E C O N O M I C S B U L L E T I N

The Impact of Cross-Border Mon Target Company Performance: Evidence from Turkey

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Abstract

This study investigates the changes in the performance of Turkish companies which were the target of acquisitions by foreign companies. Pre-acquisition and post-acquisition accounting ratios are compared by parametric t-tests. The results show an insignificant decline in the ratios. We conclude that the cross-border Mexamined in this study did not create synergy or improved the performance of target companies involved.

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1. Introduction

In recent years, mergers and acquisitions (M&As) have received a great deal of attention in Turkey. After long years where total deal value was less than a billion US dollars, M&A activity boomed in the beginning of 2005 and has entered a steady path. According to the "Annual Turkish M&A Review 2007" by *Deloitte Turkey*, the M&A volume for the 2003-2007 period reached a level of USD 75 billions, USD 71 billions of which occurred in the 2005-2007 period. Foreign investors' interest also keeps growing each year. M&A deals involving foreign companies constituted more than 70% of the volume for the 2005-2007 period.

Central to the recovery and to the growing interest of cross-border investors is, of course, the new found macro-economic stability. Historically, Turkey had been perceived as a high risk territory by many foreign investors. Due to high inflation and high interest rates, it was able to attract only short term investments from companies looking to expand into emerging markets. However, the trends have changed significantly: Possible EU membership, low inflation and the recent wave of privatizations have been key drivers in bringing foreign investment into Turkey which has in turn fuelled more M&A transactions.

Despite this increasing trend, the academic literature on Turkish M&As is limited, especially compared to the large amount of US studies. This paper aims to extend this literature. Specifically, we investigate the changes in the performance of Turkish companies subsequent to the completion of cross-border M&A transactions in which the acquirer is a foreign company and the target is a Turkish company. The research question is appealing not only because literature on Turkish M&As is limited, but also because even UK and US studies yielded inconsistent results. Since previous studies focus on UK and USA acquisitions, this study also serves as a differentiated replication which tests the generalizability of previous findings to Turkey. Given the relatively smaller and emerging Turkish market, the results could be different.

The rest of the paper is organized as follows. Section 2 provides an overview of the prior studies on the performance of M&A-involved firms. Section 3 describes our sample selection procedure and methodology used to measure changes in corporate performance. The characteristics of our sample are also presented in section 3. Section 4 presents the main results of our analysis regarding changes in the operating performance of the M&A-involved companies. Section 5 summarizes the results and concludes.

2. Literature Review

There are two main strands in the existing mergers and acquisitions literature: the stock market-based approach and the accounting-based approach.

Stock market studies employ the event study approach of Fama *et al.* (1969) to predict the financial gains and losses resulting from M&As. It is assumed that the stock market is efficient and hence abnormal security returns represent the economic impact of the M&A event (Dickerson *et al.*, 1997). Market based studies that have focused on security returns in US and UK clearly found that target firms receive positive and statistically significant wealth gains. However, evidence about the returns to acquirers at the time of the M&A event is inconclusive (Sudarsanam and Mahate, 2003).

A major problem with the event study approach is that changes in market valuations around the time of M&A activities could reflect not only real economic gains, but also other factors resulting from market inefficiency (Shiller, 1989). Also, the reliability of event studies are questioned on the grounds that it is the longer term results that matter (Copeland, 2005).

In this context, the use of accounting data is a better path to test changes in operating performance of M&A-involved companies.

Studies based on analysis of accounting data have attempted to assess the economic impact of M&As by testing for changes in the profitability of the involved companies. In this strand of literature, pre-M&A profitability measures are compared to post-M&A profitability measures by parametric tests. Some studies use pre-tax cash flows while some others use net income as measure company profitability. To adjust for size, these measures are divided by assets, sales, equity etc. An adjustment for the industry trend is also made.

Previous accounting-based studies yielded inconsistent results about changes in operating performance following M&As. Some studies report gains (Cornett and Tehranian, 1992; Healy *et al.*, 1992; and Ramaswamy and Salatka, 1996), some report losses (Hogarty, 1978; Neely and Rochester, 1987; and Yeh and Hoshino, 2001) and others show mixed or insignificant results (Herman and Lowenstein, 1988; Lev and Mandelker, 1972; Mueller, 1980; Ravencraft and Scherer, 1989; and Sharma and Ho).

