0.31)	(2.85)	(0.22)	(1.22)	(0.39)	(1.59)	(0.23)
Controls								
Cross-border		-0.277**				-0.175		
		(-2.39)				(-1.58)		
*Cross-border*Pre-performance*		-0.620***				0.193**		
		(3.02)				(2.11)		
Cash Payment	0.213**	0.091	-0.034	0.172	0.218*	0.167	0.153	0.295**
	(2.11)	(0.84)	(-0.14)	(1.27)	(1.93)	(1.39)	(0.61)	(2.05)
Mix Payment	-0.225**	-0.186*	0.044	-0.293**	0.162	0.179	-0.137	-0.391***
	(2.00)	(1.70)	(0.258)	(1.98)	(1.34)	(1.47)	(-0.63)	(2.58)
Industrial Relatedness	-0.105	-0.148*	-0.270*	-0.092	-0.071	-0.104	-0.154	-0.104
	(-1.22)	(-1.78)	(-1.82)	(-0.89)	(-0.76)	(-1.11)	(-0.80)	(-0.98)
Relative Size	0.0001	0.0002	0.0001	0.001	0.0003	0.0001	0.007	-0.001
	(0.55)	(0.89)	(0.60)	(0.39)	(0.01)	(0.58)	(0.27)	(-0.56)
F-statistic	1.48	2.59**	2.66*	0.99	1.31	1.96*	1.25	1.66
p.value	0.21	0.02	0.06	0.43	0.27	0.07	0.33	0.16
Adjusted R^2	0.03	0.14	0.27	-0.0003	0.02	0.09	0.05	0.06

Values between brackets are t-statistics.
***Statistical significance at the 1% level
**Statistical significance at the 5% level
*Statistical significance at the 10% level
CB: Cross-border sample
D: Domestic sample

4.4.2.4.1 Full Sample

Models (1) and (5) in Table 4.14 present the results of the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms for the full sample using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

Models (2) and (6) expand the examination conducted by models (1) and (5) by including a cross-border dummy variable and another variable, which is a cross-border dummy variable multiplied by the pre-acquisition adjusted performance, which examines whether there is any significant difference from the impact of pre-acquisition adjusted performance on post-acquisition adjusted performance between domestic mergers and acquisitions and cross-border mergers and acquisitions.

The results for the industry-adjusted performance shown by model (1) doesn't show any significant impact of the deal characteristics on the post-acquisition adjusted performance of acquirer firms for all the measures used except measure 8, which is the accrual measure deflated by the book value of equity, which shows a positive impact from the cash method of payment and a negative impact from the mixed payment method on the post-acquisition operating performance of acquirer firms.

Moreover, model (2) shows a significant negative impact of cross-border acquisitions on the post-acquisition performance of firms in only one of the measures used, which is the accrual measure deflated by the book value of equity, whereas there is no significant impact from the other measures. Also, measure 2 and measure 8, which are the cash flow measure deflated by sales and the accrual measure deflated by the book value of equity, show negative impact from pre-acquisition adjusted performance on post-acquisition adjusted performance of

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acquirer firms involved in cross-border acquisitions in comparison with domestic acquisitions.

The results for the industry, size and pre-acquisition adjusted performance presented by model (5) show significant positive impact from the industrial relatedness and relative size on the post-acquisition performance of acquirers using measure 2, which is the cash flow measure deflated by sales. Also, measure 5, which is the 'pure' cash flow measure scaled by sales, shows a significant negative impact from the mixed payment method and a significant positive impact from the industrial relatedness on the post-acquisition performance. Moreover, measure 8, which is the accrual measure scaled by the book value of equity, shows a significant positive impact from the cash payment method on post-acquisition performance of acquirer firms.

However, model (6) does not show any significant impact of cross-border acquisitions on the post-acquisition performance of acquirer firms for all the measures used. Also, measure 5 and measure 8, which are the 'pure' cash flow measure deflated by sales and the accrual measure deflated by the book value of equity, show negative impact from pre-acquisition adjusted performance on post-acquisition adjusted performance of acquirer firms involved in cross-border acquisitions in comparison with domestic acquisitions. However, measure 6, which is the 'pure' cash flow deflated by total market value, shows a positive impact from pre-acquisition adjusted performance on post-acquisition adjusted performance of acquirer firms involved in cross-border acquisitions in comparison with domestic acquisitions.

4.4.2.4.2 Cross-border Sample

Models (3) and (7) in Table 4.14 examine the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms in the cross-border sample using

different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

The results for the industry-adjusted performance in model (3) do not show any significant impact of the deal characteristics on the post-acquisition adjusted performance of firms for all the measures used except measure 8, which is the accrual measure scaled by the book value of equity, which shows a negative impact from the industrial relatedness on the operating performance of acquirer firms.

The results for the industry, size and pre-acquisition adjusted performance presented by model (7) show a significant negative impact from the mixed payment method on the post-acquisition performance of acquirer firms for six out of the eight measures used, which are measures 1, 2, 4, 5, 6 and 7. Those negative results from the mixed payment method on the post-acquisition performance of acquirer firms are of great similarity to the results presented in the previous chapter for the impact on the combined firms and also support the arguments in the previous literature which suggest lower results for takeovers financed by other payment methods than cash payment methods (Ghosh, 2001).

Also, measure 2, which is the cash flow deflated by sales, shows significant positive impact from the relative size on the post-acquisition performance of acquirer firms.

4.4.2.4.3 Domestic Sample

Models (4) and (8) in Table 4.14 examine the impact of some of the deal characteristics on the post-acquisition operating performance of acquirer firms involved in domestic acquisitions using different performance measures and two benchmarks that control for the industry and industry, size and pre-acquisition performance respectively.

The results for the industry-adjusted performance in model (4) show insignificant impact for the deal characteristics on the post-acquisition adjusted performance of acquirer firms for seven out of the eight measures used. However, measure 8, which is the accrual measure deflated by the book value of equity, shows a significant negative impact from the mixed payment method.

Also, the results for the industry, size and pre-acquisition adjusted performance presented by model (8) show a significant positive impact of the cash payment method on the post-acquisition performance of acquirer firms using the cash flow measure deflated by total assets, significant positive impact from the industrial relatedness between acquirer and target firms using the cash flow and the 'pure' cash flow measures deflated by sales, as well as a significant impact of the payment method using the accrual measure deflated by the book value of equity, which is positive for the cash payment method and negative for the mixed method of payment.

The overall results of the regression analysis show an impact of the payment method on the post-acquisition performance of acquirer firms being positive for the cash method of payment and negative for other means of payment. However, the remaining results provide little evidence about the ability of any of the other deal characteristics to explain the post-acquisition performance of acquirer firms across all the different performance measures, deflators and benchmarks used.

4.4.2.5 Summary of Analysis (B) Results

The results of Analysis (B), which was conducted to examine the operating performance of 98 acquirer firms, show insignificant changes in the adjusted operating performance of acquirer firms using different measures, models and benchmarks. Also, the results for the industry-adjusted performance do not show any significant difference between the operating

performance of acquirer firms involved in cross-border and domestic acquisitions. However, when control is made on the basis of the industry, size and pre-acquisition performance, the results show that cross-border acquisitions have lower post-acquisition operating performance than domestic acquisitions.

More specifically, when the adjustment is made for the industry median performance, the change model results show insignificant changes in the industry-adjusted operating performance of acquirer firms involved in domestic M&As.

However, the results for acquirer firms in the full sample show significant positive improvements in the industry-adjusted operating performance of acquirer firms for measures 1, 4 and 7, which are the measures deflated by the book value of total assets, whether being cash flow, 'pure' cash flow or accrual. Also, the cross-border sample results show significant positive changes in the operating performance of acquirers for measures 1, 4 and 8, which are the cash flow and 'pure' cash flow measures deflated by the book value of total assets and the accrual measure deflated by the book value of equity. However, the other measures have shown insignificant positive changes in the operating performance of acquirers.

When the intercept model is used, the results show insignificant changes in the industry-adjusted operating performance of acquirer firms for the full, cross-border and domestic samples for all the measures used.

When control is made for the industry, size and pre-acquisition performance, most of the change model results show insignificant changes in the operating performance of acquirer firms. More specifically, the results for the full sample show insignificant positive changes in the operating performance of acquirers for all the measures used except measure 6, which is the 'pure' cash flow measure deflated by total market value, which shows significant positive

changes. Also, the cross-border sample shows insignificant positive changes in the operating performance of acquirers for all the measures used. The domestic sample shows insignificant changes in the operating performance of acquirers for all the measures used except measures 3 and 6, which are the cash flow and 'pure' cash flow measures deflated by total market value.

When the intercept model is used, the results of the different measures are contradictory with some showing significant increase in the operating performance of acquirer firms, some others showing significant decrease, whereas the rest of the measures shows insignificant changes.

More specifically, the results for the full and cross-border sample show insignificant changes in the operating performance of acquirer firms for all the measures used except measures 1 and 7, which are the cash flow and accrual measure, both deflated by the book value of total assets, which show significant negative changes in the operating performance of acquirer firms. However, the domestic sample results show insignificant changes in the operating performance of acquirers for six out of the eight measures used whereas there are significant positive improvements in the operating performance of acquirers for measure 3 and significant negative changes for measure 5, which are the cash flow measure deflated by total market value and the 'pure' cash flow measure deflated by sales respectively.

In general, the results for the full, cross-border and domestic samples show insignificant changes in the adjusted operating performance of acquirer firms for most of the measures used in the change and intercept models. Also, there hasn't been a strong evidence of significant differences between the operating performances of firms involved in cross-border and domestic samples.

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4.4.3 Comparison between Analysis (A) Results and Analysis (B) Results

This section presents a comparison between the main results of Analysis (A) which is conducted for the acquirer and target firms combined and Analysis (B) which examines the acquirer firms only. The reason for the comparison is to find out whether the impacts of domestic and cross-border M&As on the operating performance of UK acquirers only are different from their impacts on the operating performance of UK acquirers and targets combined.

Table 4.15 presents the comparison of the results when the adjustment is made on the basis of the industry median performance.

