

THE EFFECTS OF ACQUISITIONS ON FIRM VALUE, EVIDENCE FROM TURKEY⁽¹⁾

SATIN ALMALARIN ŞİRKET DEĞERİ ÜSTÜNDEKİ ETKİSİ, TÜRKİYE ÖRNEĞİ

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ABSTRACT: Acquisitions are assumed to create value for both the target and the acquiring firm. This paper analyzes the sources of value creation in acquisitions and examines the domestic acquisitions that took place in Turkey in 2013. By taking the overall market considerations into account, I measure the degree of value creation over different periods of time. I use the standard market value technique to calculate abnormal returns in stock prices of the acquiring firms and find that the increase in firm value is statistically significant in the long run but not in the short run.

Keywords: Acquisitions; Financial Markets; Event Studies

JEL Classifications: C12; G00; G14; G34

ÖZET: Şirket satın almalarının hem satın alan hem de satılan firmanın piyasa değerini arttırdığı varsayılır. Bu makalede, Türkiye'de 2013 yılında gerçekleşen yerli satın almalar, piyasaların genel trendini de göz önünde bulundurarak incelenmiştir. Standart Piyasa değeri tekniğini kullanarak, satın alan firmanın hisse senedi fiyatlarındaki anormal getiriler hesaplanmıştır. Satın alınan şirketin açıklandığı tarih öncesi ve sonrasının karşılaştırılması sonucunda, firma değerindeki artışın uzun vadede istatistiksel olarak anlamlı olduğu, fakat kısa vadede anlamlı olmadığı bulunmuştur.

Anahtar Kelimeler: Şirket Satın Almaları; Finansal Piyasalar; Olay Çalışmaları

1. Introduction

According to Ernst & Young's M&A Report, Turkey is the leading M&A market in number and in transaction size in 2012, in the Central and Southern Europe. Turkey experienced 297 merger and acquisitions, totaling a transaction volume of 18 billion. In such a market with a vast growth potential, it is crucial to understand the dynamics behind the value creation in mergers and acquisitions.

Acquisitions are theoretically supposed to create value for both the acquirer and the target firm. Even though empirical studies support value creation for the target firm, the literature lacks empirical evidence of value creation for the acquirer.² In this paper, I argue that the time frame of the measurement may play an important role in determining the value creation. The literature assumes that the synergy, hence value creation, shows up right after the acquisition. But, as I demonstrate through the paper, it may take up to a few years to observe the full benefit of an acquisition.

¹ This research has been done when the author was an assistant professor at Washington and Lee University.

² Bradley, Desai and Kim (1998) show that the value creation in contested acquisitions is - %1.33 for the acquirer.

In this paper, I use the market model to estimate the value creation in the acquirer firm over different time frames. I consider 2 days, 5 days and 1-year stock market data. I find that the increase in firm value is statistically significant in the long run but not in the short run.

The rest of the paper is organized as follows: The next section examines previous research about the effect of acquisitions on the market value of the acquiring firms and about the measurement techniques used in the assessment of market value. Section 3 briefly explains the sources of firm value creation in acquisitions. Section 4 elaborates the methodology. Section 5 presents the data and the results. The last section concludes and explores further research opportunities.

2. Literature

The literature on the mergers and acquisitions has developed in two branches. Analysis of international mergers focuses on the firm profitability in multi-market settings where as the analysis of national mergers focuses on the comparison with international mergers in terms of value creation, competition and the measurement of degree of value creation. Horn and Persson (2001) compare international and domestic mergers. They find that the main advantage of national mergers for the firms is that by decreasing competition, they increase firm profitability. Analyzing international costs of transactions, they conclude that domestic mergers are more profitable in environments with higher trade costs. In the other branch of the literature, In a theoretical setting, Bjorvatn (2003) show that economic integration may facilitate international mergers. Since economic integration increases competitive pressure in the domestic market, mergers may become more profitable.

