CHARACTERISTICS OF MERGERS AND ACQUISITIONS IN THE TURKISH MARKET: THE POST-2004 PERIOD

by

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ABSTRACT

This study aims to analyze the value creation and destruction trends related to corporate takeovers, mergers and acquisitions in the Turkish market which became an attractive investment location in terms of merger activity especially after 2004 empowered with the global liquidity boost and desire for alternative high return investments. Cumulative abnormal returns (CARs) on the stock prices of the merger parties around the merger announcement day are calculated to be able to quantify the marginal value attached to the potential synergies to be achieved. Data is collected for 171 transactions involving publicly listed firms who bid on Turkish targets, and 67 publicly listed Turkish firms who were bid on. It is found that an average target firm experiences a significant positive abnormal return where an average bidder breaks even. Also, while industrial focus strategies create value for bidding firms, geographical diversification is associated with marginal negative returns. Gaining the majority control of the target firm also destroys value for the bidding firm; however this negative marginal effect is associated only with foreign firms. Also, a high market-to-book ratio may indicate over-valuation and can result in value destruction following a merger transaction. Another significant characteristic is the relative size of the merger parties, as smaller firms acquiring bigger targets gain more on average. Finally, the study finds that the market sees successive minor non-horizontal acquisitions as portfolio diversification that might create investor value.

ÖZET

Bu çalışma, özellikle 2004 yılı sonrasında küresel likidite artışı ve alternatif yüksek getirili yatırım arayışları sayesinde çekici bir yatırım alanı haline gelen Türkiye pazarında gerçekleşen şirket birleşmeleri ve devralmaları ile ilişkilendirilebilecek değer yaratımı ve yıkımı eğilimlerini analiz etmeyi amaçlamaktadır. Bu amaçla, birleşmeye taraf olan şirketlerin hisse senetleri üzerinde birleşme duyurusunun yapıldığı gün etrafında hesaplanan Kümülâtif Olağandışı Gelirler (KOG) kullanılarak birleşmeyle ilişkilendirilebilecek potansiyel sinerjilerin marjinal değeri ölçülmeye çalışılmıştır. Bu çerçevede Türk şirketler üzerinde satın alma isteğinde bulunmuş 171 kamuya açık şirket ile birleşme işlemlerinde hedef olmuş 67 kamuya açık Türk şirketi için veri toplanmıştır. Ortalama bir hedef şirketin anlamlı pozitif KOG değeri aldığı, ortalama bir satın alıcı şirketin ise başa baş kaldığı görülmüştür. Ayrıca, endüstriyel odaklanma stratejilerinin satın alan şirketler için değer yarattığı görülürken, coğrafi çeşitlilik stratejilerinin marjinal negatif KOG'ler yarattığı bulunmuştur. Satın alınan şirketin çoğunluk kontrolünü ele geçirmenin satın alan firma için değer yıkıcı bir etkisi olduğu saptanırken, bu etkinin sadece yabancı firmalarla ilgili olduğu gözlemlenmiştir. Bununla birlikte, yüksek pazar değeri - defter değeri oranlarının gereğinden yüksek değerleme işareti olarak algılanabildiği ve bir birleşme duyurusu sonrasında değer kaybına yol açabildiği gözlemlenmiştir. Şirketlerin oransal büyüklüklerinin önemli bir etkisi olduğu gözlenmiş; ve büyük şirketler üzerinde teklifte bulunan küçük şirketlerin pozitif KOG'lerle ilişkilendirildiği görülmüştür. Son olarak, pazarların ardı ardına yapılan küçük hisseli işlemleri yatırımcı için değer yaratacak portföy çeşitlendirmesi olarak görebildiği saptanmıştır.

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NOMENCLATURE

$AR_{i,t}$	:	Abnormal return of the stock *i* at time *t*
$R_{i,t}$	:	Realized return of the stock *i* at time *t*
$E(R_{i,t})$	:	Expected return of the stock *i* at time *t*
$\hat{\beta}_i$	:	CAPM Parameter estimated for the stock *i*
$\hat{\alpha}_i$	:	CAPM Parameter estimated for the stock *i*
$R_{m,t}$	:	Realized market return at time *t*
R_f	:	Risk-free return rate
CAR_i	:	Cumulative abnormal returns during the event window for the stock *i*
$\hat{\sigma}_{\bar{e}_i}$	:	The standard deviation of the expected return for stock *i*
$\hat{\sigma}_i$	:	The standard deviation of the abnormal return of stock *i* at time *t*
$\hat{\sigma}(CAR_t)$	:	Standard deviation of the average abnormal returns cumulated over N stocks
$\hat{\sigma}(CAR_i)$	:	Standard deviation of abnormal returns cumulated over time
VIF_i	:	Variance inflation factor
R_i	:	Multiple correlation coefficient

Chapter 1

Introduction

M&A history in Turkey dates back to the 90's, where the liberalization of the Turkish economy starts nurturing the corporate environment. As financial institutions develop and financial markets deepen, M&A activity accelerates starting at the beginning of the 90's and through the 2000's. Especially after 2004, empowered with the global liquidity boost and desire for alternative high return investments, Turkey becomes an attractive investment location in terms of merger activity. High economic growth, increasingly liberal regulations, economic and political reforms stabilizing the Turkish economy creates an investor friendly environment where both Turkish and foreign firms take their chances in the Turkish M&A market.

Turkey, as an emerging market creates an opportunity for foreign firms to diversify their operations and take advantage of a high growth market. On the other hand, domestic corporations perceive the merger market as an opportunity for inorganic growth. The motivation for taking advantage of potential synergies with the counter merger party makes the domestic companies also highly attracted to the merger market. The combination of attractive features both for local and global players lead to a very active M&A market for Turkey in the 2000s.

Especially after 2004, M&A activity plays a significant role in overall investment environment in the Turkish market. Cross-border merger transactions as well as domestic transactions create a transaction volume which is nearly 140 billion dollars. Hundreds of domestic and foreign firms are involved in these transactions which span through every active industry in Turkey. These firms, as well as the other industry players, are affected from each M&A transaction which in turn ends up having significant effects on the entire Turkish economy.

Since the M&A activity becomes so significant in terms of volume and number, we think that the effects of M&A transactions for involved parties warrant further analysis. The M&A waves have taken a hit from the recent decline of excess global liquidity and heightened risk-aversion, but they might be expected to continue as the economy picks up after a contractionary cycle. Also, it is reasonable to believe that Turkey, which proved to be a relatively strong emerging market will keep being an attraction point for foreign investors. Thus, we believe that being able to quantify potential effects of an M&A transaction to the

parties has significant value in terms of decision making purposes as well as explaining the dynamics of M&A market in Turkey.

From a very basic point of view, any M&A transaction significantly affects at least two parties involved in that transaction. Firms involved in M&A transactions assess potential opportunities to exploit when making a merger decision. Then, the markets that the firms operate in assess the projected benefits of that merger and value the new formed entity. The synergies that might be created are measured and valued by the market, which in turn are reflected in the share-price of the merging parties around the transaction announcement date. Thus, measuring the movements of the share-prices enables us to understand the perceived value creation patterns associated with M&A activity. Previous studies have proven that several different issues[1] affect profitability of mergers for both parties. Measured returns to acquirer and target firms differ from each other based on the transaction and firm characteristics.

In this context, our study aims to shed light on the Turkish M&A market in several steps. First, we draw a picture describing the overall Turkish M&A market and its historical development through the 90's and especially the 2000's. In this overview, we provide information about the Turkish M&A market size and volume, most active industries, percentage of cross-border and horizontal mergers, investor origin, as well as information about several biggest M&A transactions which occurred especially in the 2000's.

After providing a general overview of the Turkish M&A market, we continue with a literature review on the general subject of how transaction parties are affected from the merger in the short run. Representing results of the previous studies, we summarize the general value creation or destruction patterns experienced by firms involved in M&A transactions. In this section, we also describe the methodologies commonly used to measure M&A transaction effects on firms, and refer to the results of various studies that have investigated how transaction and firm characteristics can determine the market's reaction to a merger or acquisition announcement in the short run.

In the following sections, we introduce the data and methodology used in our study. After dynamics of an event study methodology and data sources to be used and sample selection process is explained in detail, we represent the results of our empirical study. The results are represented in the following manner:

[1] Such as a transaction's being horizontal or not, cross-border or not, firm size and financial characteristics of merging parties, etc.

We first portray the descriptive statistics regarding our sample to provide an overall idea about the general trends of the Turkish M&A market. Here, we provide the reader with the general summary statistics characterizing our sample by representing statistics on the types of M&A transactions and firm characteristics. The descriptive statistics show that the general trends in the Turkey M&A market are not in favor of industrial diversification, as 70% of the sample consists of transactions where the target and the acquirer firms operate in the same macro-industry. On the other hand, geographical diversification is the way to which the majority of the investors lean, as nearly 70% of the acquirers are foreign firms during the post-2004 period. Interestingly, we see that the domestic firms are keener on industrial diversification than foreign firms. Significant difference between frequencies of non-horizontal transactions between groups of foreign and domestic bidders suggests that foreign bidders may be finding being involved in non-horizontal transactions riskier. One other pattern emerging from the post-2004 M&A sample is that parties involved in cross-border M&A transactions are significantly larger than their domestic counterparts, suggesting that higher size may tolerate higher geographical diversification risk.

In the following section, we continue by providing univariate statistics about average abnormal returns associated with parties involved in M&A transactions. In this section, we report the market's overall reactions to the bidder and target firms. Here, we see that especially the target stock prices show a consistent abnormal increase starting from 10-15 days prior to the M&A announcement and stay at their final level after the announcement (on average 9% higher from the price prior to the merger announcement). While a positive abnormal return can also be observed for acquirer shares, the picture is less clear in this case and positive returns are mostly insignificant.

Next, we try to see how the markets' reactions may differ from each other based on several firm and transaction characteristics[2]. Without controlling for multiple effects, we try to identify the independent effects of potential key variables on abnormal returns. Interestingly, such analysis show that the domestic bidders experience significantly higher returns than the foreign bidders. Also, bidders involved in horizontal transactions earn significantly more than their counterparts involved in non-horizontal transactions. Similarly, targets being acquired by a firm operating in the same macro industry earn nearly 15%, targets engaged in non-horizontal transactions breakeven. These results may suggest that any kind of diversification, either geographical or industrial, is associated with lower value creation by the market.

[2] Cross-border vs. Domestic transactions, Horizontal vs. Non-horizontal transactions, Transactions involving different size acquirers or targets, etc.

Some of the firm characteristics as well as the transaction characteristics prove to have some explanatory power on abnormal returns. Our results show that the firms with high market-to-book ratios experience significantly lower returns than firms with lower market-to-book ratios. As Moeller et al. (2005) have explained, high market-to-book ratio can indicate overvaluation and result in value destruction following a merger announcement. Also, corporate governance and control seems to create a positive marginal effect for target firms. Our results show that targets whose majority shares are owned by the bidder after the transaction also experience significantly higher returns than targets whose minority shares are acquired. This might suggest that on average the market thinks that a target firm will prosper more under the management of the bidder firm.

Finally, after identifying the transaction and the firm characteristics that seem to explain abnormal returns using the univariate statistics, we move to running our multivariate cross-sectional regressions to control for the marginal effects of several variables in explaining the abnormal returns. The results of these multivariate regressions show that the negative marginal effects of industrial and geographical diversification are robust to inclusion of several other firm and transaction characteristics into the regressions. Another interesting result emerging from the multivariate tests is the fact that the bidding firms gaining majority control of the target firm after transaction do worse compared to their counterparts acquiring only minority shares of the target firm. This effect is significantly higher for foreign bidders, and the loss is mostly concentrated on the foreign firms acquiring a private target. The explanatory power of the market-to-book ratio of the acquirer firm also persists, suggesting that the potential overvaluation is corrected by the market after an M&A transaction. Another firm characteristic that proves to have a significant marginal effect on the acquirer returns is the relative size of the merger parties, as smaller firms acquiring bigger targets gain more on average.

Chapter 2

Overview

2.1. M&A History in Turkey

First, we try to provide an overview of M&A activity in Turkey. Thomson One Mergers and Acquisitions database contains 1445 M&A announcements (as of 15.09.2008), whose (intended) target firms are listed as being based in Turkey. Although the data goes back to 1984, no records are found for the years 1985, 1986, 1987. And only one M&A announcement for the year 1984 is available. This may be due to poor data recording up until 1988.

Most of the M&A activity takes place in 2000s. While there is some takeover activity in the 90's, the total number of transactions as well as the total value of the transactions have significantly risen after 2000. Post-2000 period accounts for 71% of the total M&A activity in number[3]. After adjusting for inflation, total disclosed value of the M&A transactions from 1988 to 2008 is 187 billion dollars. 162 billion dollars of transaction value is generated in the post 2000 period. This corresponds to 87% of the total deal volume generated. Although the M&A market takes a hit after rising for a while as a result of the 2001 crisis; with high economic growth, political and economical stability and reforms, an investor-friendly environment is created in the Turkish market after 2004. Combined with the global excess liquidity and risk-loving behavior, the M&A transactions mostly driven by foreign investors take a boost in the beginning of 2005. The 2005-2008 period produces 73% of the total deal volume available for the 1988-2008 period, adding up to 137 billion dollars[4]. Figures 1 and 2 show the historical trends of M&A activity with respect to the number of deals, and deal volume.

The M&A announcements consist of both cross-border and domestic transactions. Although the pre-2000 period shows a domestic investor driven market, foreign investors dominate the M&A market volume in the post-2000 period. The entire sample period covering 1988-2008 period shows that in 53% of the M&A bids, acquirers were foreign companies, and 57% of the total deal volume was generated by the cross-border M&A

[3] Of the 1445 available deal announcements listed in Thomson One database, 1032 of them takes place after 2000

[4] Deal values are adjusted for inflation & dollar/YTL parity. Deal values were converted into YTL using the rate of the announcement date available at tcmb.gov.tr, then YTL values are adjusted to current date using TUFE 1987 based index is used from tuik.gov.tr

transactions[5]. As Figure 5 shows, the ratio of cross-border transactions to total transactions has risen over time in terms of both the numbers and the size of deals. During the 2005-2008 period, where the M&A activity in the Turkish market experienced a boom, 79% of the volume was generated by the cross-border deals. Figure 4 plots portions of the cross-border and horizontal deals in total deal volume generated each year. As Figure 4 depicts, most of the substantial rise of the transaction volume is caused by the cross-border transactions.

Between 1988 and 2008, 57% of the mergers were horizontal. The ratio of the horizontal transactions to all transactions remains flat during this period. Figure 6 plots the number of horizontal and non-horizontal transactions in each year. In terms of the number of deals, the most active industries were the financials, materials, and industrials[6]. Figure 7 shows the distribution of the number of transactions among industries to which targets and acquirers belong. While 45% of the acquirers belong to the financials industry, 11% of the acquirers operate in the materials industry, and 11% of the acquirers belong to the industrials sector. 20% of the targets also operate in the financials sector. 17% of the targets belong to the materials industry, and 14% of targets operate in the industrials sector.

In terms of the total deal volume, the financials, telecommunications, and energy industries dominated other sectors. 62% of the total transaction volume is created by acquiring firms functioning in the financials sector. Acquirers operating in the telecommunications sector follow these by generating 14% of the total deal volume. 30% of the M&A bids are made to target firms which belong to the financials sector. Especially after 2004, with the enhancement of economic stability and reforms designed to attract foreign investors, the transactions mostly involve foreign banks and insurance companies entering the Turkish market by acquiring a Turkish company. Finansbank and Oyakbank's acquisitions by National Bank of Greece and ING Group, as well as Garanti Bank's partnership with General Electric and Yapi Kredi Bank's acquisition by KocBank which is a partner of Unicredito Italiano shows the great interest in foreign investors in the Turkish market.

The attractiveness of targets operating in the financials sector is followed by the targets in the energy and power sectors. 20% of the M&A transaction volume targeted energy companies including TUPRAS, Petrol Ofisi, Petkim, Baskent Dogalgaz Dagitim and Baskent Elektrik Dagitim. Turkish and foreign investor partnerships are formed to acquire shares in these companies which have operations in energy production and distribution. Telecommunications companies were also attractive especially to foreign investors mostly in the 2005-2008 period. 16% of the entire deal volume generated in the Turkish M&A history

[5] See Figure 3 for the number of cross-border deals and domestic deals for each year, and Figure 5 for the percentage of cross-border transaction value versus years

[6] Deals are classified according to "Macro Industry Code" provided in Thomson One.

target the telecommunications sector. Biggest deals in this industry concentrate in the post-2004 period, and include the acquisition of Telsim by the global giant Vodafone, partnerships of TeliaSonera and Alfa Group Consortium in Turkcell, and acquisition of Turk Telekom by Oger Telecom. The distribution of the total transaction volume among various macro industries is plotted in Figure 8.