Table 4.15: Comparison of the Results for UK Acquirers and Targets Combined with the Results for UK Acquirers Only (Industry-adjusted Performance)

Models/Measures	Results for UK Acquirers and Targets Combined (%)			Results for UK Acquirers Only (%)		
	Full Sample	Cross-border	Domestic	Full Sample	Cross-border	Domestic
Change Model						
Measure 1	0.98	1.22	0.33	2.00*	1.75*	1.32
Measure 2	0.97	0.10	1.32	0.06	13.58	0.09
Measure 3	0.23	0.73	0.20	1.01	1.19	0.49
Measure 4	0.46	0.80	0.06	2.30**	2.29*	1.31
Measure 5	0.23	0.28	0.37	0.66	0.74	0.37
Measure 6	0.39	0.68	0.03	0.46	1.34	0.41
Measure 7	1.08	1.13	0.64	1.72*	1.22	1.49
Measure 8	1.77*	3.14***	0.28	1.37	1.92*	0.32
Intercept Model						
Measure 1	-2.2*	-3.9	-1.3	-1.9	-3.9	-0.9
Measure 2	3.3	1.1	5.3**	0.4	-2.2	1.3
Measure 3	-0.2	0.1	-0.2	-0.4	-0.2	-0.4
Measure 4	-0.7	-2.0	0.1	-1.4	-4.5	-0.04
Measure 5	-2.1	-8.1	0.6	-0.2	-0.2	0.1
Measure 6	-0.2*	-0.1*	-0.3	-0.8	-0.03	-1.2
Measure 7	-2.0*	-3.6	-1.3	-1.8	-3.9	-0.9
Measure 8	-3.6	-19.6	2.9	1.6	-18.7	2.5

The results of Table 4.15 for the change and intercept model show similar results for UK acquirers and targets combined in comparison with UK acquirers only, with insignificant changes in the industry-adjusted operating performance of firms.

When the change model is used, some of the results for the UK acquirers only are similar to the results of UK acquirers and targets combined whereas other results show higher improvements in the industry-adjusted operating performance of UK acquirer firms in comparison with acquirer and target firms combined.

For example, the full and cross-border samples of UK acquirer and target firms combined show insignificant changes in the operating performance for seven out of the eight measures used whereas there are significant positive improvements for measure 8, which is the accrual measure. However, the full and cross-border samples of UK acquirers only show insignificant positive changes in the operating performance for five out of the eight measures used whereas there are significant positive improvements for three measures, which are cash flow, 'pure' cash flow and accrual measures.

On the other hand, the domestic sample show insignificant positive changes in the industry-adjusted operating performance of firms for both the UK acquirers and targets sample as well as the UK acquirers only.

When the intercept model is used, some of the results for the full, cross-border and domestic samples show higher results for the UK acquirers only in comparison with acquirer and target firms combined whereas other measures show the opposite.

For example, the intercept model shows insignificant negative and positive changes in the industry-adjusted operating performance of acquirer firms for all the measures used in the

full, cross-border and domestic samples. However, the examination for the acquirer and target firms combined show contradictory results with significant and insignificant negative changes in the operating performance of the full and cross-border samples whereas there are insignificant changes for the domestic sample except for the cash flow measure 2, which shows significant positive changes in the operating performance of firms.

Table 4.16 presents the comparison of the results when the adjustment is made on the basis of the industry, size and pre-acquisition performance of firms.

Table 4.16: Comparison of the Results for UK Acquirers and Targets Combined with the Results for UK Acquirers Only (Industry, Size and Pre-acquisition-adjusted Performance)

Models/Measures	Results for UK Acquirers and Targets Combined (%)			Results for UK Acquirers Only (%)		
	Full sample	Cross-border	Domestic	Full sample	Cross-border	Domestic
Change Model						
Measure 1	0.28	0.79	0.96	0.63	1.08	0.00
Measure 2	1.74*	0.22	2.32**	0.08	1.38	1.16
Measure 3	1.10	0.31	1.59	1.51	0.69	2.25**
Measure 4	1.47	1.05	2.50**	0.67	0.79	0.16
Measure 5	2.54**	0.24	3.24***	1.29	0.55	1.11
Measure 6	2.11**	0.76	2.99***	2.23**	0.47	2.23**
Measure 7	0.09	0.98	0.82	0.64	1.34	0.13
Measure 8	0.53	1.62	1.99**	0.07	1.63	1.24
Intercept Model						
Measure 1	-1.0	-3.0*	0.7	-2.1**	-5.2***	-0.9
Measure 2	2.0	-0.7	8.3***	-1.5	-6.3	1.7
Measure 3	-0.3	-0.2	0.3	-0.1	-0.01	0.3*
Measure 4	-0.1	-2.4	2.6*	-1.1	-3.6	-0.1
Measure 5	1.7	0.4	11.2***	0.6	-1.9	5.1*
Measure 6	-0.2	-0.2**	0.5	-0.1	0.6	0.4
Measure 7	-1.0	-2.7	0.9	-2.0*	-5.0***	-0.6
Measure 8	2.1	-9.8	8.6	-0.4	-13.5	5.3

The results shown in Table 4.16 for the change model show similar results for UK acquirers and targets combined in comparison with UK acquirers only in the full and cross-border samples, with insignificant changes in the industry, size and pre-acquisition-adjusted performance of firms. On the other hand, the domestic sample shows higher improvements in the adjusted operating performance of acquirer and target firms combined in comparison with acquirer firms only.

When the intercept model is used, most of the results for the full, cross-border and domestic samples of acquirer and target firms combined are similar to those of UK acquirers only with insignificant changes in the operating performance of firms. However, the size of most of the results of combined firms is generally higher than acquirer firms only.

4.5 Summary of the Results and Conclusions

The issue of measuring the operating performance of firms involved in mergers and acquisitions is essential for the companies in order to evaluate the extent of the achievement of their objectives and goals, as well as in helping them to develop future strategic plans.

However, only a few number of studies have been conducted to examine the operating performance of firms following mergers and acquisitions. Most of those studies concentrated on the impact of mergers on the post-acquisition performance of the combined firms without taking into consideration the difference between cross-border and domestic acquisitions.

The previous chapter has dealt with the issue of the changes in operating performance of acquirer firms, using a sample of 555 acquirer firms during the period 1996 to 2003 in order to check whether there is any difference in the changes in operating performance of acquirer firms between cross-border and domestic acquisitions. Different benchmarks and measures of

operating performance have been used and two models have been applied to assess changes in operating performance of acquirer firms, which are the change model and the intercept model.

The results in general show that when the adjustment is made for the industry median performance, the change model shows significant improvements in the operating performance of acquirer firms for the full and domestic samples, whereas there are insignificant changes in the operating performance for the cross-border sample. When the intercept model is used, the results show opposite results with a significant decrease in the operating performance of acquirer firms in the full, cross-border and domestic samples.

On the other hand, when the adjustment is made for the industry, size and pre-acquisition performance, most of the results for the change model and the intercept model show insignificant changes in the operating performance of acquirer firms. Also, the results show insignificant differences between the impacts of domestic and cross-border acquisitions on the post-acquisition operating performance of acquirer firms.

The regression analysis shows some significant positive effect from the cash method of payment on the post-acquisition operating performance of acquirer firms, whereas there is little or no significant impact of the other characteristics.

The previous chapter examined the impact of M&As on the operating performance of acquirer firms only. Therefore, this chapter gives a broader idea about the impact of M&As by the examination of acquirer and target combined firms in order to check the difference between the impacts of cross-border and domestic M&As on the operating performance by conducting Analysis (A). Another examination is conducted for the acquirer firms only in order to check whether excluding the target firms and their peers from the analysis has any impact on the results in Analysis (B).

The main examination in this chapter is based on 98 pairs of acquirer and target firms over a period of one, two or three years before, and one, two or three years after the acquisition, using cash flow, 'pure' cash flow and accrual performance measures and relative to benchmarks adjusted for the industry median performance as well as the industry, size and pre-acquisition performance. Also, two models have been used to assess changes in the operating performance of the full, cross-border and domestic samples, which are the change model and the intercept model.

The results of analysis (A) conducted for the combined firms show that firms involved in cross-border M&As have a significantly lower operating performance than domestic combined firms, especially when the adjustment is made for the industry, size and pre-acquisition performance.

When the adjustment is made for the industry median performance the results of the change model and the intercept model show insignificant changes in the operating performance of combined firms for the full, cross-border and domestic samples.

When the adjustment is made for the industry, size and pre-acquisition performance, the results of the change model show insignificant changes in the operating performance of combined firms in the full and cross-border samples whereas there is a significant increase in the operating performance of combined firms in the domestic sample. However, when the intercept model is used, the results show insignificant changes in the operating performance of combined firms in the full, cross-border and domestic samples.

The results of analysis (B) conducted for acquirer firms only show similar results to analysis (A) which includes both acquirer and target firms in the analysis, with insignificant changes in

the adjusted operating performance of firms. This suggests that acquirer firms and combined firms experience similar changes in the operating performance following M&A deals.

The results in this chapter show some similarities and some differences with the previous literature. The results reflect some similarities to Martynova et al. (2007) results which show insignificant changes in the operating performance of combined firms. However, other results contradict those of Powell and Stark (2005) and Martynova et al. (2007) since their results show higher improvements in post-takeover performance when a regression-based methodology is used in comparison to a change model. The results in this chapter show different conclusions about this issue since most of the measures show higher estimates of improvements in the post-takeover performance when the change model is used compared to the intercept model.

This contradiction in the results may be related to the difference between this study and the previous studies in the sample used and the time period covered. For example, Powell and Stark (2005) examined a UK sample that took place during the time period 1985 to 1993 whereas this study covers a more recent period, this being from 1996 to 2003. Also, the contradiction with Martynova et al. (2007) may be because their study examined a European sample whereas this study examines a UK sample.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The importance of cross-border M&As has increased over the years and become more significant with companies acquiring targets all over the world. This requires more examination and investigation of this phenomenon in order to check whether going abroad leads the companies to achieve better performance than when they acquire domestically.

Therefore, the aim of this thesis is to examine and investigate cross-border M&As in a way that can lead us to answer the main question of the thesis, which is: are cross-border M&As better or worse than domestic M&As? Therefore, in order to achieve this aim, the thesis examines the following questions:

- Do cross-border M&As bring higher returns to shareholders of UK acquirer firms than domestic M&As?

- Do cross-border M&As achieve better operating performance for UK acquirer firms than domestic M&As?

- Are changes in the operating performance of acquirers and targets combined in cross-border M&As greater than changes in the operating performance of acquirers and targets combined in domestic M&As?

These research questions have been addressed by using a sample of UK public acquirer firms who were involved in cross-border and domestic M&As during the years 1996 to 2003. The

examination has been conducted by carrying out three empirical studies connected to the consequences of M&As by examining the market reaction as well as the operating performance of firms involved in cross-border and domestic M&As.

This chapter presents the conclusions and key findings of the research in a way that shows how they meet the objectives set at the beginning of the thesis. Accordingly, the chapter is organized as follows. Section 5.2 summarizes the key findings of the empirical studies. Section 5.3 discusses the implications of the findings. Section 5.4 discusses the main problems and limitations of the study. Finally, section 5.5 presents some suggestions for further research.

5.2 Summary and Key Findings from the Empirical Investigations

This section summarizes the key findings of the thesis which are represented by the following three empirical studies.

5.2.1 Returns to Shareholders of UK Acquirers: Cross-border vs. Domestic

Study one, which is presented in chapter two of the thesis, extends the findings of previous literature conducted on the market reaction due to the announcement of merger and acquisition deals by examining the difference between the reactions of the returns on share prices of UK acquirers who are involved in cross-border and domestic M&As.

