Merger and Acquisition Announcements and The Stock Performance: The Case of Turkey

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Abstract

The objective of this thesis is to analyze the impact of the merger and acquisition announcements of Turkish public companies on their stock price behavior over the period from August 1999 to June 2012. In particular, the objective is to analyze whether the stocks of Turkish public companies targeted in M&A deals generated unexpected, i.e. excess, returns, in the post-announcement period. The expected stock returns for target firms are estimated using the Capital Asset Pricing Model (CAPM) while the performances of target firms are compared with ISE-All and ISE sector Indices. Target firm stock returns, relative to the ISE-All index returns, responded negatively to the announcement. Negative excess returns reached their peak within a week after the announcement, while the highest losses occurred within a month. It is not possible; however, to reach a definitive conclusion about the performance of the stocks relative to their corresponding sector indices. The impact of foreign acquisitions tend to be more pronounced compared to the impact of domestic acquisitions, but the underperformance of target firms stocks is higher when acquired by local firms. The most significant response in transactions occurred when only a small percentage of shares being acquired in the deal. Although excess returns are not statistically significantly different from zero, at weekly and monthly event periods these stocks underperform their previous period performances. Target firms with small trading volumes carry negative excess returns over a longer period after the announcement, and their underperformance tend to be more pronounced. These findings show the existence of insider trading in the Istanbul Stock Exchange, taking the form of information being leaked to market participants before the official announcement of the M&A deal.

Keywords: Mergers and Acquisitions, Shareholder Wealth Effects, Domestic and Foreign acquisitions, Istanbul Stock Exchange, Sectoral Indices, Event Study, Informed Trading

Tez Özeti

Bu çalışmada hisse senetleri IMKBde işlem gören 57 hedef firmanın 1999 Ağustos ile 2012 Haziran tarihleri arasında birleşme ve satın alma işlemlerinin halka duyurulmasından sonra hissedarlarına anormal getiri sağlayıp sağlamadığı test edilmiştir. Sermaye Varlıkları Fiyatlandırma Modeli kullanılarak hisse senetleri için beklenen getiriler bulunmuştur. Hedef hisseler IMKB-Tüm ve Sektörel endekslerinin performanslarına göre karşılaştırılmıştır. Hisse performansları hem duyuru sonrası performanslarına göre, hem de duyuru öncesi ve sonrası oluşan performans farklarına göre incelenmiştir. Hisseler duyuru sonrası IMKB-Tüm Endeksinin performansına oranla daha negatif performans göstermiştir. Negatif performans en yüksek noktasına bir haftada ulaşırken en yüksek kayıplar bir ayda oluşmuştur. Sektörel endeksler için bir genelleme yapmak mümkün değildir. Eğerki şirketler yabancı şirketler tarafından alındıysa tepkileri daha keskin olmuştur, ama Türk şirketler tarafından alındılarsa duyuru öncesi ve sonrası performans farkları daha yüksektir. Türk şirketler tarafından alınan şirketler duyuru sonrasında duyuru öncesine göre daha düşük performans göstermiştir. %50 sinden daha fazla hissesi satın alınan şirketler duyuru sonrası duyuru öncesine göre diğer şirketlere göre haftalık ve aylık dönemlerde daha kötü performans göstermiştir. Hisseler IMKB-Tüm Endeksindeki işlem hacmine göre değerlendirildiğinde daha düşük hacim ile işlem gören hisseler duyuru sonrasında duyuru öncesine göre daha kötü performans göstermişlerdir ve daha yüksek hacim ile işlem gören hisselere göre negatif kazanımları daha uzun sürmüştür. Bütün bu sonuçlar, Türkiyede şirket satın alma ve birleşme bilgisinin piyasaya daha önceden sızdırıldığına ve içerden öğrenenlerin ticaretinin piyasada mevcut olmasına kanıt olarak gösterilebilir.

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1 Introduction

Mergers and Acquisitions (M&A) is one of the most researched topics in finance and provides important clues to understand stock market characteristics around the world. Researchers analyze the wealth effects of M&A both to the bidders' and targets shareholders. In this manner, researchers' interest grows in line with the increasing volume of M&A. Two different approaches are utilized in these studies: Accounting-Based Approach, where pre-M&A and post-M&A profitability is studied, including a comparison of pre and post financials of the companies, and Stock Market- Based Approach. Stock market studies use the event study approach to predict the target firms and acquiring firms stocks price gains resulting from M&As (Akben-Selcuk, 2008). In the Stock Market Based Approach, the stock market is assumed to be efficient, and the returns in the stocks of the firms represent the economic impact of the M&A event (Dickerson et al., 1997). In this study I follow the Stock Market Based Approach in the analysis of the wealth effects of M&A in Turkey.

Previous studies focused primarily on the wealth effects of M&A primarily in industrial countries. To do so, the transaction dates have been chosen for the stock return analysis. The literature about Turkish companies' stock market performance after M&A transaction is limited, and these studies mostly evaluate the immediate effects i.e. within one week after the announcement of the deal. This thesis examines the impact of M&A announcements on the target firms' stock prices, analyzing whether the announcement created excess returns for the target firms' shareholders after the announcement or not. Also, by comparing the post-announcement average excess returns with the ones for the pre-announcement period, this thesis examines if information was leaked to the market before it was officially announced. This study expands the existing literature by evaluating longer term performance i.e. one month, 3 month, 1 year, and by evaluating

sectoral differences in a more robust way, and by comparing post and pre announcement performances of the target companies.

In previous research the estimation periods, which end prior to the event date, are utilized for the event itself. In addition, the event period is also included in the estimation period in this thesis to increase the explanatory power of regressions. Therefore, a comparison of both estimation periods takes place, leading to the conclusion that including the event period within the estimation period yields more significant results. The Capital Asset Pricing Model (CAPM) is used to calculate the expected values of the stock returns, and the difference between the realized and expected returns results in the excess returns.

I analyze 79 different transactions from 57 different firms that took part in M&A activity as target firm. The results are evaluated for two different time periods: 1999-2012 and 2004-2012 since the 2001 economic crisis in Turkey deteriorated the risk free rate used in the CAPM. As a note, the results when the event period is included in the estimation period are reported separately. For the 1999-2012 analysis, where the event period is excluded from the estimation period, I find that the stocks do not yield any excess returns after their official announcement itself, but the returns are statistically lower when post-pre-announcement periods are compared. The same results are found when the event period is included in the estimation period. In the sectoral study, however, it is not possible to make a generalization about the returns in different sectors. Findings for some sectors are in line with the ISE-All findings, but some sectors clearly outperform the ISE-All. In this regard, the number of transactions occurred in sectoral analysis is too small, so more transactions are needed to make comments about the general stock behavior.

When the analysis is repeated for the 2004-2012 period, the results be-

come more clearer. When the event window is not included in the estimation period, I find that an average stock yields a 3.15% loss in the week after the announcement. The loss is similar within a month, but with lower level of significance. Results are the same when the event period is included in the estimation period, but with higher level of significance. Again, I cannot make a conclusive comment about the performance of the stocks when compared to their sectoral counterparts since some stocks have a positive performance, whereas others have a negative performance.

Both estimation periods yield the same results: the stocks perform negatively after the M&A announcement, but including the event period into the estimation period gives more significant results, and, thus, the results can be analyzed at longer periods. The negative performances, which reach its highest significance within a week, however, are higher than the average returns. Therefore, seeing a negative stock performance in the after announcement period compared to pre-announcement period can be viewed as proof of insider trading.

When the acquirers origin is analyzed, it is found that stock responses are sharper in foreign acquisitions, whereas the underperformance in the after announcement period is higher in local acquisitions. Taking this a step further, a buy period is observed in the local acquisitions which can be seen as a possibility of insider trading. I divide the firms according to the percentage of the shares acquired creating three sub-groups: 0-19%, 20-49%, and 50-100%. The responses reach their most significant level when a small percentage of shares are acquired, while during the long time periods, the statistical significance decreases. When 49% or less of the firm is acquired, under performance of the stock can only be observed in a weekly period. Despite not having statistically significant excess returns in the after announcement period, the stocks in the 50% or more group under perform their previous performances

with the highest amounts.

Moreover, I examine whether changes occur when I group the firms according to their stock market volumes. The firms are divided into two groups, the first group, includes the stocks that make up to 1% of the total volume of the ISE-All, and the second group, which includes the stocks with volume higher than 1%. Both groups negatively perform within a week after the announcement. The first group keeps the negative return for longer periods leading to a higher underperformance level. Therefore, the small stocks are being manipulated by the pre-announcement information leaked to the market.

As it can be seen in the Appendix, eight transactions occurred between parent company and their affiliates. I removed the firms that were acquired by the parent companies from the analysis in order to see if there was any change in the results. In the end, there was little difference in pre and post announcement behavior with the only known change being a higher under performance level when the targets were acquired by non-parent companies.

The structure of the paper is as the following: Section 2 briefly reviews the research on mergers and acquisitions. Section 3 briefly reviews the M&A activity in Turkey since 2000. Section 4 describes the data and methodology, and mentions the contribution of this thesis to the literature. Section 5 presents and describes the results, and Section 6 concludes the results.

2 Literature Review

The literature on the effects of mergers and acquisitions on stock price performance examines whether mergers increase stock performance within the event period, utilizing an event-study approach. In most analysis, an N-day event equation window surrounding the announcement of M&A was utilized. These studies examined how the market considered and reacted to the M&A activity, and looked at the average excess returns within a given event period. The studies differentiated from each other on specific aspects:

- Different event periods and estimation periods were used, and the majority of the studies evaluated the results in the short-term.
- Different dates were used as the event date: Some researchers used the start of rumors, some used the announcement date, while others used the closing date of the transaction as the beginning of the event date.

Based on above criteria, the studies looked at the performance of:

- Target companies and acquiring companies
- Target companies when they were partially acquired or fully acquired
- The target companies that experienced domestic acquisition with the companies that experienced cross-border acquisition
- The acquiring firms, specifically when they acquired both foreign and domestic companies
- The target companies in hostile and friendly transactions

There are a plethora of studies about the acquiring companies with emphasis focused on the stock market performance of these companies, in contrast to the target companies' stock market performance. Wong and Cheung (2009) and Dodd and Ruback (1997) found that the acquirers' shareholders evaluated these corporate takeovers positively. Whereas, Frank, Harris, and Titman (1991)s study points out that the acquiring firms' did not have excess returns after the takeover. Padmavathy and Ashok (2012) found that in the Indian Stock Market, the shareholders of the bidding firms did not earn any excess returns in (-10,+10) the event window. Agrawal, Jaffe, and Mandelker (1992) examined the post-merger performance of the acquiring firms by examining the transactions occurred between NYSE acquirers and NYSE targets. They found that acquiring firms did not benefit from the acquisition. Some researchers showed that the acquisition results changed according to the countries. For example, for (-10, +10) day event period, Liang (2009) found that the announcement of a merger did not have significant effect on the acquirers' stock market performance of US companies, but Chinese acquirers' stocks reacted positively to the M&A announcement.

The findings about target firms' shareholder returns differed based on the geographical regions. The studies focused on the US and the UK indicated that the returns were positive for the target companies' shareholders around the transaction date, whereas in Asia the results were not the same. In one of the early studies, Jensen and Ruback (1983) found that shareholders of the target companies gained 20-30% around the acquisition announcement date. Mulherin and Boone (2000) looked at the target firms' share response in three day event windows around the announcement. In (-1,+1) event period, the equity value of US target firms increased around 21% in 1990-1999.

Martynova and Renneboog (2006) looked at the acquisitions in 28 European countries between1993-2001. The estimation period for the study

was (-300,-60), and the event period was (-60, +60), leading to target firms gaining around 9%. Danbolt and Maciver (2012) compared the effects of cross-border acquisitions into and out of the UK with domestic acquisitions in 1980-2008. The study used a (-1,+1) event period, and a (-260, -41) estimation period. In the end, they found that the targets gained more in cross-border acquisitions with returns being 10.1%.

Moreover, some studies compared both the target firms performance in the pre-announcement period with the returns in the after-announcement period to see whether the information was leaked to the market prior to the announcement and to determine whether insider trading existed. Wong and Cheung (2009) found that target firms' share prices negatively respond to M&A announcement in Asia over the period of 2000-2007. For the pre-announcement period (-50, -2) target shareholder returns were -2.5%, for the announcement period (-1,0) were -0.24%, and for the post-announcement period (+1,+50) were -5.2%. They suggested that the target shares were overbought by investors and speculators at first, and that the target shares performance was worse than the expectations of the market, leading to a dramatic decline in the stock price of the target firms in the post-announcement period caused by investors selling off their stocks.

Goergen and Renneboog (2003) analyzed the short term effects on wealth of (intra)European takeover (Continental Europe and UK) bids for 1993-2000. Abnormal return levels were around 9% for the target firms, and the cumulative excess return was around 23% for the two-month period prior to the announcement and the event day, including the price run-up prior to the announcement. Goergen and Renneboog used two different estimation periods in this study: -195 days to -180 days and -195 days to -30 days. They found that the domestic mergers created larger value for the shareholders in the short-term period, and the investors who bought their target companies'

shares 3 months before the acquisition date and sold them at the end of the event date gained around 24%. The return amount decreased with time, however, as the earning levels decreased to 3% in 3 months as some bids were not successfully finalized.

Keown and Pinkerton (1981) conducted a study that provided evidence of excess returns earned by investors in acquired firms before the first public announcement of their merger. To examine the stock price movements of the utilized companies, a sample of 101 stocks from New York and American Stock Exchanges and 93 stocks traded on the Over-the-Counter Market between 1975 and 1978 were chosen. The daily stock prices and dividends of the sample firms were obtained from Standard and Poors daily price record for 157 trading days surrounding the announcement date. 126 trading days before and 31 trading days after the announcement date were included in the study. The movement of the CAR shows there was a downward drift during the first 77 days of the study. The CAR became positive 25 trading days before the announcement date and almost half of total CAR increase occurred prior to the announcement date itself. Also, the daily average residuals were positive on 26 of final 27 days prior to the announcement and they were significantly different than zero with the maximum significance level achieved on 10/11 days before whereas during the final five days the significance level showed a 0.995 level. This research suggested that insider information and trading began approximately one month before the announcement date with a continual increase as the announcement date moved closer.