Both public and private firms have engaged in M&A activity in Turkey. 33% of all acquirers were public. Figure 9 plots the number of public and private acquirers each year. The ratio of public to private acquirers remains flat for the 1988-2008 period. 39% of the merger investments is done by the public acquirers. Figure 10 shows the ratio of the transaction volume generated by the public and private acquirers through the years.

Chapter 3

Literature Review

The empirical literature on mergers and acquisitions reaches similar conclusions when it comes to measuring target value. In general, studies show that while targets earn around the announcement of merger transaction, the acquirers break even. Studies investigating developed markets such as US and Euro-zone find that targets invariably gain large premiums following a merger transaction compared to the average share price before the transaction. For example, Jarrell and Poulsen (1989), Servaes (1991), Kaplan and Weisbach (1992), Mulherin and Boone (2000), report average US target abnormal returns of 29% (for 1963– 86), 24% (for 1972–87), 27% for (1971–82), and 21% (for 1990-99), respectively for US targets. Similarly, targets in continental Europe and the United Kingdom earn significant abnormal returns following an acquisition. Previous literature finds average announcement returns of 24% during the period 1955-85 (Franks, Harris and Titman, 1989), 19% in 1966-91 (Danbolt, 2004) and 13% in 1990-2001 (Goergen and Renneboog 2004).

Previous literature also suggests that the abnormal increase in share prices of targets start prior to the announcement day. Various studies empirically prove the existence of a run-up period for target abnormal returns. For instance, Schwert (1996) finds that the share price reactions of target shareholders are not limited to the announcement day but start 42 days prior to the initial public announcement of the bid. Other studies report that the price run-up is substantial and often even exceeds the announcement effect itself (Asquith et al 1983, Dennis and McConnell 1986, Goergen and Renneboog 2004). This suggests that significantly positive abnormal returns for target firms can be observed across wide event windows around the merger announcement. The positive returns around 30-60 days of the merger announcement imply that the bids are anticipated before the public announcement, and target abnormal returns can result from rumors, information leakages, or insider trading.

While the significant positive target returns are unanimous for all empirical literature findings, there is considerably less strong evidence concerning the acquirer returns. Most of the studies find share price movements for the acquiring firms around an acquisition window which are insignificantly different from zero, suggesting that the bidding firms break-even following a merger transaction. Where some studies report small negative announcement returns for the acquirers (Andrade et al. 2001, Mulherin and Boone 2000, Franks et al. 1991, Healy et al. 1992), whereas others finds zero or insignificant positive announcement abnormal

returns (Moeller and Schlingemann 2005, Schwert 2000, Loderer and Martin 1990, Asquith et al. 1983).

Although on average the bidders generally break-even, certain transaction or firm characteristics are argued to affect acquirer returns significantly. For instance, it has been argued and empirically suggested that corporate diversification strategies destroy value (Hubbard and Palia 1999, Berger and Ofek 1995, Morck et al. 1990, Lang and Stulz, 1994). If a company is trying to diversify its portfolio by acquiring a firm operating in a different industry than its own, the market reacts negatively to the merger news and the share price of the bidder drops. Therefore, the literature suggests that bidding firms engaging in non-horizontal transactions experience lower gains that their counterparts engaging in horizontal transactions.

Previous literature suggests that target firms being acquired by a foreign bidder tend to gain more compared to their counterparts being acquired by domestic bidders (Wansley et al. 1983, Dewenter, 1995, Danbolt, 2004). On the acquirer side, there have been studies showing that the share price of bidders acquiring foreign firms significantly underperforms that of bidders participating in domestic takeovers (Conn et al. 2005). It is possible that the market anticipates that regulatory and national cultural differences between the bidders' and targets' countries may lead to difficulties in managing the post-merger process. On the other hand, it has also been empirically shown that international merger activity creates value for the acquiring firms (Markides and Ittner, 1994). In this case, it can be argued that an international acquisition can enable the acquirer to enter a market in which it detected an opportunity and will seize it via more diversified assets than its competitors (Markides and Ittner, 1994).

In terms of geographical expansion and multinationalism, Doukas et al. (1988) has shown that while a multinational firm entering a country for the first time experiences significant positive abnormal returns, companies already operating in the target firm's country experience insignificant negative returns. It is argued that the ability to exploit the flexible multinational network to overcome institutional restrictions and transfer resources across borders more efficiently may increase a multinational's value. This case is argued to be true especially when the multinational firm is not already operating in the target firms country, and thus is diversifying its risks and increasing its flexibility by the acquisition (Doukas and Travlos, 1988).

Previous studies have shown that both acquirer and target firm characteristics can have significant effects on acquirer and target abnormal returns. For instance, firms with high market-to-book ratios can experience value destruction after a merger announcement due to

possible overvaluation prior to the merger announcement (Moeller et al, 2005; Dong et. al, 2003). Another firm characteristic that has been argued to be influential on announcement gains is the firm size of the target and acquirer. Where Moeller et al (2004) argue that small acquirers gain significantly more compared to their bigger counterparts, Asquith et al. argue that target size also affects the acquirer returns as their study show that smaller firms acquiring bigger targets gain more on average (Asquith et al., 1983).

Chapter 4

Data and Methodology

4.1. Data

Thomson One M&A deals database form the backbone of our research. The search criteria used to list the M&A activity in Turkey was all dates, all deal values (including not available and not disclosed), mergers & acquisitions where the target company's nation is Turkey. This search produced 1445 results, dating back to 12.31.1984.

The search results included the following elements:

- Company related: Target Name, Target CUSIP, Target Public Status, Acquirer Name, Acquirer Nation, Acquirer CUSIP, Acquirer Public Status
- Industry Related: Target TF Macro Code, Target TF Macro Description, Target TF Mid Code, Target TF Mid Description, Target Primary SIC Code, Target Primary SIC Code Description, Acquirer TF Macro Code, Acquirer Macro Description, Acquirer TF Mid Code, Acquirer TF Mid Description, Acquirer Primary SIC Code, Acquirer Primary SIC Code Description
- Deal Related: Deal ID, Announcement Date, Effective Date, Deal Synopsis, Rank Value, Value of Transaction, % of Shares Acquired, % of Shares Owned After Transaction

Deals with missing information were handled separately. Various searches were conducted using the internet news resources, and 53 non-zero deal value entries were manually added to Thomson One database search results.

Financial data required for the analysis consists of market level data which includes daily stock prices, daily market index returns, risk-free rates; and firm level data, which includes market to book ratios, company sizes, and leverage ratios. This data was gathered from Thomson One, Rasyonet, Yahoo Finance, Google Finance, and Bloomberg. Dividend adjusted stock prices and market index returns for public target companies were gathered using Rasyonet. Firm level financial information regarding the public target companies such as market to book ratio, leverage ratio, enterprise size were also obtained from Rasyonet. For the firm level financial data, the last financial report released by the target firm before the merger announcement was used. Risk-free rates for the Turkish market were also gathered using Rasyonet.

Daily stock prices and daily market returns regarding public acquirers were obtained from Thomson One. Firm level financial information regarding public acquirers was also gathered from Thomson One. Values for the acquirers' size, market-to-book ratio, and leverage ratio were obtained from the last financial report released by the acquirer before the merger announcement. Risk-free returns were collected from Google Finance, Yahoo Finance and Bloomberg.

4.2. Sample Selection

Our final sample consists of M&A deals announced between 2004 and 2008. This period accounts for 73% of the total M&A activity, and shows a clear break in terms of total deal volume generated compared to the whole 1988-2008 period. Among the 550 transactions that are recorded in Thomson One database, we can only include deals which involve at least one public party. Of the 550 transactions, 228 involve a bidder which was a public company. Due to lack of data regarding some of the transactions, 171 of these transactions were included in our sample[7].

100 transactions involved target firms which are listed as public companies. Due to lack of data regarding some of these transactions, only 67 of them are included in our sample[8].

4.3. Methodology

Following Brown and Warner (1985), we use an event study methodology where the merger announcement is used as the event date to measure the market's reaction to a merger announcement. This reaction is used to measure the wealth impact created by the merger. Measuring the stock price reaction around the merger announcement enables us to see how the market perceives the value creation potential of the merger. Around a merger announcement, the market reacts to the news and produces an abnormal return ($AR_{i,t}$). This abnormal return is essentially the difference between the realized return ($R_{i,t}$) of the stock i at time t, and the expected return ($E(R_{i,t})$) of the stock i at time t which can be interpreted as the counter factual stock return which would have been realized if no merger announcements were made.

To estimate the benchmark returns, we use Capital Asset Pricing Model (CAPM). Using CAPM, benchmark returns $E(R_{i,t})$ are calculated as follows:

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[7] Either stock price data, market index data or risk-free return data were not available for 57 transactions.

[8] Either stock price data, market index data or risk-free return data were not available for 33 transactions

$$E(R_{i,t}) - R_f = \hat{\alpha}_i + \hat{\beta}_i(R_{m,t} - R_f) + \epsilon_i$$

Here, $\hat{\beta}_i$ and $\hat{\alpha}_i$ are parameters estimated for each stock i, regressing excess stock returns on excess market returns. $R_{m,t}$ is the realized market return, and R_f is the risk-free rate. The parameters are estimated over 100 trading days for each stock. The estimation window starts 160 trading days prior to the event, and ends 60 days before the event. For each stock, $R_{m,t}$ is calculated using the local market index in which the stock is traded; and the relevant risk-free rate is used. Using this methodology, expected returns for 171 publicly traded acquirer stocks and 67 publicly traded target stocks are calculated. These returns are interpreted as benchmark returns, which would have been realized if no merger announcement were made. These benchmark returns are later used to measure the abnormal returns which result from positive or negative reaction of the market towards the merger announcement.

After coming up with the expected returns, the abnormal returns are calculated as follows:

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

The next step is calculating Cumulative Abnormal Returns (CAR) for each stock i. CARs associated with a specified event window are calculated by aggregating abnormal returns during the event window. If the event window around the merger announcement starts at t_1 and ends at t_2, CAR associated with that event window is computed as follows:

$$CAR_i = \sum_{t=t_1}^{t=t_2} AR_{i,t}$$

To be able to test the statistical significance of the Cumulative Abnormal Returns, we need to compute the standard deviations of ARs and CARs, the latter being cumulated across securities and across time. The standard deviation of the expected return for stock i ($\hat{\sigma}_{\epsilon_i}$) is computed as follows:

$$\hat{\sigma}_{\epsilon_i} = \sqrt{\frac{1}{L_i - 2} \sum_{t=T_0}^{t=T_1} \left[(R_{i,t} - R_f) - \hat{\alpha}_i - \hat{\beta}_i (R_{m,t} - R_f)\right]^2}$$

Where L_i is the number of observations for stock i, which is equal to 100 in our case (where T_0 = -160 and T_1= -60). Given the standard deviation of the expected return for stock i, the standard deviation of the abnormal return of stock i on day t ($\hat{\sigma}_i$)is calculated as follows:

$$\hat{\sigma}_{i,t} = \hat{\sigma}_{\alpha}^{2} + (R_{m,t} - R_f)^2\hat{\sigma}_{\beta}^{2} + 2(R_{m,t} - R_f)Cov(\alpha,\beta) + \hat{\sigma}_{\varepsilon_i}$$

We first consider aggregation through individual stocks. Standard deviation of the average abnormal returns cumulated over N stocks, $\hat{\sigma}(CAR_t)$, is computed as:

$$\hat{\sigma}(CAR_t) - \sqrt{\frac{1}{N^2}\sum_{i=1}^{i=N}\hat{\sigma}_{i,t}^{2}}$$

Standard deviation of abnormal returns cumulated over time, $\hat{\sigma}(CAR_i)$, is computed as:

$$\hat{\sigma}(CAR_i) = \sqrt{\sum_{t=t_1}^{t=t_2}\hat{\sigma}_{i,t}^{2}}$$

To test the significance of CARs, we can use the following test statistic:

$$T = \frac{\overline{CAR_t}}{\bar{\sigma}_t^{2}} \approx N(0,1)$$

Where;

$$\overline{CAR_i} = \frac{1}{N}\sum_{i-1}^{i=N} CAR_i \text{ and } \bar{\sigma}_i^{2} = \frac{1}{N^2}\sum_{i-1}^{i=N}\hat{\sigma}_{i,i}^{2}$$

Univariate tests are conducted using these CARs and variances. To have an idea of potential value drivers, univariate results are obtained by grouping transactions according to various deal and firm characteristics and looking at the significance and level of the average CAR of that group. Although this provides us with an initial picture, we need to control for different characteristics to see which deal or firm characteristics indeed have significant effects on the CARs. To be able to do this, we conduct multivariate tests at which the CARs are treated as dependent variables and are regressed on several dependent variables. Various models are specified to test drivers affecting the CARs.

CARs are calculated for various event windows, and multivariate regressions are run for each event window to see whether they produce similar results. Also, CARs are winsorized to see whether the results are driven by the outliers or not. To prevent outliers driving the results, we run our models with normal CARs and winsorized CARs to see whether they produce different results or not. To winsorize, we take the CAR values and generate a new identical variable except that the values belonging to the highest 5% and the lowest 5% are replaced by the next values counting inwards from the extremes. The regression results reported in the following sections are immune to changes in the specified event windows and winsorized CARs[9].

To test for fixed effects, year dummies are introduced to each model. In terms of random effects, robust standard errors are used for testing the significance of the coefficients. Standard errors are corrected using the variance-covariance matrix of independent variables, and controls for heteroskedasticity. The robust standard errors are calculated using Huber-White sandwich estimate of variance (Huber, 1967 and White, 1980). Using robust standard errors instead of OLS standard errors, test statistics are corrected for misspecification.

To test for multicollinearity, variance inflation factor (VIF) tests are performed. Variance inflation factor measures the correlation between one variable and the rest of the independent variables. VIF for a variable i is calculated as:

$$VIF_i = \frac{1}{1 - R_i^2}$$

Where R_i is the multiple correlation coefficient. High values of VIF index point to multicollinearity. For each model specified, VIF test was performed to detect potential variables causing multicollinearity. Whenever a VIF value higher than 5 is calculated for a variable, that variable is dropped and the test is conducted with the new model.

[9] Tables reporting the multivariate results are produced with the winsorized CARs.

Chapter 5

Results

5.1. Descriptive Statistics

As explained in the Sample Selection section, lack of data restricts our sample to 171 announcements to measure the effects of M&A value creation on bidding firms, and 67 announcements to measure the effects on the target firms. Combining these announcements, we obtain 225 M&A announcements which form our entire sample[10]. Panel A of Table 1 reports some basic statistics of the deal characteristics regarding the whole sample.

32% of the sample consists of transactions involving a public target company. In 76% of the 225 deals, the acquirer was listed. In 13 deals, both the target and the bidder were public companies.

Of the 225 announcements, 61% were classified as completed. 39% of the transactions were tagged as pending in Thomson One database. We would expect an increasing ratio of transactions that are classified as "completed" as M&A announcement date goes back. This expectation is supported by a breakdown of the ratio of completed deals into years. More specifically, among deals which were announced at 2005, 81% were tagged as completed. The ratios for 2006, 2007 and 2008 were 63%, 58%, and 50% respectively.

Of the 225 transactions, 68% were classified as cross-border mergers. 98 of the 145 foreign bidders were from Euro-zone. Countries outside the Euro-zone include USA, Israel, Brazil, India, Canada, UAE, South Africa, Japan, and Australia. Most frequent foreign bidders were German companies with 20 bids, followed by companies from the USA, the UK and France with 18, 14 and 12 bids respectively. Figure 11 shows the bidder country frequency in our sample.

When classified according to Thomson One's macro-industry specification, 68% of the transactions were horizontal. In terms of the number of deals, the most active industries were financials, materials, and industrials. 47% of the target companies operated in these sectors, while 57% of acquirers were from these sectors. Figure 13 plots the distribution of industries among transactions. In terms of total deal volume, financials and telecommunications dominated other sectors. 62% of the total transaction volume was

[10] 13 of the announcements involved a public bidder and a public target, and therefore were not counted twice.

generated by bids targeting companies operating in these two sectors, while 77% of the total deal volume was generated by bids made by companies in the financials or telecommunications sectors. Figure 12 shows the total transaction volumes generated by various industries.