The choice of the type of acquisitions critically depends on the assessment of the degree of value creation in international and domestic acquisitions. Therefore, it is crucial to determine the sources of value creation as well as to have a reliable assessment method to compute the values created. In this context; Deepak, Pinches and Narayanan (1992) analyze different methods of financing in mergers and acquisitions. They prove that stock financing is more beneficial in terms of value creation for both the acquirer and the target firm. They also consider the effect of the structure of the bidding firm and conclude that conglomerate acquisitions decrease the value of the acquiring firm. On the other hand, Seth (1990) looks at the sources of the value creation in terms of the relationship between the target and the acquiring firm. He finds that related acquisitions do not always have higher success in creating value, compared to unrelated acquisitions. In order to explain this surprising result, he argues that risk diversification may play an important role in value creation and firms, by acquiring unrelated firms, decreases their market risks, therefore may increase their market value. In another paper, Chatterjee (1986) classifies the factors that may affect the market value of the firms after acquisitions into three groups: financial synergy, operational synergy and collusive synergy. He finds that the advantages gained through decreased competition after the acquisition (i.e., collusive synergy) have the highest effect on the market value. The lowest effect is through the cost advantages of the acquisitions (i.e., operational synergy).

Once the possible factors affecting the market value after acquisitions are determined, the second crucial step is to find a method to empirically measure the change in the market value. MacKinlay (1997) summarizes event study methods and

gives an example from stock market where he calculates, at first, the normal performance and then abnormal returns and compares them to determine whether the event is statistically significant. In this paper, I follow his method to find out whether the event "acquisition" has statistically significant effect on the market value of the firm.

Besides their microeconomic effects such as the impact on the firm value and industry, the welfare effects of both domestic and international acquisitions and their policy implications are widely analyzed in the literature too. Horn and Levinsson (2001) discuss the role of international agreements on the choice of merger and acquisition type.

The literature on merger and acquisition activities in Turkey is limited compared to the international literature. Akben-Selcuk and Altioek-Yilmaz (2011) analyze the effect of mergers and acquisitions from both an economic and accounting perspective. They find that the acquirer firms are negatively affected by M&As. In another paper, Hekimoglu and Tanyeri (2011) compare the abnormal returns after acquisitions in Turkey with the ones in EU and US. They find that the abnormal returns in Turkey are positive but small compared to the returns in EU and US.

3. Sources of Value Creation in Acquisitions

Value-maximizing hypothesis of acquisitions states that acquisitions occur to maximize the combined market value of the firms. Therefore, acquisitions increase both the acquiring and the target firm's market value. Value creation is realized as a result of a process called "synergy", which provides a new and efficient allocation of firms' scarce resources after the acquisition. The synergy may happen at any stage of the market activity. These stages can be classified into 5 broad categories: Market power, economies of scale, economies of scope, coinsurance, and financial diversification.³ By taking Seth (1997)'s classification into account, I group the sources of value creation in acquisitions in 5 categories:

3.1. Market Power

Firms, by undertaking horizontal acquisitions, may decrease the competition in the market. Therefore, the price level and the profits increase, which positively affects the value of the acquiring firm.⁴ For instance, Denizbank's acquisition of Citi Turkey Retail Banking Division is expected to increase Denizbank's market power, thus its market value. Also, after the acquisition, the rivals may mutually decrease competition by entry deterrence. Since the acquiring firm is stronger after the acquisition, its market power increases, which influences the decision of its rivals.

3.2. Economies of Scale

In cases of acquisitions where the firms use similar raw materials, the cost of raw materials may decrease, which in turn increases profitability, hence market value. The firms may also undertake lower-cost inventory management techniques after the acquisition. In order to enjoy the synergy created by economies of scale, the firms must be related, either operating in the same market (horizontal merger and

³ Seth, Anju, "Value creation in acquisitions: A reexamination of performance issues.", *Strategic Management Journal*, 11.2, 1990, p102.

⁴ This issue is strictly monitored by Turkish Competition Authority.

acquisitions) or sharing similar factors of production. As an example of the synergy created by economies of scale, we can give Urfar Pharmaceuticals' acquisition of Bilim Pharmaceuticals.

3.3. Economies of Scope

If a firm acquires a related firm (not operating in the same market), they may experience economies of scope.⁵ The best example for this type of synergy is created in vertical acquisitions where the final product of one firm is the raw material of the other. The combined market value of the firms will increase after the acquisition due to both increased sales and reduced production costs. Yıldız Holding's acquisition of Adapazarı Sugar factory is expected to decrease Yıldız Holding's production cost, which may cause an increase in Yıldız Holding's firm value.

3.4. Diversification of Risk

The firm undertaking the acquisition activity may benefit from decreased risk of bankruptcy, if he is not sharing the same risk environment with the target firm. For instance, in 2013, Torunlar Food acquired Başkent Natural Gas Distribution. By diversifying the risk associated with his main industry of operation, Torunlar Food decreased his risk of bankruptcy. After the acquisition, the acquiring firm may enjoy higher levels of debt capacity in case of bankruptcy, which further increases its market value.