The literature on the M&A performance in the Turkish market is limited with these studies demonstrating that short run performances produced the same results shown above: The target companies stock prices will likely increase prior to the announcement. Mandaci (2004) analyzed these acquisitions by examining whether the merger and acquisition announcements

provided excess returns to the stockholders of the companies that were listed in ISE for ten days preceding and ten days following the announcement dates from 1998-2003. The study tested whether the announcement dates had a positive impact on stock prices both before and after as the event period for the study was (-10,+10) with The study observed statistically significant excess returns around the event date. Also, the returns are statistically significant before the announcement date. Statistically significant excess returns were achieved first two days before and the first day after the announcement. This result showed the existence of insider trades ultimately claiming that ISE was not an efficient market. Hekimoglu and Tanyeri (2009) took another step forward and examined the mergers and partial sales between 1991 and 2009 in the ISE and found that the target companies received an 8.56% cumulative excess return in mergers, and a 2.25% in the partial sales between (-30, +30) of the event day period. In continuation, Cukur and Eryigit (2006) looked at the five bank mergers that occurred in 2005 and found the gain was around 4.7% during the announcement period. While there is an abundance of Turkish short run studies, the same cannot be said for long run performance reports.

3 A Review of M&A Activity in Turkey

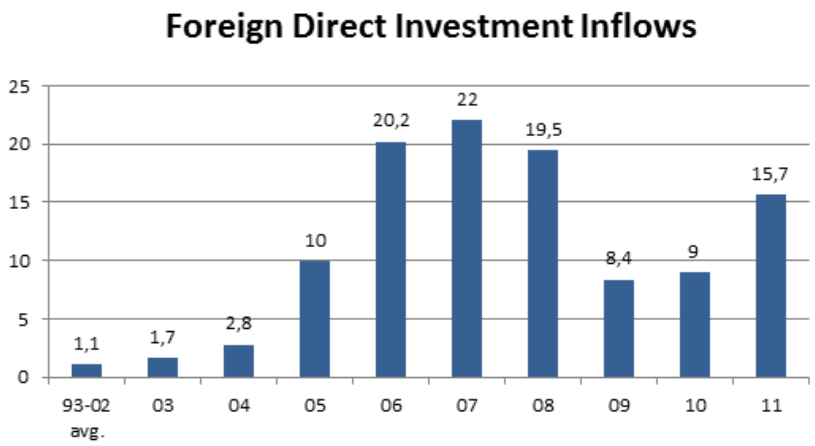
After 1980, Turkey transitioned into a new economic regime with the implementation of export oriented industrialization policies, and the liberalization of foreign trade. In conjunction with these new economic policies, the devaluation of the Turkish Lira in 1980 led to export volumes that were four times higher by 1989. Overall growth rates increased after 1980, but the macroeconomic environment became damaged due to political instability and the lack of successful government coalitions in the 1990s. The uncertainty in the economy increased dramatically by this time as inflation reaching critical

levels. (Senses & Taymaz, 2003) The 1999 earthquake became a tipping point for the central government as they admitted the need for a new stabilization program moving forward.

The Turkish government and the IMF reached an agreement in December 1999 on an exchange rate stabilization program with the aim of the program being to decrease budget deficit, specific fragilities in the economy, reduce inflation, and make banking sector reforms. At first, the program appeared successful, particularly during the first nine months, but the inefficiency of the banking sector reforms only exacerbated the existing problem. Turkey experienced its worst economic crisis in history in 2001 as GNP dropped 9.5%, the public debt increased by 40% compared to GDP, and inflation reached 70% by the end of 2001. In February of the same year, the program was abandoned and the regime changed to a free floating exchange. Since the current account deficit increased, the value of the Euro decreased compared to dollar, leading to currency overshoots, increased interest rates, resulting in a contracted economy (Boratav & Akyuz, 2002).

The fundamental economic indicators changed with the implemented reforms following the 2001 crisis. Political stability coupled with improved global developments helped the macroeconomic framework between 2002-2005. High economic growth was achieved, inflation decreased to single digit numbers, and the share of public debt in national income decreased bringing high levels of foreign capital to Turkey. The Transition to a Strong Economy program decreased the fiscal deficit and public sector borrowing requirement as nominal interest rates and real interest rates gradually declined. The international environment was another factor in Turkish growth rates as global monetary policy eased and interest rates started to decline in the US allowing capital to flow to emerging markets (Yilmaz & Taymaz, 2008).

Figure 1: FDI Inflows (Bilion $)



[1]

M&A activity was influenced significantly by the December 2004 EU Councils decision to start membership negotiations with Turkey. The initiation of the EU accession process, which began in October 2005, allowed Turkey to attract high levels of Foreign Direct Investment (FDI) inflows specifically in merger and acquisition. International banks turned their attention to their Turkish counterparts, causing a rise in local public enterprises (Izmen & Yilmaz, 2009). More than 90% of the FDI, in the form of M&A, targeted service sector companies (Yilmaz & Taymaz, 2008) as total value of M&A deals increased from 2.5 bn. $ in 2004 to 29.13 bn $ in 2005.

To widen the scope of this study, M&A activities in Turkey provided by PricewaterhouseCoopers Turkey for 20002012 period have been utilized. This data, however, does have some shortcomings as the values of some of the M&A deals in Turkey were not announced publicly leading to approximations on the deal values reported in the below tables.

Before 2005, the number of M&A deals and their volumes were low, but by 2005, the number of deals jumped to 99 while deal volume increased to

Table 1: M&A Review in Turkey 2000-2012

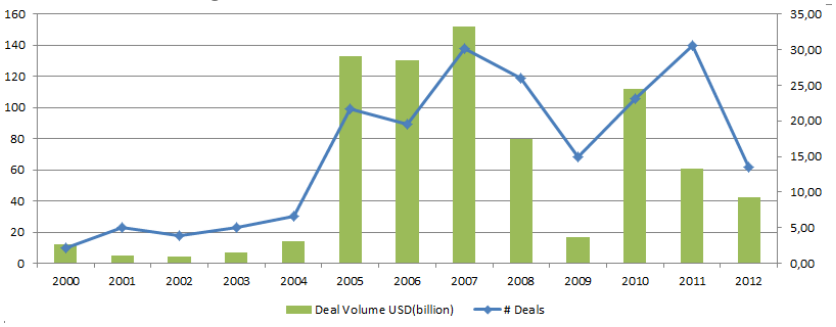
Year	# of Deals	Total Deal Value(Billion$)	Foreign I.(% of D.N)
2000	10	2	70 %
2001	23	1	61 %
2002	18	1	70 %
2003	23	1	43 %
2004	30	3	50 %
2005	99	29	43 %
2006	89	28	60 %
2007	138	33	54 %
2008	119	17	58 %
2009	68	5	49 %
2010	106	29	53 %
2011	140	15	62 %
2012(First 8 m.)	62	9	55 %

29.13 billion $. In 2007, both the number of deals and their values reached their peak as 138 deals were completed, with a total value of 33.32 billion $.

The M&A volume was around 17.51 billion $ in 2008 with 119 deals made, but with the effects of the global financial crisis in 2009, the M&A volume decreased to 5.2 billion $ from only 68 transactions the lowest volume since 2004. In 2010, 106 transactions were completed with a volume around 29 billion $ as nearly half came through privatization. In 2011, the M&A volume decreased to 15 billion $ showing a remarkable difference between 2010 and 2011 in terms of volume stemming from low privatization and M&A numbers in 2011. As an example, in the first 8 months of 2012, the deal volume was around 9.3 billion $ with 62 transactions. Table 1 and Figure 2 briefly rewieved the M&A in Turkey between 2000 - 2012.

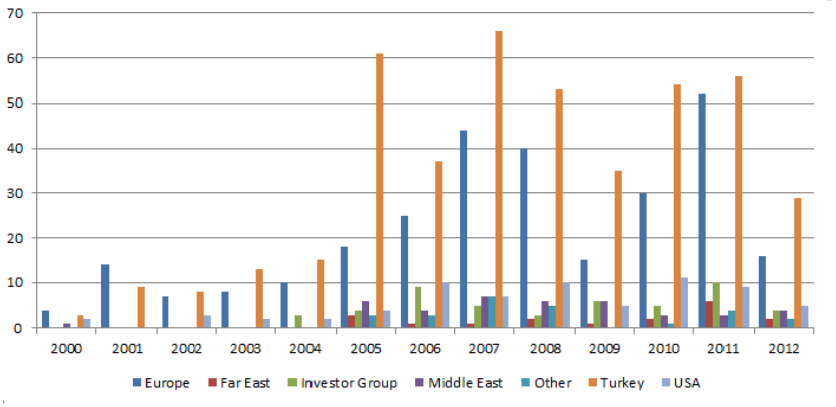
The percentage of foreigners involved in M&A deals did not fluctuate, as the average from 2004-2012 was around 54%, whereas the percentage of foreigners in the total deal volume had increased since 2004. From 2004-

Figure 2: Deal Numbers & Volume



2007, the percentage of foreigners in terms of deal volume was roughly 70%, and by 2008 it reached 85%. With the effects of global financial crisis, the percentage of foreigners decreased to 43% in 2009, and 36% in 2010. But, with 2011, their participation returned to 74%. Before 2004, the majority of investors were Turkish companies European countries, however, after 2004, the diversity of the investors increased, as Middle East Far East companies started to appear in the Turkish market (Figure 3).

Figure 3: Acquirers' Origin (Billion $)



4 Data and Methodology

The objective of this thesis is to analyze the impact of merger and acquisition announcements on Turkish shareholders' wealth through the lens of the local stock market, and to show the regularity with which Turkish target firms generated unexpected, i.e. excess, returns in the period immediately following this announcement.

The analysis is based on the acquisitions of Turkish companies whose stocks are traded on the Istanbul Stock Exchange (ISE) between 1 year before and after their transaction announcements. The list of the transactions is taken from the Thomson One Database using the following criteria to determine its inclusion in this study:

- The target company was a Turkish company
- The transaction was completed
- The target company's stock was traded on the ISE for at least 365 days before and 365 days after the transaction announcement were made
- The information on the foreigner vs. domestic status of the company was available.
- The percent of the shares acquired was available
- The transaction was completed between August 1999 and June 2012.

The daily closing prices of the stocks, the daily closing prices of the ISE-All Index (an index that contains all companies that trade in the ISE), and the daily closing price of the sectoral indices are taken from the Matriks Data

Terminal. For this study, the closing prices are adjusted to the dividend announcements of the stocks Whereas the data of the risk free rate is obtained from Bloomberg. The data for the risk free rate is available on Bloomberg as early as August 1999, allowing the study to go from August 1999 to June 2012, allowing the sample size to be 79 transactions. If a company experiences more than one transaction in 3 months only the first transaction is considered as the other transactions are removed from the sample since their could be a spillover effects from the first transaction. If a company is targeted for multiple transactions in different years; however, I evaluate each of them as separate transactions. Therefore, the announcement day of the transaction is taken as day 0 (the event day), but if the transaction is announced on the weekend, the first workday is considered as the beginning date for the after announcement period.

In existing literature on mergers and acquisitions, the event window and estimation periods were clearly defined and separated. The event window is defined as the proximity of event day. Estimation periods were used to see trend lines for each company which help determine the estimated returns during their event periods. In many studies, the estimation period ended prior to the event day as the event period values are predicted by using the fit generated by using the estimation period.

Daily closing stock prices, the closing price of the ISE-All or industry specific data, and the daily risk free return is the methodology used to estimate the return expectations of the market. This approach assumes the share prices utilized include all given market information about the company. The acquisition announcement date is considered as the event date in the study.

In order to construct the trend lines for each of the company and estimate market β in our sample, I use two different estimation periods. First, I use

the standard one used in the literature and estimate a trend line through ordinary least squares (OLS) regression with Capital Asset Pricing Model (CAPM) by using (-365,-31) time period to the event date as the estimation period. Second, by using a different estimation period than most of the literature, I include event periods into estimation period and obtain regressions by using (-365,365) time period to the event date. By doing so, my aim is to internalize any event that naturally occurs and may have an effect on stock price by using a much larger sample to obtain the fit. Moreover, inclusion of event window into estimation period allows to calculate excess returns in the event period through estimation instead of prediction. This allows to capture more precise results with higher statistical significance, as it will be reported and analysed in the Results. Furthermore, the second estimation period allows to compare returns in longer horizons. By using the first, in order to obtain results for longer horizons, I would either have to go further away from the event date to obtain a fit to exclude larger event periods from estimation, or I would have to use the fit I obtained and estimate some of excess returns while still predicting excess returns around event date. The second method allows to prevent this duality.

Moreover, for the second estimation period in which I also include the event windows and afterwards into regression, I controlled for whether behavior of a stock return structurally changed after the announcement or not. To do so, I applied the 'Chow Test' on each robust OLS regression composed for each firm picking the announcement date as the fraction day. I revised the regressions which failed the test as two separate regressions, one for pre-announcement and one for after announcement regression with corresponding data sets. I calculated the pre and post announcement excess returns via their own regression results. Therefore, the analysis also responds to changes in structural movements in stock returns as well. The first estimation period does not require such a test since it does not include after announcement

data while setting the regressions.

In this thesis, the standard event study methodology used by Brown and Warner (1985) is implemented by using CAPM to derive expected returns of company i for time t in market m by,

$$r_{i,t} - r_{f,t} = \alpha_i + \beta_i(r_{m,t} - r_{f,t}) + \varepsilon_{i,t} \tag{1}$$

Coefficients α_i and β_i for each company are estimated by robust OLS regression in our data set via regressing risk, adjusted company returns on risk, and adjusted market returns. In our analysis, I used ISE-All market returns for the total market analysis and corresponding sector market returns for the respective sector analysis. $\varepsilon_{i,t}$ denotes the excess stock returns of firm i at time t.

For this analysis to be complete, as previously mentioned, I accept the announcement date as the event date and use realized returns within (-365, -31) or (-365,365) period for the estimation period to form heteroskedasticity adjusted robust OLS estimations for each firm. I use different event periods, the joining of two sub analysis periods, (-1,0)(0,1), (-7,0)(0,7), (-30,0)(0,30), (-90,0)(0,90) (-365,0)(0,365), all in dates.

To obtain excess returns, I calculate the expected returns for each date by examining trend lines obtained via both methods and compare them with the realized returns. Their difference, i.e. the difference between predicted returns, the realized returns for the first method, and the residuals of the fit for the second method, yields the excess returns.

After calculating excess returns for each firm, I examine if after the an-

nouncement excess stock returns averages are non-zero or not for pre specified event periods by using a standardized t-test. The result of this test captures how, on average, stock returns respond to the announcement of an acquisition. Moreover, to see how stock performances change compared to the pre-announcement period, I take the difference of the average excess returns of the two periods with the event date as the origin, and test if their difference is zero. This method shows how stock behavior changes after the announcement and filter stock return responses that are actually increasing, but still yield negative results after the announcement average excess returns due to pre-period negative performances.