In 70% of the cases, the bidder company gained majority control of the target firm, by owning more than 51% of the target's shares after the transaction. While 69% of the target shares were owned after the transaction, 60% of the target shares were acquired in each transaction on average. In 21 deals, bidding firm has owned an average of 50% of the target firm shares prior to the transaction. In the rest of the 109 deals with disclosed terms, the bidder had no prior ownership of the target company.

122 of the transactions in the sample have disclosed deal values. On average, the inflation adjusted deal value was 430 million dollars. Maximum deal value observed in the sample is 6 billion dollars. Without the inflation adjustment, the average deal value was 350 million dollars.

Panel B of Table 1 reports some basic statistics regarding the financial characteristics of the acquirer and target firms. Financial information we choose to report includes market to book ratio, leverage, and the asset size of the company. This information is only available for the companies that are public. The average market to book ratio of acquiring firms is 2,48. The same ratio for target firms is 1,56. Average leverage of a bidding company is 0,25 where the average value of the same ratio for a target company is 0,61. 23% of the bidder firms had engaged in at least one transaction in Turkey prior to the last transaction in the sample. In other words, in 40 of the transactions, acquirers had at least one more M&A experience in Turkey as a bidding firm in the previous 4 years.

When we separate the sample into two groups as cross-border transactions and domestic transactions, we can explain more about the characteristics of these two groups of M&A deals. Panel A of Table 2 summarizes some basic statistics of the cross-border and domestic M&A transactions. There are several deal characteristics that are significantly different from each other for cross-border and domestic transactions. The percentage of completed deals is higher among cross-border transactions. The 15% difference is significant at 5% level. Also, foreign acquirers tend to engage in horizontal transactions more frequently than domestic firms. The 18% difference between the ratio of horizontal mergers to all mergers in cross-border and domestic transactions sub-samples is significant at 1% level. Foreign bidders may be finding engaging in non-horizontal transactions riskier, because as Harris, Kriebel and Raviv (1982) explain, information asymmetry costs involved in such transactions are higher. When compared to the domestic M&A deals, cross-border deals tend

to have higher disclosed deal values. On average, there is 400 million dollars difference between cross-border and domestic transactions. This difference is significant at 5% level. Differences in these deal characteristic statistics are summarized in Panel A of Table 3.

Firms engaging in cross-border and domestic transactions show differences also in terms of their financial characteristics. Foreign acquirers are significantly larger in asset size than domestic acquirers. While the asset size of an average foreign firm is 204 billion dollars, an average domestic acquirer has an asset size of 8 billion dollars. The difference is significant at 1% level. The size difference is also significant for target firms. Target firms being acquired by domestic firms have an average enterprise value of 0,77 billion YTL. On the other hand, an average target being acquired by a foreign firm has an enterprise value of 3 billion YTL. The difference of the target size is significant at 10% level. One other difference between the domestic and foreign acquirers is that the domestic acquirers tend to engage in multiple M&A transactions within the sample period. While 18% of the foreign acquirers had previous M&A experience as a bidder in the Turkish market before their last transaction in the sample, the same ratio for domestic firms was 35%. The difference is significant at 5% level.

While market to book ratio and leverage does not differ significantly for the foreign and domestic acquirers, targets involved in cross-border and domestic M&A transactions show significant differences in terms of these financial characteristics. While the market to book ratio of a target being acquired by a foreign firm is 2,20 on average, same ratio for a target being acquired by a domestic firm is 0,93. The difference in market to book ratios is significant at 1% level. There is a 22% difference in leverage ratios for the targets involved in cross-border and domestic M&A transactions. The leverage of an average target firm being acquired by a foreign company is higher than the one being acquired by a domestic firm at a 5% significance level. Panel B of Table 3 summarizes differences in characteristics of firms being involved in cross-border and domestic transactions.

5.2. Univariate Results

Figure 7 and 8 show cumulative abnormal returns for acquirers and targets around the event window. As can be seen from the graphs, the market anticipates the merger and reacts accordingly. Especially the target stock prices show a consistent abnormal increase starting from 10-15 days prior to the M&A announcement and stay at their final level after the announcement. While a positive abnormal return can also be observed for acquirer shares, the picture is less clear in this case. As Figure 7 depicts, targets experience an average abnormal return of 9% around the event window.

Several different event windows were examined for both the acquirer and the target CARs. The (1-,1) window, which is commonly used in the literature has produced insignificant results for every classification. Target abnormal returns, which are significantly greater than zero over the longer term, are insignificant for this event window. The reason can be deduced from Figure 7 and Figure 8. The stock prices for the merging parties start rising long before the announcement, making the short term CARs insignificant. Different longer term windows were also examined for both the acquirer and target CARs. Results were qualitatively similar, and we chose to report one medium (-10,10) and one longer term (-30,15) event window. Table 4 documents cumulative abnormal returns for the public acquirer and public target firms for two different event windows. The first event window starts 30 days prior to the merger announcement, and ends 15 days after the announcement (-30,15). The second window has a shorter horizon and spans 20 days around the announcement (-10,10).

To provide a clearer picture, acquirer and target firms were clustered into several subsamples based on several deal and firm characteristics. To understand the main drivers of value creation or destruction, an initial step would be to analyze average CARs in different subsamples. First, we chose to create subsamples based on basic deal characteristics such as whether the M&A transaction is a horizontal or a non-horizontal one; whether acquiring firm is domestic or foreign; whether the acquiring firm gained the majority control of the target firm; and whether the acquirer has previously engaged in an M&A transaction in Turkey. Another set of classifications used to create subsamples was based on firm characteristics which are size, market to book ratio, and leverage. For each characteristic two groups were formed for firms which have size, market to book, and leverage values below and above the median of the whole sample.

Panel A of Table 4 reports acquirer firms' cumulative abnormal returns on the entire sample and the subsamples. Consistent with the previous literature, an average acquirer in most of the subsamples breaks even. Cumulative abnormal returns for acquirers are 0,07% and 1,22% for (-30,15) and (-10,10) event windows respectively, and are not statistically significantly different from zero. Although this is the case for most of the subsamples, a few subsamples of acquirers show significant returns.

Acquirers with above-median market-to-book ratios experience a significant value loss in both of the event windows. The losses for (-30,15) and (-10,10) event windows are 3,19%, and 2,02% respectively. Both negative returns are significant at 10% level. Another remark to be made is on domestic acquirers. Although the (-30,15) event window shows no significance (t-stat = 1,34), the positive return for the (-10, 10) window which is 3,34% is significant at 5% confidence level. Several other event windows that are not reported here

also showed high t-stats for positive CARs for domestic acquirers. The subsample of acquirers engaging in horizontal M&A transactions also demonstrate a significant positive return of magnitude 1,97% for the (-10,10) event window. The return for (-30,15) event window is also positive, but not significant (t-stat = 0,94). Long term event windows other than the reported two also produced qualitatively similar results for acquirer CARs in horizontal transactions.

Panel B of Table 4 reports the CARs for targets in the chosen (-30,15) and (-10,10) event windows. Consistent with the previous literature, all subsamples as well as the overall sample of target firms earn significantly positive returns for both event windows. While positive return for targets in the longer term event window is 8,89%, in the shorter term, the return that an average target earns is 6,40%. As Figure 7 depicts, the market anticipation for M&A announcement starts earlier than 10 days prior to the announcement. This seems to be the reason for shorter term CARs to be lower in magnitude than the longer term CARs. Positive CARs associated with target returns are all significant at a 1% confidence level.

To have a better idea on the drivers of the value impact associated with M&A transactions, we can look at differences of univariate statistics of different subsamples. Although average CARs for some of the subsamples may be insignificant, differences between average CARs associated with different subsamples may be significant. An analysis of the significance of these differences can be useful in explaining the effects of certain deal or firm characteristics on abnormal returns experienced by acquiring and target firms. As Table 4 documents, the average CAR for foreign acquirers on (-30,15) event window is an insignificant -1,25% (tstat = -0,82), while domestic acquirers earn a positive insignificant return of 3,18% (tstat = 1,34). Comparing the returns of these different groups of acquirers shows that the domestic bidders experience CARs which are 4,43% higher than the foreign ones. This difference is significant at 5% confidence level (tstat = 1,87).

Another significant difference between CARs can be obtained by separating the acquiring firms into two groups based on whether the M&A transaction was a horizontal or a non-horizontal one. While bidders engaging in horizontal transactions earn an insignificant 1,43% return (tstat = 0,94), non-horizontal transactions cause 3,23% negative returns on average for bidders. The 4,67% difference between average CARs is significant at 5% confidence level (tstat = 1,96). The fact that non-horizontal and cross-border transactions result in negative abnormal returns for bidders is consistent with the hypothesis that industrial diversification may destroy value on average as supported by Berger and Ofek (1995), Denis, Denis and Sarin (1997) and Lang and Stulz (1994). Table 6 reports the differences in CARs for different groups of acquirers clustered based on deal and firm characteristics.

Besides differences based on the transaction characteristics, exploring differences in CARs based on acquirer firms' characteristics might also be useful. For example, bidder firms with above median size have significantly lower CARs on average than those with below-median size. While higher size firms experience an insignificant negative return of 2,34%, lower size bidders gain an insignificant positive return of 2,13%. The 4,47% difference is significant at 5% confidence level. However, we must emphasize the fact that higher size bidders are generally foreign firms[11]. To conclude that firm size has a marginal effect on CARs, we must control for the transaction characteristics as well. We provide further analysis on this matter in the following sections. Another firm characteristic that deserves further attention is the market-to-book ratio. Previous studies have shown that high market-to-book ratio can indicate overvaluation and result in value destruction following a merger announcement (Moeller et al, 2005; Dong et. al, 2003). Firms with market-to-book ratios which are higher than the median experience a significant negative return with a magnitude of -3,19% (tstat = -1,93). The group of firms which have a lower market-to-book ratio experience a gain of 2,62%. The difference is significant at 1% confidence level.

As stated earlier, target returns are significantly positive for both (-10,10) and (-30, 15) event windows for each subsample. To better understand the drivers of value creation, we can test whether transactions with different characteristics produce significantly different CARs. While the CAR of an average target firm is 12,86% when the bidding firm is foreign, the CAR for an average target firm is 4,79% when the bidding firm is domestic. Both of the CARs are significant. The difference has a magnitude of 8,07%, and is significant at 10% confidence level. Industrial diversification is another deal characteristic producing significantly different CARs for different groups of target firms. While targets being acquired by a firm operating in the same macro industry as they do earn a significant 14,56% return, targets engaging in non-horizontal transactions breakeven. The 15,20% difference is significant at 1% confidence level. Focus strategies seem to create greater target value.

Targets whose majority shares are owned by the bidder after the transaction also experience significantly higher returns than targets whose minority shares are acquired. Targets losing majority control earn 21,76% positive returns, while targets whose minority shares are acquired experience -1,12% negative returns. The difference is significant at 1% level. The only firm characteristic which seems to create a difference between below-the-median and above-the-median target firms is leverage. While highly levered target firms earn 12,80% around the event window, same average return for less levered firms is 4,85%. The

[11] As Panel B of Table 3 suggests, the difference in asset sizes of cross border and domestic acquirers is significantly different that zero at 1% confidence level. According to this statistic, average asset size or foreign acquirers is significantly larger than that of domestic acquirers.

difference is significant at 10% level. Table 7 provides statistics of several critical transaction and firm characteristics that may be creating difference in CARs.

5.3. Multivariate Results

Although the univariate results provided us with some ideas regarding the sources of the value in M&A transactions, multivariate tests are conducted to be able to control for several different factors. To be able to differentiate marginal effects of different deal and firm characteristics and test hypotheses regarding those effects, multivariate cross-sectional regressions were run.

Tables 8 to 13 report results of the multivariate regressions performed on (-30,15) event window CARs of the acquirers. Control variables include deal and firm characteristics discussed in detail in the descriptive statistics and univariate results sections. These characteristics include deal characteristics which are industrial diversification (horizontal or non-horizontal), geographic diversification (cross-border or domestic), target public status (private or public), the acquirer's previous experience in Turkey (experienced or not), and the logarithmically scaled deal value of the transaction. Another class of control variables is firm specific characteristics which are logarithmically scaled value of the acquirer's asset size, leverage of the acquirer, and the market to book ratio of the acquirer.

5.3.1. Merger Characteristics and Acquirer Returns

In the first two columns of Table 8, we provide multivariate regression results computed for these two different classes of specifications. Model 1 of Table 8 quantifies standalone effects of the deal characteristics on acquirer returns. Supporting the univariate results reported in the previous section, Model 1 report a significant positive effect for industrial focus, and a significant negative return for geographical diversification. While transactions classified as "Horizontal" gain 7,3% more on average at 5% significance level, transactions classified as "Cross-Border" experience an additional 8,6% loss on average at 1% significance level. Model 2 investigates the individual effects of firm level characteristics. Results of Model 2 also support the results reported in univariate statistics section, which indicated that acquirers with higher size and higher market to book did worse than their counterparts. At a 10% significance level, a unit change in log of acquirer size result in a 2,3% decrease in the acquirer's CAR. Similarly, one unit increase in the acquirer's market to book ratio decreases the acquirer's CAR by 1,6% at a 5% significance level.

Model 3 of Table 8 brings two sets of control variables together and allows us to see whether their effects persist under this stronger specification. When controlled for all

transaction level and firm level characteristics; the effects of industry focus, geographical diversification and market to book ratio persist. However, the significance of acquirer asset size is lost under this specification. While acquirers engaging in transactions classified as "Horizontal" earn 7,1% more at 5% significance level, foreign firms engaged in M&A transactions in Turkey do 7% worse than their domestic counterparts at 5% significance level. Although the significance of market to book ratio persists under this specification, acquirer size loses strength in explaining CARs when all deal and firm characteristics are being controlled for. As discussed earlier, the size of foreign firms engaging in M&A transactions are significantly higher than the size of their domestic counterparts[12]. Model specification without controlling for geographical diversification shows that logarithmically scaled acquirer asset size is significantly affecting acquirer CAR. However, adding cross-border transaction control variable to the model specification shows that the true negative effect is due to geographical diversification, not acquirer size.

5.3.2. Corporate Control and Acquirer Returns

Tables 9 and 10 report a series of models that intend to measure the effects of corporate control on acquirer CARs. First we want to measure the average effect of percentage shares of target firm owned by the acquirer on the acquirer's CAR. As Model 2 of Table 9 reports, for each additional percent share owned, the acquirer loses 0,1% CAR. This loss is significant at 10% level, and is controlled for the deal and firm specific characteristics explained in the previous section. To refine our results, we specify different models to understand the effects of gaining majority control and acquiring minority stakes of target firms. While models specified in Table 9 focuses on the effects of gaining majority control of a target firm on the acquirer CARs, Table 10 investigates how CARs of firms who acquire minority shares of the target firms are affected. We measure the marginal effect of gaining majority control of the target firm on the CAR of acquiring firm as -5,3%, which is significant at 10% level[13]. Significance of cross-border versus domestic classification, horizontal versus non-horizontal classification, and market to book ratio of the acquirer firm persists under this specification. This result indicates that bidding firms gaining majority control of the target firm after a transaction do worse when compared to their counterparts acquiring only minority shares of the target firm.

[12] As shown in Panel B of Table 3, difference between size of foreign and domestic acquirers is different from zero at 1% significance level.

[13] To measure this effect, we introduced a binary variable called "Major Control" which takes the value of unity if acquiring firm owned more that 51% of its target's shares after the transaction. The value of the variable is assigned to 0 if acquirer ends up owning less than 51% of the shares of its target after the transaction. The variable takes N/A values if deal terms on this matter were not disclosed.

To understand more about the marginal effect of corporate control on acquirer firms, we want to distinguish between foreign and domestic firms who gained majority control of their target firms. Model 4 of Table 9 is specified to understand which portion of the acquiring firms (domestic or foreign) are responsible for the marginal negative effect of corporate control on acquirer CARs. The regression results suggest that foreign firms who ended up owning more that 51% of their target firms' shares experience 7,6% loss in their CARs on average. This loss is significant at 5% level. While this is the case for foreign firms, their domestic counterparts do not experience any marginal effect based on gaining corporate control on average.