The empirical examination is conducted by applying the event study methodology using a sample of 585 acquirer firms which have returns data available and uses three different models in calculating abnormal returns, which are the mean-adjusted model, the market model and the market-adjusted model. The examination is conducted around the announcement date using five different event windows which are (-1, +1), (-2, +2), (-5,+5), (-10, +10) and (-40, +40). Most of the results using all the models and during all the event

windows show insignificant changes in the returns to shareholders of UK acquirers involved in cross-border acquisitions. On the other hand, most of the results for UK acquirers' shareholders involved in domestic M&As show a significant increase in the share market returns.

More specifically, the results obtained from using the mean-adjusted model show insignificant changes in the cumulative average abnormal returns of cross-border acquisitions during all the event windows. However, the domestic sample shows a significant increase in the cumulative average abnormal returns over the (-1, +1), (-2, +2) and (-10, +10) windows, whereas significant decrease in the returns when lengthening the period up to (-40, +40) days around the announcement day.

The equality tests shows no significant difference in means between cross-border and domestic M&As using the t- test, whereas significant negative difference in medians over the (-1, +1) and (-2, +2) event windows which suggests lower returns to cross-border acquirers.

When applying the market model in the analysis, the results show insignificant changes in the cumulative abnormal returns of UK acquirer firms involved in cross-border M&As using all the event windows except the (-10, +10) days which shows a significant decrease in the returns. However, the results for the domestic sample show a significant increase in the returns of UK acquirers over the event windows (-1, +1), (-2, +2) and (-40, +40) days.

The equality tests give the same results as in the mean-adjusted model with an insignificant difference in means whereas there is a significant negative difference in medians between cross-border and domestic M&As over the event windows (-1, +1) and (-2, +2).

Finally, when applying the market-adjusted model, the results of the analysis of the cross-border sample show insignificant changes in the cumulative abnormal returns over the event windows (-1, +1), (-2, +2) and (-5, +5) whereas there is a significant decrease in the returns over the (-10, +10) and (-40, +40) days around the announcement day. On the other hand, the domestic sample results show a significant increase in returns over most of the event windows, which are (-1, +1), (-2, +2), (-5, +5) and (-10, +10) days around the announcement day.

The equality tests show significant negative differences in means and medians over the (-1, +1) and (-2, +2) event windows which means lower returns for cross-border M&As in comparison with domestic M&As.

Also, a regression analysis has been conducted to examine the impact of some of the acquirer and deal characteristics on the returns to shareholders of acquirer firms. The results in general do not show that cross-border M&As affect the returns to acquirers' shareholders differently than domestic M&As. The results also show a significant positive impact of the deal value on the returns of domestic acquirers whereas there is a significant negative impact from the acquirer's size on the returns of domestic acquirer firms. However, no significant impact for those characteristics has been shown on the cross-border acquirers' returns.

The results of the first study generally support the findings from the previous literature conducted on the returns to shareholders of acquirer firms, which concluded that acquirers have generally insignificant negative returns to shareholders in cross-border deals, whereas there are significant positive returns to shareholders in domestic M&A transactions. This research adds to the previous studies by the direct comparison of the two types of acquisitions (cross-border vs. domestic) with results generally showing no significant difference between the returns to shareholders of acquirer firms involved in cross-border and domestic M&As,

which is surprising given the vast increase in the number of cross-border deals during recent years.

5.2.2 Operating Performance of UK Acquirers: Cross-border vs. Domestic

The evidence provided in study one, which is presented in chapter two of the thesis, shows that share market prices on the London Stock Exchange do not respond in a significantly different way to the announcement of cross-border acquisitions in comparison to domestic acquisitions, which may indicate that investors in the market may have felt that acquiring abroad is not profitably different than domestic acquisitions.

Study two, which is presented in chapter three of the thesis, also examines the UK acquirer firms using a longer time period than study one and using different performance measures in order to provide further insight into the difference between cross-border and domestic M&As. The study examines whether cross-border acquisitions have a less or more favourable impact on the operating performance of acquirer firms than domestic acquisitions by using acquirer firms' data over a period of up to three years before, and up to three years after, the acquisition. The major contribution of this study lies in the fact that according to my knowledge, it is the first study that compares the operating performance of UK acquirer firms involved in cross-border and domestic acquisitions by using the acquirer's data in the pre- and post-acquisition periods and by applying different benchmarks in the examination.

The empirical examination is conducted using eight different measures of operating performance and by applying the change model and the intercept model in order to calculate the changes in operating performance of acquirer firms. Also, two benchmarks are used in this study in order to control for the industry as well as the industry, size and pre-acquisition performance.

The results do not show significant differences between the operating performance of acquirer firms involved in cross-border and domestic M&As for most of the performance measures used, which is consistent with the results of the previous chapter conducted on the announcement period returns. However, there are some contradictions in the results when the change model is used in comparison with the intercept model, since the intercept model shows significantly lower operating performance of acquirer firms than the change model.

More specifically, when the change model is used, the results for the acquirer firms involved in cross-border M&As show significant positive changes in the industry-adjusted operating performance of acquirers using three measures, which are the cash flow deflated by total assets, the cash flow deflated by total market value and the 'pure' cash flow deflated by total assets whereas there are insignificant changes using the other measures. When the potential effects of industry, size and pre-acquisition performance are controlled, the results show insignificant changes in the operating performance of acquirer firms for all the measures used.

On the other hand, the results for acquirer firms involved in domestic M&As show significant positive changes in the industry-adjusted operating performance of acquirers using four measures, which are the cash flow measure deflated by total assets and total market value and the accrual measure deflated by total assets and the book value of equity respectively. The other measures show insignificant positive changes in the operating performance of acquirer firms. However, when control is made for the industry, size and pre-acquisition performance, the results show significant positive changes in the adjusted operating performance for two measures, which are the cash flow and 'pure' cash flow measures both deflated by total market value whereas there are insignificant changes for the other measures.

When the intercept model is used, the analysis shows different results from the change model. For example, the results for acquirer firms involved in cross-border M&As show significant

negative changes in the industry-adjusted operating performance of acquirer firms for all the performance measures used, except the accrual measure deflated by the book value of equity which shows positive changes. However, when industry, size and pre-acquisition performance effects are controlled, the results are more contradictory. Two measures show significant decreases in the operating performance of acquirers, which are the cash flow and the accrual measure both deflated by total assets whereas the accrual measure deflated by the book value of equity shows a significant increase. However, the other measures show insignificant changes in the operating performance of acquirer firms.

The results for acquirer firms involved in domestic M&As also show significant negative changes in the industry-adjusted operating performance of acquirer firms for five out of the eight measures used, which are the cash flow measure deflated by total assets and sales, pure cash flow deflated by total assets and sales and the accrual measure deflated by total assets. However, the other measures show insignificant changes in the operating performance of acquirers. When the adjustment is made for the industry, size and pre-acquisition performance, the results show insignificant changes in the operating performance of acquirer firms for all the measures used.

The regression analysis results for the impact of cross-border M&As on the post-acquisition operating performance of acquirer firms show an insignificant negative impact of cross-border M&As on the post-acquisition performance for most of the operating performance measures and benchmarks used.

5.2.3 Operating Performance of Combined Firms: Cross-border vs. Domestic

Study three, which is in chapter four of the thesis, is based on two kinds of analysis. Analysis (A) examines whether there is a significant difference between the impacts of cross-border and domestic M&As on the operating performance of UK bidders and targets combined. The

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performance measures and benchmarks used in this study are the same as those used in chapter three of the thesis. However, the calculation in this study differs from the one in study two by using the acquirer and target firms' data during the three years before the acquisition and the combined firms' data during the three years after the acquisition. On the other hand, analysis (B) of the chapter is conducted for the same acquirer firms used in analysis (A) by using the acquirer's data only in the pre- and post-acquisition period in order to check whether or not excluding target firms from the analysis has a qualitative impact on the results.

The results of analysis (A) conducted for the combined firms show that firms engaged in cross-border M&As have lower operating performance than domestic combined firms. More specifically, the results using the change model show that firms involved in cross-border M&As have insignificant changes in the industry-adjusted operating performance for all the measures used except the accrual measure deflated by the book value of equity, which shows significant positive changes in the operating performance of combined firms. When the industry, size and pre-acquisition performance effects are controlled, the results for the cross-border sample show insignificant changes in the operating performance of combined firms for all the measures used.

When the operating performance of firms involved in domestic M&As is examined, the results show insignificant changes in the industry-adjusted operating performance of combined firms for all the performance measures used. When the industry, size and pre-acquisition performance effects are controlled, the results show a significant increase in the operating performance of combined firms for five measures, which are the cash flow measure deflated by sales, the pure cash flow measures deflated by total assets, sales and total market value respectively and the accrual measure deflated by the book value of equity.

When the intercept model is used, the results for the cross-border sample show insignificant changes in the industry-adjusted performance of combined firms for all the measures used except the pure cash flow measure deflated by total market value, which shows significant negative changes in the operating performance of combined firms. When the control is made for the industry, size and pre-acquisition performance of firms, the results also show insignificant changes in the operating performance of firms for all the measures except the cash flow measure deflated by total assets and the pure cash flow measure deflated by total market value.

The results for the combined firms involved in domestic M&As show insignificant changes in the industry-adjusted performance of combined firms for all the measures used except the cash flow measure deflated by sales, which shows significant positive changes in operating performance of combined firms. When the industry, size and pre-acquisition performance of firms is controlled, the results also show insignificant changes in the operating performance of firms for all the measures except the cash flow measure deflated by sales and the pure cash flow measures deflated by total assets and sales respectively, which show significant positive changes in operating performance of combined firms.

The regression analysis results for the impact of cross-border M&As on the post-acquisition operating performance of combined firms show different results depending on the kind of benchmark used in the examination. For example, when the adjustment is made for the industry median performance, the results show insignificant negative impact of cross-border M&As. When the effects of industry, size and pre-acquisition performance are controlled, the results show significant negative impact of cross-border M&As on the post-acquisition performance of combined firms, which implies that cross-border M&As have a lower operating performance for combined firms than domestic M&As.

The results of analysis (B) of this chapter which is conducted for acquirer firms only are similar to the results achieved in analysis (A), which includes both acquirer and target firms in the analysis.

5.3 Implications of the Results

The M&A activity should be beneficial to the economy as a whole if the managers use the firm's resources wisely and act in the best interests of the firm and the shareholders in order to maximize the value of the firm following the M&A deal.

The findings of this thesis have obvious implications for the managers, shareholders as well as the decision and policy makers as to whether cross-border M&As should be actively encouraged or discouraged in comparison with domestic M&As.

Some of the results of the thesis show lower returns and operating performance for UK acquirer and combined firms in cross-border M&As in comparison with domestic M&As for some of the measures used. However, this doesn't mean that those transactions should be discouraged, since the maximum period after the M&A covered by the analysis in this thesis is three years. If firms usually undertake cross-border M&As as long term strategic investment activities by which they expect to generate higher profits than domestic M&As after more than three years, then the evidence reported in the thesis could have misrepresented the difference between the operating performances of cross-border M&As and domestic M&As. If that is so, and if empirical evidence shows that cross-border M&As usually generate higher profits than domestic M&As after more than three years, then it will be wrong and irrational to discourage firms from engaging in cross-border M&As.