The aggregate excess returns for each firm over the analysis period ι is denoted as,

$$AR_{i,\iota,(\theta \in p,a)} = \frac{\sum_{t \in \iota} \varepsilon_{i,t}}{T} \tag{2}$$

where $AR_{i,\iota}$ measures the sum of excess returns for firm i at event period ι and θ denotes the period of the aggregate returns, pre-announcement (θ=p) or after announcement (θ=a), and T denotes the number of observations.

To see the average effect in the market, I calculate,

$$\mu_{m,\iota,\theta} = \frac{\sum_i AR_{i,\iota,\theta}}{n} \tag{3}$$

where $\mu_{m,\iota,\theta}$ measures the cumulative average excess returns for market m at event period ι and for sub analysis period θ. n denotes the number of firms i in market m.

To obtain after announcement effect, I perform a standard t test to test the null hypothesis that $\mu_{m,\iota,a}$ is zero against the alternative hypothesis it is not. To do so, I calculate

$$t_{m,\iota,a} = \frac{\mu_{m,\iota,a}}{s_{\mu_{m,\iota,a}}} \tag{4}$$

where $s_{\mu_{m,\iota,a}}$ is defined as

$$s_{\mu_{m,\iota,a}} = \frac{\sigma_{m,\iota,a}}{\sqrt{n-1}}$$

where $\sigma_{m,\iota}$ is the sample standard deviation in market m for event period ι and sub analysis period θ.

To obtain performance differences among sub analysis periods $\theta = p$ and $\theta = a$, I define $D_{m,\iota} = \mu_{m,\iota,a} - \mu_{m,\iota,p}$ and perform a standard t test to test the null hypothesis that $D_{m,\iota}$ is zero against the alternative it is not.

$$t_{m,\iota,D} = \frac{\mu_{m,\iota,D}}{s_{\mu_{m,\iota,D}}} \tag{5}$$

I perform the very same test analysis mentioned above, but this time, I use the difference term at nominator and the standard deviation of the difference at denominator.

5 Results

The data set for this study covers information on 57 companies that took part in M&A activity (as target firms) and that satisfy the valuation requirements mentioned in the previous section. Along with the names of these companies and their stock prices, the data also includes information on the names of acquirer firms as well as the value of their M&A deal. The data begins in August 1999 and ends in June 2012. These 57 companies are reported in the Appendix section with their corresponding index abbreviations, sectors, ordinary least squares regression results, and chow test results.

Including different acquisitions of the same companies, I analyze 79 different transactions. All regressions successfully reported highly significant robust coefficients for the explanatory variable based on risk adjusted market returns. For those 79 regressions, I failed to reject the null hypothesis which states that the data set does not present structural breaks. I revised these regressions and successfully got significant and robust coefficients for two different parts and these results are reported in the Appendix as well.

The main results are presented within two separate time frames. Turkey experienced a significant economic downturn in 2000-2001, which generated excessive positive or negative returns in the risk free asset values. This excessive difference in risk free return could bias the results and dissemble the true market reaction to the acquisition announcement. Thus, this study first analyzes the outcome for the full sample, August 1999 - June 2012. Next, to account for possible spillover effects during the after crisis period, I analyze the transactions from January 2004 - June 2012. This time frame removes the transactions whose regressions would include data from the years 2000, 2001 and 2002, which leads to the second time frame including 62 regressions for 45 firms.

The results are reported for both the predicting and estimating event window expected returns under the aforementioned time periods. First, I will only present the results, and then I will evaluate them.

5.1 August 1999 - June 2012

First the general market reaction to the acquisition announcement is analyzed by using the ISE-All index.

Table 2 presents results obtained by the common estimation period used

Table 2: Testing For Excess Returns (Full Sample Period - Event Window out of Estimation)

ι	1 d	1 w	1 m
$\mu_{ISE,\iota,p}$	0.0156	0.0488	0.0694
$\mu_{ISE,\iota,a}$	-0.0001	-0.0118	0.0032
$s_{\mu_{ISE,\iota,p}}$	0.0054	0.0136	0.0220
$s_{\mu_{ISE,\iota,a}}$	0.0064	0.0137	0.0210
$t_{\mu_{ISE,\iota,p}}$	2.8683	3.5843	3.1521
$t_{\mu_{ISE,\iota,a}}$	-0.0150	-0.8650	0.1502
$D_{ISE,\iota}$	-0.0157	-0.0607	-0.0662
$s_{D_{ISE,\iota}}$	0.0080	0.0179	0.0283
$t_{D_{ISE,\iota}}$	-1.9518	-3.3840	-2.3361

in the literature. The full data sample does not present evidence that an average stock performs non-zero excess returns at any time after the announcement, but they experience positive excess returns in the pre-announcement period. The returns in the pre-period reaches the most significant level within a week. At the event windows for a day, a week and a month after an acquisition announcement, however, stocks statistically significantly perform lower than their corresponding pre-period performances. This lower performance reaches its statistical peak at a week whereas their economic peak occurs at a month after the announcement.

Table 3 summarizes the results I obtained by adding the event window to the estimation period. The results are similar in nature. Moreover, since I now include the event window into the estimation period, I am able to examine longer periods without narrowing the estimation sample size (3 months and 1 year).

In order to analyze how acquired firms' stocks perform after the announcement with respect to their sector indexes, the markets are changed as each firm's own market returns are estimated as the explanatory variables. The

Table 3: Testing For Excess Returns (Full Sample Period - Event Window in Estimation

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0152	0.0469	0.0625	0.0427	-0.0903
$\mu_{ISE,\iota,a}$	0.0000	-0.0143	-0.0018	0.0101	-0.0151
$s_{\mu_{ISE,\iota,p}}$	0.0054	0.0133	0.0197	0.0268	0.0726
$s_{\mu_{ISE,\iota,a}}$	0.0064	0.0136	0.0194	0.0303	0.0264
$t_{\mu_{ISE,\iota,p}}$	2.8118	3.5344	3.1710	1.5918	-1.2449
$t_{\mu_{ISE,\iota,a}}$	-0.0041	-1.0518	-0.0912	0.3334	-0.5736
$D_{ISE,\iota}$	-0.0152	-0.0612	-0.0643	-0.0326	0.0752
$s_{D_{ISE,\iota}}$	0.0080	0.0178	0.0271	0.0382	0.0858
$t_{D_{ISE,\iota}}$	-1.9062	-3.4364	-2.3734	-0.8529	0.8760

corresponding markets and regression results are reported in the Appendix. For each firm, I utilize statistically significant robust coefficients for the explanatory variables.

I chose to analyze the stock performances vis a vis sector indices by including the event periods into the estimation periods which allows for evaluating long term return performances. Significant excess returns are summarized as follows:

- IT Sector: -1% weekly excess return at 5% level of significance
- Service Sector: -2% weekly excess return at 5% level of significance
- REIT Sector: -1% monthly excess return at 1% level of significance
- Food Sector: 18% yearly excess return at 10% level of significance
- Mineral Sector: 11% monthly excess return at 10% level of significance
- Textile Sector: -3.1% daily excess return at 10% level of significance

I failed to find any evidence indicating excess stock performance after the acquisition announcement in other sector indices. If I examine whether stocks perform higher or lower compared to their pre-announcement performances, however, the following results occurred:

- Banking Sector: -11% weekly under-performance with 1% level of significance
- IT Sector: 8% monthly over-performance at 5% level of significance
- REIT Sector: -11% weekly under-performance at 10% level of significance
- Food Sector: 44% monthly over-performance at 5% level of significance
- Textile Sector: -7.4% monthly under-performance at 5% level of significance

Other industries do not exhibit any evidence showing excess stock performance.

5.2 January 2004 - June 2012

With this subset the same analysis was conducted for excess returns.

Table 4 shows results without the event window in the estimation period. This sample demonstrates that during the week after the announcement period, an average stock yields 3.15% loss on stockholders within a given significance. The pre-period performances are positive as it is found in the full sample period. A month after the announcement the value loss is more or less similar regardless if the significance is lower. Moreover at daily, weekly

Table 4: Testing For Excess Returns (After 2004 period - Event Window out of Estimation

ι	1 d	1 w	1 m
$\mu_{ISE,\iota,p}$	0.0094	0.0366	0.0466
$\mu_{ISE,\iota,a}$	-0.0081	-0.0315	-0.0310
$s_{\mu_{ISE,\iota,p}}$	0.0051	0.0128	0.0239
$s_{\mu_{ISE,\iota,a}}$	0.0064	0.0135	0.0189
$t_{\mu_{ISE,\iota,p}}$	1.8515	2.8672	1.9528
$t_{\mu_{ISE,\iota,a}}$	-1.2814	-2.3345	-1.6439
$D_{ISE,\iota}$	-0.0175	-0.0682	-0.0776
$s_{D_{ISE,\iota}}$	0.0085	0.0188	0.0316
$t_{D_{ISE,\iota}}$	-2.0669	-3.6343	-2.4555

Table 5: Testing For Excess Returns (After 2004 Sample - Event Window in Estimation

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0091	0.0351	0.0413	0.0236	0.0072
$\mu_{ISE,\iota,a}$	-0.0083	-0.0330	-0.0312	-0.0471	-0.0180
$s_{\mu_{ISE,\iota,p}}$	0.0050	0.0123	0.0210	0.0264	0.0315
$s_{\mu_{ISE,\iota,a}}$	0.0063	0.0132	0.0183	0.0283	0.0309
$t_{\mu_{ISE,\iota,p}}$	1.7988	2.8562	1.9626	0.8948	0.2290
$t_{\mu_{ISE,\iota,a}}$	-1.3131	-2.4920	-1.7023	-1.6626	-0.5818
$D_{ISE,\iota}$	-0.0174	-0.0681	-0.0725	-0.0707	-0.0252
$s_{D_{ISE,\iota}}$	0.0084	0.0186	0.0308	0.0412	0.0616
$t_{D_{ISE,\iota}}$	-2.0606	-3.6637	-2.3548	-1.7187	-0.4084

and monthly event periods, stocks significantly perform lower than their pre-announcement periods.

Table 5 presents the results when the event window is included in the estimation period for the 2004-2012 sub-samples. This addition allows for similar stock behavior with mostly higher significance.

Before talking about sectoral returns, it should be noted that all trans-

actions in IT, REIT, technology, and textile and machinery industries are completed after 2004. The results presented for these industries are the same for the sub-sample as well making them insignificant for this study.

Observing sectoral behavior with the standard method yields the following:

- Service Sector: -2% weekly excess return at 10% level of significance
- Wood-Paper-Printing Sector: -10% monthly excess return at 1% level of significance

All other sectors do not present any evidence towards excess return.

When the performance differences between the pre and post announcement periods are checked the following results are obtained:

- Banking Industry: -12.9% weekly under-performance at 5% level of significance
- Food Industry: 40% yearly out-performance at 10% level of significance

Before further analysis focusing on stock prices, I would like to elaborate on aforementioned results. First, stock prices perform negatively after the announcement both in the full sample and in the sub-sample, and with both estimation periods. Moreover, it is noticeable that negative average returns are lower than the average magnitude of negative performances. This indicates stocks enter a sell period after the announcement instead of yielding positive returns, i.e. present increasing price behavior, for the buy period. This result indicates a hint for insider trading.

With both samples and both methods, this negative performance has the highest significance at a week; however it reaches its highest point estimate at a month. Hence the results indicate that an average stock most probably yields a loss in a week though highest losses are realized within a month. This indicates, at some acquisition transactions, risk lasting up to a month may be rewarded with compensation of some of the loss incurred in the first week. If this does not occur, however, the expected loss is higher. Hence after a week of negative returns, investors have the choice to wait a month and take a risk of losing more in hope of recovering some of this loss.

Both estimation methods appear to report similar excess return behaviors and magnitudes, however, when the the event period and afterwards are included into the estimation period, the yields results are more significant than the other. Moreover, the inclusion of the estimation period allows us to capture excess return behaviors at longer horizons. Another clear pattern that was obtained by checking longer horizons is that statistical significance of the observed excess returns fell after a week, dissipating in at most 3 months.

When the two samples are compared, the 2004-2012 data sets show the stock behaviors more clearly. With the full sample, I failed to find any evidence demonstrating any abnormal stock movement after the announcement using both estimation periods whereas I found weekly and monthly negative returns with the sub-sample. The sub-sample also shows the underperformance of stock prices after the announcement compared to their pre-announcement period more significantly. Hence, as expected, the removal of the 2001 crisis fluctuations from the sample allows me to capture the results more clearly.

The sector analysis yields interesting results showing positive and statistically significant results under some specific cases, contrary to our findings

about how overall stock performs in ISE-All index after an announcement. It is also noteworthy to point out the over-performance in the Food Industry sector, in both studies, after an announcement was made. This result, however, as well as other sector results, is not reliable due to small transaction amount in most of the sector indices. For example, under the Food Industry sector, there are only seven transactions with noticeable outliers, thus, results may be misleading when forming a generalization. More transactions are definitely needed in most sectors to specify a general stock behavior compared to its sector index.

Two sector indices that have the largest sizes are Banking (14 transactions, 3 pre 2004), and Chemical and Petroleum (13 transactions, 3 pre 2004) Sectors. Results in these sectors indicate that stocks traded under the Chemical and Petroleum sector index do not show any excess return as a response to an acquisition announcement whereas a weekly under-performance for the Banking sector index was seen with both samples. This result supports the findings for the market ISE-All. About sector evaluation, however, more acquisitions are needed in all sectors to attain a reliable result about how different sectors react to their acquisition announcements.

As mentioned above, including and excluding the event window in the estimation period yields similar results, however including it yields more significant results. Moreover, the 2004-2012 sub-sample shows excess return and examine behaviors more clearly at a longer horizon. Under the light of these observations, I will comment the following analysis with estimation period containing event window and afterwards for 2004-2012 period.