Model 5 of Table 9 further investigates the drivers of additional value destruction for foreign acquirers upon gaining corporate control. As results of this specification suggests, foreign acquirers gaining majority control of a private target experience an additional 9,2% loss on their CARs on average. This loss is significant at 10% level. While this is the case for gaining majority control of a private target, a similar significant loss cannot be associated with acquirers gaining majority control of a public target. Also, domestic firms gaining major control of private or public firms are not affected significantly either, as Model 6 of Table 9 reports. This brings us to the conclusion that information asymmetries are either larger for foreign firms, or are affecting foreign firms more in transactions where they acquire the majority of a private target.

To further understand the effects of majority or minority control of the target firm on acquirer CARs, we also want to quantify the effect of acquiring minority shares of the target firm. Table 10 reports the results of the tests associated with the minority share acquisition. As expected, acquiring a minority stake brings an additional 5,3% return to acquirers at 10% significance level[14]. Table 10 Model 3 shows that this marginal positive effect is associated only with cross-border transactions. To be able to understand if acquiring minority shares of public firms is different than private firms, different tests were conducted for foreign and domestic acquirers. Models 4 and 5 report results of these tests. While foreign firms' CARs are not affected significantly from the target firm's public status, domestic firms acquiring the minority stake of a private target earn an almost significant marginal return of 7,3% (t-stat 1,4).

5.3.3. Target Size and Acquirer Returns

In this section, we test the effect of absolute size of the target, as well as relative size of the target to the acquirer on the bidder firms' CARs. Table 11 reports results associated

[14] Same size and different sign was measured for acquiring majority stakes.

with target size. To quantify the effect of target size, we conduct several tests by introducing variables related with target size. Normally, asset size of the target is only available for public targets. In our sample, only 21 target firms are classified as public companies. Therefore, instead of using the actual target size, we use a proxy value for the target size, to increase the number of transactions to be included in the regression[15]. The proxy for target value is generated by dividing deal value by percentage shares acquired by the acquirer. This proxy enables us to generate more a reasonable target value for all transactions that has disclosed deal terms. This way, we do not suffer from the loss of degrees of freedom which would result from having insufficient number of observations for target size if actual target size were used instead of the proxy. Using disclosed deal terms as described above, 56 values were generated for target size proxy.

To reduce the variation, target values were logarithmically scaled. Model 2 measures marginal effect of the logarithmically scaled target values. Controlling for the deal and firm characteristics specified above, log of target size has 10,6% positive impact on acquirer CARs on average. The positive effect is significant at 10% level. Significant positive effect of logarithmically scaled target value suggests that acquirers bidding on bigger targets earn more than their counterparts bidding on smaller targets. To test the effects of target size relative to the acquirer size, we conduct several tests by introducing new variables. To quantify the relative size, a new variable called "Target / Acquirer Ratio" was created. For transactions for which both target value proxy and acquirer size values were available, the new variable is calculated by dividing target value to acquirer asset size[16]. Model 3 quantifies the marginal effect of relative size of the target to the acquirer. Controlling for the deal and firm characteristics, one unit of increase in "Target / Acquirer Ratio" results in 15,4% increase in acquirer CAR on average. This increase is significant at 5% level. This result is consistent with previous literature, as there have been studies suggesting that smaller firms acquiring bigger targets gain more on average (Asquith et al., 1983).

To further elaborate on our results, we introduce another variable called "Small Acquirer & Big Target". This binary variable takes the value of unity if the transaction involves a target which has a greater size than the median target size, and an acquirer which has a smaller size than the median acquirer size. Model 5 quantifies the effect of this variable on acquirer CAR. An average transaction for which this variable takes the value of one has 7,1% higher acquirer CAR than a transaction for which this variable takes the value of zero. This result is significant at 10% level. To further refine the relative size effect, we group acquirers and targets using smaller size quintiles. Targets and acquirers are divided into 5

[15] Same methodology is used by Asquith et al. (1983).
[16] Both acquirer size and target value proxy are real dollar values

groups each based on their sizes. The highest value group for target size was matched with the lowest value group for acquirer size. New binary variable "Smallest Acquirer & Biggest Target" takes value of unity for transactions that have targets and acquirers matched as described above. Model 6 of table 11 reports the marginal effect of this matching on acquirer CARs as 23,2%, which is significant at 1% level. Matching acquirers and targets belonging to same quintiles, or matching big acquirers with small targets do not produce significant results. Also, results are not particularly driven by horizontal or non-horizontal transactions, as well as domestic or cross-border transactions.

5.3.4. Previous Experience and Acquirer Returns

This section focuses on how previous M&A experiences of acquirers affect the acquirer CARs. More specifically, we want to measure whether an acquirer that has previously engaged in an M&A transaction in Turkey after 2005 do better or worse compared to its counterparts on average. We want to quantify the effect of previous experience on acquirer CARs for different groups of acquirers such as foreign and domestic acquirers, horizontal and non-horizontal acquirers, smaller and larger acquirers, and acquirers gaining majority control of their targets and buying minority shares of their targets.

Table 12 provides a summary of the effects of previous experience on different acquirer groups. Model 2 of Table 12 reports the results of a test conducted to quantify the effects of previous experience on foreign and domestic acquirers. As results suggest, foreign acquirers who are entering the Turkish market for at least the second time experience a loss in returns measuring up to 6,5% on average. This loss is significant at 10% level, and is associated with the transactions following the initial entrance. While foreign acquirers seem to do worse in their second or more entry attempts to the Turkish market, domestic acquirers do not suffer from significant marginal losses associated with their previous M&A experiences. It is important to note that the significance of standalone effect of the transaction's being cross-border almost persists under this specification (tstat 1,44). The acquirer's

size being above the median size of all acquirers significantly affects the result, as marginal loss associated with above median experienced acquirers is 8,2% which is significant at 10% level.

Previous experience also affects the acquirers who gain the majority control of the target firm after transaction and acquirers who buy minority shares of the target firm differently. Two interactive binary variables are created and added to the regression equation reported in Model 4 to test this effect. While signs of both coefficients associated with these

two groups of acquirers are negative, only acquirers gaining majority control significantly do worse. The marginal effect of having a previous M&A experience in Turkey and engaging in a transaction to gain majority control of a target is -7,5% on acquirer CARs. This effect is significant at 5% level. It is important to point out that the significant effect persists when the variable "Major Control" is added to the regression equation. Although the significance strength decreases, effect of previous experience for acquirers gaining majority control persist at 10% level even when "Majority Control" variable is added to the control variables[17]. To test the effect of previous experience on acquirers who engage in horizontal and non-horizontal transactions, two interactive variables are created and added to the regression equation[18]. Model 5 results suggest that horizontal and non-horizontal transactions of experienced bidders have significantly different effects on acquirer CARs. While experienced bidders engaging in horizontal transactions suffer from significant negative marginal returns (coefficient = -6,5%, significant at 10%), experienced bidders engaging in non-horizontal transactions earn 10,3% more at 5% significance level. This effect is persistent to separately controlling for the transaction's being horizontal or not.

Table 13 provides a more specific analysis on industrial diversification and the acquirers' previous experience on horizontal and non-horizontal transactions. 16 of the non-horizontal transactions in our sample are conducted by experienced acquirers. While 11 of these non-horizontal transactions are conducted by acquirers who have previously engaged in at least one non-horizontal transaction, 5 of them are conducted by acquirers who only have previous horizontal transaction experience. Of the 29 horizontal transactions which were conducted by experienced acquirers, 24 of them had acquirers who have previous horizontal transaction experience and 5 of them had acquirers that only engaged in non-horizontal transactions before. As results reported in Table 13 shows, while acquirers with previous horizontal transaction experience do significantly worse, acquirers with previous non-horizontal transaction experience do significantly better. Coefficient for the binary variable associated with the first group of acquirers is -13,2%, while coefficient for the binary variable associated with the second group is 16,8%. Both coefficients are significantly different from zero at 1% confidence level.

[17] Remember that "Major Control" is a binary variable which takes the value of unity if acquiring firm owned more that 51% of its target's shares after the transaction

[18] "E*Horizontal" takes the value of unity for horizontal transactions that have acquirers that have at least one previous M&A experience in Turkey. "E*Non-horizontal" takes the value of unity for similar non-horizontal transactions

5.3.5. Industrial Diversification and Acquirer Returns

For every model specified, the binary variable "Horizontal" which takes the value of unity if the acquirer firm operates in the same macro industry with the target firm, has a significant marginal positive effect on the acquirer CARs. This phenomenon is consistent with the previous literature which suggests that industrial focus may increase efficiency and create value (Berger & Ofek, 1995 and Comment & Jarrell, 1995). At this point, we conduct several tests to understand whether horizontal transactions with different deal or firm characteristics create different values for the acquirers or not.

As Model 1 of Table 14 shows, a transaction's being horizontal is associated with a significant marginal positive return of 7,1%. Model 2 is specified to understand whether this marginal effect is different for cross-border and domestic transactions[19]. Results suggest that although the acquirers of both cross-border and domestic transactions experience higher CARs than their non-horizontal counterparts, the positive effect was significant only for the domestic transactions. At a 10% significance level, the acquirers of domestic and horizontal transactions earn 7,9% more on the margin. However, the marginal positive effect for the acquirers of cross-border horizontal transactions is not significant.

Several other models are also specified to quantify the effects of target and acquirer sizes on acquirers involved in horizontal transactions. Different interactive binary variables are created to quantify any possible differences between the effects of firm size on horizontal transactions. Binary variables interacting "Horizontal" variable with different quintiles of target and acquirer sizes are introduced to the models. Models 3 and 4 of Table 14 show results for binary variables interacting "Horizontal" variable with the smallest and biggest quintiles of target and acquirer size[20]. Although different coefficient signs are reported for the biggest and smallest targets and acquirers, results are not significant. However, by testing whether these coefficients are different from each other, we can reject the null hypothesis that both biggest and smallest acquirers are affected in the same way when being involved in a

[19] Two interactive dummy variables are created. "Horizontal*CB" takes the value of unity if the transaction is classified as both cross-border and horizontal, while "Horizontal*D" takes the value of unity if the transaction is horizontal and domestic. When these variables are added to the control variables, "Cross-Border" binary variable caused multicollinearity, and was dropped from the equation. Significances did not change.

[20] 5 quintiles are introduced for targets and acquirers, and highest and lowest quintiles are interacted with "Horizontal" variable.

horizontal transaction[21]. This suggests that the marginal effect of a transaction's being horizontal is not the same for different size acquirers. However, there is no strong evidence that the acquirers involved in horizontal transactions with different size target firms are affected differently.

As horizontal transactions are associated with positive marginal returns to the acquirers, industrial diversification is generally associated with value destruction in the literature (Denis, Denis, & Sarin, 1997; Berger & Ofek, 1995; Lang & Stulz, 1994 and Morck, Schleifer & Vishny, 1990). Our study also supports this phenomenon. Model 5 of Table 14 reports results for non-horizontal mergers which are also classified as cross-border and domestic. Both groups of transactions produce negative marginal returns for the acquirers. According to the model results, the marginal negative effect for the domestic acquirers is -7,9%, and is significant at 10% level. The negative effect for cross-border acquirers is -6,1% but is not significant. There is no evidence that cross-border and domestic non- horizontal transactions bring different marginal gains to the acquirers.

However, this is not true for non-horizontal mergers with different levels of post-merger corporate control. When we introduce interactive variables to control for the effects of acquiring majority and minority shares of a target firm operating in a different industry, we see that significantly different coefficients are associated with these variables. Model 6 of Table 14 reports the results for testing this effect. Negative marginal returns of 13,7% for the firms acquiring majority shares of a firm operating in a different industry than the acquirer's own is significant at 1% level. 18 transactions are classified as belonging to this group. This effect is robust to controlling for majority control separately[22]. While this is the case for majority control, the firms acquiring minority shares of a non-horizontal target break even. These results suggest that the market evaluates the acquisition of minority shares of a non-horizontal as an investment decision which will not cause significant harm to a company. However, market interprets that an acquirer firm will do worse if it gains corporate control of a firm operating in a different macro-industry than its own industry. Industrial diversification seems to be considered harmful or risky only if an acquirer gains a say in the target firm's management, possibly due to potential lack of knowledge and experience in that particular industry.

[21] While "Horizontal*Biggest_Acquirer" variable's coefficient is -10% with a tstat of 1.60, coefficient of "Horizontal*Smallest_Acquirer" is 8% with a tstat of 1.40. T-test shows that these coefficients are different from each other at 10% level.

[22] When we include "Majority Control" binary variable to model 6, the significance of the "Nonhorizontal*Major_Control" variable does not change, and the coefficient associated with this variable is stil 14%.

5.3.6. Geographical Diversification and Acquirer Returns

As the earlier sections show, markets generally treat geographical diversification negatively, and associate cross-border mergers with marginal value destruction for the acquirer firms. A company expanding across borders entering a new emerging market is potentially perceived as a risk-taker. This may be due to the fact that as an emerging market, the Turkish market is perceived to be an unfamiliar and risky environment for long term investments. On top of the possible negative effects of entering a different country than the home country of the acquirer, risks associated with entering an emerging market may be responsible for the marginal negative effect of "Cross-Border" variable's coefficient on acquirer CARs. On average, foreign firms entering the Turkish market experience 7% lower CARs than their domestic counterparts. This effect is significant at various levels differing for various model specifications, but is robust in general.

As Model 4 of Table 9 shows, the negative effect is higher when a foreign company acquires majority shares of a Turkish target firm, while foreign firms acquiring minority shares do not experience lower CARs. This might suggest that foreign firms being handed over the management of a Turkish company in an unfamiliar business environment are considered to suffer more compared to foreign firms acquiring minority stakes and having less say on management decisions. Model 4 of table 10 measures a significant positive marginal effect on acquirer CARs when a foreign company acquires minority shares of a Turkish firm. Partnerships with the Turkish companies allowing the foreign acquirers to benefit from Turkish target firms' previous experience and management knowledge are associated with positive marginal returns.

Foreign companies entering the Turkish market more than once do not benefit from their previous experience. As Model 2 of Table 12 shows, entries after the first exposure to the Turkish market bring marginally 6,5% less to the acquirers. This effect is significant at 10% level, and contradicts with the learning effect hypothesis. According to this hypothesis, one might expect to see higher CARs for acquirers as acquirers procure experience from their previous exposure to the unfamiliar Turkish market. The reason for not seeing positive marginal returns associated with their previous experience might be that the market associates the positive impact of entry into the Turkish market with the first acquisition, and does not assign extra value to the successive transactions.

Chapter 6

Robustness

As explained in the methodology section, to check the robustness of our results, we use several methods. The first method is to use different sets of CARs, which are cumulative returns aggregated over different event windows. As explained earlier, CARs calculated using the (-10, 10) and (-30,15) event windows produce qualitatively similar results.

Another potential problem associated with multivariate tests may be multicollinearity. To check whether our dependent variables are suffering from high correlation or not, variance inflation factor (VIF) tests are performed for each model run. In necessary cases multicollinearity is taken care of by dropping out the problematic variable. However, we must note that only one model suffered from multicollinearity[23].

To make sure that our test statistics are robust to potential heteroskedasticity concerning the dependent variable, standard errors are calculated using Huber-White sandwich variance estimator. Additional robustness checks regarding the calculation of CARs and multivariate tests are explained in the following sections.

6.1. Selection of the Sample

During the 2004-2008 period, some foreign companies have engaged in successive M&A deals in several countries within short periods of time. For 11 of the 171 deals used in conducting the multivariate tests, the acquirer company has announced another M&A deal outside of Turkey within the 45 work-day period prior to the announcement in Turkey. For these 11 deals, it may not be possible to differentiate the cause of change in the stock price of the acquirer company. Any extraordinary change in the stock price of an acquirer is caused by a combined effect of M&A news in different markets. Due to the nature of the event study analysis, we cannot differentiate the effects of two successive mergers within a short period of time on the acquirer's stock price.

Therefore, to make sure that our results are not driven by announcement reactions in other markets than Turkey, we conduct all of our tests once more with the rest of the sample which

[23] Footnote 19 on page 20 elaborates on this point.

consists only of these 160 announcements[24]. For 10 of the announcements, the acquirer firm has another M&A experience outside of Turkey within the (-160,60) event window. To be able to calculate $\hat{\beta}_i$ for these companies, we exclude the stock returns around the previous merger[25].

Running the multivariate regressions with the new sample produces virtually the same results for the tests. Levels and signs of the coefficients, as well as the significance of critical coefficients are robust to this change in the sample.