5.4 Limitations of the Study

The results of this study should be considered with a degree of knowledge of its limitations. Those limitations have resulted from a problem which occurred at the beginning of the data collection period which is the need to collect the data manually from the Acquisitions Monthly magazine due to the unavailability of the suitable electronic databases.

This problem has resulted in some of the limitations which can be summarized in the following four points:

- The manual collection of the data proved to be a time and effort- consuming exercise.

- The size of the sample used to conduct the various studies in the thesis might have been larger if an electronic database was available.

- Another limitation was the unavailability of the data needed to analyse the impacts of some firm characteristics on the differences between the reactions of the market to the announcements of domestic and cross-border M&As by UK acquirers, as well as the impacts of the characteristics on the difference between the effects of domestic and cross-border M&As on the operating performance of UK acquirers.

- Another important limitation is that the difference between the impacts of domestic and cross-border M&As on the operating performance of UK acquirers in periods longer than three years after the M&As is not examined in the thesis. This could be an important limitation if firms undertake cross-border M&As as long term strategic activities which they expect to generate higher profits than domestic M&As after three years.

5.5 Suggestions for Further Research

On the basis of the findings from this study as well as the other previous literature, recommendations and suggestions for further investigation are provided in order to obtain greater understanding of the findings presented in this thesis and to improve them.

For example, different approaches can be used in future studies in order to add to the understanding of the antecedents and consequences of M&A transactions. One approach is to examine the issue of M&As more closely and in greater detail by using a case study analysis since this approach may provide better insights into the actual antecedents, motives and consequences of the M&A transactions. The findings of those case studies might explain any variations in the results of this current thesis and complement the findings in it.

Furthermore, some firms may undertake M&As as long-term strategic activities which they expect to generate high profits for them over a very long time period. Therefore, future research should examine time periods longer than three years after the M&As in order to check whether or not the impacts on the operating performance of firms change over longer time periods.

Also, subsequent studies might increase the power of this research by examining a bigger sample size or conducting the examination in developing countries rather than developed countries.

Sudarsanam (2010) suggests that acquirer firms involved in cross-border M&As may benefit from the strength of the currency of their home country at the time of the acquisition. Therefore, it would be beneficial if future research examines the impact of the changes in the exchange rates between the currencies of the acquirer and target firms at the time of the

acquisition on the differences between the returns and operating performances of firms involved in cross-border and domestic acquisitions.

APPENDICES

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
World	1 174	1 879	2 723	3 360	3 908	3 724	3 965	4 566	5 498	5 868	6 740	7 995	9 007	10 031	8 098	6 553	6 621	7 270	8 560	9 075	10 145	4 370
Developed economies	1 057	1 703	2 459	2 840	3 234	3 106	3 196	3 740	4 726	5 002	5 760	6 947	7 966	8 829	6 982	5 324	5 158	5 708	6 761	7 233	8 143	3 414
Europe	546	1 016	1 430	1 594	2 066	1 891	1 759	2 070	2 685	2 660	3 014	3 650	4 801	5 472	4 373	3 226	2 865	3 018	3 806	4 036	4 610	1 987
European Union	505	936	1 328	1 463	1 864	1 730	1 609	1 881	2 444	2 425	2 763	3 357	4 456	5 046	4 042	2 952	2 627	2 752	3 430	3 624	4 171	1 798
Austria	4	6	8	14	40	40	33	45	70	41	47	56	83	109	97	76	69	91	97	95	127	38
Belgium	12	14	17	27	45	56	39	49	68	72	101	141	189	247	165	95	85	89	103	96	112	42
Bulgaria	1	-	-	-	-	-	-	1	-	-	-	-	1	2	1	3	4	1	4	2	2	3
Cyprus	-	-	-	-	-	-	-	-	7	4	3	1	9	17	22	12	6	7	9	26	32	12
Czech Republic	-	-	-	-	2	2	-	2	3	5	10	3	7	8	10	15	5	4	11	16	12	5
Denmark	7	17	22	37	64	58	57	55	100	62	91	94	138	177	167	94	79	100	147	120	103	72
Estonia	-	-	-	-	-	2	-	1	-	4	9	6	8	7	4	6	6	6	4	8	12	4
Finland	9	18	39	32	54	57	43	50	34	62	80	108	149	173	144	137	96	66	93	109	91	65
France	59	101	178	267	310	284	211	247	319	327	353	410	527	665	535	359	291	329	454	468	588	241
Germany	37	71	113	160	251	265	234	313	422	402	344	453	787	835	559	450	386	351	433	444	491	213
Greece	-	-	2	-	2	5	14	9	3	3	13	14	34	58	77	37	27	10	29	32	24	17
Hungary	-	-	-	-	-	-	1	1	7	1	10	13	18	18	8	15	24	11	13	16	18	7
Ireland	9	33	41	46	25	37	44	75	75	77	82	95	126	162	127	76	73	76	81	112	140	45
Italy	24	26	55	65	104	105	91	76	105	66	78	138	183	202	206	131	140	113	165	155	232	85
Latvia	-	-	-	-	-	-	1	-	-	-	-	3	3	6	3	2	7	5	2	1	3	1
Lithuania	-	-	-	-	-	-	-	-	1	-	-	1	4	-	2	4	8	2	4	3	3	4
Luxembourg	4	3	2	6	26	18	20	22	13	16	26	29	25	41	33	25	25	31	41	63	62	42
Malta	-	-	-	-	-	-	1	-	2	-	3	-	2	-	1	-	-	3	-	2	2	1
Netherlands	38	54	62	89	159	132	151	191	279	286	294	365	413	427	332	253	195	196	249	263	307	158
Poland	-	-	-	1	1	-	2	2	4	7	4	2	9	12	14	9	14	15	21	14	40	17
Portugal	-	-	2	1	7	14	15	13	15	6	17	26	36	50	39	38	22	27	25	38	37	23
Romania	-	-	-	-	-	-	-	-	1	-	1	2	1	-	-	4	3	1	2	4	1	3
Slovakia	-	-	-	-	-	1	1	1	1	8	1	2	5	2	9	5	3	4	4	6	5	7
Slovenia	-	-	-	1	-	-	-	1	-	1	-	-	-	4	14	10	8	8	7	8	10	3
Spain	7	9	28	31	39	45	32	26	39	60	85	152	181	198	156	126	137	128	154	187	218	84
Sweden	20	56	90	102	176	127	98	105	159	172	175	221	322	335	239	156	150	177	215	233	293	130
United Kingdom	274	528	669	584	559	482	521	596	717	743	936	1 022	1 196	1 291	1 078	814	764	901	1 063	1 103	1 206	476
Other developed Europe	41	80	102	131	202	161	150	189	241	235	251	293	345	426	331	274	238	266	376	412	439	189
Andorra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-
Faeroe Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-
Gibraltar	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1	-	1	4	3	2
Guernsey	-	-	-	-	-	-	-	-	1	-	-	1	2	-	-	-	11	5	1	15	23	5
Iceland	-	-	-	-	-	1	-	-	2	-	2	1	3	6	7	8	13	18	45	57	40	11
Isle of Man	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	3	2	11	9	19	2

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Jersey	-	-	-	-	-	-	1	-	-	1	2	1	1	2	2	1	1	1	3	10	28	8
Liechtenstein	-	3	5	6	2	1	-	-	2	3	3	1	2	2	3	-	6	1	-	1	2	1
Monaco	-	1	2	1	2	1	-	4	5	2	4	2	3	1	4	2	3	-	1	-	-	1
Norway	9	8	16	27	63	48	43	47	62	65	66	89	94	114	89	89	51	95	113	112	122	57
Switzerland	32	68	79	97	134	110	106	138	169	164	174	198	240	299	222	173	149	143	200	203	201	102
North America	373	466	721	776	843	1 011	1 211	1 396	1 738	1 977	2 337	2 815	2 624	2 747	2 048	1 652	1 841	2 131	2 225	2 430	2 604	1 101
Canada	77	88	163	160	142	204	233	271	320	391	437	512	409	506	430	381	425	500	488	552	612	235
United States	296	378	558	616	701	807	978	1 125	1 418	1 586	1 900	2 303	2 215	2 241	1 618	1 271	1 416	1 631	1 737	1 878	1 992	866
Other developed countries	138	221	308	470	325	204	226	274	303	365	409	482	541	610	561	446	452	559	730	767	929	326
Australia	59	63	60	83	56	55	84	109	126	94	156	207	187	231	217	185	205	286	363	398	503	140
Bermuda	6	1	7	10	10	8	12	22	18	49	43	41	53	53	72	26	20	25	26	32	38	23
Greenland	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Israel	-	-	1	5	3	9	15	17	9	13	21	31	34	66	33	28	26	37	55	59	69	25
Japan	58	134	223	347	248	125	99	106	133	186	159	184	233	210	188	152	165	171	255	235	248	122
New Zealand	15	23	17	25	8	7	16	20	16	23	30	19	34	50	51	55	36	40	31	43	71	16
Developing economies	47	63	101	154	221	242	359	469	496	609	668	654	676	866	743	830	917	1 090	1 269	1 345	1 454	682
Africa	11	11	15	24	26	24	24	39	45	57	72	107	130	124	96	75	49	63	95	93	77	42
North Africa	-	-	1	2	1	5	4	3	4	2	2	3	16	6	8	3	4	4	12	17	9	4
Algeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-
Egypt	-	-	1	1	-	-	2	-	1	1	1	1	7	6	3	1	3	2	3	14	6	3
Libyan Arab Jamahiriya	-	-	-	1	1	5	1	2	1	-	-	1	1	-	2	1	1	1	1	-	1	-
Morocco	-	-	-	-	-	-	1	1	1	1	1	1	6	-	-	2	-	-	1	8	2	2
Sudan	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Tunisia	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Other Africa	11	11	14	22	25	19	20	36	41	55	70	104	114	118	88	72	45	59	83	76	68	38
Côte d' Ivoire	-	-	-	-	-	-	1	1	2	-	1	1	1	1	-	-	-	1	-	-	-	-
Ghana	-	-	-	-	-	-	-	1	1	4	1	-	-	-	-	-	-	-	1	1	-	-
Liberia	-	-	-	-	-	-	-	1	-	1	-	-	-	1	-	1	1	-	2	-	-	-
Niger	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nigeria	-	-	-	-	-	1	1	-	-	1	-	-	-	1	2	3	2	1	3	3	4	6
Senegal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Sierra Leone	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	1	-	-	-	-
Congo	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Equatorial Guinea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Gabon	-	-	-	-	1	-	-	-	-	1	-	1	-	-	3	-	-	-	-	-	-	-
São Tomé and Principe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Eritrea	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-
Kenya	1	-	-	-	1	-	-	-	1	-	1	1	-	2	1	1	1	3	2	4	4	1