Despite the empirical evidence for the synergy created through risk diversification, finance theory has shown that in perfectly competitive financial markets, diversification only decreases the total risk, not the systematic risk. Since asset pricing is affected only by systemic risk, firm values should not react to acquisitions. Levy and Sarnat (1970) propose that market imperfections such as indivisibility of assets and existence of frictional costs (transaction costs, cost of information and monitoring, etc.) create room for further diversification and decrease the systemic risk, which in turn increases the market value if the acquiring firm.

3.5. Characteristics of The Market for Corporate Control

The environment the firms are operating influence their decision making process. For instance, the foundation of the Competition Authority (Rekabet Kurumu) in Turkey has increased the regulatory pressure upon mergers and acquisitions. Even though further research is needed to prove the effect on firm values, by comparing with the 1968 Williams Amendment in the USA, we may expect firm values to be negatively affected by stricter regulations.

The number of bidders in an acquisition is also an important factor in determining the effect on the acquiring firm. As the number of bidders increases, the acquisition price rises, which is expected to affect the value of the acquiring firm negatively.

The acquiring firm may finance the acquisition either through cash payment or stock issuance. Myers and Majluf (1984) argue that cash financing is better for both the acquiring and the target firm. He posits that issuance of stock provides negative signals to the market, whereby decreases the firm value.

⁵ Williamson (1981) claims that even unrelated firms can benefit from acquisitions through economies of scope due to firms sharing of monitoring and administrative costs.

4. Methodology

In order to measure the effect of the acquisition on the acquiring firm value, I use the event study approach by MacKinlay (1997). The abnormal return on a stock is defined as the return after the acquisition. For firm i and acquisition date t , the abnormal return is:

$$AR_{it} = R_{it} - E(R_{it} | X_t)$$

where R_{it} and $E(R_{it} | X_t)$ are actual and normal returns respectively. I assume that normal returns are linearly related to market returns, X_t .

Actual return is the return of the stock after the acquisition and normal return is defined as the expected return of the stock if there was no acquisition. Therefore, their difference provides a good estimate for the effect of the acquisition on the firm value.

The estimation window is set to be T days prior to the acquisition. The event window is the interval $[\tau_1, \tau_2]$. Denote that $-\tau_1$ days before the announcement is included in the event window to capture the effect of a possible information leakage.

Figure 1 illustrates the timing of the estimation process. Expected returns are calculated based on the $T + \tau_1$ observations prior to the announcement of acquisition. The announcement date is denoted by 0.

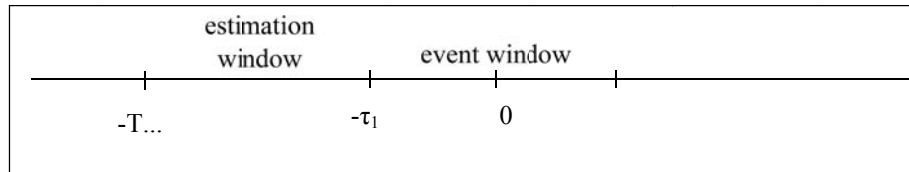


Figure 1. Timeline of the Acquisitions

4.1. Estimation of The Normal Returns

The market model of security pricing posits that the return of a security is linearly related to the return of the market. Different from the existing literature, instead of using an overall market index, I use industry indices specific to the main area of operation of the acquiring firm. By this way, I have a better estimate for the expected returns.⁶

The return of stock i at time t is:

$$\begin{aligned} R_{it} &= \alpha_i + \beta_i R_{mt} + \epsilon_{it} \\ E(\epsilon_{it}) &= 0 \quad \text{var}(\epsilon_{it}) = \sigma_{\epsilon_i}^2 \end{aligned} \quad (1)$$

Where R_{it} and R_{mt} are return of stock i and the return in the industry of operation, respectively. $\alpha_i, \beta_i, \sigma_{\epsilon_i}^2$ are the parameters of the model. Using industry indices instead of an overall market index, ensures that the part of the return associated with the fluctuations in industry is eliminated. Therefore, I will have a lower varianced estimate for abnormal returns. The normal return is then,

⁶ See Section 5 for further details.

$$E(R_{it} | X_t) = \hat{\alpha}_i + \hat{\beta}_i R_{mt}$$

where $\hat{\alpha}_i$ and $\hat{\beta}_i$ are OLS estimates of parameters α_i and β_i .