6.2. Re-Calculating the β's – Lagged CAPM

As explained in the Methodology section, CARs of the acquirers are calculated by cumulating the abnormal returns of the acquirer stock prices over various event windows. To calculate the daily abnormal returns, we subtract the expected return from the realized return. Expected returns are calculated by fitting the individual stock's daily returns on the market's excess return (market return minus the risk free rate) on that day. The associated equation is as follows:

$$R_{i,t} - R_f = \hat{\alpha}_i + \hat{\beta}_i(R_{m,t} - R_f) + \epsilon_i$$

An alternative approach is to use a lagged model to calculate the expected stock returns. If a stock is not sufficiently liquid, i.e. the daily trade volume of the stock is not sufficient to be able to deduct the co-movement of the stock with the market, a lagged model may be more appropriate to use. If this is the case, $\hat{\beta}_i$ calculated by the method above may not be reliable. To check whether the $\hat{\beta}_i$'s we calculate are reliable or not, we also calculate CARs with a lagged model, and re-run the multivariate tests.

The lagged CAPM model is specified as follows:

$$R_{i,t} - R_f = \hat{\alpha}_i + \sum_{k=0}^{k=3} \hat{\beta}_{i,k}(R_{m,t-k} - R_{f,t-k}) + \epsilon_i$$

And the $\hat{\beta}_i$ associated with each stock is calculated by aggregating the lagged $\hat{\beta}_{i,k}$'s:

$$\hat{\beta}_i = \sum_{k=0}^{k=3} \hat{\beta}_{i,k}$$

[24] 11 transactions associated with the problematic acquirers are dropped.
[25] Stock return data for 45 days around the previous merger is excluded from the model.

Running our multivariate tests with CARs calculated by using the lagged CAPM model as the dependent variable produced virtually similar results. Levels and significance of the independent variables' coefficients are robust to the change in the calculation method of the CARs. This suggests that the initial $\hat{\beta}_i$'s calculated by ordinary CAPM are reliable. Since the acquiring firms are relatively big firms, their stocks are probably liquid enough making the ordinary CAPM sufficient for calculating the $\hat{\beta}_i$'s.

6.3. Controlling for the Correlations – What if the Independent Variable is not Independent?

When running our multivariate tests, we include year dummies to control for the certain external conditions affecting the investment environment each year. While binary dummies for each year capture the fixed effect of each year, the CARs of acquirers involving in M&A transactions in Turkey for a given year might not be independent from each other. Although using the Huber White sandwich estimator for variances takes care of potential heteroskedasticity to some degree, this method still assumes that independent variables are not correlated. To control for the random effect, we cluster the CARs for each year and correct the standard errors.

Results show that although some degree of significance is lost for our several multivariate tests, in general our results are similar. This effect is expected as clustering reduces the degrees of freedom, and in our case the sample size is already small. However, certain important effects associated with control variables persist under this new specification.

For example, the marginal positive effect associated with the horizontal transactions and the marginal negative effect associated with cross-border transactions is robust to clustered multivariate tests. Also, the marginal loss experienced by the acquirers who gain the corporate control of a target firm is almost significant (tstat = 1.86). This effect is significantly stronger for foreign acquirers compared to domestic acquirers. Also, gaining majority control of a private target creates a significant loss for a foreign acquirer but not a domestic one. Similarly, as explained in the target size and acquirer returns section, while bigger target size is associated with positive marginal returns, acquirer size is generally insignificant. As for acquirer experience, the effect of previous experience on a current non-horizontal transaction remains significantly positive, while a current horizontal transaction significantly brings lower CARs to the acquirers. As explained, results of clustered multivariate tests are consistent with our previous tests where we assumed CARs are not correlated within each year.

One other possible clustering option may be clustering the acquirer CARs according to the acquirer's macro-industry. CARs associated with acquirers belonging to a particular industry may be correlated with each other. Also, besides a random effect, certain industries may have a fixed effect on the acquirer returns. However, because of our small sample size, we cannot cluster the acquirer CARs according to every macro-industry code. Also, introducing dummy variables associated with each macro-industry reduces the power of our tests. As Figure 13 shows, 70% of the acquirers in our sample operate in the following industries: financials, materials, industrials and energy. Therefore, instead of introducing binary dummy variables for every macro-industry, we include 4 dummy variables to the multivariate tests associated only with these industries. And also, standard errors are calculated by grouping the acquirer CARs into the following clusters: financials, materials, industrials, energy and other.

Under this new specification, our results are consistent with what is reported in the "Multivariate Results" section. Though several levels may differ, significance and sign of critical coefficients reported in the previous sections persist when standard errors are controlled for potential industrial correlations. This shows that our results are robust for fixed and random industrial effects.

Chapter 7

Conclusions

The 2000's is the period in which both domestic and cross-border M&A activity has risen significantly. According to the Thomson One database, 87% of the total M&A volume in the Turkish market is accounted for the 2000's, especially concentrating around the 2005-2008 period[26]. Along with the expansionary cycle of the global economy, the Turkish M&A market has become a noteworthy investment area for both foreign and domestic companies. We believe that our study can shed some light on this highly active period, in terms of value creation or destruction patterns associated with M&A transactions. In our opinion, understanding these patterns can be beneficial for explaining future investment potentials and merger wave directions.

Not surprisingly, the Turkish target firms significantly benefit from the merger transaction, consistent with the previous literature. While this is the case, we find that the targets being acquired by foreign firms gain significantly more than their counterparts being acquired by domestic bidders[27]. Also, average target gains marginally more when engaged in a horizontal transaction. Marginal effect of handing the majority control over the bidder firms is also significantly positive. These results may suggest that a Turkish target is considered to worth potentially more under a bidder within the same macro-industry that the target firm operates in.

The picture is slightly different for the bidding firms. We find that, on average, a foreign firm bidding on a Turkish target experiences significant marginal loss. We must note that this loss is significantly larger when the foreign firm acquires majority shares of its target. However, similar to the target firms, bidder firms also gain from industrial focus strategies.

Besides the transaction characteristics, our study shows that several firm characteristics have explanatory power on merger party returns following an M&A transaction. Our results support the previous studies which have found that a high market-to-book ratio may indicate over-valuation and can result in value destruction following a merger transaction. Another firm characteristic that proves to have a significant marginal effect on the acquirer returns is the relative size of the merger parties, as smaller firms acquiring bigger targets gain more on average. Interestingly, the market does not reward former M&A experience of foreign firms

[26] Around 140 billion dollars worth of M&A transactions are accounted for the 2005-2008 period.
[27] Univariate test results

in the Turkish market. We see that the market associates the positive marginal impact of entry into the Turkish market with the first acquisition, and does not assign extra value to the successive transactions.

Although the global M&A signals slow down due to the recent global financial crisis, we believe that M&A investment will stay as a valuable option for the firms seeking for expanding their operational basis, and diversifying their operational or financial risk. With this prospect in mind, we hope that our study provides the reader with the dynamics of the Turkish M&A market, which will keep being an attraction point to foreign direct investment with its increasingly liberalizing economy.

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APPENDIX

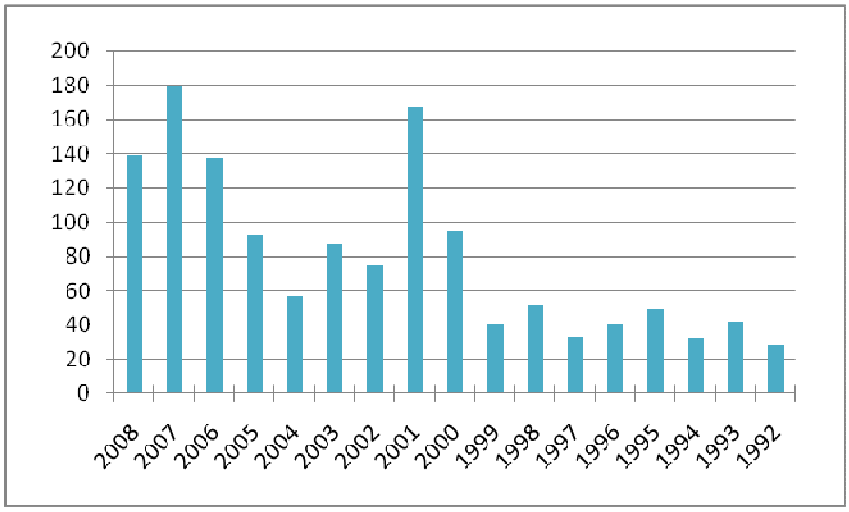

Figure 1: Total Number of M&A Deals

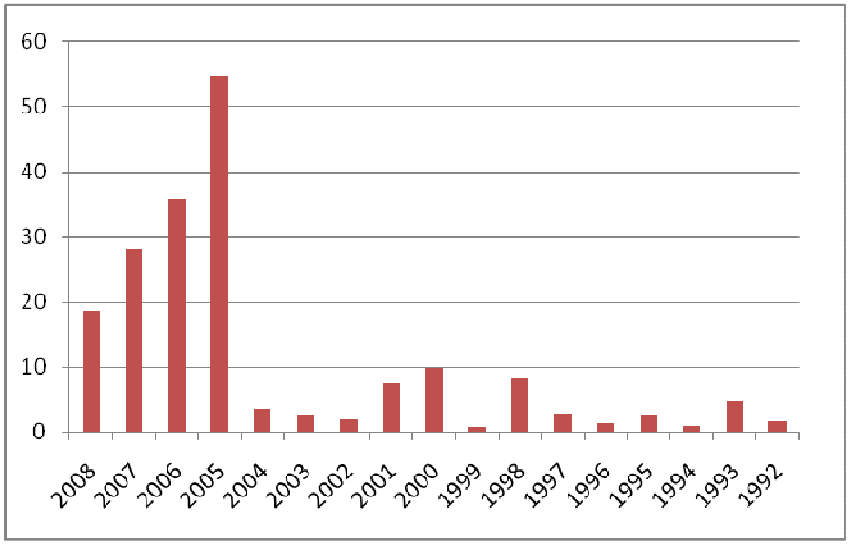

Figure 2: Total Value of M&A Deals (in $Billions)

Figures 1 and 2 shows the historical trends in M&A activity which occurred in Turkey. Figure 1 plots the number of M&A announcements made each year. All announcements classified as related to M&A deals are included in the figure. Figure 2 plots the inflation adjusted M&A deal volume generated each year. Deal volume for each year is calculated by aggregating disclosed deal values which are adjusted for inflation by taking 1992 as the base year.

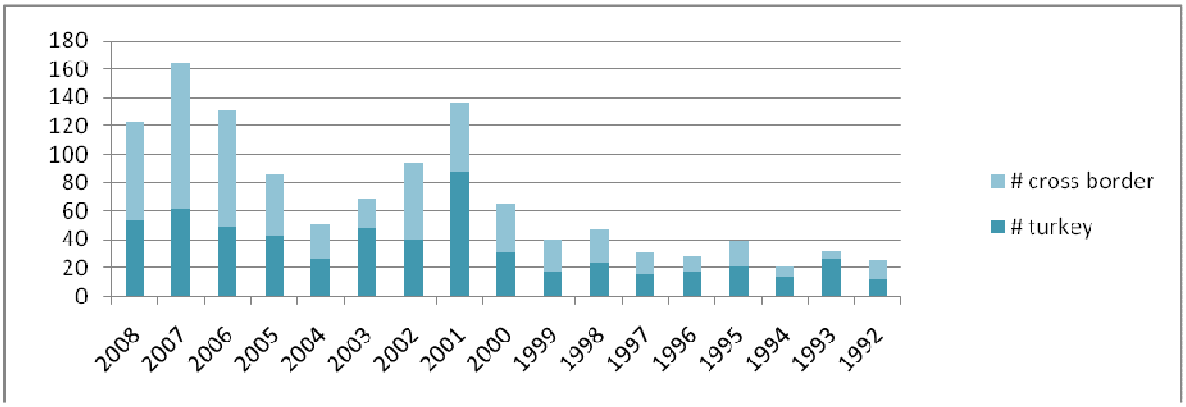

Figure 3: Number of Cross-Border and Domestic M&A Deals

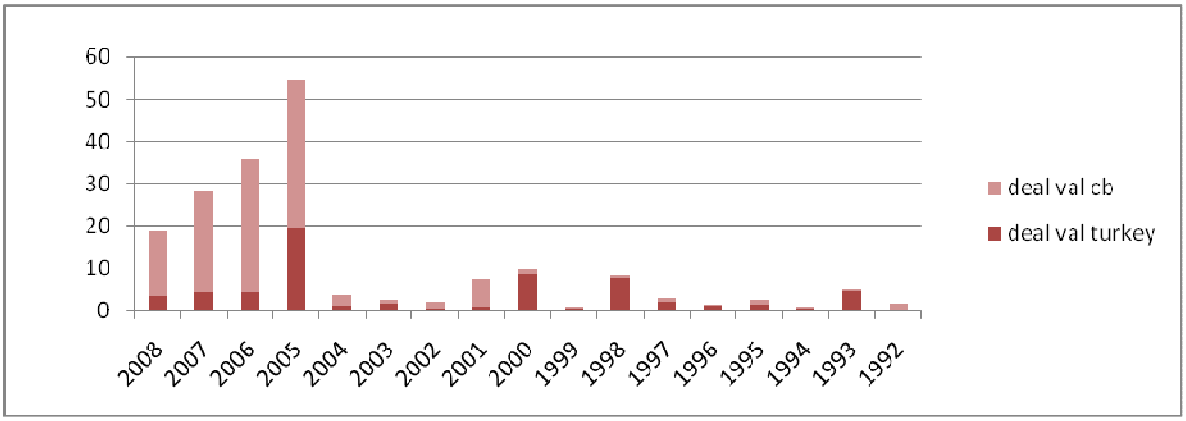

Figure 4: Value of Cross-Border and Domestic M&A Deals (in $Billions)

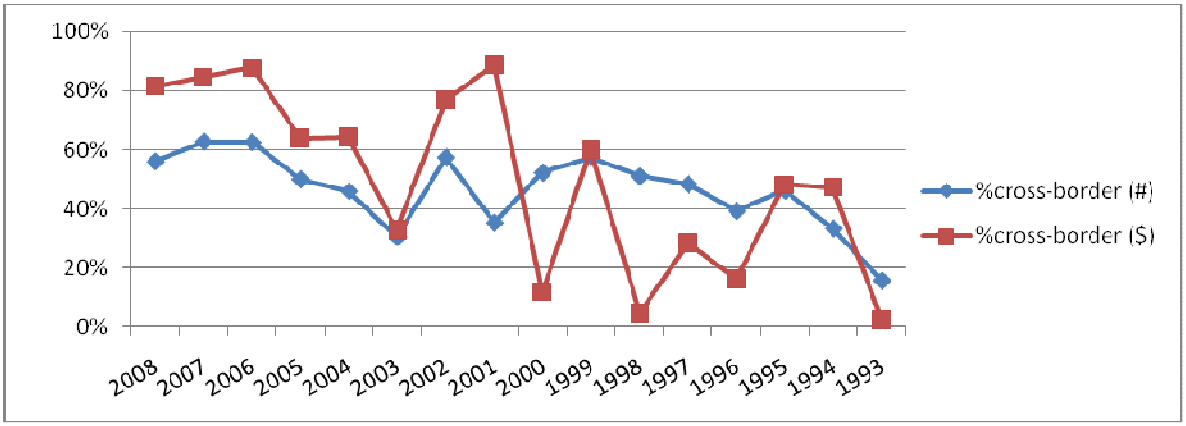

Figure 5: Percentage of Cross-Border M&A Deals in Number and Volume

Figures 3, 4 and 5 intend to differentiate between cross-border and domestic M&A activity. If the acquirer company operates in a different country than Turkey, the transaction is classified as "*Cross-Border*". If both the acquirer and the target companies are Turkish, the merger is classified as a "*Domestic*" merger. Figure 3 plots the number of deals classified as either cross-border or domestic M&A announcements made each year. Figure 4 plots the total disclosed deal volume generated by cross-border and domestic transactions. Figure 5 plots the percentage of cross-border deals in total M&A activity. The proportion of cross-border transactions to all transactions is calculated and plotted with respect to the number of announcements made, and the total disclosed deal volume generated.