The accounting-based approach also has problems: Companies can use creative accounting techniques which may imply that their published accounts may not accurately reflect the companies' financial position. (Dickerson *et al.*, 1997). However, we still consider the accounting-based approach to be a better method for the objectives of this study. This is especially true if we take into account the fact that the Turkish stock market is not developed enough to satisfy the assumption of market efficiency required by the event study methodology.

3. Data and Methodology

3.1. Data

The company news on the Istanbul Stock Exchange's (ISE) website were screened to identify the sample of cross border M&A deals to be used in this study. The period from 2003 to 2006 was selected to focus on recent acquisitions and to have enough post-M&A performance data available for the involved companies. The deals involving non-listed companies were excluded since financial statements data would not be available for them.

A total of 41 cross-border M&A deals that took place between 2003 and 2006 were identified. In all of these deals, the Turkish company was the target, while the foreign company was the acquirer. Some statistics about these 41 deals are presented in Table 1.

Examination of Table 1 reveals that the majority of the deals, both in terms of numbers and transaction value, took place in 2006. When we look at the industries where the Turkish target firms are operating, we see that most of the firms are operating in the banking sector. The majority of the acquirers are US companies.

In terms of transaction value, the biggest deal was the sale of a 13,2% stake in Turkcell to a Russian Telecommunications company; Alfa Telecom for USD 3,3 billions. The second was the acquisition of a 20% stake in Akbank by Citibank of USA for USD 3,1 billions. The third biggest deal in terms of transaction value was the sale of a 46% stake in Finansbank to National Bank of Greece for USD 2,8 billions.

3.2. Final Sample

Since some of the companies were involved in more than one deal, there were a total of 33 companies whose performances were to be analyzed. Multiple M&As by the same company within the same year were treated as a single deal, and included only once in our

sample. Of these 33 companies, three did not have enough pre-M&A data and were excluded from our sample. Thus, our final sample consisted of 30 companies.

3.3. Hypotheses

The objective of this study is to investigate whether there are any changes in the corporate performance of Turkish companies which were the target of cross-border acquisitions. Therefore, we formulate the following two-sided null and alternative hypotheses.

H_0: There is *no* significant change in the operating performance of the Turkish companies following cross-border acquisitions.

H_a: There is a significant change in the operating performance of the Turkish companies following cross-border acquisitions.

3.4. Performance Measurement

To assess the impact of the acquisition on corporate performance, we use the accounting approach. The following three profitability ratios are employed to assess changes in corporate performance.

ROA: Return on assets defined as Net Income/Total Assets
ROE: Return on equity defined as Net Income/Total Equity
ROS: Return on sales defined as Net Income/Net Sales

Analyzing the "raw" ratios above can give misleading results because some of the changes in company performance may be due to economic or market fluctuations. To isolate the effect of the acquisitions, the literature suggests an adjustment for the industry trend (e.g. Healy et al., 1992). As a proxy for the industry trends, we determine a peer company for each target firm in our sample. The peer company is identified from the pool of ISE-listed companies operating in the same industry. The firm with the median EBIT/ Total assets ratio *at the end of the year prior to the acquisition* is then selected as our industry median peer. The companies being involved in an M&A deal were not included in the calculation of the industry median in order to get a proper control sample which is sufficiently different from the experimental sample.

We compute each company's industry-adjusted ratio as the difference between the firm's "raw" ratio and the corresponding statistics for the median firms in each industry, as follows.

$$AROA_{i,t} = ROA_{i,t} - ROA_{peer,i,t}$$
$$AROE_{i,t} = ROE_{i,t} - ROE_{peer,i,t}$$
$$AROS_{i,t} = ROS_{i,t} - ROS_{peer,i,t}$$

where
$AROA_{i,t}$, $AROE_{i,t}$, $AROS_{i,t}$ are the industry adjusted profitability ratios for company i at the end of year t.
$ROA_{i,t}$, $ROE_{i,t}$, $ROS_{i,t}$ are unadjusted profitability ratios for company i at the end of year t.
$ROA_{peer,i,t}$, $ROE_{peer,i,t}$, $ROS_{peer,i,t}$ are profitability ratios for the peer company at the end of year t.