4.2. Estimation of The Abnormal Return

Now, we are ready to calculate abnormal returns of stock i at time t :

$$AR_{it} = R_{it} - E(R_{it} | X_t)$$

Denote that the abnormal returns are actually the error terms in equation (1).

Abnormal returns are normally distributed with mean 0 and variance $\sigma_{AR_{it}}^2$ where

$$\sigma_{AR_{it}}^2 = \sigma_{\epsilon_i}^2 + \left(\frac{1}{\tau_1 + \tau_2} \right) \left(1 + \frac{R_{mt} - \hat{\mu}_m}{\hat{\sigma}_m^2} \right)$$

With $\hat{\sigma}_m^2$ as the estimate of the variance in equation (1) and $\hat{\mu}_m$ as the mean return of the industry during the event period.

In order to have a better estimate for the effect of the acquisition, I find the cumulative abnormal return over the event period, which is the sum of individual abnormal returns. The cumulative abnormal return of stock i is:

$$CAR_i = \sum_{t=\tau_1}^{\tau_2} AR_{it}$$

Under the null hypothesis H_0 that the acquisition has no effect on the value of the firm, the distribution of the abnormal returns is given by;

$$AR_{it} \sim N(0, \sigma_{AR_{it}}^2)$$

Using individual variances of the abnormal return, the variance of the cumulative abnormal return is;

$$var(CAR_i) = \sigma^2 = \sum_{t=\tau_1}^{\tau_2} \sigma_{AR_{it}}^2 + 2 \sum_{\tau_1 \leq t < t' \leq \tau_2} cov(AR_{it}, AR_{it'}) \quad (2)$$

Therefore, the cumulative abnormal return of stock i is distributed normally;

$$CAR_i \sim N(0, \sigma^2)$$

Now, we are ready to provide a t-statistic with $n-1$ degrees of freedom to test our null hypothesis, H_0 .

$$t_{(n-1)} = \frac{CAR_i}{\sqrt{n}\sigma_i}$$

Denote that the sample size n is simply equal to $-\tau_1 + \tau_2$.

5. Data and Results

Data on M&A activities from Borsa Istanbul Daily Bulletins is used to identify 336 acquisitions that took place in Turkey in 2013. Out of 336, the ones with domestic acquirers whose shares are traded on Borsa Istanbul and who are involved only in 1 M&A activity are considered. Table (1) summarizes the resulting 22 acquisitions.

Table 1. Domestic Acquisitions in Turkey, 2013

ACQUIRER CODE	ACQUIRER	TARGET
DOHOL	Doğan Şirketler Grubu Holding A.Ş.	Doğan TV Holding
KRSAN	Karsusan Karadeniz Su Ürünleri Sanayii A.Ş.	Etiler İnci Büfe
SNGYO	Sinpaş Gayrimenkul Yatırım Ortaklığı A.Ş.	Paşalimanı Un Fabrikası
ULAS	Ulaşlar Turizm Yatırımları ve Dayanıklı Tüketim Malları Ticaret Pazarlama A.Ş.	Polat Alara Hotel
EGCYH	Egeli-Co Girişim Sermayesi Yatırım Ortaklığı A.Ş.	Enda Enerji
KILER	Kiler Gayrimenkul Yatırım Ortaklığı A.Ş.	Aras EDAS
AKSEN	Aksa Enerji Üretim A.Ş.	Gesa Güç Sistemleri
DENIZ	Denizbank A.Ş.	Citi Türkiye-Bireysel Bankacılık Bölümü
SAHOL	Hacı Ömer Sabancı Holding A.Ş.	CarrefourSA
ANELE	Anel Elektrik Proje Taahhüt ve Ticaret A.Ş.	Anel Mekanik
RHEAG	Rhea Girişim Sermayesi Yatırım Ortaklığı A.Ş.	Netsafe Bilgi Teknolojileri Güvenliği
EGCYO	Egeli-Co Tarım Girişim Sermayesi Yatırım Ortaklığı A.Ş.	Doğa Tarım ve Hayvancılık
DYOBY	Dyo Boya Fabrikaları Sanayii ve Ticaret A.Ş.	Casati Türkiye
ARENA	Arena Bilgisayar	ADEO Bilişim
ODAS	Odaş Elektrik Üretim Sanayi Ticaret A.Ş.	Can Kömür
BIMAS	BİM Birleşik Mağazalar A.Ş.	Ziylan Mağazacılık, Polaris Pazarlama, Uğur İç ve Dış Ticaret
KOMHL	Kombassan Holding A.Ş.	Double Tree by Hilton Ankara
NETAS	Netaş Telekomünikasyon A.Ş.	Kron Telekomünikasyon
AKFEN	Akfen Holding	Adana İpekyolu Enerji Üretim
KCHOL	Koç Holding A.Ş.	Enerji Yatırımları A.Ş.
PEGYO	Pera Gayrimenkul Yatırım Ortaklığı A.Ş.	Beken Otomotiv (Auto King)
TATGD	Tat Gıda Sanayi A.Ş.	Tedi İçecek