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Mauritius	-	-	-	-	-	-	-	-	-	1	3	1	1	2	2	5	2	-	17	11	7	2
Reunion	-	-	-	-	-	-	-	-	-	4	-	-	1	-	1	-	1	-	-	-	-	-
Seychelles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	3	-	2	2
Uganda	-	-	-	-	-	-	-	-	-	-	1	-	1	-	2	-	-	-	-	-	2	-
United Republic of Tanzania	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Angola	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Botswana	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	1	1	-	-	-	-	-
Lesotho	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Malawi	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-	-	-	-
Namibia	-	-	-	-	-	-	1	1	-	1	-	1	1	-	-	-	-	1	-	2	-	1
South Africa	9	11	14	20	21	18	15	28	34	40	61	96	103	105	69	57	34	47	51	55	46	24
Swaziland	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-
Zambia	1	-	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	1	1	1	-
Zimbabwe	-	-	-	2	2	-	-	3	-	1	1	2	2	1	4	5	3	1	1	3	2	1
Latin America and the Caribbean	12	14	16	22	28	51	61	98	98	91	105	153	133	185	145	179	151	180	153	213	248	108
South and Central America	8	10	13	16	19	34	49	77	75	70	82	124	104	152	102	126	104	130	101	143	170	73
South America	6	9	7	9	15	26	33	46	63	50	50	83	73	108	76	86	71	95	62	92	116	54
Argentina	1	-	1	-	2	6	11	7	8	10	21	37	27	36	20	21	18	17	13	12	7	4
Bolivia	-	-	-	-	-	-	-	2	1	1	-	-	-	-	1	3	1	3	-	1	3	1
Brazil	2	2	5	2	5	7	10	16	20	8	8	23	24	35	38	29	32	40	30	43	58	40
Chile	-	1	-	1	1	3	4	8	18	21	9	10	10	22	11	15	12	17	7	20	22	3
Colombia	1	1	-	-	-	1	2	7	3	-	4	7	2	3	2	5	1	6	5	6	14	2
Ecuador	-	-	-	-	-	2	-	2	2	1	-	-	-	1	-	1	1	-	-	-	1	1
Falkland Islands (Malvinas)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Guyana	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Paraguay	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Peru	-	-	-	-	-	-	-	1	6	3	2	1	2	6	2	6	1	10	4	3	2	2
Suriname	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uruguay	1	1	-	-	2	2	-	-	1	-	1	1	1	2	1	2	3	-	2	1	-	-
Venezuela	1	3	1	6	4	5	6	3	4	6	5	4	7	2	1	4	-	2	-	6	9	1
Central America	2	1	6	7	4	8	16	31	12	20	32	41	31	44	26	40	33	35	39	51	54	19
Belize	-	-	-	1	-	1	1	1	2	-	-	2	2	-	1	-	-	1	-	1	-	-
Costa Rica	-	-	-	-	-	-	2	-	1	2	-	11	4	1	1	-	1	-	2	3	6	-
El Salvador	-	-	-	-	-	-	1	-	-	-	-	1	-	2	-	-	-	1	2	9	-	-
Guatemala	-	-	-	-	2	-	-	-	-	-	1	-	-	4	6	4	-	1	5	10	4	2
Honduras	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Mexico	2	-	5	4	2	6	12	27	7	17	27	25	24	36	16	32	26	26	25	24	36	15
Nicaragua	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Panama	-	1	1	2	-	1	-	3	2	1	4	2	1	1	2	4	5	6	5	4	8	1
Caribbean	4	4	3	6	9	17	12	21	23	21	23	29	29	33	43	53	47	50	52	70	78	35
Anguilla	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	1	1	1
Antigua and Barbuda	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	-	-
Aruba	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Bahamas	-	-	-	1	-	1	1	4	8	3	2	4	3	1	6	7	6	3	3	8	1	4
Barbados	-	-	-	1	1	1	-	-	-	1	1	-	2	1	-	-	1	-	7	3	9	3
British Virgin Islands	1	-	-	-	-	1	2	6	10	7	6	3	7	13	22	27	19	19	13	16	21	7
Cayman Islands	2	3	-	-	1	1	1	4	1	-	6	4	4	3	9	7	6	9	5	17	35	18
Cuba	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	-	-	-	-	-	-	1	-	-	-	-	-	-	1	1	1	-	5	-	1	1	-
Haiti	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Jamaica	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	1	6	7	4	-
Martinique	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Netherlands Antilles	1	1	1	2	4	3	4	-	2	3	1	10	5	6	1	1	3	1	2	4	1	-
Puerto Rico	-	-	1	2	2	3	1	3	-	2	6	7	3	5	4	8	6	8	9	8	4	1
Saint Kitts and Nevis	-	-	-	-	-	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-
Trinidad and Tobago	-	-	1	-	-	5	1	3	-	-	-	1	3	2	-	1	5	3	3	1	-	1
Turks and Caicos Islands	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-
US Virgin Islands	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	1	2	1	-	-
Asia and Oceania	24	38	70	108	167	167	274	332	353	461	491	394	413	557	502	576	717	847	1 021	1 039	1 129	532
Asia	24	38	70	107	167	166	272	331	351	458	489	393	411	556	496	568	716	842	1 020	1 032	1 124	530
West Asia	4	8	15	13	14	16	19	19	18	25	36	35	43	46	47	40	44	44	78	108	135	98
Bahrain	-	-	2	2	2	3	5	3	-	1	6	11	13	7	10	8	13	12	12	20	22	16
Iraq	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Jordan	-	-	-	-	1	-	-	-	-	-	1	-	-	2	-	1	-	2	3	3	3	2
Kuwait	3	6	9	5	5	3	1	1	4	13	6	2	7	8	10	4	4	4	13	10	16	10
Lebanon	-	-	-	-	-	1	2	-	1	1	1	-	-	3	2	2	3	1	2	2	2	1
Oman	-	-	-	-	-	-	-	1	-	-	2	5	1	2	1	4	2	-	2	4	2	5
Qatar	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	2	3	4	1	8	8
Saudi Arabia	1	1	2	1	4	3	5	8	8	2	11	8	3	7	9	5	6	4	7	13	10	7
Syrian Arab Republic	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Turkey	-	-	2	3	1	6	6	4	3	5	5	6	9	12	9	9	5	7	11	11	10	9
United Arab Emirates	-	1	-	2	1	-	-	2	2	2	4	3	6	4	6	7	9	11	24	44	61	40
Yemen	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
South, East and South-East Asia	20	30	55	94	153	150	253	312	333	433	453	358	368	510	449	528	672	798	942	924	989	432
China	1	4	6	5	9	14	39	28	21	27	58	51	49	47	54	79	112	110	102	88	122	51
Hong Kong, China	16	13	21	30	64	49	78	76	58	76	93	97	89	141	121	128	144	157	189	186	186	62

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Korea, Democratic People's Republic of	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Korea, Republic of	1	2	3	9	4	5	8	17	21	29	23	11	17	14	31	17	29	17	32	56	56	29
Macao, China	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	1	1	1	-
Mongolia	-	-	-	-	-	-	-	-	-	2	2	2	1	-	-	-	-	-	-	-	-	-
Taiwan Province of China	-	2	6	15	6	11	4	4	14	9	23	24	28	28	13	22	29	26	22	20	25	13
Afghanistan	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Bangladesh	-	-	-	-	-	1	-	-	1	-	-	1	-	2	2	-	1	-	-	-	-	-
India	1	2	3	1	4	8	2	7	13	7	13	9	31	56	40	48	70	77	122	162	194	110
Iran, Islamic Republic of	-	-	-	-	2	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Nepal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-
Pakistan	1	-	-	-	1	1	1	1	1	-	1	-	2	-	3	2	3	3	-	3	-	-
Sri Lanka	-	-	-	-	-	-	-	1	2	-	-	1	1	1	4	2	2	1	1	2	4	1
Brunei Darussalam	-	-	-	-	-	-	1	-	2	3	1	-	-	1	-	-	1	-	-	1	-	-
Cambodia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-
Indonesia	-	2	2	8	7	4	11	12	13	19	16	10	10	11	4	3	14	11	18	15	13	7
Lao People's Democratic Republic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Malaysia	-	1	3	8	17	16	28	54	74	107	103	38	34	48	37	76	90	147	193	164	162	72
Myanmar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Philippines	-	-	1	-	3	-	3	3	15	24	7	4	14	13	9	9	6	13	17	12	17	5
Singapore	-	4	9	15	32	28	69	99	87	111	108	102	79	135	112	122	154	211	221	189	192	69
Thailand	-	-	1	3	4	11	8	9	11	17	5	7	11	10	18	18	15	24	22	19	15	12
Viet Nam	-	-	-	-	-	1	-	-	-	1	-	1	1	1	1	1	1	-	1	5	1	-
Oceania	-	-	-	1	-	1	2	1	2	3	2	1	2	1	6	8	1	5	1	7	5	2
American Samoa	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cook Islands	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1	-	-	-	-
Fiji	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1	-	1	-	-
French Polynesia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	3	-	2	1	-
Marshall Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
Nauru	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
New Caledonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2	-	-
Niue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Norfolk Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Northern Mariana Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Papua New Guinea	-	-	-	1	-	-	2	1	1	2	1	-	1	1	-	1	-	-	-	-	3	1
Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-
Solomon Islands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Tonga	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Number of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Number of deals)

Country / region	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Vanuatu	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
South-East Europe and the CIS	-	-	-	1	3	7	4	9	6	16	9	19	20	31	56	52	71	52	87	96	133	84
Southeast Europe	-	-	-	-	-	1	1	1	1	2	1	3	4	2	6	10	9	2	4	10	10	3
Albania	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Croatia	-	-	-	-	-	-	-	-	1	1	1	3	4	2	3	7	7	1	3	5	6	1
Czechoslovakia (former)	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Macedonia, TFYR	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-	-
Serbia and Montenegro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	4	3	1
Serbia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Yugoslavia (former)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-
Commonwealth of Independent States (CIS)	-	-	-	1	3	6	3	8	5	14	8	16	16	29	50	42	62	50	83	86	123	81
Armenia	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Azerbaijan	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1
Belarus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	1	1	-
Georgia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Kazakhstan	-	-	-	-	-	-	-	1	-	2	1	-	-	2	2	1	3	2	9	6	17	4
Moldova, Republic of	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Russian Federation	-	-	-	1	3	6	3	7	5	11	4	13	15	23	45	38	49	38	67	75	94	72
Ukraine	-	-	-	-	-	-	-	-	-	1	2	3	1	3	3	3	8	8	7	3	10	3
Uzbekistan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-
unspecified	70	113	163	365	450	369	406	348	270	241	303	375	345	305	317	347	475	420	443	401	415	190

Source: UNCTAD cross-border M&A database(www.unctad.org/fdistatistices).

Note: The data cover only those deals that involve an acquisition of an equity of more than 10%.   2008 is first half January through June.