To evaluate if the acquiring firms origin effects the markets response, I divide the acquisitions according to acquiring firms' country of origin. Table 6 reports results for transactions with foreign originated acquiring firms, and

Table 6: Testing For Excess Returns - Foreign Acquirer

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0077	0.0267	0.0269	0.0022	0.0357
$\mu_{ISE,\iota,a}$	-0.0044	-0.0384	-0.0503	-0.0619	-0.0563
$s_{\mu_{ISE,\iota,p}}$	0.0062	0.0148	0.0296	0.0282	0.0416
$s_{\mu_{ISE,\iota,a}}$	0.0079	0.0174	0.0231	0.0391	0.0409
$t_{\mu_{ISE,\iota,p}}$	1.2433	1.8060	0.9099	0.0777	0.8576
$t_{\mu_{ISE,\iota,a}}$	-0.5582	-2.2067	-2.1779	-1.5823	-1.3759
$D_{ISE,\iota}$	-0.0121	-0.0652	-0.0772	-0.0641	-0.0920
$s_{D_{ISE,\iota}}$	0.0105	0.0241	0.0433	0.0559	0.0813
$t_{D_{ISE,\iota}}$	-1.1611	-2.7073	-1.7825	-1.1466	-1.1306

Table 7: Testing For Excess Returns - Local Acquirer

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0105	0.0462	0.0719	0.0629	-0.0309
$\mu_{ISE,\iota,a}$	-0.0141	-0.0286	-0.0117	0.0132	0.0373
$s_{\mu_{ISE,\iota,p}}$	0.0084	0.0209	0.0297	0.0500	0.0470
$s_{\mu_{ISE,\iota,a}}$	0.0103	0.0205	0.0303	0.0558	0.0446
$t_{\mu_{ISE,\iota,p}}$	1.2531	2.2086	2.4177	1.2577	0.6581
$t_{\mu_{ISE,\iota,a}}$	-1.3680	-1.3924	-0.3858	0.2360	0.8359
$D_{ISE,\iota}$	-0.0247	-0.0749	-0.0836	-0.0497	0.0682
$s_{D_{ISE,\iota}}$	0.0139	0.0293	0.0455	0.0679	0.0900
$t_{D_{ISE,\iota}}$	-1.7805	-2.5547	-1.8385	-0.7326	0.7577

Table 7 reports results for transactions with local originated acquiring firms. These results indicate the exact pattern I observed for the full market analysis. One point of importance is that if an acquiring firm is of foreign origin, stocks respond sharper and the return decline is higher. This may indicate commitment uncertainty in foreign investors who acquire local firms. Stock returns under-performance is significantly higher, however, if the acquiring firm is local. Also, when I look at the pre-period performance, the returns are positive and higher if the acquier is a local firm. Considering the fall in the post-announcement period is higher in foreign originated firms, and the positive returns are higher in pre-announcement period in local acquisitions, it can be deduced that a possible higher degree of insider trading exists in local transactions.

Moreover, to analyze the effect of partial acquisitions, I divide the transactions according to the number of shares acquired. The sample is divided into 3 pieces focusing on the sample sizes to make their analysis comparable with Table 8 to 10 reporting these results. The most significant response in the post-announcement occured when small amounts of shares were acquired. These transactions exhibit the similar pattern I observed above. The statistical significance decreases as an event period expands and the excess return reaches its apex in a month. Another interesting observation is that stock return responses lose their significance as % of shares acquired increases, yielding no significant result for the group of firms that acquired more than 50% of their total shares.

A noteworthy point is the performance differences of stocks after the announcement. I only found significant under-performance in weekly periods for firms with less than 50% of total shares sold. Firms whose majority of stocks was subject to transaction, however, yielded a different result. Although excess returns reported are not statistically significantly different from zero, at

Table 8: Testing For Excess Returns - 0%-19% of shares acquired

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0054	0.0183	-0.0076	-0.0022	-0.0356
$\mu_{ISE,\iota,a}$	-0.0105	-0.0355	-0.0382	-0.0152	0.0340
$s_{\mu_{ISE,\iota,p}}$	0.0081	0.0176	0.0273	0.0324	0.0573
$s_{\mu_{ISE,\iota,a}}$	0.0072	0.0168	0.0236	0.0624	0.0553
$t_{\mu_{ISE,\iota,p}}$	0.6724	1.0364	-0.2786	-0.0683	-0.6214
$t_{\mu_{ISE,\iota,a}}$	-1.4575	-2.1050	-1.6225	-0.2444	0.6147
$D_{ISE,\iota}$	-0.0159	-0.0537	-0.0306	-0.0130	0.0696
$s_{D_{ISE,\iota}}$	0.0125	0.0255	0.0414	0.0634	0.1109
$t_{D_{ISE,\iota}}$	-1.2758	-2.1092	-0.7399	-0.2056	0.6273

weekly and monthly event periods these stocks under perform their previous period performances in the highest amounts I have reported (8.2% in a week and 15.3% in a month). In addition, the pre-announcement performances are statistically significantly positive only in the transactions when more than 50% of the shares sold. This result implies that a possibility of insider trading or market fear existed after a possible hostile takeover. It is logical to include the pre-announcement stock price increase as a part of the control premium paid by the bidders. If control premiums paid to the target firms are higher, the stock price runup is large in the pre-announcement period. Insider trading causes the stock price increase in the pre-announcement period. Acquirer will pay more for the target firm since acquirer and target cannot find the cause of the price increase (Schwert, 1996).

Furthermore, I also examined how stock responses vary with the transaction volume of each observed companies' stocks. To do so, I divided the sub-sample into two groups; one with companies whose trade volume is less than 1% of ISE-All in the year that the M&A occurred, and the other is those that constitutes more than 1% of total volume in the year that the M&A occurred. Table 11 and Table 12 reports these results. I observe, at a week, both groups show similar responses at the announcement. Firms

Table 9: Testing For Excess Returns - 20%-49% of shares acquired

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0045	0.0068	0.0099	0.0371	0.0570
$\mu_{ISE,\iota,a}$	-0.0181	-0.0628	-0.0291	-0.0473	-0.0659
$s_{\mu_{ISE,\iota,p}}$	0.0032	0.0136	0.0444	0.0676	0.0511
$s_{\mu_{ISE,\iota,a}}$	0.0162	0.0340	0.0494	0.0660	0.0503
$t_{\mu_{ISE,\iota,p}}$	1.3761	0.4970	0.2237	0.5484	1.1156
$t_{\mu_{ISE,\iota,a}}$	-1.1211	-1.8459	-0.5894	-0.7168	-1.3094
$D_{ISE,\iota}$	-0.0226	-0.0696	-0.0391	-0.0844	-0.1229
$s_{D_{ISE,\iota}}$	0.0170	0.0354	0.0678	0.0979	0.0994
$t_{D_{ISE,\iota}}$	-1.3330	-1.9657	-0.5759	-0.8624	-1.2360

Table 10: Testing For Excess Returns - 50% - 100% of shares acquired

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0152	0.0702	0.1185	0.0457	0.0099
$\mu_{ISE,\iota,a}$	0.0006	-0.0121	-0.0350	-0.0323	-0.0267
$s_{\mu_{ISE,\iota,p}}$	0.0110	0.0252	0.0347	0.0408	0.0539
$s_{\mu_{ISE,\iota,a}}$	0.0097	0.0186	0.0261	0.0473	0.0531
$t_{\mu_{ISE,\iota,p}}$	1.3886	2.7883	3.4162	1.1191	0.1840
$t_{\mu_{ISE,\iota,a}}$	0.0642	-0.6499	-1.3391	-0.6825	-0.5028
$D_{ISE,\iota}$	-0.0146	-0.0824	-0.1535	-0.0779	-0.0366
$s_{D_{ISE,\iota}}$	0.0149	0.0352	0.0531	0.0685	0.1045
$t_{D_{ISE,\iota}}$	-0.9777	-2.3411	-2.8927	-1.1379	-0.3504

Table 11: Testing For Excess Returns - Trade Volume is Less Than 1% of ISE

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0127	0.0441	0.0591	0.0459	-0.0070
$\mu_{ISE,\iota,a}$	-0.0059	-0.0255	-0.0303	-0.0726	-0.0059
$s_{\mu_{ISE,\iota,p}}$	0.0072	0.0170	0.0314	0.0390	0.0421
$s_{\mu_{ISE,\iota,a}}$	0.0079	0.0146	0.0228	0.0342	0.0410
$t_{\mu_{ISE,\iota,p}}$	1.7571	2.5941	1.8782	1.1770	-0.1669
$t_{\mu_{ISE,\iota,a}}$	-0.7523	-1.7458	-1.3281	-2.1237	-0.1427
$D_{ISE,\iota}$	-0.0186	-0.0695	-0.0893	-0.1185	0.0012
$s_{D_{ISE,\iota}}$	0.0111	0.0242	0.0421	0.0540	0.0820
$t_{D_{ISE,\iota}}$	-1.6798	-2.8741	-2.1213	-2.1930	0.0144

Table 12: Testing For Excess Returns - Trade Volume is More Than 1% of ISE

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0028	0.0200	0.0112	-0.0142	0.0314
$\mu_{ISE,\iota,a}$	-0.0124	-0.0456	-0.0328	-0.0039	-0.0385
$s_{\mu_{ISE,\iota,p}}$	0.0060	0.0169	0.0196	0.0266	0.0477
$s_{\mu_{ISE,\iota,a}}$	0.0111	0.0264	0.0321	0.0504	0.0477
$t_{\mu_{ISE,\iota,p}}$	0.4769	1.1839	0.5693	-0.5327	0.6575
$t_{\mu_{ISE,\iota,a}}$	-1.1180	-1.7286	-1.0200	-0.0772	-0.8069
$D_{ISE,\iota}$	-0.0153	-0.0657	-0.0439	0.0103	-0.0698
$s_{D_{ISE,\iota}}$	0.0134	0.0301	0.0437	0.0616	0.0935
$t_{D_{ISE,\iota}}$	-1.1414	-2.1784	-1.0050	0.1672	-0.7471

with small volumes, however, carry this negative return at longer horizons. Moreover, their returns are positive and statistically significant up to one month before the official announcement. their under-performance after the announcement is higher, more significant, and persists through longer horizons as This result may indicate stocks with small volume are more easily manipulated by investors, and the information leaked to the market in local acquisitions.

Table 13: Testing For Excess Returns - Non-parent Company Acquisitions

ι	1 d	1 w	1 m	3 m	1 y
$\mu_{ISE,\iota,p}$	0.0111	0.0385	0.0471	0.0308	0.0015
$\mu_{ISE,\iota,a}$	-0.0099	-0.0336	-0.0374	-0.0534	-0.0113
$s_{\mu_{ISE,\iota,p}}$	0.0056	0.0136	0.0233	0.0292	0.0335
$s_{\mu_{ISE,\iota,a}}$	0.0070	0.0149	0.0201	0.0312	0.0332
$t_{\mu_{ISE,\iota,p}}$	1.9914	2.8302	2.0153	1.0544	0.0460
$t_{\mu_{ISE,\iota,a}}$	-1.4141	-2.2571	-1.8627	-1.7081	-0.8069
$D_{ISE,\iota}$	-0.0211	-0.0721	-0.0844	-0.0841	-0.0129
$s_{D_{ISE,\iota}}$	0.0093	0.0207	0.0340	0.0449	0.0659
$t_{D_{ISE,\iota}}$	-2.2656	-3.4761	-2,4846	-1.8732	-0.1952

Another point of interest is how stocks perform in responds to an acquisition by a company other than its parent company. A new shareholder may introduce uncertainty about the firms corporate governance specifically related to how uncertainty affects the markets reaction as shown in Table 13. Compared to the results presented in Table 5 (sub-sample, ISE-All, event window within estimation period results), the after announcement excess returns do not show any difference. Table 13, however, reports higher under-performance than is reported in Table 5. This indicates that although parent company acquisitions do not affect the after announcement excess return behavior, the results show some of the fear that uncertainty introduces by higher under-performance of company stocks which were acquired by non-parent companies.

6 Conclusion

In this thesis, I analyze the effects of merger and acquisition announcements on Turkish shareholders wealth by focusing on the stock markets response. The performance of the Turkish target firms are analyzed in 1 day, 7 days, 30 days, and 365 days period in ISE-All and sectoral indices. The

effects of 79 transactions announced from 1999-2012 are analyzed in this study. The after announcement performances of the stocks are detemined, and compared with the pre-announcement returns. The performance of the target firms are grouped according to the acquirers origin, the percentage of the shares acquired in the transaction, and the volume of the target firm in the ISE-All. To remove the effects of the 2001 economic crisis, the analysis is also done for the 2004-2012 period. To the contrary, the event period is also included in the estimation period, and the results generated are compared with the results found with the classical estimation method.

The analyses are more reliable for the 2004-2012 periods since the fluctuations in the risk free rate is removed. Including the event period in the estimation period makes the results more significant as it allows, the stock returns to be analyzed in longer periods. The target firms, however, underperform after the M&A announcement with both methods. When examining both samples and methods, the negative performance reaches its peak at a month. It is not possible to make a general comment about the returns in the sectoral analysis since there is no consensus on return performance. If the acquiring firm is a foreign firm, the stocks responds are sharper, but after the announcement period return fell more when the acquirer was a local firm. When less than 50% of the shares are acquired, the underperformance occurred only in a weekly period, whereas when 50% of the shares are acquired, the stocks underperform in weekly and monthly periods. Also, the underperformance that form less than 1% of the total volume of ISE-All is higher compared to the more active stocks and, the less traded stocks carry the negative return at longer periods.

This thesis is one of the few and most comprehensive studies that look at the performance of the acquired firms in the Turkish market in the medium period since the previous studies focus on short term effects. The target firms

are classified according to different dimensions, and the returns are found by using two different estimation periods. This thesis differentiates from early studies by including the event period in the estimation period, and using broad estimation period (-365, +365) days. In this manner, this study can be used in the future studies that look at the performance of the Turkish firms during the M&A. This study can also be extended by adding the accounting based approach and by evaluating the performance of the stocks around the event date.

References

[1] Agrawal, A., Jaffe, J. F., and Mandelker, G. N. (1992). The Post-Merger Performance of Acquiring Firms: A Re-examination of An Anomaly.*Journal of Finance*, 47, 4, 1605-1621.

[2] Akben-Selcuk, E. (2008). The Impact of Cross-Border Mon Target Company Performance: Evidence from Turkey. *Economics Bulletin*, 13,5, 1-9.

[3] Akyuz, Y. and Boratav, K. (2002). The Making of the Turkish Crisis, UNCTAD,Working Paper.

[4] Brown, S. J. and Warner, J. B. (1985). Using Daily Stock Returns: The Case of Event Studies. *Journal of Financial Economics*, 8, 105-138.

[5] Cukur, S. and Eryigit, R. (2006). Banka Birleme ve Devralma Olaylarnn Borsadaki Etkisi. *Iktisat Isletme ve Finans*, 21, 96-107.

[6] Cyree K. B. and DeGennaro, R. P. (2001). A Generalized Method for Detecting Abnormal Returns and Changes in Systematic Risk. Federal Reserve Bank of Atlanta Working Paper No.8.

[7] Danbolt, J. and Maciver, G. (2012). Cross-Border versus Domestic Acquisitions and the Impact on Shareholder Wealth. *Journal of Business Finance & Accounting*

[8] Deloitte Turkey (2008). Annual Turkish M&A Review 2007.