The industry adjusted ratios are a more reliable measure of performance since they control for industry events unrelated to the acquisition. Computing each performance measure as the difference between the raw ratio and an industry-specific index also increases the construct validity of the measures (Fowler and Schmidt, 1989).

In order to assess the changes in the profitability of the target firms, we employ two following models: the change model and the intercept model.

In the *change model*, the industry adjusted financial ratios (*AROA, AROE, AROS*) for each company of the sample over the year before (year T-1) and after (year T+1) the acquisition are calculated, and the mean for the year T-1 is compared with the mean for the year T+1 by parametric t-tests. The year of the acquisition is omitted from comparisons because it usually includes recognition of a number of atypical events which distort comparisons. The results are presented in the following section.

An assumption underlying the t-tests performed for the change model is that the pre-acquisition performance will continue into the future. While it is not unreasonable, it is unreasonable to assume that the pre-acquisition performance will continue into the post-acquisition period at a constant rate. Therefore, in following Healy et al. (1992), this assumption was relaxed and the effect of the acquisition on post-acquisition performance was investigated through a cross-sectional regression of the post-acquisition performance on the pre-acquisition performance for each of the three performance measures. This is called the intercept model.

In the *intercept model*, we estimate changes in company performance with the intercept from the following three regressions.

$$AROA_{post} = \alpha + \beta.\ AROA_{pre}$$
$$AROE_{post} = \alpha + \beta.\ AROE_{pre}$$
$$AROS_{post} = \alpha + \beta.\ AROS_{pre}$$

where

$AROA_{pre}$, $AROE_{pre}$, $AROS_{pre}$ are industry adjusted pre-acquisition profitability ratios.

$AROA_{post}$, $AROE_{post}$, $AROS_{post}$ are industry adjusted post-acquisition profitability ratios.

The intercept α represents the abnormal control adjusted cash flow returns (changes in performance caused by acquisition). The slope coefficient β captures any correlation in profitability ratios between pre and post acquisition years. The results are presented in the section 4.

4. Results

4.1. Change model

Table 2 reports the mean pre-acquisition and post-acquisition ratios. On the average, post-acquisition financial performance decreased relative to the pre-acquisition period for all three performance measures. However, as can be seen from Table 2, parametric t-tests show that the difference between the pre-acquisition and post-acquisition ratios is not statistically significant. Therefore, accounting data, using the change model, does not provide sufficient evidence to reject our null hypothesis. We conclude that there is no significant difference between the pre-acquisition and post-acquisition performance of Turkish companies which were the target of foreign acquisitions.

4.2. Intercept Model

Table 3 reports regression results related to the intercept model. As can be seen from the table, constants are not significantly different from zero. Therefore we again fail to reject our null hypothesis and conclude that there is no significant difference between the pre-

acquisition and post-acquisition performance of Turkish companies which were involved in cross-border deals.

5. Summary and Conclusions

The results for tests of our null hypothesis did not provide sufficient evidence to reject it. This implies that corporate acquisitions by foreign companies do not lead to improved performance for the sample of Turkish target firms and period examined in this study. The results are uniform across the three accounting ratios which show insignificant declines. The use of change and intercept models did not affect the results. The cross-border M&As examined in this study did not generate synergy or improved the performance of target firms' line of businesses.

Table 4 compares the results of the present study with prior research using the same accounting ratios. Observation of Table 4 reveals that for the ROA measure of performance, the study's finding that acquisitions do not yield improvements in operating performance is consistent with Sharma and Ho (2002), and Ravenscraft and Scherer (1989). A similar finding is observed for the ROE and ROS measures of operating performance that is consistent with Sharma and Ho (2002) and Lev and Mandelker (1972).

There are also inconsistencies with prior studies. Our result about ROA, contradicts the findings of Neely and Rochester (1987), Yeh and Hoshino (2001) who report a significant decrease in ROA following acquisitions and Lev and Mandelker (1972) who report a significant increase in ROA. As for ROE, Yeh and Hoshino (2001) have a finding that contradict the results of the present study: They report significant decline in ROE following M&As.