Value of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
World	97 311	137 630	167 068	200 389	116 642	112 939	123 492	170 575	231 577	264 254	370 987	692 686	903 868	1 349 777	730 441	483 238	411 302	565 871	929 362	1 118 068	1 637 107	621 282
Developed economies	87 894	130 929	149 972	172 537	94 856	89 436	82 130	133 950	207 768	232 508	319 050	614 253	842 887	1 202 786	673 772	420 022	334 807	469 332	784 411	937 747	1 414 753	499 396
Europe	35 298	53 474	79 353	98 212	54 302	62 800	47 041	82 955	111 803	127 595	182 115	376 363	595 019	924 022	405 206	264 394	168 496	232 801	522 526	576 820	893 010	317 094
European Union	34 844	44 662	76 339	88 493	47 267	57 288	44 454	70 114	101 195	113 106	169 340	335 310	569 202	864 911	381 250	246 501	159 462	219 397	477 530	509 018	847 882	284 700
Austria	62	-	181	236	208	171	169	43	157	4	352	804	2 375	2 428	1 468	2 009	1 909	4 557	5 761	10 189	6 228	3 952
Belgium	20	226	321	852	776	625	197	3 209	4 707	3 349	2 079	3 604	16 376	17 317	20 404	5 148	3 555	9 749	6 171	8 168	9 083	1 125
Bulgaria	8	-	-	-	-	-	-	-	-	3	60	-	800	12	-	9	17	1 519	22	78	94	1
Cyprus	-	-	-	13	-	-	-	-	-	58	1 881	-	108	19	32	36	118	9	515	2 901	1 699	2 575
Czech Republic	-	-	-	-	-	67	-	24	46	148	82	133	33	58	36	42	142	360	650	1 048	308	66
Denmark	61	71	304	785	615	263	338	400	154	488	1 743	1 311	7 439	4 693	4 433	2 242	3 087	7 073	16 045	14 060	14 158	1 127
Estonia	-	-	-	-	-	-	-	22	-	17	8	19	10	15	41	-	25	-	3	3	-	-
Finland	58	176	979	1 136	574	52	106	742	471	1 845	2 515	8 077	3 462	21 902	9 310	5 677	972	3 450	4 373	4 848	1 327	5 436
France	3 262	5 664	18 322	22 852	10 548	13 777	6 840	9 398	9 203	13 352	26 198	42 325	91 344	175 452	62 260	41 446	12 574	23 215	59 860	80 469	105 268	34 052
Germany	1 487	2 614	3 576	6 919	8 030	7 637	5 662	7 662	19 396	19 399	15 042	70 414	89 591	71 518	61 289	44 368	23 782	21 038	47 667	51 983	94 122	55 393
Greece	-	-	100	-	13	19	134	35	-	1	2 338	1 839	896	3 943	1 325	218	371	82	2 285	7 124	811	1 637
Hungary	-	-	-	-	-	-	62	-	25	-	12	46	157	468	1 332	193	1 279	317	620	2 148	6	41
Ireland	67	698	1 088	762	399	532	542	1 621	1 228	2 277	1 978	3 773	4 700	6 192	4 529	2 560	2 041	4 170	5 570	10 699	10 008	3 775
Italy	3 387	1 499	3 660	2 887	1 160	5 484	1 379	1 795	7 510	1 760	6 363	16 058	14 109	21 527	20 592	10 426	14 398	11 860	54 744	20 384	65 521	24 636
Latvia	-	-	-	-	-	-	18	-	-	-	-	2	0	2	-	2	14	1	2	-	4	28
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	25	25	6	27	180	30	-
Luxembourg	59	80	2 736	1 714	1 023	1 373	1 559	189	51	1 037	1 970	1 537	4 065	6 599	16 902	4 605	1 236	565	12 107	7 477	13 939	8 018
Malta	-	-	-	-	-	-	7	-	-	-	-	0	-	4	-	43	-	-	57	-	115	110	-
Netherlands	2 731	2 383	3 292	5 958	5 794	5 774	3 134	8 947	7 581	15 770	16 169	26 005	50 940	43 031	34 217	18 803	10 124	11 228	99 641	59 463	155 841	44 538
Poland	-	-	-	-	14	-	8	11	10	76	45	472	135	264	420	541	711	196	835	3 467	1 458	711
Portugal	-	-	14	17	181	875	74	312	1 279	96	612	4 201	1 689	4 047	932	1 770	1 252	3 156	726	3 019	4 322	1 133
Romania	-	-	-	-	-	-	-	-	-	-	0	9	-	-	10	19	7	16	10	4	23	34
Slovakia	-	-	-	-	-	-	-	1	-	42	1	14	425	26	119	17	7	234	499	1	178	-
Slovenia	-	-	-	-	-	-	-	-	-	-	-	-	4	12	14	63	15	59	59	32	138	319
Spain	305	576	1 329	1 243	3 713	2 463	1 564	3 948	745	3 457	8 320	16 055	36 969	55 699	12 050	7 606	6 090	35 792	28 912	82 881	58 828	10 483
Sweden	1 004	3 775	1 651	13 242	1 468	2 186	1 964	1 926	11 500	3 288	8 135	16 987	11 160	23 070	9 339	12 839	5 482	10 053	17 022	12 528	34 671	4 329
United Kingdom	22 333	26 901	38 786	29 877	12 751	15 988	20 697	29 827	37 132	46 638	73 437	121 624	232 410	406 621	120 155	85 838	70 227	70 636	113 406	125 747	269 709	81 291
Other developed Europe	454	8 812	3 014	9 719	7 035	5 512	2 588	12 841	10 608	14 489	12 775	41 053	25 817	59 111	23 955	17 893	9 034	13 404	44 996	67 802	45 127	32 394
Andorra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	38	433	-	-	-
Gibraltar	-	-	-	-	3	-	-	-	-	-	-	-	-	18	-	-	0	-	13	404	116	7
Guernsey	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	343	415	14 128	6 051	1 269	173
Iceland	-	-	-	-	-	7	-	-	-	-	-	-	-	154	167	387	307	2 446	2 912	2 328	3 850	666
Isle of Man	-	-	-	-	-	-	-	-	-	-	-	-	-	0	50	-	3	3	483	976	357	10
Jersey	-	69	-	-	-	-	-	-	-	24	20	23	82	24	926	865	119	5	623	139	1 990	15 461

Value of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Liechtenstein	-	-	-	160	-	-	-	62	10	-	142	-	8	-	-	-	159	-	-	-	270	-
Monaco	-	-	15	-	35	113	-	4	-	-	0	-	-	-	102	-	77	-	4	-	-	-
Norway	53	19	166	1 382	1 322	401	130	1 004	1 607	4 032	1 295	1 213	2 079	9 284	1 916	6 355	414	4 532	9 412	11 548	13 025	1 736
Switzerland	401	8 724	2 834	8 177	5 675	4 991	2 458	11 773	8 990	10 433	11 317	39 806	23 647	49 630	20 795	10 286	7 613	5 965	16 988	46 356	24 252	14 341
North America	44 406	51 874	56 326	44 333	25 597	19 671	30 664	44 754	83 606	85 952	114 183	214 118	179 806	227 963	191 902	127 214	130 948	198 899	201 949	262 265	448 386	144 828
Canada	4 724	15 911	10 983	3 922	5 103	4 354	5 066	7 250	13 689	12 303	20 483	42 799	21 576	42 238	42 018	15 035	17 810	41 886	28 374	53 080	78 007	20 506
United States	39 682	35 963	45 344	40 410	20 494	15 317	25 598	37 505	69 916	73 649	93 699	171 319	158 230	185 725	149 883	112 179	113 138	157 014	173 575	209 185	370 378	124 323
Other developed countries	8 190	25 581	14 292	29 992	14 957	6 965	4 424	6 241	12 359	18 961	22 752	23 772	68 062	50 801	76 665	28 414	35 363	37 632	59 936	98 662	73 358	37 473
Australia	3 390	9 258	4 788	7 650	1 485	1 720	2 272	3 252	7 748	10 232	12 852	10 359	13 479	9 241	39 844	12 410	18 868	21 129	42 712	51 014	36 949	15 855
Bermuda	724	-	34	1 691	125	64	537	1 628	87	1 260	3 913	9 116	35 499	12 543	17 149	1 822	733	1 883	1 886	4 788	2 247	4 766
Israel	-	-	-	28	25	59	395	146	106	484	547	1 095	694	2 534	912	432	1 473	4 129	1 456	9 400	5 376	503
Japan	3 559	13 846	8 221	15 425	12 439	4 565	1 076	1 081	3 838	5 960	3 429	2 049	12 918	23 945	17 462	11 663	8 963	8 366	12 363	31 048	23 550	13 019
New Zealand	518	2 476	1 249	5 198	883	558	145	134	580	1 027	2 011	1 153	5 472	2 538	1 298	2 087	5 326	2 124	1 519	2 412	5 237	3 331
Developing economies	3 886	2 826	5 401	13 297	5 997	10 551	13 191	16 056	17 746	26 005	46 157	56 995	43 442	127 600	43 593	45 567	38 437	48 479	90 479	151 605	178 438	100 718
Africa	554	208	446	350	765	1 768	761	4 280	817	2 395	2 864	17 473	7 010	7 367	3 502	1 840	1 405	3 852	3 949	23 106	13 086	8 078
North Africa	139	-	-	-	-	309	54	15	33	8	32	3	430	213	132	-	585	111	1 730	4 431	1 413	4 188
Egypt	139	-	-	-	-	-	18	-	22	-	4	-	8	213	-	-	155	61	1 712	4 140	1 331	4 188
Libyan Arab Jamahiriya	-	-	-	-	-	309	-	5	-	-	-	3	-	-	45	-	430	50	-	-	-	-
Morocco	-	-	-	-	-	-	36	10	-	8	28	-	399	-	87	-	-	-	18	291	82	-
Tunisia	-	-	-	-	-	-	-	11	-	-	-	-	23	-	-	-	-	-	-	-	-	-
Other Africa	414	208	446	350	765	1 459	707	4 265	784	2 388	2 832	17 470	6 579	7 154	3 370	1 840	821	3 741	2 219	18 675	11 672	3 890
Botswana	-	-	-	-	-	-	-	8	4	-	-	-	-	-	3	-	87	-	88	-	-	-
Chad	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	203	-
Côte d' Ivoire	-	-	-	-	-	-	3	7	-	1	2	-	-	-	-	-	-	53	-	-	-	-
Gabon	-	-	-	-	229	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-
Ghana	-	-	-	-	-	-	0	35	506	2	137	-	31	-	-	-	0	16	-	-	-	-
Kenya	100	-	-	-	-	-	-	-	2	-	-	5	-	6	17	-	2	22	12	-	-	16
Lesotho	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Liberia	-	-	-	-	-	-	-	-	15	-	-	-	-	-	46	37	-	6	-	-	-	-
Malawi	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Mauritius	-	-	-	-	-	-	-	-	3	36	7	25	188	14	40	1	22	395	654	1 191	198	
Namibia	-	-	-	-	-	-	-	-	11	-	-	-	-	8	-	-	14	-	-	0	11	
Nigeria	-	-	-	-	-	-	-	2	-	-	-	-	81	74	-	-	-	21	174	1 044		
Senegal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-		
Seychelles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	115	6	0	67		
Sierra Leone	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-		
South Africa	314	208	446	329	537	1 459	707	4 249	733	1 773	2 778	17 303	6 545	6 881	2 938	1 636	687	3 322	1 538	17 993	10 074	352