[9] Deloitte Turkey (2009). Annual Turkish M&A Review 2008.

[10] Deloitte Turkey (2010). Annual Turkish M&A Review 2009.

[11] Deloitte Turkey (2011). Annual Turkish M&A Review 2010.

[12] Deloitte Turkey (2012) Annual Turkish M&A Review 2011.

[13] DeLong, G. (2001), Stockholder Gains From Focusing Versus Diversifying Bank Mergers. *Journal of Financial Economics*, 59, 221-252.

[14] Dickerson, A.P. and Gibson, H.D. & Tsakalotos, E. (1997). The Impact of Acquisitions on Company Performance: Evidence from a large panel

of UK firms. *Oxford Economic Papers*,49,344-361.

[15] Dodd, P. and Ruback, R. (1977). Tender Offers and Stockholder Returns: An Empirical Analysis. *Journal of Financial Economics*, 5, 351-374.

[16] Franks, J. and Harris, R. and Titman, S. (1991). The Postmerger Share-Price Performance of Acquiring Firms. *Journal of Financial Economics*, 29, 81-96.

[17] Goergen, M. and Renneboogi, L. (2004). Shareholder Wealth Effects of European Domestic and Cross-border Takeover Bids. *European Financial Management*,10,9-45.

[18] Hekimoglu, M. H. and Tanyeri, B. (2011). Stock-Market Reactions to Mergers of Non-Financial Turkish Firms. *ktisat letme ve Finans*,308, 53-70.

[19] Huang, Y. S. and Walkling R. A. (1987). Target Abnormal Returns Associated with Acquisition Announcement:Payment, Acquisition Form, and Managerial Resistance. *Journal of Financial Economics*, 19, 329-349.

[20] Izmen, U. and Yilmaz, K (2009). Turkey's Recent Trade and Foreign Direct Investment Performance. In Z. Onis and F. Senses (eds.), *Turkey and the Global Economy: Neo-Liberal Restructuring and Integration in the Post-Crisis Era*, Routledge, October 2009, 173-203.

[21] Jensen, M. C. and Ruback, R. S. (1983). The Market for Corporate Control: The Scientific Evidence. *Journal of Financial Economics*,11, 5-50.

[22] Keown, A. J. and Pinkerton, J. M. (1981). Merger Announcements and Insider Trading Activity: An Empirical Investigation. *Journal of Finance*, 36, 855-869.

[23] Liang, H. (2009). The Information Implication of Merger and Acquisition Announcement: Evidence from US & China. International Trade & Finance Association. 19th International Conference Working Paper.

[24] Lowinski, F. and Schiereck, D. and Thomas, T. W. (2004). The Effect of Cross-Border Acquisitions on Shareholder Wealth - Evidence from Switzerland. *Review of Quantitative Finance and Accounting*, 22, 315330.

[25] Ma, J. and Pagan J. A. and Chu, Y. (2009). Abnormal Returns to Mergers and Acquisitions in Ten Asian Stock Markets. *International Journal of Business*, 14(3), 235-250.

[26] Mandaci, P. E. (2004). Sirketlerin Birleme ve Satn Alma Duyurularnn Hisse Senedi Fiyatlar zerine Etkileri. textitktisat letme ve Finans, 19(225), 118124.

[27] Martynova, M. and Renneboog, L. (2006). Mergers and Acquisitions in Europe. European Corporate Governance Institute Finance Working Paper No. 114

[28] Mulherin, J. H. and Boone, A. L. (2000). Comparing Acquisitions and Divestitures. *Journal of Corporate Finance*, 6, 117-139.

[29] Ozatay, F. and Sak, G. (2003). Banking Sector Fragility and Turkeys 2000-2001 Financial Crisis, Central Bank of The Republic of Turkey Discussion Paper.

[30] Padmavathy, S. and Ashok, J. (2012). Merger Announcements and Stock Price Behavior: Empirical Evidence from Indian Stock Market. *International Research Journal of Finance and Economics*, 83, 153-160.

[31] Schwert, G. (1996). Markup pricing in mergers and acquisitions. *Journal of Financial Economics*, 41, 153-192.

[32] Senses, F. and Taymaz, E. (2003). Unutulan Bir Toplumsal Amac: Sanayilesme Ne Oluyor? Ne Olmali?. *ERC Working Papers*, 03-01, 1-24.

[33] Taymaz, E. and Yilmaz, K. (2008). Integration with the Global Economy: The Case of Turkish Automobile and Consumer Electronics Industries. Commission of Growth and Development, Working Paper, 37.

[34] Wong, A. and Cheung, K. Y (2009). The Effects of Merger and Acquisition Announcements on the Security Prices of Bidding Firms and Target Firms in Asia. *International Journal of Economics and Finance*, 1, 274-283.

[35] Yeldan, E. (2005). Assessing The Privatization Experience in Turkey. Global Policy Network, Working Paper.

Appendix

Table 14: Transactions in The Study

Date Announced	Target Company	Code	Acquirer Name	% of Shares Acquired
14.02.2001	Ege Gubre Sanayii AS	EGGUB	Gencer Holding	49,44
10.04.2001	Ege Profil	EGEPRO	Deceuninck NV	39,99
02.05.2001	Garanti Bankasi AS	GARAN4	Dogus Insaat ve Ticaret AS	4,87
31.05.2001	Turk Tuborg Bira ve Malt	TBORG2	Carlsberg Breweries	47,70
11.06.2001	Cimentas zmir Cimento	CMENT	Cementir SpA	97,28
29.06.2001	Bolu Cimento Sanayi AS	BOLUC	Dogus Holding AS	13,27
16.08.2001	Penguen Gida Sanayi AS	PENGD	DEG	14,60
27.09.2001	Alternatif Bank AS	ALNTF	Anadolu Endustri Holding AS	15,00
23.10.2001	Kerevitas	KERVT4	Nestle SA	25,17
02.01.2002	Tekstilbankas AS	TEKST	GSD Holding AA	40,59
07.01.2002	EgePlast	EPLAS	Ege Yildiz Plastik Pazarlama	12,00
05.08.2002	Tire Kutsan Oluklu Mukavva	TIRE2	Bomsas Mukavva	100,00
18.11.2002	Petrol Ofisi AS	PTOFS5	Dogan Sirketler Grubu Holding	25,83
27.02.2003	Kipa Kitle Pazarlama Ticaret	KIPA	Tesco PLC	84,33
27.02.2003	Bagfas Bandirma Gubre	BAGFS	Gencer	5,55
21.08.2003	Anadolu Cam Sanayii AS	ANACM	Sisecam	33,16
31.01.2005	Yapi ve Kredi Bankasi AS	YKBNK3	Koc Finansal Hizmetler AS	57,42

Table 14: cont.

Date Announced	Target Company	Code	Acquirer Name	% of Shares Acquired
25.03.2005	Turkcell Iletisim Hizmetleri	TCELL	Telia Sonera AB	27,30
20.04.2005	Ray Sigorta AS	RAYSG3	Dogan Sirketler Grubu Holding	67,32
10.06.2005	Turcas Petrol AS	TURCAS	Aksoy Holding AS	28,50
25.08.2005	Garanti Bankasi AS	GARAN3	GE Consumer Finance INC	29,50
12.09.2005	Petrol Ofisi AS	PTOFS4	Dogan Sirketler Grubu Holding	4,58
13.09.2005	TUPRAS Turkiye Petrol AS	TUPRAS	Investor Group	51,00
23.09.2005	Izmir Demir Celik Sanayi AS	IZMDC	Sahin Koc Celik Sanayi	54,68
28.09.2005	Yapi ve Kredi Bankasi AS	YKBNK2	Koc Finansal Hizmetler AS	0,01
21.10.2005	Efes Sinai Yatirim Holding AS	AEFES	Coca Cola Icecek Uretim AS	100
26.12.2005	Kerevitas	KERVT3	Sashsisch Thuringische	25,00
24.01.2006	Petrol Ofisi AS	PTOFS3	OMV AG	34,14
26.01.2006	Baticim Anadolu Cimento	BTCIM2	Orascom Const. Ind SAE	20
05.04.2006	Yapi ve Kredi Bankasi AS	YKBNK	Koc Finansal Hizmetler AS	14,56
31.05.2006	Denizbank Finansal Services	DENIZ	Dexia Participation Belgique	75
21.06.2006	Sekerbank TAS	SKBNK2	TuranAlem Securities JSC	33,98
06.09.2006	Izocam Ticaret ve Sanayi AS	IZOCM	JV-Isover, Alghanim	61,20
17.10.2006	Akbank TAS	AKBNK2	Citigroup Inc.	20,00
27.11.2006	Deva Holding AS	DEVA2	EastPharma Ltd	52,58
30.11.2006	Trabzonspor Sportif Yatrm	TSPOR2	Deutsche Bank AG	5,06

Table 14: cont.

Date Announced	Target Company	Code	Acquirer Name	% of Shares Acquired
13.12.2006	Dogus Otomotiv Servis	DOAS	Dogus Holding AS	12
29.12.2006	Yapi Kredi Finansal AS	YKFIN	Yap ve Kredi Bankas	5,40
18.01.2007	Garanti Bankasi AS	GARAN2	Lone Pine Capital LLC	5,00
08.02.2007	Dogan Yayin Holding AS	DYHOL	Lone Pine Capital LLC	8,70
23.02.2007	Baticim Anadolu Cimento	BTCIM	OCI Cimento Anonim Sirketi	78,42
20.03.2007	Ray Sigorta AS	RAYSG2	TBI Holdings Financial	58,20
19.04.2007	Deva Holding AS	DEVA	EastPharma Ltd	47,42
20.04.2007	Tire Kutsan Oluklu Mukavva	TIRE	Mondi Packaging Paper Swiece	53,56
28.05.2007	Turk Demir Dokum	TUDDF	Vaillant Saunier Duval Iberica	72,56
29.05.2007	Kartonsan Karton Sanayi	KARTN	Asli Gida ve Kimya	17,59
21.06.2007	AFM Uluslararas Film	AFMAS	A1 Group Ltd	51,91
05.07.2007	Petkim Petrokimya Holding AS	PETKM	Investor Group	51,00
12.07.2007	Anel Telekomunikasyon	ANELT	Purlear Enterprises	4,54
27.07.2007	Dogan Gazetecilik AS	DGZTE	Deutsche Bank AG	22,00
17.09.2007	Akal Tekstil AS	AKALT	AKKOK Sanayi Yatirim	10,00
17.10.2007	Petrol Ofisi AS	PTOFS2	OMV AG	3,17
14.02.2008	Migros Turk Ticaret AS	MGROS	Migros Turk Ticaret AS SPV	97,90
15.02.2008	Acibadem Saglik Hizmetleri	ACIBD	Almond Holding AS	13,74
27.03.2008	Turk Tuborg Bira ve Malt	TBORG	Central Bottling Co Ltd	95,65

Table 14: cont.

Date Announced	Target Company	Code	Acquirer Name	% of Shares Acquired
05.06.2008	Luks Kadife Ticaret ve Sanayi	LUKSK	Kucukcalik Mefrusat Santic AS	62,18
24.06.2008	Kerevitas	KERVT2	Yildiz Holding AS	51,00
05.08.2008	Bossa Ticaret ve Sanayi	BOSSA2	Akkardan Sanayi ve Ticaret AS	50,12
19.08.2008	Trabzonspor Sportif Yatirim	TSPOR	UBS AG London	5,40
25.08.2008	Klimasan Klima Sanayi	KLMSN	Metalfrio Solutions SA	100,00
21.11.2008	Bossa Ticaret ve Sanayi	BOSSA2	Akkardan Sanayi ve Ticaret AS	24,96
19.12.2008	Frigo Pak Gida Malzemeleri	FRIGO	Pride Foods Ltd	63,00
05.01.2009	Nurol Gayrimenkul Yatirim	NUGYO	Nurol Yatirim Bankasi	19,00
13.01.2009	Petrokent Turizm AS	PKENT	Ercan	0,20
04.02.2009	Vestel Elektronik Sanayi	VESTL	Collar Holding BV	47,70
04.02.2009	Kerevitas	KERVT	Yildiz Holding AS	12,82
10.05.2009	Parsan Makina Parcalari	PARSN	Celik Holding AS	66,73
17.08.2009	Tav Havalimanlar Holding AS	TAVHL	Goldman Sachs International	12,57
05.10.2009	Atakule Gayrimenkul Yatirim	AGYO	Tarman	51,00
23.11.2009	Akbank TAS	AKBNK	Haci Omer Sabanci Holding AS	8,47
19.01.2010	Kristal Kola ve Mesrubat	KRSTL	Ihlas Pazarlama AS	38,00
30.05.2010	Arena Bilgisayar	ARENA	Redington Intl Hldg Ltd	49,40
07.06.2010	Sekerbank TAS	SKBNK	FNB Samruk-Kazyna	22,22
13.08.2010	Finans Finansal Kiralama AS	FFKRL	National Bank of Greece AS	8,47

Table 14: cont.

Date Announced	Target Company	Code	Acquirer Name	% of Shares Acquired
29.09.2010	Ray Sigorta AS	RAYSG	Vienna Insurance Group	10,00
20.10.2010	Petrol Ofisi AS	PTOFS	OMV AG	54,14
02.11.2010	Garanti Bankasi AS	GARAN	BBVA	24,89
18.02.2011	Aksigorta AS	AKGRT	Ageas SA/NV	30,99
05.04.2011	Ceylan Yatirim Holding	CEYLN	Mintay Dis Ticaret AS	6,97

Table 15: Unexpected Returns Before Acquisition (Full Sample Period)

Firm	Date	1 day	1 week	1 month	3 months	1 year
EGGUB	2.2001	-0.0058	0.0989	0.0518	-0.1085	-3.7246
CEYLN	4.2001	-0.0015	0.0127	0.3035	0.2508	0.0698
EGEPRO	4.2001	0.2114	0.3857	0.218	0.2971	-3.7781
GARAN4	5.2001	-0.0041	0.1434	0.2499	0.2765	0.0438
TUBORG2	5.2001	0.0404	0.1137	0.5849	0.9705	0.0357
CMENT	6.2001	0.0675	0.2978	0.3746	0.3724	0.5767
BOLUC	6.2001	0.0067	-0.026	-0.0336	0.121	0.011
PENGD	8.2001	0	0.0137	0.2581	0.0158	-0.0506
ALNTF	9.2001	0.0741	0.0409	-0.0781	0.0462	0.1284
KERVT4	10.2001	0.1769	0.4965	0.1844	-0.2346	-0.2454
TEKST	1.2002	0.0682	0.1387	0.0864	0.0944	-0.201
EPLAS	1.2002	0.0189	-0.2117	0.2526	0.4944	0.2124
TIRE2	8.2002	-0.0526	-0.0064	0.0191	0.109	-0.3001
PTOFS5	11.2002	0.0187	0.0806	0.1443	-0.1411	-0.4489
KIPA	2.2003	0.0129	-0.0572	-0.1181	-0.4359	-0.157
BAGFS	2.2003	-0.0024	0.0231	0.0208	-0.1274	0.1291
ANACM	8.2003	0.0084	-0.019	-0.1391	-0.0924	0.115
YKBANK3	1.2005	-0.0024	0.2036	0.1298	-0.0156	0.0744
TCELL	3.2005	0.0347	0.1386	0.1141	0.0155	0.3262
RAYSG3	4.2005	0.0209	-0.0159	0.0148	-0.0261	-0.1316
TURCAS	6.2005	-0.0052	-0.0307	0.0461	0.0418	-0.2586
GARAN3	8.2005	-0.0112	0.0334	0.051	-0.0575	0.0732
PTOFS4	9.2005	0	-0.0666	-0.0271	0.1631	-0.1491
TUPRAS	9.2005	-0.013	0.0584	0.1082	0.0896	0.3353
IZMDC	9.2005	-0.0072	0.0046	-0.0132	-0.285	-0.2443

Table 15: cont.