The results should be considered in light of the following limitations. First, it must be acknowledged that the results of this study have a generalizability problem, since only public companies listed on the ISE were examined. Second, the post acquisition period examined in this study was only one year. This may not seem adequate for gains to materialize following an acquisition, however, extending the post-acquisition period would cause sample size problems for this study. Third, the accounting measures used in this study were based on net income rather than on pure cash flows. Hence, they might be affected by taxation, depreciation methods etc. Future research could extend the literature on Turkish M&As by addressing these limitations.

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Table 1: Sample Description (N=41)

Panel A: Acquirer Country

Country	No. of deals	Percentage
USA	10	24.39
Germany	6	14.63
Austria	4	9.76
Greece	3	7.32
UK	3	7.32
Australia	2	4.88
Belgium	2	4.88
France	2	4.88
Russia	2	4.88
Kuwait	1	2.44
Saudi Arabia	1	2.44
Hong Kong	1	2.44
Finland	1	2.44
Kazakhstan	1	2.44
Italy	1	2.44
Denmark	1	2.44
Total	*41*	*100*

Panel B: Completion Year

Year	No. of deals	Percentage
2006	26	63.41
2005	8	19.51
2004	2	4.88
2003	5	12.20
Total	*41*	*100*

Panel C: Total Deal Value by Year

Year	Total Value (USD mn)	Percentage
2006	12604.42	60.39
2005	8006.2	38.36
2004	3	0.01
2003	258.99	1.24
Total	*20872.61*	*100*

Panel D: Target Sector

Sector	No. of deals	Percentage
Banking	9	21.95
Airport Operations	4	9.76
Food manufacturing	4	9.76
Telecommunications	3	7.32
Holdings	3	7.32
Petroleum and Coal Products Manufacturing	3	7.32
Cement, glass and other nonmetallic products	2	4.88
Food and beverage stores	2	4.88
Transportation	1	2.44
Real Estate Investment Trusts	1	2.44
Petrochemical and other chemicals	1	2.44
Financial Services	1	2.44
Textile Mills	1	2.44
Automotive and Other Transportation Equipment	1	2.44
Iron, Steel and Other Primary Metals	1	2.44
Cable Manufacturing	1	2.44
Paper Manufacturing	1	2.44
Household appliances	1	2.44
Beverage Manufacturing	1	2.44
Total	*41*	*100*

Table 2: T-statistics (two-tail) for financial ratios

		Mean	Difference (post - pre)	t-statistic	p-value
AROA	Pre-acquisition	-0.01	-0.02	0.583	0.565
	Post-acquisition	-0.03			
AROE	Pre-acquisition	-0.01	-0.07	0.686	0.498
	Post-acquisition	-0.08			
AROS	Pre-acquisition	0.12	-0.18	1.146	0.263
	Post-acquisition	-0.06			

Table 3: Regression results related to the intercept model

Dependent variable: *AROApost*

	Coefficient	Std. Error	t	Sig.
(Constant)	-0.025	0.031	-0.803	0.429
AROApre	0.286	0.357	0.802	0.429

Dependent variable: *AROEpost*

	Coefficient	Std. Error	t	Sig.
(Constant)	-0.084	0.091	-0.922	0.364
AROEpre	-0.787	0.492	-1.600	0.121

Dependent variable: *AROSpost*

	Coefficient	Std. Error	t	Sig.
(Constant)	-0.027	0.047	-0.568	0.576
AROSpre	-0.231	0.081	-2.869	0.009

Table 4: Comparison with previous studies

Study	*Measure*	*Finding*
Herman and Lowenstein (1988)	ROE	Mixed
Lev and Mandelker (1972)	ROA	Significant increase
	ROE	No gains
	ROS	No gains
Mueller (1980)	ROA	Mixed
Neely and Rochester (1987)	ROA	Significant decline
Ravenscraft and Scherer (1989)	ROA	No gains
Sharma and Ho (2002)	ROA	No gains
	ROE	No gains
	ROS	No gains
Yeh and Hoshino (2001)	ROA	Significant decline
	ROE	Significant decline