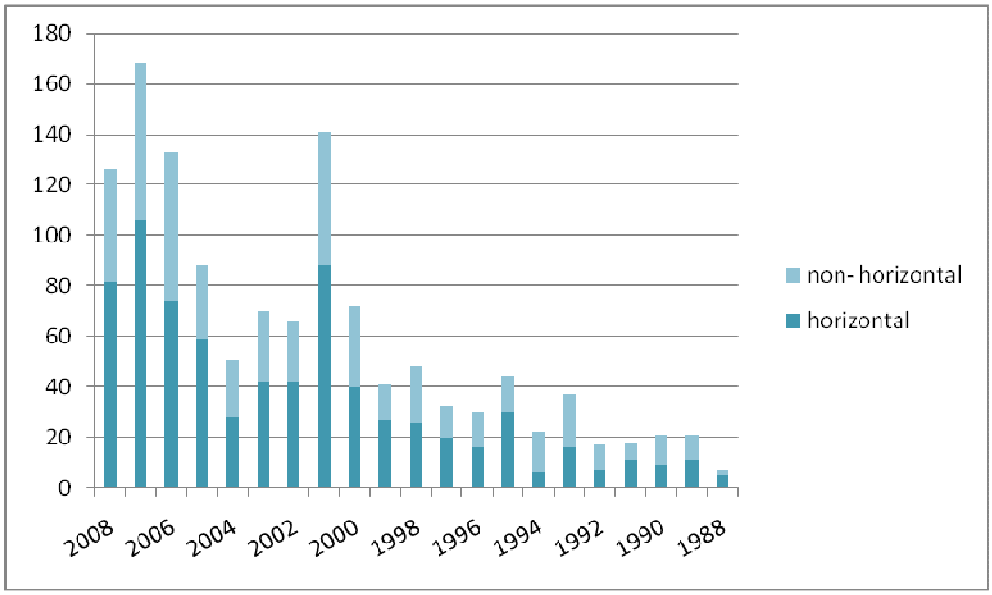

Figure 6: Number of Horizontal and Non-Horizontal M&A Deals

Figure 6 plots the M&A announcements made each year by classifying mergers into two groups: horizontal transactions and non-horizontal transactions. In Thomson One M&A deals database, companies are classified into 12 macro-industries. These industries are *Financials, Materials, Industrials, Energy and Power, Telecommunications, Consumer Staples, Media and Entertainment, Retail, Healthcare, Real Estate, High Technology and Consumer Products*. If both the target and the acquirer companies operate within the same macro-industry, the M&A transaction is classified as "*Horizontal*". If the macro-industries do not match, the transaction is classified as "*Non-Horizontal*"

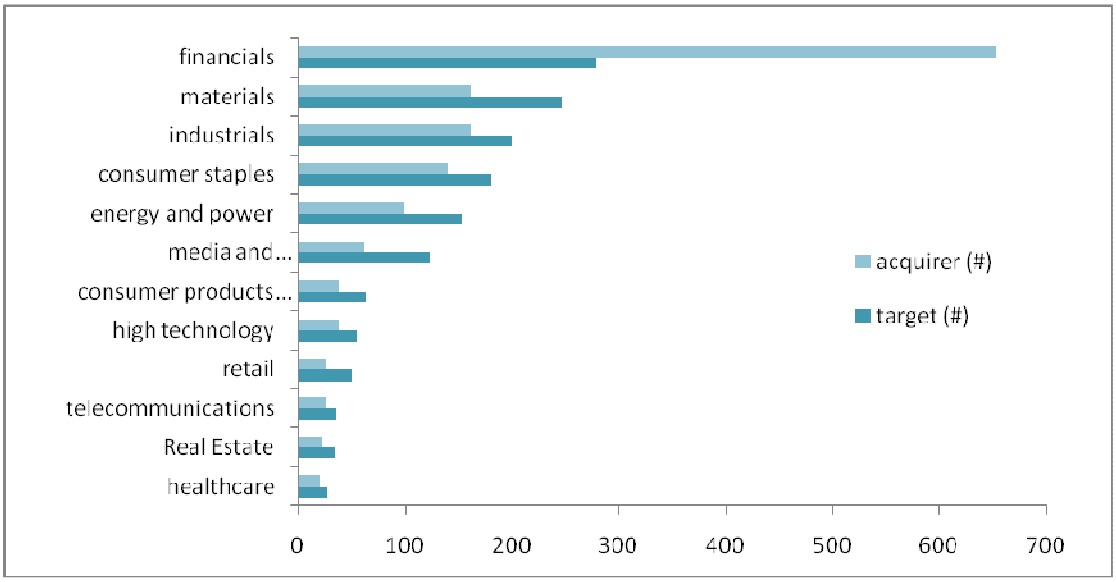

Figure7: Number of M&A Deals by Industry

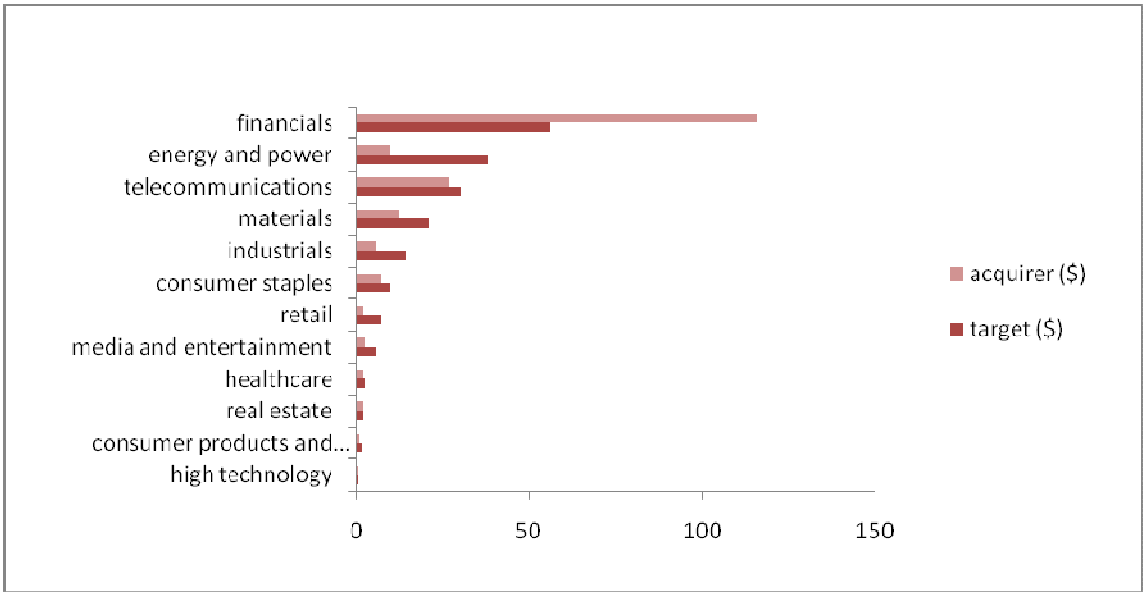

Figure8: Value of M&A Deals by Industry (in $Billions)

Figures 7 and 8 plot the distribution of M&A transactions among various macro-industries during the 1992-2008 period. While Figure 7 plots the distribution based on the number of announcements made within each industry, Figure 8 displays the total disclosed deal volume generated by companies associated with each macro industry. The volume values in Figure 8 are real dollar values in billions. The inflation adjustment is made by taking the year 1992 as the base year.

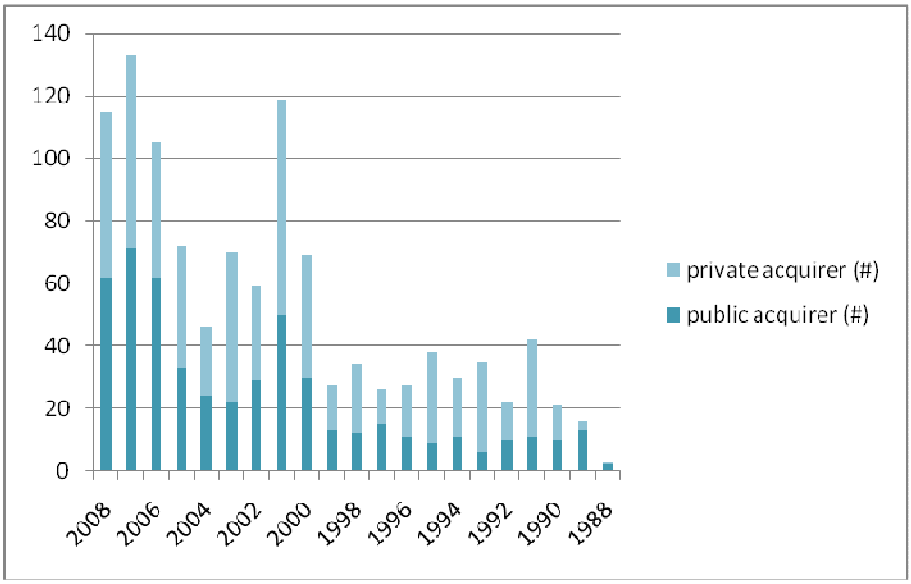

Figure9: Number of Private and Public Acquirers

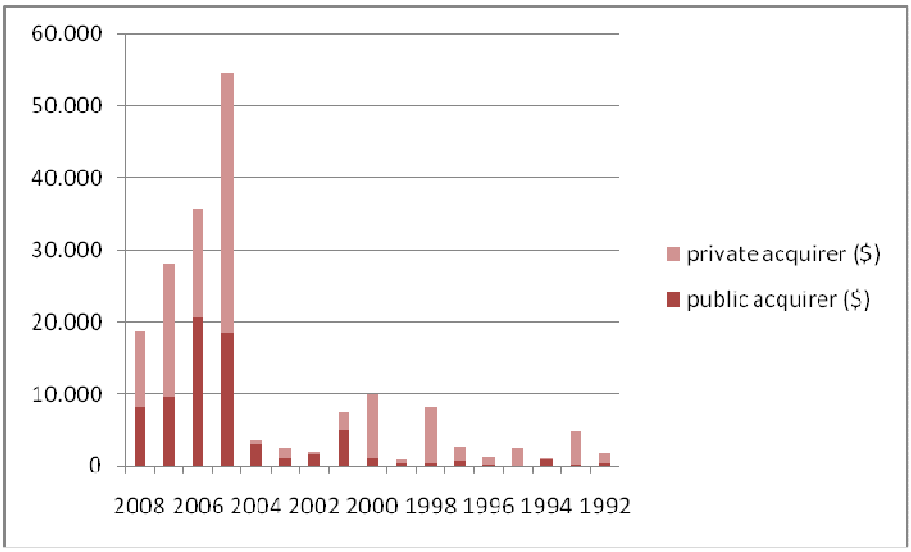

Figure10: Value of Transactions done by Private and Public Acquirers (in $Millions)

Figures 9 and 10 intend to differentiate between M&A transactions with a public acquirer and a private acquirer. If an acquirer's stock is publicly traded, the acquirer is classified as a "*Public Acquirer*". If not, the acquirer is classified as a "*Private Acquirer*". Figure 8 plots number of deals classified as either transactions made by a public or private acquirer each year. Figure 9 plots the total disclosed deal volume generated by public and private acquirers. The volume values in the Figure 9 are real dollar values in billions. The inflation adjustment is made by taking the year 1992 as the base year.

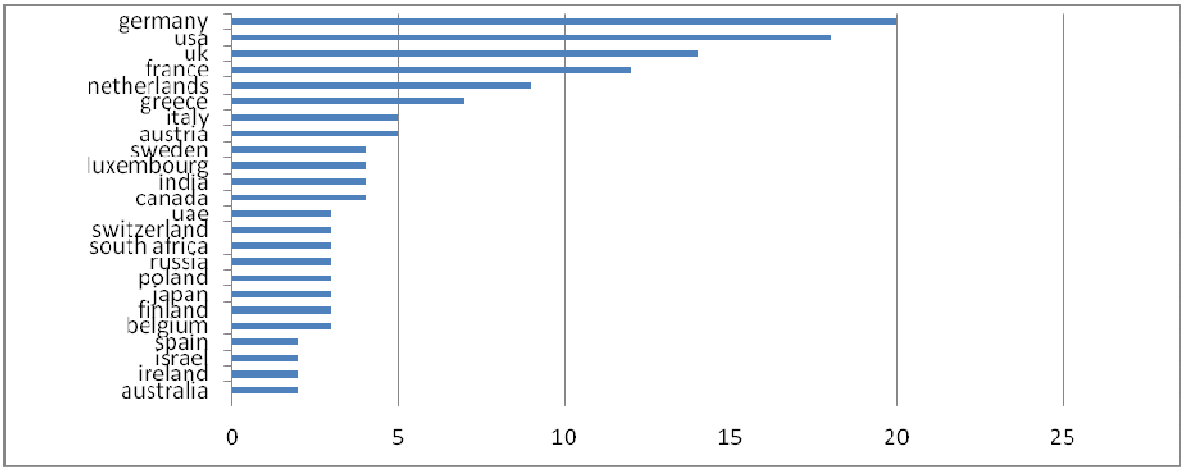

Figure11: Number of Cross-Border M&A Deals by Bidder Country

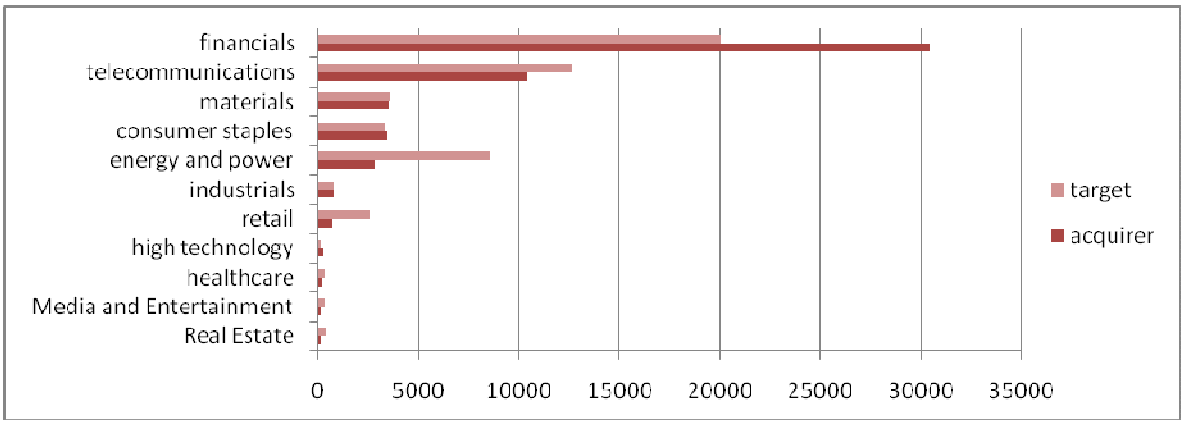

Figure12: Value of M&A Deals by Industry (in $Millions)

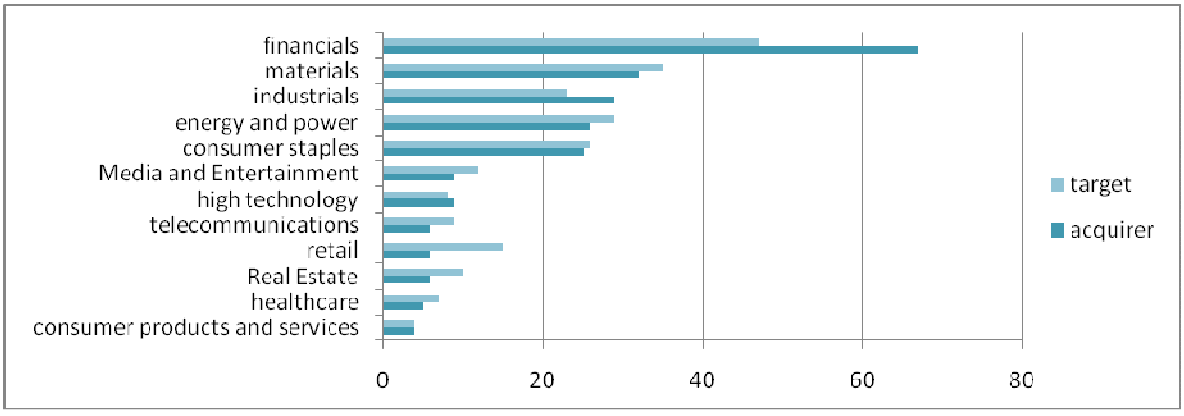

Figure13: Number of M&A Deals by Industry

Legend 1: Description of Variables Associated with Deal Characteristics

Completed: This binary variable takes the value of unity if the M&A transaction is classified as "*Completed*" in the Thomson One database. Alternative classifications are "*Pending*", "*Withdrawn*", "*Intended*".

Cross-Border: This binary variable takes the value of unity if the acquirer operates in another country than Turkey. All target companies are Turkish companies.