The estimation window is set to be 190 days⁷ before the acquisition date, omitting the last 4 days to exclude the effect of information leakage. The total number of observations for each firm in the event window is therefore 380 (1 for each trading session).

Using session returns in the estimation window, I calculate the parameters of the market model. The results are summarized in Table (2). Session Returns are regressed against the relevant industry returns.⁸ As expected, session returns are positively related to industry returns.

⁷ The estimation window is smaller for KRSAN, ULAS, ODAS, TATGD since the shares of these firms were not traded during some portion of the 190-day estimation window.

⁸ Returns on industry indices.

Table 2. Estimation Window Regression Results

	$\hat{\alpha}$	$\hat{\beta}$	$\hat{\sigma}^2$	CAR(10)	Event Window (n)	Mean Return (market)	Variance (market)
DOHOL	-0.011	0.931	3.301	6.559	20	0.604	5.469
KRSAN	-0.716	0.359	51.532	6.796	20	0.308	0.382
SNGYO	-0.071	1.097	1.135	3.367	20	0.308	0.382
ULAS	-0.152	1.025	15.106	-1.248	20	-0.139	0.394
EGCYH	-0.059	0.473	1.882	1.257	20	0.002	0.579
KILER	-0.101	0.618	0.576	-0.974	20	0.002	0.579
AKSEN	0.057	0.383	0.723	1.691	20	0.042	0.413
DENIZ	-0.051	0.519	2.629	1.438	20	0.078	1.101
SAHOL	0.025	0.642	1.218	0.499	20	0.078	1.101
ANELE	-0.107	0.439	0.900	1.529	20	-0.209	4.417
RHEAG	-0.182	0.505	1.759	-0.053	20	-0.209	4.417
EGCYO	-0.07	0.501	2.836	0.228	20	0.307	3.267
DYOBY	0.02	0.614	2.318	19.907	19	-0.190	18.913
ARENA	-0.02	0.42	1.291	0.864	20	0.884	7.196
ODAS	-0.103	0.461	3.584	6.064	20	0.884	7.196
BIMAS	-0.133	0.632	7.707	14.020	20	-0.020	1.108
KOMHL	-0.242	0.481	10.265	2.302	20	-0.020	1.108
NETAS	-0.076	0.812	1.824	-1.554	20	-0.020	1.108
AKFEN	-0.162	0.749	7.427	9.430	20	-0.257	1.845
KCHOL	0.018	0.979	0.962	2.013	20	-0.257	1.845
PEGYO	-0.027	0.712	3.039	-5.935	20	-0.257	1.845
TATGD	0.158	0.596	1.486	-2.684	20	-0.236	2.473

At first, the event period considered is 10 days and 5 days, and then, it is set to include all data available after the date of acquisition. By setting different event windows, I try to explain the effect of the time frame after the acquisition, on the firm value. It may take up to 2 years to fully see the synergy created by the M&A. Therefore, using a short time frame may not give accurate information about the effect of the acquisition.

The cumulative abnormal returns for the 10-day event period are given in Table (2). These returns include the abnormal returns for 10 days around the date of acquisition.⁹ Using CAR values and calculating its variance via equation (2), I conduct a one-tail t test to check null hypothesis that the abnormal returns are zero. For the 10-day and 5 day event windows, the null hypothesis cannot be rejected. The results are summarized in Table (3) and Table (4).

⁹ 4 days before the event, event date and 5 days after the event, totaling 10 days.