Value of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Uganda	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	250	-	-	-	-
United Republic of Tanzania	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Zambia	-	-	-	-	-	-	-	-	-	15	-	-	-	43	-	22	-	-	29	-	25	-
Zimbabwe	-	-	-	22	-	-	-	4	-	64	-	16	6	-	309	22	-	57	-	1	5	1
Latin America and the Caribbean	156	480	1 887	6 770	2 256	3 786	3 523	3 950	6 020	7 725	18 773	25 251	15 531	17 066	9 742	12 648	14 424	17 860	15 244	39 270	47 625	14 394
South and Central America	23	234	1 678	6 458	2 236	1 930	3 250	3 280	5 373	7 063	18 533	22 569	14 377	16 404	6 758	11 110	12 095	14 909	11 441	36 991	39 598	9 964
South America	-	234	91	5 764	2 233	912	2 795	1 021	4 991	6 045	10 982	21 213	9 086	10 863	6 068	5 916	6 373	12 460	7 884	31 738	19 756	9 531
Argentina	-	-	-	5 604	240	274	1 500	155	1 981	393	3 817	7 692	1 361	1 471	440	1 002	507	164	903	3 488	5 328	2 315
Bolivia	-	-	-	-	-	-	-	-	-	0	-	-	-	-	92	38	-	-	-	39	112	-
Brazil	-	2	2	40	65	64	778	258	1 102	1 170	3 181	9 409	4 849	6 064	5 215	2 050	4 914	11 087	5 343	24 582	9 858	6 194
Chile	-	53	-	-	-	443	59	439	914	3 936	2 004	669	2 292	2 690	211	2 021	865	775	1 259	1 291	1 996	232
Colombia	-	-	-	-	-	-	11	10	90	-	1 109	81	119	217	20	530	3	71	258	778	1 285	725
Ecuador	-	-	-	-	-	43	-	22	50	45	-	-	-	-	-	0	1	-	-	1	-	-
Paraguay	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-
Peru	-	-	-	-	-	-	-	7	808	430	49	116	356	81	28	271	74	242	122	1 098	235	66
Suriname	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uruguay	-	18	-	-	-	8	-	120	3	-	-	25	25	32	-	-	5	-	-	3	-	-
Venezuela	-	161	89	120	1 926	80	446	10	42	71	824	3 222	84	308	61	4	-	120	-	460	942	-
Central America	23	-	1 587	694	3	1 018	455	2 259	382	1 018	7 551	1 357	5 291	5 541	690	5 194	5 721	2 449	3 557	5 253	19 842	432
Belize	-	-	-	-	-	-	55	1	25	-	-	63	319	-	13	-	-	5	-	-	-	-
Costa Rica	-	-	-	-	-	-	-	-	100	21	3	-	-	-	-	-	13	-	-	302	772	-
El Salvador	-	-	-	-	-	-	-	-	-	-	-	-	-	57	-	-	-	63	-	-	-	-
Guatemala	-	-	-	-	-	-	-	-	-	48	-	-	-	-	-	-	-	-	-	49	140	-
Honduras	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-
Mexico	23	-	1 587	690	3	1 018	400	2 258	168	871	7 411	1 076	2 755	5 479	644	4 944	5 548	2 283	3 488	4 655	18 428	432
Panama	-	-	-	4	-	-	-	-	89	127	89	218	2 217	6	33	250	140	97	69	247	502	-
Caribbean	133	246	208	312	19	1 856	273	670	647	662	240	2 681	1 154	663	2 984	1 537	2 329	2 951	3 804	2 279	8 027	4 431
Antigua and Barbuda	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-
Aruba	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bahamas	-	83	-	1	-	17	-	15	141	344	-	51	460	-	748	44	825	810	8	322	1 814	-
Barbados	-	-	-	-	5	-	-	-	-	-	15	1	-	-	-	638	-	-	123	-	-	-
British Virgin Islands	2	-	-	-	-	62	29	89	62	271	90	31	177	240	670	539	133	1 561	74	166	1 939	187
Cayman Islands	-	-	-	-	-	-	24	530	-	7	128	67	90	73	1 559	137	1 053	69	2 902	278	4 155	3 635
Cuba	-	-	-	-	-	-	-	8	341	-	-	-	-	-	-	-	-	-	-	-	-	-
Dominican Republic	-	-	-	-	-	-	1	-	-	-	-	-	109	1	8	8	-	16	-	-	93	-
Jamaica	-	-	-	16	-	10	-	-	4	-	-	-	-	-	-	-	-	-	1	196	1	-
Netherlands Antilles	132	-	16	287	-	11	44	-	99	7	7	528	309	3	-	0	188	125	-	350	-	586
Puerto Rico	-	163	169	8	14	1 500	-	28	-	17	1	1 998	-	226	-	148	130	370	574	812	25	-

Value of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Saint Kitts and Nevis	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Trinidad and Tobago	-	-	24	-	-	245	175	1	-	-	-	5	10	120	-	23	-	-	30	155	-	-
Turks and Caicos Islands	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	0	-	-
Asia and Oceania	3 177	2 139	3 069	6 177	2 976	4 996	8 908	7 827	10 909	15 885	24 520	14 272	20 901	103 167	30 350	31 079	22 608	26 767	71 286	89 229	117 728	78 246
Asia	3 177	2 139	3 069	6 062	2 976	4 995	8 766	7 827	10 888	15 819	24 422	14 272	20 760	102 733	30 350	31 046	22 607	26 765	71 110	89 022	117 450	78 242
West Asia	170	124	253	2 126	113	17	995	1 499	1 716	1 548	1 929	846	1 624	1 747	422	3 193	1 569	2 086	19 879	30 372	40 474	22 074
Bahrain	-	-	168	1 537	-	-	581	356	-	-	1 472	325	690	79	274	646	432	-	554	2 068	1 689	1 529
Iraq	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33	-
Jordan	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	9	-	4	98	356
Kuwait	170	-	83	-	112	-	-	-	4	647	-	70	120	32	105	114	441	845	3 173	1 870	1 758	154
Lebanon	-	-	-	-	-	-	21	-	3	0	58	-	-	-	-	-	-	7	103	1 522	210	-
Oman	-	-	-	-	-	-	-	-	-	-	18	151	-	-	-	69	125	-	33	5	9	565
Qatar	-	-	-	-	-	-	-	-	-	42	-	-	-	2	-	-	15	438	352	127	5 263	2 400
Saudi Arabia	-	-	-	-	-	-	282	630	1 687	350	335	219	3	1 550	39	2 020	473	78	53	1 257	13 139	1 080
Turkey	-	-	2	14	-	12	111	36	22	356	43	4	97	49	-	133	22	441	1 733	1 814	1 585	1 744
United Arab Emirates	-	124	-	576	1	-	-	476	-	153	2	77	676	13	4	211	60	268	13 877	21 704	16 689	14 247
Yemen	-	-	-	-	5	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-
South, East and South-East Asia	3 007	2 015	2 816	3 936	2 864	4 978	7 771	6 328	9 172	14 272	22 494	13 426	19 136	100 986	29 928	27 853	21 039	24 679	51 231	58 650	76 976	56 168
China	-	17	33	60	295	596	480	145	205	312	1 041	1 428	207	973	775	1 295	1 908	1 678	5 599	15 384	4 529	9 363
Hong Kong, China	2 879	1 652	1 005	1 383	1 363	2 930	5 393	2 771	2 644	5 821	10 836	6 934	10 184	81 321	4 273	20 039	5 883	5 957	13 740	10 628	13 430	4 816
Korea, Democratic People's Republic of	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Korea, Republic of	-	-	235	33	187	76	74	500	1 791	1 143	2 451	187	1 181	1 845	717	217	593	345	2 236	4 075	10 228	4 327
Macao, China	-	-	-	-	-	-	-	-	-	-	-	-	450	-	-	-	0	-	0	-	7	-
Taiwan Province of China	29	-	464	1 564	72	165	151	30	252	6	837	788	794	1 830	664	145	406	786	634	623	1 525	570
Afghanistan	-	-	-	-	-	13	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bangladesh	-	-	-	-	-	-	-	-	12	-	-	1	-	-	-	-	-	-	-	-	-	-
India	87	49	11	-	1	3	219	147	39	81	1 298	429	431	1 185	2 629	396	1 668	950	5 654	6 030	11 265	8 221
Nepal	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	15	-
Pakistan	4	-	-	-	-	-	-	-	-	-	6	223	-	7	4	81	-	16	-	-	339	-
Sri Lanka	-	-	-	-	-	-	-	2	3	-	-	26	12	-	14	13	-	-	-	3	1	8
Brunei Darussalam	-	-	-	-	-	-	202	-	31	189	-	-	-	-	-	-	-	-	-	112	-	-
Cambodia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-
Indonesia	-	260	-	48	3	229	65	304	688	261	994	349	628	1 446	548	262	1 253	1 022	5 836	374	1 389	171
Malaysia	-	-	27	304	231	175	168	980	1 412	3 677	1 592	1 073	1 151	995	747	1 964	3 902	881	2 724	2 833	5 610	1 455
Myanmar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Philippines	-	-	-	-	14	374	25	42	442	414	257	1	478	1 398	1 528	38	131	270	7 339	353	763	941
Singapore	7	38	773	501	606	403	926	1 300	1 462	2 176	3 079	1 383	3 436	9 497	16 741	3 174	4 966	11 913	6 309	17 806	27 436	24 855
Thailand	-	-	269	42	91	11	55	106	191	181	76	603	182	487	1 251	230	324	863	1 160	398	431	1 441

Value of Cross-border M&A's, by region/economy of purchaser, 1987-2008[a]