Firm	Date	1 day	1 week	1 month	3 months	1 year
YKBANK2	9.2005	0.005	0.0304	-0.0776	-0.1725	0.0182
AEFES	10.2005	0.0123	0.0178	0.0968	0.0101	0.1689
KERVT3	12.2005	-0.0003	-0.0099	-0.2815	0.5141	0.4138
PTOFS3	1.2006	0.0033	-0.086	0.0136	-0.008	0.0458
BTCIM2	1.2006	-0.0034	-0.0587	-0.2028	-0.0649	0.1993
YKBANK	4.2006	0.1098	0.1631	0.1536	0.1165	0.0957
DENIZ	5.2006	0.0202	0.1037	-0.0103	-0.1455	-0.1966
SKBNK2	6.2006	0.0136	0.0047	0.1823	-0.0006	-0.0984
IZOCM	9.2006	0.0091	0.0856	0.114	-0.0719	-0.0878
AKBNK2	10.2006	-0.0051	0.0132	-0.0112	0.2107	0.1082
DEVA2	11.2006	-0.042	-0.034	-0.0194	-0.0687	0.5536
TSPOR2	11.2006	-0.0087	0.0085	-0.0695	-0.1789	-0.0107
DOAS	12.2006	-0.0216	-0.0763	-0.1361	-0.0351	0.3159
YKFIN	12.2006	0.0069	0.0479	-0.0747	0.1688	0.1653
GARAN2	1.2007	-0.0089	0.0839	0.0294	0.0949	-0.0168
DYHOL	2.2007	-0.0238	-0.0379	-0.0694	0.0529	0.5014
BTCIM	2.2007	-0.0125	-0.0104	0.051	-0.1643	-0.1337
RAYSG2	3.2007	0.0209	0.1076	0.6376	0.3389	0.3994
DEVA	4.2007	0.0297	-0.026	-0.0874	-0.2345	0.003
TIRE	4.2007	-0.0323	0.1737	0.326	0.2059	-0.0052
TUDDF	5.2007	0.001	0.0544	-0.0157	0.0884	0.4131
KARTN	5.2007	-0.0114	0.052	0.1268	0.0587	-0.2964
AFMAS	6.2007	0.0143	0.0077	0.2132	0.0437	-0.194
PETKM	7.2007	-0.0133	-0.0906	-0.011	0.2172	0.0655
ANELT	7.2007	0.0067	-0.0154	-0.101	-0.0305	-0.2133
DGZTE	7.2007	-0.0056	-0.0775	-0.208	0.2028	0.1419
AKALT	9.2007	0.0107	0.2281	0.0786	0.1458	0.095

Table 15: cont.

Firm	Date	1 day	1 week	1 month	3 months	1 year
PTOFS2	10.2007	-0.0025	-0.0741	-0.0508	-0.1195	-0.3585
MGROS	2.2008	-0.0248	0.0155	-0.0254	0.058	0.0479
ACIBD	2.2008	0.0061	0.0024	0.122	0.0141	-0.1192
TUBORG	3.2008	0.1823	0.4088	0.3945	0.0833	-0.5131
LUKSK	6.2008	0.0081	-0.0113	-0.0022	-0.0419	0.0157
KERVT2	6.2008	0.0032	0.2064	0.2358	0.4564	-0.129
BOSSA2	8.2008	0.1558	0.3415	0.3202	0.3524	0.0816
TSPOR	8.2008	0.0037	-0.0205	-0.2709	-0.2612	-0.0026
KLMSN	8.2008	-0.019	-0.034	0.1088	-0.2081	0.2521
BOSSA	11.2008	0.0147	0.0859	0.5322	0.8534	0.1796
FRIGO	12.2008	0.0343	-0.0198	0.0264	-0.1213	-0.4114
NUGYO	1.2009	-0.0025	0.0877	0.0212	-0.1255	-0.4266
PKENT	1.2009	0.0281	-0.0135	0.0496	0.167	-0.4507
VESTEL	2.2009	0.0105	-0.0335	0.1794	-0.18	-0.4798
KERVT	2.2009	-0.0337	-0.0716	-0.0789	-0.1303	-0.344
PARSN	5.2009	0.0622	0.0627	0.1545	0.3566	-0.1315
TAVHL	8.2009	-0.0263	0.0311	-0.0992	-0.1191	-0.1152
AGYO	10.2009	-0.0199	0.0635	0.077	0.1071	0.1336
AKBNK	11.2009	-0.0103	0.0212	0.0026	-0.1629	0.232
KRSTL	1.2010	0.0027	0.0434	0.0885	-0.1404	-0.1414
SKBNK	6.2010	0.0175	0.0053	-0.0695	-0.1522	0.0105
FFKRL	8.2010	-0.0068	0.0062	-0.1295	-0.116	0.0648
RAYSG	9.2010	0.1024	0.0869	0.0082	0.0565	0.262
PTOFS	10.2010	0.0072	-0.0136	-0.0665	-0.1632	-0.1249
GARAN	11.2010	0.0069	0.033	-0.0525	-0.0131	0.0102
ARENA	11.2010	-0.0034	0.0578	-0.0237	-0.317	0.2436
AKGRT	2.2011	-0.0122	0.0226	0.038	0.113	0.1844

Table 16: Unexpected Returns After Acquisition (Full Sample Period)

Firm	Date	1 day	1 week	1 month	3 months	1 year
EGGUB	2.2001	0.0624	-0.2097	-0.1201	0.0172	0
CEYLN	4.2001	-0.015	-0.1231	-0.2321	0.9731	0
EGEPRO	4.2001	-0.0318	0.0794	0.0522	0.0176	0
GARAN4	5.2001	0.0626	0.1195	0.2318	0.2115	0
TUBORG2	5.2001	0.1405	0.3078	0.5881	0.5714	0
CMENT	6.2001	-0.0357	-0.0222	0.1478	0.4387	-0.5499
BOLUC	6.2001	0.0513	0.1233	0.2863	0.1807	0
PENGD	8.2001	-0.0116	-0.0753	-0.0355	-0.1363	0
ALNTF	9.2001	-0.0313	-0.1368	0.0861	0.3404	0
KERVT4	10.2001	0.1878	0.1989	-0.0048	-0.0611	0.0533
TEKST	1.2002	0.1331	0.1635	0.082	0.0397	0
EPLAS	1.2002	-0.0253	0.0017	0.0354	0.0324	-0.1638
TIRE2	8.2002	0.0415	0.2059	0.2764	0.2514	0.3258
PTOFS5	11.2002	0.0409	0.3241	0.5407	0.8491	0.4818
KIPA	2.2003	-0.0374	-0.0275	-0.0691	-0.0613	0
BAGFS	2.2003	-0.0047	-0.0003	-0.0071	-0.0507	-0.1167
ANACM	8.2003	-0.0125	-0.0193	-0.0632	0.1053	-0.1137
YKBANK3	1.2005	-0.0191	0.0821	0.0139	0.0772	-0.0091
TCELL	3.2005	-0.0113	-0.0596	-0.0747	-0.2315	-0.3562
RAYSG3	4.2005	-0.0382	-0.1047	0.0224	0.1654	0.1598
TURCAS	6.2005	-0.1041	-0.22	-0.2044	-0.2378	0.2679
GARAN3	8.2005	0.0011	-0.0788	-0.0831	-0.1085	-0.0823
PTOFS4	9.2005	-0.0627	-0.1106	-0.0427	-0.1028	0.1631
TUPRAS	9.2005	-0.033	-0.0668	-0.1489	-0.2757	-0.4336
IZMDC	9.2005	-0.0573	-0.0575	0.0002	-0.2803	0.2254

Table 16: cont.

Firm	Date	1 day	1 week	1 month	3 months	1 year
YKBANK2	9.2005	-0.0498	-0.1341	-0.1166	-0.1637	-0.0317
AEFES	10.2005	-0.0248	-0.0672	-0.0741	-0.078	-0.1687
KERVT3	12.2005	-0.0037	-0.0856	-0.121	-0.2581	-0.4027
PTOFS3	1.2006	-0.0043	-0.0162	0.1153	0.406	0
BTCIM2	1.2006	0.0125	0.0239	0.1269	-0.0298	-0.1956
YKBANK	4.2006	-0.0298	-0.0235	0.0149	0.1387	0.018
DENIZ	5.2006	0.01	0.0161	0.0006	-0.013	0
SKBNK2	6.2006	-0.2157	-0.5381	-0.6089	-0.6351	0
IZOCM	9.2006	0.0005	-0.0301	-0.0303	0.0357	0
AKBNK2	10.2006	-0.0061	-0.0405	0.0198	0.042	-0.0987
DEVA2	11.2006	0.0142	0.0658	0.0564	-0.2498	-0.5527
TSPOR2	11.2006	0.0074	-0.0429	-0.1398	-0.1831	0
DOAS	12.2006	-0.0052	-0.041	0.0834	-0.1002	-0.3232
YKFIN	12.2006	0.0068	0.0215	-0.082	-0.0863	-0.1568
GARAN2	1.2007	-0.0024	-0.0253	-0.071	0.0147	0
DYHOL	2.2007	-0.0183	-0.0325	0.0736	0.1258	-0.4858
BTCIM	2.2007	0.1785	0.2074	0.2746	0.2552	0
RAYSG2	3.2007	-0.0142	-0.0581	-0.1166	-0.4346	-0.5625
DEVA	4.2007	0.0114	0.0291	0.3889	0.062	0.0147
TIRE	4.2007	-0.0217	-0.0519	-0.0985	-0.076	0
TUDDF	5.2007	-0.0215	0.0139	-0.0275	-0.0205	-0.3454
KARTN	5.2007	-0.0121	-0.0103	-0.0996	-0.1159	0.3023
AFMAS	6.2007	-0.006	-0.0091	-0.1845	-0.3856	0.2165
PETKM	7.2007	0.0431	-0.016	0.0595	-0.0276	-0.0595
ANELT	7.2007	0.0019	-0.033	0.0131	0.1285	0.2351
DGZTE	7.2007	-0.0029	-0.1152	-0.1163	-0.2829	-0.1449
AKALT	9.2007	-0.0223	-0.0333	-0.0653	-0.3748	-0.0902

Table 16: cont.

Firm	Date	1 day	1 week	1 month	3 months	1 year
PTOFS2	10.2007	0.0322	0.0137	0.033	0.1148	0.3334
MGROS	2.2008	0.0032	-0.0067	-0.0144	-0.0826	0
ACIBD	2.2008	-0.0331	-0.021	0.0828	-0.0553	0.1052
TUBORG	3.2008	0.0254	-0.0648	-0.2188	-0.1983	0.3483
LUKSK	6.2008	-0.0391	-0.1357	-0.1574	-0.1704	-0.0445
KERVT2	6.2008	-0.001	-0.0918	-0.3216	-0.1758	0.2474
BOSSA2	8.2008	-0.0134	-0.0766	-0.0576	0.4007	0
TSPOR	8.2008	0.0298	0.0134	0.1302	-0.2469	0
KLMSN	8.2008	0.0225	0.0003	-0.0102	0.0676	-0.2104
BOSSA	11.2008	-0.0831	0.1101	0.144	0.2148	-0.1368
FRIGO	12.2008	-0.0214	0.1599	0.0748	0.2941	0.4001
NUGYO	1.2009	0.0679	-0.0526	0.1143	0.2289	0.3595
PKENT	1.2009	0.0008	0.228	0.04	-0.3202	0.432
VESTEL	2.2009	-0.001	0.0073	0.0436	0.4733	0.483
KERVT	2.2009	-0.0423	-0.0652	-0.1067	0.0949	0.2978
PARSN	5.2009	-0.0143	-0.1093	-0.0316	-0.0588	0.1157
TAVHL	8.2009	0.0083	-0.1089	-0.1545	-0.0695	0.1135
AGYO	10.2009	-0.0195	-0.0496	-0.0325	0.0344	-0.0875
AKBNK	11.2009	0.001	-0.0012	-0.0621	-0.0529	-0.2435
KRSTL	1.2010	-0.0066	-0.0046	0.1553	0.1864	0.0418
SKBNK	6.2010	0.0207	-0.0258	0.0334	-0.0155	0
FFKRL	8.2010	0.1224	0.0487	-0.0418	0.0873	-0.1667
RAYSG	9.2010	-0.0695	-0.1195	-0.2154	-0.2681	-0.315
PTOFS	10.2010	0.0621	0.1594	0.1827	0.4221	0.1199
GARAN	11.2010	-0.0087	-0.0028	-0.0502	-0.0258	0.0079
ARENA	11.2010	-0.0125	-0.028	-0.0866	-0.151	-0.2545
AKGRT	2.2011	-0.0349	-0.1346	-0.1645	-0.3479	-0.1627

Table 17: Breakdown of Companies According to Their Sectors

Company	Sector	Company	Sector
AKBNK	Banking	TUBORG2	Food
AKBNK2	Banking	CEYLN	Holding
ALNTF	Banking	DYHOL	Holding
DENIZ	Banking	TAVHL	Holding
GARAN	Banking	ANELT	IT
GARAN2	Banking	ARENA	IT
GARAN3	Banking	KLMSN	MPM
GARAN4	Banking	PARSN	MPM
SKBANK	Banking	TUDDF	MPM
SKBANK2	Banking	VESTEL	MPM
TEKST	Banking	ANACM	Mineral Products
YKBANK	Banking	BOLUC	Mineral Products
YKBANK2	Banking	BTCIM	Mineral Products
YKBANK3	Banking	BTCIM2	Mineral Products
IZMDC	Basic Metal	CMENT	Mineral Products
BAGFS	CPP	IZOCM	Mineral Products
DEVA	CPP	AGYO	REIT
DEVA2	CPP	NUGYO	REIT
EGGUB	CPP	ACIBD	Service
EGPRO	CPP	AFMAS	Service
PETKM	CPP	DOAS	Service
PTOFS	CPP	KIPA	Service
PTOFS2	CPP	MGROS	Service
PTOFS3	CPP	TCELL	Service
PTOFS4	CPP	TSPOR	Service

Table 17: cont.