Domestic: This binary variable is the complementary variable for "*Cross-Border*" binary variable. It takes the value of unity if the acquirer company is a Turkish company.

Horizontal: This binary variable takes the value of unity if the acquirer and the target operate in the same macro-industry. In Thomson One M&A deals database, companies are classified into 12 macro-industries. These industries are *Financials, Materials, Industrials, Energy and Power, Telecommunications, Consumer Staples, Media and Entertainment, Retail, Healthcare, Real Estate, High Technology and Consumer Products*.

Non-horizontal: This binary variable takes the value of unity if the acquirer and the target operate in different macro-industries.

Public Target: This binary variable takes the value of unity if the target's stock is publicly traded.

Public Acquirer: This binary variable takes the value of unity if the target's stock is publicly traded.

Private Target: This binary variable takes the value of unity if the target's stock is not publicly traded.

% Owned After: This is a continuous variable indicating the percentage of shares of the target firm owned by the bidding firm after the specific transaction. This variable takes the value of N/A if the terms of the M&A deal are not disclosed.

% Acquired: This is a continuous variable indicating the percentage of shares of the target firm acquired by the bidding firm on the specific transaction. This variable takes the value of N/A if the terms of the M&A deal are not disclosed.

% Owned Before: This is a continuous variable indicating the percentage of shares of the target firm that was owned by the bidding firm before the specific transaction. This variable takes the value of N/A if the terms of the M&A deal are not disclosed, and takes the value of zero if the acquiring firm did not own any stakes of the target firm before the transaction.

Major Control Gained: This binary variable takes the value of unity if the acquiring firm owned more than 51% of its target's shares after the transaction. The variable takes N/A values if deal terms on this matter were not disclosed.

Minor Shares Acquired: This binary variable takes the value of unity if acquiring firm owned less than 51% of its target's shares after the transaction. The variable takes N/A values if deal terms on this matter were not disclosed.

Deal Value: This is a continuous variable indicating the real dollar value of the M&A deal in millions. The base year for inflation adjustment is 2004, which is the beginning of our sample. The variable takes the value of N/A if deal terms on this matter were not disclosed.

Log of Deal Value: This is the logarithmically scaled version of the variable "*Deal Value*".

Legend 2: Description of Variables Associated with Firm Characteristics

Leverage: This is a continuous variable showing the financial leverage of the acquirer or the target firm. It is calculated by dividing the debt of the company to the book value of equity.

Market to book: This is a continuous variable calculated by dividing the market price of the share to the book value of the share.

Size: This is a continuous variable, and is equal to the asset size of the company.

Log of Size: This is the logarithmically scaled version of the "*Size*" variable.

High Leverage: This is a binary variable defined for acquires and targets separately. For acquirers, "*High Leverage*" variable takes the value of unity if the leverage of the acquirer is below-median among the acquirers in the sample. Similarly, for targets, "*High Leverage*" variable takes the value of unity if the leverage of the target is below-median among the targets in the sample.

High Market to Book: This is a binary variable defined for acquirers and targets separately. For acquirers, "*High Market to Book*" variable takes the value of unity if the market to book ratio of the acquirer is below-median among the acquirers in the sample. Similarly, for targets, "*High Market to Book*" variable takes the value of unity if the market to book ratio of the target is below-median among the targets in the sample.

High Size: This is a binary variable defined for acquirers and targets separately. For acquirers, "*High Size*" variable takes the value of unity if the asset size of the acquirer is below-median among the acquirers in the sample. Similarly, for targets, "*High Size*" variable takes the value of unity if the asset size of the target is below-median among the targets in the sample.

Target Value: This is a proxy created for measuring the target market value. It is calculated by dividing the "*Deal Value*" variable by the "*% Acquired*" variable.

Log of Target Value: This is the logarithmically scaled version of the "*Target Value*" variable.

Target / Acquirer Ratio: This is a continuous variable calculated by dividing the "*Target Value"* variable by the "*Size*" value associated with the acquirer bidding on that target firm.

Experienced: This binary variable takes the value of unity if the acquirer has previously engaged in an M&A transaction in Turkey after 2004.

Horizontal_Experienced: This binary variable takes the value of unity if the acquirer has previously engaged in a horizontal M&A transaction in Turkey after 2004.

NonHorizontal_Experienced: This binary variable takes the value of unity if the acquirer has previously engaged in a non-horizontal M&A transaction in Turkey after 2004.

Table 1: Characteristics of the Deals and Firms in the Sample

Panel A					
Deal Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Public Target	0,32	0	0,47	1	0
Public Acquirer	0,76	1	0,43	1	0
Completed	0,61	1	0,49	1	0
Cross-Border	0,68	1	0,47	1	0
Horizontal	0,68	1	0,47	1	0
% Owned After	68,59	71,23	31,99	100	3,17
% Acquired	60,42	56,21	34,14	100	0,005
Major Control Gained	0,70	1	0,46	1	0
Deal Value($bil)	0,43	0,08	1,03	6,00	0,00
Panel B					
Acquirer Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	2,48	1,84	1,97	14,58	0,46
Leverage	0,25	0,23	0,18	0,81	0,00
Experienced	0,23	0,00	0,42	1,00	0,00
Size($bil)	147,71	4,94	366,76	1884,32	0,00
Target Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	1,56	0,98	1,51	6,08	0,00
Leverage	0,61	0,58	0,49	3,92	0,00
Size(TLbil)	1,99	0,24	4,82	20,07	0,01

Table 2 and 3: Characteristics of Domestic and Cross-Border Deals

DOMESTIC DEALS

Deal Characteristics	**mean**	**median**	**stdev**	**min**	**max**
Public Target	0,38	0	0,49	0	1
Public Acquirer	0,69	1	0,46	0	1
Completed	0,51	1	0,50	0	1
Horizontal	0,56	1	0,50	0	1
% Owned After	65,01	72,46	35,28	4	100
% Acquired	53,82	50	36,56	4	100
% Owned Before	11,19	0	23,31	0	88,4
Major Control Gained	0,63	1	0,49	0	1
Deal Value($mil)	177,65	46,08	418,04	0,05	2146,49
Acquirer Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	2,18	1,77	1,44	6,80	0,47
Leverage	0,25	0,22	0,21	0,77	0,00
Experienced	0,35	0,00	0,48	1,00	0,00
Size($bil)	8,65	0,97	15,68	50,63	0,01
Target Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	0,93	0,58	0,96	3,50	0,00
Leverage	0,50	0,45	0,29	1,19	0,00
Size	0,77	0,12	1,47	4,64	0,01

CROSS-BORDER DEALS

Deal Characteristics	**mean**	**median**	**stdev**	**min**	**max**
Public Target	0,31	0	0,46	0	1
Public Acquirer	0,79	1	0,41	0	1
Completed	0,66	1	0,47	0	1
Horizontal	0,74	1	0,44	0	1
% Owned After	69,91	70	30,78	3,17	100
% Acquired	62,85	60	33,07	0,005	100
% Owned Before	7,06	0	19,09	0	80
Major Control Gained	0,73	1	0,45	0	1
Deal Value($mil)	0,58	0,10	1,23	0,00	6,00
Acquirer Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	2,60	1,95	2,15	14,58	0,46
Leverage	0,25	0,23	0,17	0,81	0,00
Experienced	0,18	0,00	0,39	1,00	0,00
Size($bil)	204,76	11,53	422,84	1884,32	0,00
Target Characteristics	**mean**	**median**	**stdev**	**max**	**min**
Market to Book	2,20	2,18	1,70	6,08	0,00
Leverage	0,72	0,60	0,61	3,92	0,06
Size	3,07	0,36	6,34	20,07	0,05

Table 3: Differences in Characteristics of Cross-Border and Domestic Deals

Table 3 reports the results of tests performed to compare the difference of means of deal and firm characteristics among cross-border and domestic transactions. A significant result suggests that the mean of the certain characteristic is significantly different for cross-border and domestic deals. 10%, 5% and 1% significance levels are denoted by *, **, and *** respectively.

Cross-Border & Domestic Transactions Difference

Panel A				
Deal Characteristics	**Cross-Border**	**Domestic**	**Difference**	**tstat**
Public Target	0,31	0,38	-0,07	-1,11
Public Acquirer	0,79	0,69	0,10	1,49
Completed	0,66	0,51	0,15	2,29**
Horizontal	0,74	0,56	0,18	2,78***
% Owned After	69,91	65,01	4,90	0,77
% Acquired	62,85	53,82	9,03	1,34
% Owned Before	7,06	11,19	-4,13	1,02
Major Control Gained	0,73	0,63	0,10	1,08
Deal Value($mil)	0,58	0,18	0,40	2,08**
Panel B				
Acquirer Characteristics	**Cross-Border**	**Domestic**	**Difference**	**tstat**
Market to Book	2,60	2,18	0,42	1,22
Leverage	0,25	0,25	0,00	0,05
Experienced	0,18	0,35	-0,17	-2,42**
Size	204,76	8,65	196,11	3,21***
Target Characteristics	**Cross-Border**	**Domestic**	**Difference**	**tstat**
Market to Book	2,20	0,93	1,27	3,23***
Leverage	0,72	0,50	0,22	1,91**
Size	3,07	0,77	2,30	1,66*

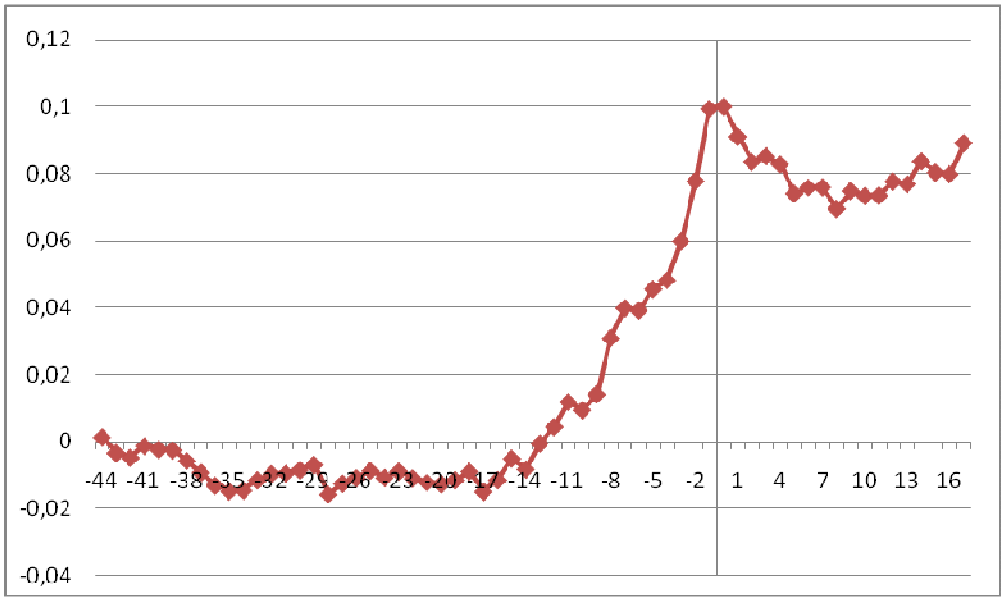

Figure 14: Target Cumulative Abnormal Returns

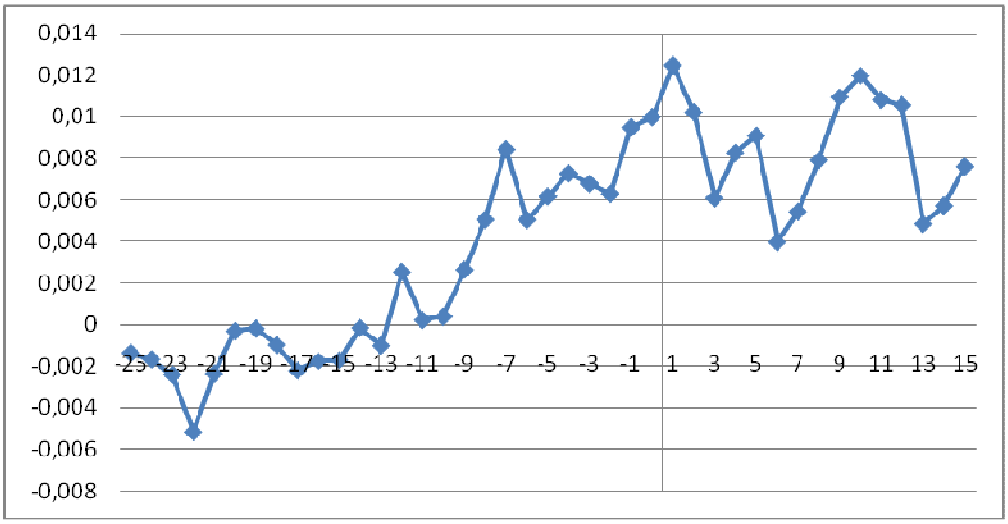

Figure 15: Acquirer Cumulative Abnormal Returns

Figures 14 and 15 plot the cumulative abnormal returns of targets and acquirers around the merger announcement. Merger announcement date is the day zero.

Table 4 and 5: Univariate Statistics for Acquirer and Target Returns

Panel A reports means and variances Cumulative Abnormal Returns of the acquirers in the sample for two event windows: (-30,15) and (-10, 10). While "*All*" denotes the whole sample, means and variances associated with different subsamples of acquirers are reported. T-Statistics reported are the statistics calculated to test whether a CAR is significantly greater that zero or not. 10%, 5% and 1% significance levels are denoted by *, **, and *** respectively.

Panel B reports the same for Cumulative Abnormal Returns of the target firms.

Table 4

Acquirer CARs	**[-30,15]**			**[-10,10]**		
	return	**variance**	**tstat**	**return**	**variance**	**tstat**
All	0,07%	0,0002	0,05	1,22%	0,0001	1,40
Cross-Border	-1,25%	0,0002	-0,82	0,32%	0,0001	0,31
Domestic	3,18%	0,0006	1,34	3,34%	0,0003	2,08**
Horizontal	1,43%	0,0002	0,94	1,97%	0,0001	1,91*
Major Control	0,02%	0,0004	0,01	1,01%	0,0002	0,77
Experienced Bidder	-2,05%	0,0007	-0,78	-1,04%	0,0003	-0,59
High Size	-2,34%	0,0003	-1,34	-0,64%	0,0001	-0,54
High Leverage	-1,09%	0,0003	-0,64	-0,32%	0,0001	-0,28
High Market to Book	-3,19%	0,0003	-1,93*	-2,02%	0,0001	-1,82*

Table 5

Target CARs	**[-30,15]**			**[-10,10]**		
	return	**variance**	**tstat**	**return**	**variance**	**tstat**
All	8,89%	0,0005	4,17***	6,40%	0,0002	4,44***
Cross Border	12,86%	0,0005	5,92***	7,46%	0,0002	5,08***
Domestic	4,79%	0,0004	2,27**	5,30%	0,0002	3,72***
Public Acquirer	11,30%	0,0005	5,09***	7,88%	0,0002	5,25***
Horizontal	14,56%	0,0005	6,82***	9,68%	0,0002	6,71***
Major Control	21,76%	0,0004	10,71***	15,99%	0,0002	11,64***
High Market to Book	6,79%	0,0004	3,32***	4,74%	0,0002	3,42***
High Leverage	6,79%	0,0004	3,30***	4,74%	0,0002	3,41***

Table 6: Univariate Differences of Acquirer Returns Based on some Deal and Firm Characteristics

Table 6 reports the results of tests performed to compare the difference of means of CARs of the acquirers belonging to different subsamples. The subsamples are generated by grouping transactions with common deal and acquirer characteristics. A significant t-statistic suggests that the average CAR associated with one subsample is significantly different from the other subsample. 10%, 5% and 1% significance levels are denoted by *, **, and *** respectively.

Cross-border		**Domestic**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
120	-1,25%	51	3,18%	-4,43%	-1,87**
Horizontal		**Non-horizontal**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
121	1,43%	50	-3,23%	4,67%	1,96**
Public Target		**Private Target**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
21	-2,60%	150	0,43%	-3,03%	-0,91
Major Control		**Minor Control**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
72	0,01%	27	2,51%	-2,49%	-0,84
High Market to Book		**Low Market to Book**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
79	-3,19%	78	2,62%	-5,82%	-2,60***
High Leverage		**Low Leverage**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
79	-1,09%	78	1,33%	-2,43%	-1,06
High Size		**Low Size**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
83	-2,34%	82	2,13%	-4,47%	-2,01**
Experienced		**Not experienced**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
40	-2,04%	131	0,71%	-2,76%	-1,07

Table 7: Univariate Differences of Target Returns Based on some Deal and Firm Characteristics

Table 7 reports the results of tests performed to compare the difference of means of CARs of the targets belonging to different subsamples. The subsamples are generated by grouping transactions with common deal and target characteristics. A significant t-statistic suggests that the average CAR associated with one subsample is significantly different from the other subsample. 10%, 5% and 1% significance levels are denoted by *, **, and *** respectively.