Table 3. 10-Day Event Window t-Test Results

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DOHOL	0.622	19	0.541	0.32793	-0.7748	1.4307
KRSAN	0.930	19	0.364	0.33980	-0.4247	1.1043
SNGYO	0.825	19	0.419	0.16836	-0.2586	0.5954
ULAS	-0.576	19	0.571	-0.13368	-0.6193	0.3520
EGCYH	0.276	19	0.785	0.06283	-0.4131	0.5388
KILER	-0.428	19	0.674	-0.04871	-0.2870	0.1896
AKSEN	0.518	19	0.610	0.08455	-0.2569	0.4260
DENIZ	0.147	19	0.885	0.09062	-1.2036	1.3849
SAHOL	0.213	19	0.833	0.04811	-0.4240	0.5202
ANELE	0.169	19	0.868	0.04869	-0.5560	0.6534
RHEAG	-0.134	19	0.895	-0.03457	-0.5741	0.5049
EGCYO	0.080	19	0.937	0.02160	-0.5468	0.5900
DYOBY	1.364	19	0.189	1.34660	-0.7197	3.4129
ARENA	0.600	19	0.556	0.09782	-0.2434	0.4390
ODAS	0.791	19	0.439	0.36314	-0.5977	1.3240
BIMAS	2.029	19	0.057	0.70100	-0.0222	1.4242
KOMHL	0.479	19	0.637	0.11511	-0.3879	0.6182
NETAS	-0.431	19	0.671	-0.07768	-0.4549	0.2995
AKFEN	1.700	19	0.105	0.47151	-0.1088	1.0519
KCHOL	0.550	19	0.589	0.10064	-0.2825	0.4838
PEGYO	-0.804	19	0.431	-0.29675	-1.0694	0.4759
TATGD	-0.557	19	0.584	-0.12151	-0.5779	0.3349

Table 4. 5-Day Event Window t-Test Results

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DOHOL	0.750	9	0.472	0.74260	-1.4972	2.9824
KRSAN	0.619	9	0.551	0.13649	-0.3624	0.6354
SNGYO	0.183	9	0.859	0.04501	-0.5122	0.6022
ULAS	-0.291	9	0.778	-0.09282	-0.8150	0.6294
EGCYH	0.887	9	0.398	0.21208	-0.3291	0.7532
KILER	0.206	9	0.841	0.02180	-0.2176	0.2612
AKSEN	-1.802	9	0.105	-0.14893	-0.3359	0.0380
DENIZ	0.114	9	0.912	0.14074	-2.6643	2.9458
SAHOL	1.026	9	0.332	0.34299	-0.4135	1.0995
ANELE	0.281	9	0.785	0.10193	-0.7199	0.9238
RHEAG	-0.274	9	0.790	-0.08422	-0.7789	0.6105
EGCYO	0.945	9	0.370	0.35853	-0.5001	1.2172
DYOBY	-0.040	9	0.969	-0.01336	-0.7596	0.7329
ARENA	0.126	9	0.903	0.02688	-0.4573	0.5111
ODAS	-0.540	9	0.602	-0.18370	-0.9533	0.5859
BIMAS	1.353	9	0.209	0.80554	-0.5409	2.1519

Table 4. Continues

KOMHL	0.308	9	0.765	0.09000	-0.5705	0.7505
NETAS	0.039	9	0.970	0.01205	-0.6828	0.7069
AKFEN	-0.653	9	0.530	-0.17119	-0.7640	0.4216
KCHOL	1.053	9	0.320	0.25669	-0.2947	0.8081
PEGYO	-1.385	9	0.200	-0.67227	-1.7706	0.4260
TATGD	-0.697	9	0.503	-0.17832	-0.7568	0.4002

According to the long run event window results in Table (5), 9 out of 22 acquisitions have created value for the acquirer firm in the long run.¹⁰ There is no significant pattern in the type of these acquisitions. Both vertical and horizontal acquisitions have resulted an increase in firm value. This result is controversial to Akben-Selcuk and Altioğ-Yılmaz (2011). The difference in the expected returns due to the use of industry indices instead of the market index as well as the difference in the event windows may be the reason for the results to differ from theirs.