Company	Sector	Company	Sector
PTOFS5	CPP	TSPOR2	Service
TUPRAS	CPP	AKALT	Textile
TURCAS	CPP	BOSSA	Textile
AEFES	Food	BOSSA2	Textile
FRIGO	Food	LUKSK	Textile
KERVT	Food	DOAS	Trade
KERVT2	Food	KIPA	Trade
KERVT3	Food	MGROS	Trade
KERVT4	Food	DGZTE	WPP
KRSTL	Food	KARTN	WPP
PENGD	Food	TIRE	WPP
TUBORG	Food	TIRE2	WPP

Table 18: Testing For Excess Returns - Sectoral Indices
(Full Sample Period)

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$\mu_{ISE(Banking),\iota,p}$	14	0.0103	0.0603	0.0371	0.0085	0.0961
$\mu_{ISE(Banking),\iota,a}$	14	-0.0252	-0.0682	-0.0768	-0.0685	-0.0627
$s_{\mu_{ISE(Banking),\iota,p}}$	14	-0.0059	-0.0094	-0.0174	-0.0218	-0.0463
$s_{\mu_{ISE(Banking),\iota,a}}$	14	-0.0199	-0.0438	-0.0548	-0.0772	-0.0751
$t_{\mu_{ISE(Banking),\iota}}$	14	-1.2670	-1.5570	-1.4017	-0.8874	-0.8347
$D_{ISE(Banking),\iota}$	14	-0.0355	-0.1285	-0.1139	-0.0770	-0.1588
$s_{D_{ISE(Banking),\iota}}$	14	-0.0201	-0.0364	-0.0678	-0.0825	-0.1317
$t_{D_{ISE(Banking),\iota}}$	14	-1.7710	-3.5275	-1.6803	-0.9330	-1.2055
$\mu_{ISE(IT),\iota,p}$	2	-0.0155	-0.0134	-0.0932	-0.1513	-0.0091
$\mu_{ISE(IT),\iota,a}$	2	0.0054	-0.0102	-0.0168	-0.0927	0.0000
$s_{\mu_{ISE(IT),\iota,p}}$	2	-0.0224	-0.0089	-0.0090	-0.2112	-0.0161
$s_{\mu_{ISE(IT),\iota,a}}$	2	-0.0104	-0.0013	-0.0097	-0.1582	-0.0000
$t_{\mu_{ISE(IT),\iota}}$	2	0.5196	-7.9925	-1.7344	-0.5859	2.8527
$D_{ISE(IT),\iota}$	2	0.0209	0.0032	0.0764	0.0586	0.0091
$s_{D_{ISE(IT),\iota}}$	2	-0.0290	-0.0083	-0.0162	-0.1903	-0.0161
$t_{D_{ISE(IT),\iota}}$	2	0.7211	0.3838	4.7223	0.3079	0.5663
$\mu_{ISE(REIT),\iota,p}$	2	-0.0242	0.0396	-0.0243	0.0736	0.0484
$\mu_{ISE(REIT),\iota,a}$	2	0.0199	-0.0742	-0.0111	0.0090	-0.0621
$s_{\mu_{ISE(REIT),\iota,p}}$	2	-0.0083	-0.0123	-0.0533	-0.0287	-0.1926
$s_{\mu_{ISE(REIT),\iota,a}}$	2	-0.0365	-0.0440	-0.0007	-0.0786	-0.0919
$t_{\mu_{ISE(REIT),\iota}}$	2	0.5460	-1.6874	-16.1387	0.1147	-0.6757
$D_{ISE(REIT),\iota}$	2	0.0441	-0.1138	0.0131	-0.0646	-0.1105
$s_{D_{ISE(REIT),\iota}}$	2	-0.0331	-0.0393	-0.0529	-0.0962	-0.2515
$t_{D_{ISE(REIT),\iota}}$	2	1.3322	-2.8955	0.2481	-0.6711	-0.4395
$\mu_{ISE(Service),\iota,p}$	8	-0.0027	-0.0115	-0.0161	-0.0819	0.0813
$\mu_{ISE(Service),\iota,a}$	8	-0.0050	-0.0229	-0.0342	-0.1573	-0.0985

Table 18: cont.

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$s_{\mu_{ISE(Service),\iota,p}}$	8	-0.0051	-0.0191	-0.0486	-0.0444	-0.0828
$s_{\mu_{ISE(Service),\iota,a}}$	8	-0.0083	-0.0099	-0.0382	-0.0421	-0.0946
$t_{\mu_{ISE(Service),\iota}}$	8	-0.6052	-2.3170	-0.8962	-3.7395	-1.0404
$D_{ISE(Service),\iota}$	8	-0.0023	-0.0114	-0.0181	-0.0753	-0.1797
$s_{D_{ISE(Service),\iota}}$	8	-0.0108	-0.0223	-0.0752	-0.0556	-0.1709
$t_{D_{ISE(Service),\iota}}$	8	-0.2155	-0.5121	-0.2408	-1.3555	- 1.0519
$\mu_{ISE(Food),\iota,p}$	10	0.0533	0.1338	0.1243	0.0583	-0.2542
$\mu_{ISE(Food),\iota,a}$	10	0,0366	0.0813	0.0753	0.0770	0.1814
$s_{\mu_{ISE(Food),\iota,p}}$	10	-0.0259	-0.0679	-0.0797	-0.1274	-0.1003
$s_{\mu_{ISE(Food),\iota,a}}$	10	-0.0275	-0.0586	-0.1036	-0.0837	-0.0837
$t_{\mu_{ISE(Food),\iota}}$	10	1.3316	1.3880	0.7269	0.9196	2.1678
$D_{ISE(Food),\iota}$	10	-0.0167	-0.0524	-0.0490	0.0187	0.4356
$s_{D_{ISE(Food),\iota}}$	10	-0.0208	-0.0655	-0.0874	-0.1602	-0.1727
$t_{D_{ISE(Food),\iota}}$	10	-0.8012	-0.8002	-0.5607	0.1169	2.5227
$\mu_{ISE(Mineral),\iota,p}$	6	0.0118	0.0494	0.0208	0.0114	-0.0073
$\mu_{ISE(Mineral),\iota,a}$	6	0.0321	0.0372	0.1142	0.1249	-0.0200
$s_{\mu_{ISE(Mineral),\iota,p}}$	6	-0.0120	-0.0597	-0.0829	-0.0537	-0.0591
$s_{\mu_{ISE(Mineral),\iota,a}}$	6	-0.0303	-0.0413	-0.0470	-0.0677	-0.0712
$t_{\mu_{ISE(Mineral),\iota}}$	6	1.0582	0.9021	2.4270	1.8434	-0.2809
$D_{ISE(Mineral),\iota}$	6	0.0202	-0.0122	0.0933	0.1135	-0.0127
$s_{D_{ISE(Mineral),\iota}}$	6	-0.0371	-0.0803	-0.0925	-0.0497	-0.1230
$t_{D_{ISE(Mineral),\iota}}$	6	0.5450	-0.1519	1.0091	2.2851	-0.1032
$\mu_{ISE(Holding),\iota,p}$	3	-0.0153	0.0142	0.0283	0.0607	0.1495
$\mu_{ISE(Holding),\iota,a}$	3	-0.0128	-0.0754	-0.0540	0.3888	-0.1203
$s_{\mu_{ISE(Holding),\iota,p}}$	3	-0.0050	-0.0462	-0.1249	-0.1639	-0.1945
$s_{\mu_{ISE(Holding),\iota,a}}$	3	-0.0082	-0.0416	-0.0937	-0.4270	-0.2020
$t_{\mu_{ISE(Holding),\iota}}$	3	-1.5574	-1.8140	-0.5761	0.9105	-0.5958

Table 18: cont.

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$D_{ISE(Holding),\iota}$	3	0,0026	-0.0896	-0.0823	0.3282	-0.2699
$s_{D_{ISE(Holding),\iota}}$	3	-0.0091	-0.0783	-0.1761	-0.3605	-0.3614
$t_{D_{ISE(Holding),\iota}}$	3	0.2822	-1.1437	-0.4672	0.9103	-0.7467
$\mu_{ISE(CPP),\iota,p}$	13	0.0120	0.0103	0.0105	-0.0609	-0.0241
$\mu_{ISE(CPP),\iota,a}$	13	-0.0028	-0.0149	0.0511	0.0385	0.0291
$s_{\mu_{ISE(CPP),\iota,p}}$	13	-0.0178	-0.0362	-0.0146	-0.0467	-0.0829
$s_{\mu_{ISE(CPP),\iota,a}}$	13	-0.0173	-0.0470	-0.0594	-0.0779	-0.0851
$t_{\mu_{ISE(CPP),\iota}}$	13	-0.1596	-0.3166	0.8600	0.4940	0.3422
$D_{ISE(CPP),\iota}$	13	-0.0147	-0.0252	0.0406	0.0994	0.0532
$s_{D_{ISE(CPP),\iota}}$	13	-0.0267	-0.0544	-0.0592	-0.0958	-0.1646
$t_{D_{ISE(CPP),\iota}}$	13	-0.5517	-0.4634	0.6858	1.0374	0.3231
$\mu_{ISE(Technology),\iota,p}$	2	-0.0109	0.0097	-0.0665	-0.1078	0.2229
$\mu_{ISE(Technology),\iota,a}$	2	-0.0019	-0.0252	-0.0463	-0.1273	-0.2295
$s_{\mu_{ISE(Technology),\iota,p}}$	2	-0.0130	-0.0382	-0.0034	-0.1856	-0.3049
$s_{\mu_{ISE(Technology),\iota,a}}$	2	-0.0018	-0.0360	-0.0504	-0.2335	-0.3246
$t_{\mu_{ISE(Technology),\iota}}$	2	-1.0413	-0.6979	-0.9178	-0.5449	-0.7072
$D_{ISE(Technology),\iota}$	2	0.0090	-0.0349	0.0202	-0.0194	-0.4525
$s_{D_{ISE(Technology),\iota}}$	2	-0.0122	-0.0643	-0.0488	-0,2136	-0.5453
$t_{D_{ISE(Technology),\iota}}$	2	0.7374	-0.5422	0.4148	-0.0910	-0.8297
$\mu_{ISE(Trade),\iota,p}$	3	-0.0115	-0.0420	-0.0504	-0.1339	-0.0145
$\mu_{ISE(Trade),\iota,a}$	3	-0.0136	-0.0413	-0.0378	-0.0600	-0.0335
$s_{\mu_{ISE(Trade),\iota,p}}$	3	-0.0141	-0.0070	-0.0199	-0.0957	-0.1853
$s_{\mu_{ISE(Trade),\iota,a}}$	3	-0.0145	-0.0324	-0.0512	-0.0723	-0.1766
$t_{\mu_{ISE(Trade),\iota}}$	3	-0.9386	-1.2746	-0.7377	-0.8292	-0.1897
$D_{ISE(Trade),\iota}$	3	-0.0021	0.0006	0.0126	0.0740	-0.0190
$s_{D_{ISE(Trade),\iota}}$	3	-0.0255	-0.0308	-0.0655	-0.0995	-0.3283
$t_{D_{ISE(Trade),\iota}}$	3	-0.0823	0.0207	0.1923	0.7435	-0.0580

Table 18: cont.

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$\mu_{ISE(WPP),\iota,p}$	4	-0.0208	0.0343	0.0418	0.0658	-0.2420
$\mu_{ISE(WPP),\iota,a}$	4	0.0084	0.0132	0.0146	0.0085	0.2450
$s_{\mu_{ISE(WPP),\iota,p}}$	4	-0.0054	-0.0584	-0.1275	-0.1033	-0.1912
$s_{\mu_{ISE(WPP),\iota,a}}$	4	-0.0204	-0.0770	-0.1344	-0.1403	-0.1968
$t_{\mu_{ISE(WPP),\iota}}$	4	0.4125	0.1709	0.1087	0.0608	1.2453
$D_{ISE(WPP),\iota}$	4	0.0292	-0.0211	-0.0272	-0.0573	0.4871
$s_{D_{ISE(WPP),\iota}}$	4	-0.0235	-0.0924	-0.2047	-0.2219	-0.3629
$t_{D_{ISE(WPP),\iota}}$	4	1.2443	-0.2289	-0.1327	-0.2580	1.3423
$\mu_{ISE(Textile),\iota,p}$	4	0.0429	0.1606	0.2544	0.3648	0.2597
$\mu_{ISE(Textile),\iota,a}$	4	-0.0307	-0.0151	0.0080	0.1017	-0.2386
$s_{\mu_{ISE(Textile),\iota,p}}$	4	-0.0298	-0.0736	-0.1363	-0.2525	-0.1766
$s_{\mu_{ISE(Textile),\iota,a}}$	4	-0.0125	-0.0471	-0.0370	-0.2179	-0.1813
$t_{\mu_{ISE(Textile),\iota}}$	4	-2.4672	-0.3216	0.2172	0.4666	-1.3160
$D_{ISE(Textile),\iota}$	4	-0.0736	-0.1757	-0.2464	-0.2631	-0.4983
$s_{D_{ISE(Textile),\iota}}$	4	-0.0259	-0.0914	-0.1158	-0.2978	-0.3338
$t_{D_{ISE(Textile),\iota}}$	4	-2.8398	-1.9230	-2.1282	-0.8835	-1.4928
$\mu_{ISE(MPM),\iota,p}$	4	0.0083	0.0148	0.0501	0.0389	0.1732
$\mu_{ISE(MPM),\iota,a}$	4	-0.0016	-0.0077	-0.0349	0.0252	-0.1373
$s_{\mu_{ISE(MPM),\iota,p}}$	4	-0.0107	-0.0190	-0.0710	-0.0957	-0.0822
$s_{\mu_{ISE(MPM),\iota,a}}$	4	-0.0108	-0.0147	-0.0749	-0.1138	-0.0800
$t_{\mu_{ISE(MPM),\iota}}$	4	-0.1475	-0.5234	-0.4654	0.2215	-1.7154
$D_{ISE(MPM),\iota}$	4	-0.0099	-0.0225	-0.0849	-0.0137	-0.3105
$s_{D_{ISE(MPM),\iota}}$	4	-0.0157	-0.0286	-0.0935	-0.1921	-0.1512
$t_{D_{ISE(MPM),\iota}}$	4	-0.6343	-0.7878	-0.9078	-0.0714	-2.0535