(Millions of dollars)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008[a]
Viet Nam	-	-	-	-	-	6	-	0	-	11	27	1	-	-	37	-	4	-	-	15	22	0
Oceania	-	-	-	115	-	1	142	-	22	66	97	-	141	434	-	33	1	2	176	208	278	4
American Samoa	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Fiji	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	2	-	-	-	1
Guam	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	-	-	-
New Caledonia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	100	-	-
Papua New Guinea	-	-	-	115	-	-	142	-	12	66	97	-	136	434	-	28	-	-	23	-	275	-
Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	18	3	3
Vanuatu	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-
South-East Europe and the CIS (Transition economies)	-	-	-	-	-	22	26	245	451	419	212	353	226	428	687	1 409	10 181	1 623	24 976	8 536	18 432	15 335
Southeast Europe	-	-	-	-	-	4	19	-	1	176	100	21	3	24	-	284	258	34	57	49	941	2
Croatia	-	-	-	-	-	-	-	-	1	1	100	21	3	24	-	254	32	21	51	39	-	2
Czechoslovakia (former)	-	-	-	-	-	4	19	-	-	173	-	-	-	-	-	-	-	-	-	-	-	-
Macedonia, TFYR	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	16	-	-	-	-	-	-
Montenegro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Serbia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	77	-
Serbia and Montenegro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	227	12	6	5	860	-
Commonwealth of Independent States (CIS)	-	-	-	-	-	18	6	245	450	242	112	331	223	404	687	1 124	9 923	1 589	24 919	8 487	17 492	15 333
Armenia	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-
Kazakhstan	-	-	-	-	-	-	-	-	450	-	-	-	-	106	-	-	170	5	-	3 254	2 978	1 512
Kyrgyzstan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-
Russian Federation	-	-	-	-	-	18	6	245	-	242	112	308	223	265	662	1 100	9 700	1 550	24 529	5 229	14 465	12 806
Ukraine	-	-	-	-	-	-	-	-	-	-	-	23	-	32	25	24	53	34	390	5	49	1 009
unspecified	5 530	3 875	11 695	14 554	15 784	12 931	28 145	20 324	4 430	5 322	5 516	21 084	17 032	18 445	11 792	16 241	25 732	36 915	26 274	20 179	23 012	5 833

Source: Thompson Finance

a First half of 2008

Appendix 2.A: List of Acquirers and Targets Used in the Sample

[not available in the digital version of this thesis]

Appendix 2.B: Datastream Definitions

❖ Return index (RI):

A return index (RI) is available for individual equities and unit trusts. This shows a theoretical growth in value of a share holding over a specified period, assuming that dividends are re-invested to purchase additional units of an equity or unit trust at the closing price applicable on the exdividend date. For unit trusts, the closing bid price is used.

For all countries except the USA and Canada detailed dividend payment data is only available on Datastream from 1988 onwards. Up to this time the RI is constructed using an annualized dividend yield, as follows:

$$RI_t = RI_{t-1} * \frac{PI_t}{PI_{t-1}} * \left(1 + \frac{DY_t}{100} * \frac{1}{N}\right)$$

Where:
RIt = return index on day t

RIt-1 = return index on previous day

PIt = price index on day t

PIt-1 = price index on previous day

DYt = dividend yield % on day t

N = number of working days in the year (taken to be 260)

From 1988 onwards (and from 1973 for US and Canadian stocks), the availability of detailed dividend payment data enables a more realistic method to be used in which the discrete quantity of dividend paid is added to the price on the ex-date of the payment. Then:

$$RI_t = RI_{t-1} * \frac{P_t}{P_{t-1}}$$

except when t = ex-date of the dividend payment D then:

$$RI_t = RI_{t-1} * \frac{P_t + D_t}{P_{t-1}}$$

Where:
Pt = price on ex-date

Pt-1 = price on previous day

D = dividend payment associated with ex-date t''.

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❖ **02999 Total assets**

Asset Data, Annual Item

Applies to	Description	Footnotes
Industrials	TOTAL ASSETS represent the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.	B. Excludes contra items (contingent liabilities) C. Includes trust business assets D. Adjusted to exclude foreign currency translation gains/losses
Banks	TOTAL ASSETS represent the sum of cash & due from banks, total investments, net loans, customer liability on acceptances (if included in total assets), investment in unconsolidated subsidiaries, real estate assets, net property, plant and equipment and other assets.	F. Adjusted to exclude provision for bad debt/loan losses G. Adjusted to exclude treasury stock H. Adjusted to exclude investment in own bonds
Insurance Companies	TOTAL ASSETS represent the sum of cash, total investments, premium balance receivables, investments in unconsolidated subsidiaries, net property, plant and equipment and other assets.	I. Adjusted to exclude foreign currency translation losses and provision for bad debts J. Adjusted to excluded treasury stock and investment in own bonds
Other Financial Companies	TOTAL ASSETS represent the sum of cash & equivalents, receivables, securities inventory, custody securities, total investments, net loans, net property, plant and equipment, investments in unconsolidated subsidiaries and other assets.	

❖ **Market value / market capitalisation – datatype (MV)**

Market value on Datastream is the share price multiplied by the number of ordinary shares in issue. The amount in issue is updated whenever new tranches of stock are issued or after a capital change.

☐ For companies with more than one class of equity capital, the market value is expressed according to the individual issue.

☐ Market value is displayed in millions of units of local currency.

❖ **18191 Earnings before interest and taxes (EBIT)**

Supplementary (Income) Data, Annual Item

Applies to	Description
All Industries	EARNINGS BEFORE INTEREST AND TAXES (EBIT) represent the earnings of a company before interest expense and income taxes. It is calculated by taking the pretax income and adding back interest expense on debt and subtracting interest capitalized.

❖ 18198 Earnings before interest, taxes and depreciation (EBITDA)

Supplementary (Income) Data, Annual Item

Applies to	Description
All Industries	EARNINGS BEFORE INTEREST, TAXES AND DEPRECIATION (EBITDA) represent the earnings of a company before interest expense, income taxes and depreciation. It is calculated by taking the pretax income and adding back interest expense on debt and depreciation, depletion and amortization and subtracting interest capitalized.

❖ 03151 Working capital

Supplementary Data, Annual Item

Applies to	Description
Industrials	WORKING CAPITAL represents the difference between current assets and current liabilities. It is a measure of liquidity and solvency.

❖ 01001 Net sales or revenues

Income Data, Annual Item

Applies to	Description	Footnotes
Industrial Companies	NET SALES OR REVENUES represent gross sales and other operating revenue less discounts, returns and allowances.	A. Gross total sales or revenue
		AA. Length of fiscal period is 18 months
	It includes but is not restricted to:	AB. Length of fiscal period is 15 months
	Franchise sales when corresponding costs are available and included in expenses.	AC. Length of fiscal period is 9 months
	Consulting fees	
	Service income	AD. Length of fiscal period is 6 months
	Royalty income when included in revenues by the company.	AF. Length of fiscal period is 5 months
	Contracts-in-progress income	
	Licensing and franchise fees	AG. Length of fiscal period is 13 months
	Income derived from equipment lease or rental when considered part of operating revenue	AH. Length of fiscal period is 14 months
	Commissions earned (not gross billings) for advertising companies	AI. Length of fiscal period is 7

Income from leased departments

It excludes:

Non-operating income

Interest income

Interest capitalized

Equity in earnings of unconsolidated subsidiaries

Rental income

Dividend income

Foreign exchange adjustment

Gain on debt retired

Sale of land or natural resources

Sale of plant and equipment

Sale of investment

Sales from discontinued operations

Security transactions

Income on reserve fund securities when shown separately

Operating differential subsidies for shipping companies

Net mutual aid assistance for airlines companies

General and Service Taxes

Value-Added taxes

Excise taxes

Windfall Profit Taxes

months

AJ. Length of fiscal period is 8 months

AK. Length of fiscal period is 48 weeks

AL. Length of fiscal period is 3 months

AM. Length of fiscal period is 11 months

AN. Length of fiscal period is 53 weeks

AP. Length of fiscal period is 16 months

AQ. Length of fiscal period is 10 months

AR. Length of fiscal period is 20 months

AS. Length of fiscal period is 2 months

AT. Length of fiscal period is 17 months

AU. Length of fiscal period is 4 months

AV. Length of fiscal period is 21 months

AX. Length of fiscal period is 22 months

B. Net sales includes value-added, excise, windfall profit or sales tax

BA. Major accounting standards switch

❖ 03501 Common equity

Shareholders' Equity Data, Annual Item

Applies to	Description	Footnotes
All Industries	COMMON EQUITY represents common shareholders' investment in a company.	A. Common shareholders' equity is not delineated
	It includes but is not restricted to:	B. Preferred stock cannot be separated
	Common stock value	
	Retained earnings	C. Treasury stock appears on asset side and cannot be separated
	Capital surplus	
	Capital stock premium	D. Minority interest in current year's income and/or the entire minority interest cannot be
	Cumulative gain or loss of foreign currency translation, if included in equity per FASB 52	

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treatment

Monetary correction-capital (03482)

Goodwill written off (03491)

For Non-U.S. Corporations preference stock which participates with the common/ordinary shares in the profits of the company

For Non-U.S. Corporations, if shareholders equity section is not delineated then the following additional accounts are included:

Appropriated and unappropriated retained earnings

Net income for the year, if not included in retained earnings (majority share of income is only included)

Compulsory statutory/legal reserves without specific purpose

Discretionary Reserves if other companies in that country include in their delineated shareholders' equity

Negative Goodwill

It excludes:

Common treasury stocks

Accumulated unpaid preferred dividends

For U.S. Corporations, excess of involuntary liquidating value for outstanding preferred stock over stated value is deducted

Redeemable common stock (treated as preferred)

separated

F. A small amount of special reserves cannot be separated (Germany)

G. Common shareholders' equity is not delineated and is not comparable

H. Policyholders equity cannot be separated

I. Includes non-equity reserves and/or other provisions which cannot be separated

J. Before appropriation on net income for the year

K. Increase/Decrease due to revaluation of assets

L. No standard text

M. No standard text

N. Adjusted to include foreign currency translation gains/losses

O. Adjusted to exclude treasury stock

P. Adjusted to include unappropriated net loss

Q. Adjusted to include unrealized gain/loss on marketable securities

R. Includes equity portion of untaxed reserves

T. Includes consolidation adjustments

Appendix 3.A: List of Acquirer Firms Used in the Sample and Their Benchmarks (Analysis B)

[not available in the digital version of this thesis]

Appendix 3.B: Number of M&As within Different Time Periods

Years	Raw Firm Data		Industry-adjusted Data		Industry, size and performance -adjusted Data	
	maximum	minimum	maximum	minimum	maximum	minimum
(-3,+3)	525	466	407	325	394	316
(-3,+2)	525	466	412	337	398	318
(-3,+1)	525	466	415	343	401	323
(-2,+3)	549	481	445	369	452	358
(-2,+2)	549	481	450	382	457	362
(-2,+1)	549	481	453	388	459	367
(-1,+3)	555	503	509	454	485	407
(-1,+2)	555	503	521	420	489	409
(-1,+1)	555	503	503	409	485	408

Appendix 4.A: List of Acquirers and Targets Used in the Sample with Their Benchmarks

[not available in the digital version of this thesis]

Appendix 4.B: Number of M&As within Different Time Periods

Years	Raw Firm Data		Industry-adjusted Data		Industry, size and performance -adjusted Data	
	maximum	minimum	maximum	minimum	maximum	minimum
(-3,+3)	85	66	53	36	57	35
(-3,+2)	85	66	56	38	57	35
(-3,+1)	85	66	56	39	58	36
(-2,+3)	91	71	60	40	62	46
(-2,+2)	91	72	63	42	62	46
(-2,+1)	91	72	63	44	63	47
(-1,+3)	98	77	71	46	71	55
(-1,+2)	98	77	75	49	71	55
(-1,+1)	98	77	75	51	72	56

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