Table 5. Long-run t-Test Results

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
DOHOL	-0.252	1052	0.801	-0.01276	-0.1120	0.0865
KRSAN*	10.628	1052	0.000	0.73608	0.6002	0.8720
SNGYO	0.613	1052	0.540	0.02473	-0.0545	0.1039
ULAS	1.416	1008	0.157	0.08442	-0.0326	0.2014
EGCYH	0.706	968	0.480	0.04121	-0.0733	0.1557
KILER	1.255	968	0.210	0.06778	-0.0382	0.1738
AKSEN	-1.843	922	0.066	-0.08919	-0.1842	0.0058
DENIZ	0.370	922	0.711	0.01570	-0.0675	0.0989
SAHOL	-0.829	922	0.407	-0.02687	-0.0905	0.0367
ANELE*	2.043	840	0.041	0.09870	0.0039	0.1935
RHEAG*	2.335	840	0.020	0.17570	0.0280	0.3234
EGCYO*	2.850	796	0.004	0.19391	0.0604	0.3275
DYOBY	1.082	759	0.280	0.05978	-0.0487	0.1683
ARENA	1.889	715	0.059	0.10505	-0.0041	0.2142
ODAS*	3.535	715	0.000	0.24137	0.1073	0.3754
BIMAS*	3.774	641	0.000	0.15006	0.0720	0.2281
KOMHL*	3.394	641	0.001	0.20256	0.0854	0.3197
NETAS*	1.971	641	0.049	0.12424	0.0004	0.2480
AKFEN*	3.959	597	0.000	0.18399	0.0927	0.2753
KCHOL	0.001	597	0.999	0.00002	-0.0684	0.0685
PEGYO	0.111	597	0.912	0.00979	-0.1632	0.1828
TATGD	-2.166	597	0.031	-0.10047	-0.1916	0.0094

The long run event window estimation results are consistent with the theoretical view that it takes time to observe the synergy created in acquisitions. But, empirical research conflicts with these findings. Malmendier, Moretti and Peters (2012) show

¹⁰ The increase in value of KRSAN, ANELE, RHEAG, EGCYO, ODAS, BIMAS, KOMHL, NETAS, AKFEN shares is statistically significant.

that the in a 3-year period after the acquisition, the winning bidder firm underperforms compared to other bidders. The answer to this contradictory result comes from Rau and Vermaelen (1998). They demonstrate that the market and the management over-extrapolate the bidder firms' past performance. Therefore, if the bidder's pre-acquisition price-to-book ratio is high (i.e, the firm is a glamour firm), the market overestimates the value of the acquisition, which may cause higher abnormal returns in the short run compared to the abnormal returns of value firms¹¹. But in the long run, when the market corrects its belief, the value firms will have higher (positive) abnormal returns than the glamour firms.

In order to check this proposition, I compare the average P/B ratio of the 9 firms whose abnormal returns are significantly greater than 0, with the P/B ratio of the remaining firms. The t-test results are shown on Table (6). The results support Malmendier, Moretti and Peters (2012). The firms with positive abnormal returns have lower P/B ratios. In other words, value firms have higher abnormal returns compared to others.

Table 6. Equality of P/B ratios, t-Test Results.

t	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	%80 Confidence Interval of the Diff.	
					Lower	Upper
-1.473	18.752	0.157	-0.29857	0.20273	-0.56787	-0.02927

6. Conclusions

This paper opposes the paradox that the acquirer firm loses value after the acquisition by extending the measurement period to cover the lag in synergy creation. Synergy created through economies of scale and economies of scope may take substantial amount of time. Therefore, in measuring the value creation, it is beneficial to consider longer time frames. I use the market model along with stock data from Borsa Istanbul to estimate the value creation in acquisitions in Turkey, in 2013.

The estimation results indicate no statistically significant value creation in the short run, but in the long run, 9 out of 22 acquisitions increased the value of the acquirer firm. In order to explain the difference in the long run results, I test the proposition that the market and the management over-extrapolate the bidder firms' past performance. In order to check this proposition, I compare the average P/B ratio of the 9 firms whose abnormal returns are significantly greater than 0, with the P/B ratio of the remaining firms. The results support Malmendier, Moretti and Peters (2012). The firms with positive abnormal returns have lower P/B ratios. In other words, value firms have higher abnormal returns compared to others.

The key limitation of this study along with all market model studies, is the complexity of the external factors affecting firm value. Even though this paper excludes effects of additional mergers and acquisitions, it is not possible to track down all other external factors and isolate the effect of the acquisitions. In this perspective, a sector analysis may be performed in future research to isolate the sectorial effects.

¹¹ Firms whose P/B ratio is low.

Also, in this paper, acquisitions are not differentiated in terms of payment method. Grouping the acquisitions in terms of payment method may be useful in tracking down the effect of cash and stock financing on the value creations in acquisitions.

7. References

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