Table 19: Testing For Excess Returns - Sectoral Indices
(After 2004 Period)

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$\mu_{ISE(Banking),\iota,p}$	11	0.0103	0.0603	0.0371	0.0085	0.0961
$\mu_{ISE(Banking),\iota,a}$	11	-0.0252	-0.0682	-0.0768	-0.0685	-0.0627
$s_{\mu_{ISE(Banking),\iota,p}}$	11	-0.0116	-0.0211	-0.0380	-0.0485	-0.0773
$s_{\mu_{ISE(Banking),\iota,a}}$	11	-0.0190	-0.0511	-0.0595	-0.0807	-0.0642
$t_{\mu_{ISE(Banking),\iota}}$	11	-0.6119	-0.4126	-0.6377	-0.6013	-1.2046
$D_{ISE(Banking),\iota}$	11	-0.0355	-0.1285	-0.1139	-0.0770	-0.1588
$s_{D_{ISE(Banking),\iota}}$	11	-0.0230	-0.0463	-0.0825	-0.1016	-0.1273
$t_{D_{ISE(Banking),\iota}}$	11	-1.5469	-2.7782	-1.3808	-0.7582	-1.2472
$\mu_{ISE(Service),\iota,p}$	7	-0.0034	-0.0069	-0.0141	-0.0633	0.0556
$\mu_{ISE(Service),\iota,a}$	7	-0.0003	-0.0241	-0.0251	-0.1572	-0.0528
$s_{\mu_{ISE(Service),\iota,p}}$	7	-0.0059	-0.0216	-0.0566	-0.0463	-0.0912
$s_{\mu_{ISE(Service),\iota,a}}$	7	-0.0077	-0.0114	-0.0430	-0.0491	-0.0946
$t_{\mu_{ISE(Service),\iota}}$	7	-0.7713	-1.8881	-1.3162	-0.9435	-0.9636
$D_{ISE(Service),\iota}$	7	0.0031	-0.0173	-0.0110	-0.0939	-0.1084
$s_{D_{ISE(Service),\iota}}$	7	-0.0106	-0.0251	-0.0869	-0.0607	-0.1788
$t_{D_{ISE(Service),\iota}}$	7	0.2910	-0.6888	-0.1262	-1.5481	-0.6063
$\mu_{ISE(Food),\iota,p}$	7	0.0383	0.1064	0.0667	0.0584	-0.2326
$\mu_{ISE(Food),\iota,a}$	7	0.0075	0.0411	0.0137	0.0446	0.1669
$s_{\mu_{ISE(Food),\iota,p}}$	7	-0.0254	-0.0675	-0.0946	-0.1039	-0.1153
$s_{\mu_{ISE(Food),\iota,a}}$	7	-0.0246	-0.0655	-0.1176	-0.1077	-0.1051
$t_{\mu_{ISE(Food),\iota}}$	7	-1.0340	-1.0297	-0.8042	-0.9641	-1.0974
$D_{ISE(Food),\iota}$	7	-0.0308	-0.0653	-0.0529	-0.0138	0.3995
$s_{D_{ISE(Food),\iota}}$	7	-0.0178	-0.0612	-0.1144	-0,1931	-0.2011
$t_{D_{ISE(Food),\iota}}$	7	-1.7332	-1.0670	-0.4627	-0.0715	1.9868
$\mu_{ISE(Mineral),\iota,p}$	3	-0.0004	0.0201	-0.0005	-0.0557	0.0192
$\mu_{ISE(Mineral),\iota,a}$	3	0.0567	0.0577	0.1127	0.0466	-0.0818

Table 19: cont.

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$s_{\mu_{ISE(Mineral),\iota,p}}$	3	-0.0041	-0.0534	-0.1055	-0.0395	-0.0720
$s_{\mu_{ISE(Mineral),\iota,a}}$	3	-0.0618	-0.0944	-0.1038	-0.0778	-0.1002
$t_{\mu_{ISE(Mineral),\iota}}$	3	-0.0672	-0.5650	-1.0166	-0.5083	-0.7189
$D_{ISE(Mineral),\iota}$	3	0.0570	0.0376	0.1131	0.1024	-0.1010
$s_{D_{ISE(Mineral),\iota}}$	3	-0.0625	-0.1141	-0.1368	-0.0894	-0.1546
$t_{D_{ISE(Mineral),\iota}}$	3	0.9126	0.3294	0.8270	1.1447	-0.6536
$\mu_{ISE(Holding),\iota,p}$	2	-0.0193	0.0221	-0.0724	-0.0474	0.1889
$\mu_{ISE(Holding),\iota,a}$	2	-0.0130	-0.0665	-0.0110	0.0411	-0.1805
$s_{\mu_{ISE(Holding),\iota,p}}$	2	-0.0014	-0.0903	-0.0396	-0.1934	-0.3768
$s_{\mu_{ISE(Holding),\iota,a}}$	2	-0.0164	-0.0802	-0.1551	-0.0642	-0.3761
$t_{\mu_{ISE(Holding),\iota}}$	2	-0.0859	-1.1255	-0.2553	-3.0129	-1.0020
$D_{ISE(Holding),\iota}$	2	0.0063	-0.0886	0.0614	0.0885	-0.3694
$s_{D_{ISE(Holding),\iota}}$	2	-0.0157	-0.1478	-0.1395	-0.1706	-0.6521
$t_{D_{ISE(Holding),\iota}}$	2	0.4031	-0.5999	0.4403	0.5188	-0.5665
$\mu_{ISE(CPP),\iota,p}$	10	-0.0036	-0.0362	-0.0029	-0.0229	0.0225
$\mu_{ISE(CPP),\iota,a}$	10	-0.0112	-0.0188	0.0317	-0.0152	-0.0213
$s_{\mu_{ISE(CPP),\iota,p}}$	10	-0.0059	-0.0147	-0.0158	-0.0483	-0.0915
$s_{\mu_{ISE(CPP),\iota,a}}$	10	-0.0203	-0.0334	-0.0496	-0.0691	-0.0929
$t_{\mu_{ISE(CPP),\iota}}$	10	-0.2888	-0.4400	-0.3193	-0.6989	-0.9847
$D_{ISE(CPP),\iota}$	10	-0.0076	0.0174	0.0346	0.0078	-0.0438
$s_{D_{ISE(CPP),\iota}}$	10	-0.0202	-0.0307	-0.0562	-0.0781	-0.1797
$t_{D_{ISE(CPP),\iota}}$	10	0.3770	0.5679	0.6163	0.0994	-0.2438
$\mu_{ISE(Trade),\iota,p}$	2	-0.0226	-0.0387	-0.0562	-0.0559	0.0396
$\mu_{ISE(Trade),\iota,a}$	2	-0.0021	-0.0524	-0.0095	-0.0337	-0.0503
$s_{\mu_{ISE(Trade),\iota,p}}$	2	-0.0080	-0.0114	-0.0371	-0.0091	-0.3461
$s_{\mu_{ISE(Trade),\iota,a}}$	2	-0.0067	-0.0590	-0.0756	-0.1295	-0.3508
$t_{\mu_{ISE(Trade),\iota}}$	2	-1.1949	-0.1929	-0.4916	-0.0702	-0.9867

Table 19: cont.

ι	No. Of M&A	1 day	1 w	1 m	3 m	1 y
$D_{ISE(Trade),\iota}$	2	0.0205	-0.0137	0.0466	0.0222	-0.0898
$s_{D_{ISE(Trade),\iota}}$	2	-0.0075	-0.0542	-0.0995	-0.1252	-0.6036
$t_{D_{ISE(Trade),\iota}}$	2	2.7442	-0.2533	0.4689	0.1769	-0.1489
$\mu_{ISE(WPP),\iota,p}$	3	-0.0133	-0.0033	-0.0120	0.0157	0.0004
$\mu_{ISE(WPP),\iota,a}$	3	-0.0084	-0.0490	-0.1008	-0.1111	0.1023
$s_{\mu_{ISE(WPP),\iota,p}}$	3	-0.0067	-0.0865	-0.1814	-0.0798	-0.1515
$s_{\mu_{ISE(WPP),\iota,a}}$	3	-0.0092	-0.0420	-0.0257	-0.0367	-0.1611
$t_{\mu_{ISE(WPP),\iota}}$	3	-0.7370	-2.0627	-7.0686	-2.1721	-0.9403
$D_{ISE(WPP),\iota}$	3	0.0049	-0.0457	-0.0888	-0.1268	0.1019
$s_{D_{ISE(WPP),\iota}}$	3	-0.0131	-0.0749	-0.1805	-0.0936	-0.2854
$t_{D_{ISE(WPP),\iota}}$	3	0.3743	-0.6107	-0.4917	-1.3543	0.3570

Table 20: OLS Results Chow Test

Target Company	α	β	C.T α	C.T β
YKFIN	-0.0001	1.0174	.	.
YKBANK	0.0003	1.0337	.	.
YKBANK3	0.0007	1.1731	-0.0003	1.0010
YKBANK2	0.0001	1.0309	.	.
VESTEL	-0.0001	0.9087	.	.
GARAN	0.0000	1.1912	.	.
GARAN4	-0.0003	1.0060	0.0011	1.1085
GARAN3	0.0004	1.1337	.	.
GARAN2	0.0004	1.1097	0.0006	1.3473
TCELL	0.0004	1.0426	.	.
TUDDF	-0.0008	0.6865	.	.
TURCAS	0.0010	0.9194	.	.
TUPRAS	0.0009	0.8927	.	.
TUBORG	0.0000	0.7485	.	.
TUBORG2	0.0025	0.9498	0.0022	0.7653
TSPOR	0.003826	0.3271	-0.0003	0.6072
TSPOR2	-0.0004	0.6196	0.0038	0.3546
TIRE	0.0030	0.8050	0.0020	0.3602
TIRE2	0.0007	0.9510	.	.
TEKST	0.0000	0.9682	0.0004	1.1286
TAVHL	0.0002	0.9556	.	.
SKBNK	0.0000	1.1309	-0.0002	0.9868
SKBNK2	0.0040	0.8667	-0.0001	1.0469
RAYSG	-0.0002	0.8919	.	.
RAYSG3	0.0010	0.9492	.	.
RAYSG2	0.0021	0.9189	.	.

Table 20: cont.

Target Company	α	β	C.T α	C.T β
PTOFS	-0.0003	0.7788	.	.
PTOFS5	-0.0004	0.9572	.	.
PTOFS4	-0.0002	0.9806	.	.
PTOFS3	-0.0005	0.8978	0.0005	1.0484
PTOFS2	0.0002	0.8565	.	.
PKENT	0.0032	0.8172	.	.
PETKM	0.0001	0.9209	.	.
PENGD	0.0033	1.0032	-0.0002	0.8166
PARSN	-0.0004	0.9620	.	.
NUGYO	0.0000	0.9071	.	.
MGROS	0.0007	0.7558	0.0018	0.5740
LUKSK	0.0006	0.7430	.	.
KRSTL	0.0005	0.8880	.	.
KLMSN	0.0014	0.5956	.	.
KIPA	0.0030	0.8180	0.0006	0.6159
KERVT	0.0035	0.8301	.	.
KERVT4	0.0000	0.9841	.	.
KERVT3	0.0003	0.8574	.	.
KERVT2	0.0025	0.8178	.	.
KARTN	-0.0002	0.7323	.	.
IZOCM	0.002913	0.7568	0.0000	0.4633
IZMDC	0.0009	0.8892	.	.
FRIGO	0.0006	0.8393	.	.
FFKRL	0.0013	0.6830	.	.
EGEPRO	0.0023	0.9978	0.0027	0.6992
EPLAS	0.0002	0.9776	.	.
EGGUB	0.0006	0.9937	0.0005	0.8949

Table 20: cont.

Target Company	α	β	C.T α	C.T β
AEFES	0.0006	0.8554	.	.
DOAS	0.0002	0.1236	.	.
DYHOL	-0.0011	1.1022	.	.
DGZTE	0.0000	1.0902	.	.
DEVA	0.0010	0.7571	.	.
DEVA2	0.0027	0.7533	.	.
DENIZ	0.0038	0.9868	-0.0006	0.5922
CMENT	0.0021	0.9285	.	.
CEYLN	-0.0007	0.9560	0.00334	0.8625
BOSSA	0.0012	0.5950	.	.
BOSSA2	-0.0004	0.8269	0.0030	0.4498
BOLUC	-0.0001	1.0076	0.0028	0.9187
BTCIM	0.0011	0.8255	-0.0016	0.5394
BTCIM2	0.0016	0.7626	.	.
BAGFS	0.0002	0.8695	.	.
AGYO	-0.0003	0.8456	.	.
ARENA	0.0010	0.9517	.	.
ANELT	0.0000	0.7587	.	.
ANACM	0.0024	0.9139	.	.
ALNTF	-0.0007	0.9913	0.0009	1.1017
AKBNK	0.0002	1.1705	.	.
AKBNK2	0.0000	1.1856	.	.
AKALT	0.0003	0.8086	.	.
AKGRT	0.0005	1.0019	.	.
AFMAS	0.0012	0.7700	.	.
ACIBD	0.0001	0.5339	.	.

Table 21: Summary Table

Number of Transactions-Full Sample Period	79
Number of Transactions-After 2004	63
Number of Non-parent Company Transactions	71
Number of Parent Company Transactions	8
Average % of Shares Acquired-Full Sample Period	37
Average % of Shares Acquired-After 2004	37
Number of Transactions 0%-19%-After 2004	21
Number of Transactions 20%-49%-After 2004	18
Number of Transactions 50%-100%-After 2004	24
Number of Foreign Acquisitions-After 2004	37
Number of Dometic Acquisitions-After 2004	26
Number of Stocks Less Than 1% of volume-After 2004	39
Number of Stocks More Than 1% of volume-After 2004	23
Number of Transactions in Banking Sector	11
Number of Transactions in IT Sector	2
Number of Transactions in REIT Sector	2
Number of Transactions in Holding Sector	2
Number of Transactions in Service Sector	7
Number of Transactions in CPP Sector	10
Number of Transactions in WPP Sector	3
Number of Transactions in Food Sector	7
Number of Transactions in Mineral Products Sector	3
Number of Transactions in Textile Sector	4
Number of Transactions in MPM Sector	4
Number of Transactions in Trade Sector	2