Cross-border		**Domestic**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
34	12,86%	33	4,79%	8,07%	1,32
Horizontal		**Non-horizontal**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
42	14,56%	25	-0,6%	15,20%	-2,48***
Public Acquirer		**Private Acquirer**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
18	11,30%	49	8%	3,30%	0,47
Major Control		**Minor Control**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
25	21,76%	17	-1,12%	22,88%	2,75***
High Leverage		**Low Leverage**		**Difference**	
Obs	*Mean*	*Obs*	*Mean*	*Mean*	*tstat*
34	12,80%	33	4,85%	7,95%	1,3

Table 8

Acquirer [-30, +15] CAR	Model 1	Model2	Model3
Experienced	-0.041		-0.036
	[1.65]		[1.24]
Private Target	0.015		0.028
	[0.60]		[0.94]
Horizontal	0.073***		0.071**
	[2.76]		[2.40]
Cross Border	-		-0.070**
	[3.26]		[2.45]
Log of Deal Value	-0.041	-0.001	0.003
	[1.65]	[0.16]	[0.43]
Log of Acquirer Size		-0.023*	-0.015
		[1.86]	[1.27]
Leverage		-0.047	0.029
		[0.61]	[0.37]
Market to book		-0.016**	-0.016**
		[2.36]	[2.06]
Annual Year Dummies?	yes	yes	yes
Constant	-0.000	0.162***	0.074
	[0.01]	[2.91]	[1.27]
Observations	95	86	86
Adjusted R-squared	0.20	0.13	0.19

Table 9

Acquirer [-30, +15] CAR	Model 1	Model2	Model3	Model 4	Model 5	Model6
Experienced	-0.036	-0.064**	-0.060*	-0.058*	-0.049	-0.055
	[1.24]	[2.04]	[1.87]	[1.81]	[1.45]	[1.61]
Private Target	0.028	0.029	0.026	0.033	0.066	0.039
	[0.94]	[0.91]	[0.79]	[1.00]	[1.46]	[1.23]
Horizontal	0.071**	0.083**	0.081**	0.083**	0.073**	0.085**
	[2.40]	[2.32]	[2.37]	[2.33]	[2.13]	[2.44]
Cross Border	-0.070**	-0.067*	-0.064*	-0.011	-0.024	-0.021
	[2.45]	[1.93]	[1.85]	[0.15]	[0.36]	[0.49]
Log of Deal Value	0.003	-0.004	-0.004	-0.004	-0.003	-0.004
	[0.43]	[0.54]	[0.54]	[0.44]	[0.33]	[0.53]
Log of Acquirer Size	-0.015	-0.013	-0.013	-0.012	-0.017	-0.010
	[1.27]	[0.88]	[0.93]	[0.79]	[1.11]	[0.69]
Leverage	0.029	0.091	0.094	0.093	0.090	0.087
	[0.37]	[1.23]	[1.24]	[1.22]	[1.10]	[1.13]
Market to book	-0.016**	-0.016*	-0.016*	-0.015*	-0.014*	-0.015
	[2.06]	[1.79]	[1.92]	[1.96]	[1.74]	[1.63]
% Shares Owned After		-0.001*				
		[1.73]				
Major Control Gained			-0.053*			
			[1.77]			
Cross Border & Major				-0.076**		-0.078**
				[2.49]		[2.52]
CB*MC*Public Target					-0.019	
					[0.38]	
CB*MC*Private Target					-0.092*	
					[1.81]	
Domestic & Major Control				-0.003	0.008	
				[0.04]	[0.13]	
D*MC*Public Target						-0.024
						[0.42]
D*MC*Private Target						-0.041
						[0.59]
Annual Year Dummies?	yes	yes	yes	yes	yes	yes
Constant	0.074	0.184***	0.152***	0.102	0.062	0.106**
	[1.27]	[2.71]	[2.82]	[1.30]	[0.74]	[2.23]
Observations	86	58	58	58	58	58
Adjusted R-squared	0.19	0.24	0.24	0.24	0.19	0.23

Table 10

Acquirer [-30, +15] CAR	Model 1	Model 2	Model3	Model4	Model 5
Experienced	-0.036	-0.060*	-0.058*	-0.058*	-0.067*
	[1.24]	[1.87]	[1.81]	[1.81]	[1.86]
Private Target	0.028	0.026	0.033	0.033	0.026
	[0.94]	[0.79]	[1.00]	[1.00]	[0.63]
Horizontal	0.071**	0.081**	0.083**	0.083**	0.080**
	[2.40]	[2.37]	[2.33]	[2.33]	[2.12]
Cross Border	-0.070**	-0.064*	-0.085**	-0.085**	-0.069**
	[2.45]	[1.85]	[2.52]	[2.52]	[2.03]
Log of Deal Value	0.003	-0.004	-0.004	-0.004	-0.006
	[0.43]	[0.54]	[0.44]	[0.44]	[0.64]
Log of Acquirer Size	-0.015	-0.013	-0.012	-0.012	-0.014
	[1.27]	[0.93]	[0.79]	[0.79]	[0.93]
Leverage	0.029	0.094	0.093	0.093	0.113
	[0.37]	[1.24]	[1.22]	[1.22]	[1.25]
Market to book	-0.016**	-0.016*	-0.015*	-0.015*	-0.013
	[2.06]	[1.92]	[1.96]	[1.96]	[1.46]
Minor Share Acquired		0.053*			
		[1.77]			
Domestic & Minor Share			0.003		0.009
			[0.04]		[0.13]
D*MS*Public Target				0.000	
				[.]	
D*MS*Private Target				0.003	
				[0.04]	
Cross Border & Minor Share			0.076**	0.076**	
			[2.49]	[2.49]	
CB*MS*Public Target					0.073
					[1.39]
CB*MS*Private Target					0.043
					[0.70]
Year Dummies?	yes	yes	yes	yes	yes
Constant	0.074	0.099**	0.099**	0.099**	0.109**
	[1.27]	[2.16]	[2.11]	[2.11]	[2.23]
Observations	86	58	58	58	58
Adjusted R-squared	0.19	0.23	0.24	0.24	0.18

Table 11

Acquirer [-30, +15] CAR	Model 1	Model 2	Model3	Model4	Model 5
Experienced	-0.036	-0.082***	-0.066*	-0.035	-0.030
	[1.24]	[2.73]	[1.90]	[0.94]	[0.81]
Private Target	0.028	0.041	0.032	0.016	0.012
	[0.94]	[1.35]	[0.99]	[0.42]	[0.34]
Horizontal	0.071**	0.076**	0.078**	0.085**	0.083**
	[2.40]	[2.05]	[2.17]	[2.21]	[2.12]
Cross Border	-0.070**	-0.066*	-0.054	-0.032	-0.025
	[2.45]	[1.96]	[1.61]	[0.79]	[0.64]
Log of Acquirer Size	-0.015	-0.014	0.009	-0.015	-0.003
	[1.27]	[0.93]	[0.49]	[1.06]	[0.18]
Leverage	0.029	0.113	0.134	0.053	0.064
	[0.37]	[1.59]	[1.63]	[0.55]	[0.67]
Market to book	-0.016**	-0.015*	-0.016**	-0.018*	-0.018*
	[2.06]	[1.78]	[2.35]	[1.70]	[1.98]
Log of Deal Value	0.003	-0.049**	-0.011	-0.004	-0.009
	[0.43]	[2.63]	[1.17]	[0.45]	[0.87]
Log of Target Size		0.106*			
		[2.47]			
Target / Acquirer Ratio			0.154**		
			[2.35]		
Small Target & Big				0.004	
				[0.09]	
Big Target & Small					0.071*
					[1.86]
Year Dummies?	yes	yes	yes	yes	yes
Constant	0.074	0.086*	0.040	0.121**	0.088*
	[1.27]	[1.70]	[0.73]	[2.48]	[1.71]
Observations	86	58	58	51	51
Adjusted R-squared	0.19	0.28	0.26	0.16	0.22

Table 12

Acquirer [-30, +15] CAR	Model1	Model2	Model3	Model4	Model 5	Model 6
Private Target	0.028	0.028	0.023	0.030	0.026	0.038
	[0.94]	[0.94]	[0.80]	[0.93]	[0.84]	[1.27]
Horizontal	0.071**	0.064**	0.068**	0.079**	0.081**	0.112***
	[2.40]	[2.10]	[2.32]	[2.14]	[2.32]	[3.37]
Cross Border	-0.070**	-0.047	-0.060**	-0.059*	-0.064*	-0.061**
	[2.45]	[1.44]	[2.34]	[1.73]	[1.82]	[2.20]
Log of Acquirer Size	-0.015	-0.016	-0.014	-0.013	-0.013	-0.025**
	[1.27]	[1.35]	[1.01]	[0.93]	[0.90]	[2.08]
Leverage	0.029	0.007	0.009	0.104	0.094	-0.017
	[0.37]	[0.10]	[0.11]	[1.38]	[1.23]	[0.23]
Market to Book	-0.016**	-0.017**	-0.015*	-0.014	-0.016*	-0.016**
	[2.06]	[2.18]	[1.82]	[1.48]	[1.82]	[2.16]
Log of Deal Value	0.003	0.003	0.002	-0.004	-0.004	0.002
	[0.43]	[0.41]	[0.36]	[0.53]	[0.54]	[0.38]
Experienced	-0.036					
	[1.24]					
E*Domestic		0.002				
		[0.04]				
E*Cross-Border		-0.065*				
		[1.77]				
E*Big Acquirer			-0.082*			
			[1.87]			
E*Small Acquirer			-0.062			
			[1.04]			
E* Minor Shares Acquired				-0.017	-0.056	
				[0.28]	[0.88]	
E*Major Control Gained				-0.075**	-0.062*	
				[2.16]	[1.75]	
E*Horizontal						-0.065*
						[1.97]
E*Non-horizontal						0.103**
						[2.09]
Major Control					-0.051	
					[1.56]	
Year Dummies?	yes	yes	yes	yes	yes	yes
Constant	0.074	0.077	0.070	0.071	0.149**	0.081
	[1.27]	[1.39]	[1.20]	[1.15]	[2.45]	[1.50]
Observations	86	86	86	58	58	86
Adjusted R-squared	0.19	0.20	0.20	0.20	0.21	0.26

Table 13

Acquirer [-30, +15] CAR	Model1	Model2	Model3	Model4	Model5	Model 6
Private Target	0.027	0.028	0.035	0.030	0.024	0.038
	[0.90]	[0.94]	[1.21]	[0.98]	[0.78]	[1.27]
Horizontal	0.064**	0.071**	0.097***	0.076**	0.081***	0.112***
	[2.29]	[2.40]	[3.23]	[2.41]	[2.68]	[3.37]
Cross Border	-0.060**	-0.070**	-0.053*	-0.072**	-0.081***	-0.061**
	[2.33]	[2.45]	[1.92]	[2.44]	[2.77]	[2.20]
Log of Acquirer Size	-0.018	-0.015	-0.023**	-0.017	-0.011	-0.025**
	[1.49]	[1.27]	[2.01]	[1.36]	[0.94]	[2.08]
Leverage	-0.005	0.029	-0.013	0.037	0.028	-0.017
	[0.07]	[0.37]	[0.17]	[0.46]	[0.37]	[0.23]
Market to Book Ratio	-0.016**	-0.016**	-0.017**	-0.016**	-0.014*	-0.016**
	[2.08]	[2.06]	[2.33]	[2.05]	[1.71]	[2.16]
Log of Deal Value	0.003	0.003	0.002	0.003	0.001	0.002
	[0.51]	[0.43]	[0.33]	[0.48]	[0.10]	[0.38]
Experienced		-0.036	0.063	-0.041	-0.020	-0.065*
		[1.24]	[1.63]	[1.31]	[0.62]	[1.97]
Horizontal*Hor_exp			-0.132***			
			[2.73]			
Nonhorizontal*Hor_exp				0.081		
				[1.43]		
Horizontal*Nonhor_exp					-0.097*	
					[1.91]	
Nonhorizontal*Nonhor_exp						0.168***
						[2.82]
Year Dummies?	yes	yes	yes	yes	yes	yes
Constant	0.085	0.074	0.096*	0.074	0.060	0.092*
	[1.52]	[1.27]	[1.78]	[1.26]	[0.99]	[1.71]
Observations	86	86	86	86	86	86
Adjusted R-squared	0.19	0.19	0.25	0.19	0.21	0.26

Table 14

Acquirer [-30, +15] CAR	Model1	Model2	Model3	Model4	Model5	Model6	Model 7
Experienced	-0.036	-0.037	-0.022	0.025	-0.037	-0.058	-0.060*
	[1.24]	[1.24]	[0.74]	[0.50]	[1.24]	[1.66]	[1.78]
Private Target	0.028	0.027	0.033	0.068	0.027	0.009	0.011
	[0.94]	[0.89]	[1.03]	[1.17]	[0.89]	[0.31]	[0.39]
Cross Border	-0.070**	-0.057	-0.048*	-0.033	-0.075**	-0.070**	-0.071**
	[2.45]	[1.13]	[1.69]	[0.49]	[2.24]	[2.21]	[2.19]
Log of Deal Value	0.003	0.003	0.003	-0.006	0.003	-0.001	-0.001
	[0.43]	[0.46]	[0.38]	[0.64]	[0.46]	[0.12]	[0.16]
Log of Acquirer Size	-0.015	-0.015	-0.008	-0.021	-0.015	-0.019	-0.019
	[1.27]	[1.26]	[0.46]	[1.05]	[1.26]	[1.46]	[1.39]
Leverage	0.029	0.031	-0.032	0.037	0.031	0.095	0.094
	[0.37]	[0.39]	[0.40]	[0.21]	[0.39]	[1.31]	[1.28]
Market to Book	-0.016**	-0.016*	-0.016**	-0.040***	-0.016*	-0.015	-0.015*
	[2.06]	[1.99]	[2.23]	[2.92]	[1.99]	[1.68]	[1.79]
Horizontal	0.071**						
	[2.40]						
Cross Border		0.061					
		[1.58]					
Domestic		0.079*					
		[1.80]					
Biggest Acquirer			-0.016				
			[0.33]				
Smallest Acquirer			0.034				
			[0.78]				
Biggest Target				-0.040			
				[0.86]			
Smallest Target				0.065			
				[1.33]			
Non-horizontal							
Cross Border					-0.061		
					[1.58]		
Domestic					-0.079*		
					[1.80]		
Major Control						-0.137***	-0.133***
						[3.77]	[3.59]
Minor Control						0.041	0.030
						[1.42]	[0.77]
Major Control							-0.014
							[0.41]
Year Dummies?	yes	yes	yes	yes	yes	yes	yes
Constant	0.074	0.066	0.104	0.186**	0.145***	0.215***	0.226***
	[1.27]	[1.06]	[1.46]	[2.30]	[2.74]	[5.14]	[4.09]
Observations	86	86	86	39	86	58	58
Adjusted R-squared	0.19	0.18	0.12	0.26	0.18	0.32	0.31

Table 15

Target [-30, +15] CAR	Model1	Model2	Model3	Model4	Model5
Cross Border	0.010	0.009	-0.012	-0.037	0.073
	[0.18]	[0.16]	[0.21]	[0.53]	[0.82]
Horizontal	0.087	0.088	0.094	0.085	0.052
	[1.51]	[1.47]	[1.60]	[1.11]	[0.75]
Public Acquirer	-0.091*	-0.090*	-0.084*	-0.148**	-0.080
	[1.81]	[1.77]	[1.74]	[2.26]	[1.03]
Log of Target Size	0.028*	0.028*	0.022	0.015	0.040
	[1.90]	[1.83]	[1.53]	[1.41]	[0.64]
Leverage		0.006			
		[0.22]			
Market to Book			0.023		
			[1.16]		
Log of Deal Value				0.082*	
				[1.93]	
Major Control					0.174*
					[2.05]
Constant	-0.205*	-0.206*	-0.184*	-0.206*	-0.386
	[1.76]	[1.75]	[1.72]	[2.02]	[0.76]
Observations	48	48	48	33	29
Adjusted R-squared	0.20	0.18	0.19	0.27	0.24