THE PREMERGER DISCRIMINATION BETWEEN ACQUIRER AND TARGET FIRMS

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ABSTRACT: This paper examines the premerger discrimination between acquirers and targets using a sample of 56 mergers from U.S. economy. The research findings indicate that acquirers and targets discriminate in terms of size, liquidity and cash flow dimensions, while no statistically significant discrimination are detected in terms of growth potential, past market returns and operating efficiency. The subsample studies show that diversifying mergers aim to exploit cash flow potential of targets, whereas related mergers focus on growth potential. The premerger financial properties of acquirer and targets bear informational clues about method of payment in mergers. Strategic analysis of portfolio shifts show that value acquirers aim to purchase companies with higher growth potential, whereas growth bidders aim to purchase companies with stronger cash flow record.

Key words: *Mergers, Acquisitions, Premerger Discrimination, Method of Payment, Book-to Market Ratios, Wilcoxon Signed-Rank Test.*

ÖZET: Bu araştırmada ABD ekonomisine ait 56 şirket birleşmeleri örnek alınarak, birleşen firmaların birleşme öncesi farklılıkları analiz edilmektedir. Araştırma bulguları birleşen firmaların birleşme öncesinde şirket büyüklüğü, likidite ve nakit akışlarına göre istatiksel olarak anlamlı farklılıkları olduğunu, büyüme potansiyeli, geçmiş pazar getirileri ve faaliyet etkinliği açısından ise istatiksel olarak anlamlı farklılıkların olmadığını göstermiştir. Alt örnek analizleri dikey şirket birleşmelerinin temel amacının satın alınan firmaların güçlü nakit akışlarını elde etmek, yatay şirket birleşmelerinin temel amacının ise büyüme ve gelişme amaçlı yapıldığını göstermektedir. Birleşme öncesi satın alan ve satın alınan firmaların finansal özellikleri şirket birleşmelerinde kullanılabilecek ödeme yöntemi hakkında bilgi içeriği taşımaktadır. Satın alan firmanın portföy değişiminin stratejik analizi düşük gelişme perspektifi olan firmaların yüksek büyüme istikametinde, yüksek gelişme perspektifi olan firmaların ise nakit akışlarını kuvvetlendirmek istikametinde şirket birleşmelerine gittikleri tespit edilmiştir.

Anahtar Kelimeler: *Şirket Birleşmeleri, Birleşme Öncesi Farklılıklar, Ödeme Yöntemi, Piyasa Değeri/Defter Değeri, Wilcoxon Testi.*

I. INTRODUCTION

The merger decision is a portfolio diversification and external growth decision aiming to gain competitive advantage through synergy by combining activities of

two companies. Whatever the sources of the expected synergy from mergers, it is believed that larger companies who have sufficient funds to finance the deal and are eligible to create more synergy initiate mergers bids. However, there are some merger deals in the today's economies that challenge this established rule and imply that there could be some other factors that determine the acquirer.

This paper is going to analyze the premerger discrimination between acquirer and targets. For this purpose, I study a sample of 56 mergers between U.S. public industrial companies announced and completed between 1992 and 1997. Specifically, I study whether acquirer and target companies discriminate in terms of size, liquidity, growth, cash flows, past market returns and operating efficiency dimensions. The Wilcoxon signed rank test and binomial test is used to test discrimination between acquirer and targets across these financial dimensions. I also study whether method of payment, business overlap degree of acquirer and target industries, and growth potential of acquirers matter in the premerger discrimination acquirer and targets.

Research results indicate that acquirers are much bigger than their targets. Acquirers retain statistically significant higher liquidity than targets for cash bid purposes. Evaluation of strategic dimensions of the merger indicates that bidders takeover targets with stronger cash flow record, while growth dimension is neglected. The subsample analysis shows that related mergers invests in the future viability of firm through acquiring high-growth firms reflected in the price-to-book ratios of targets, whereas diversifying mergers are focused on acquiring targets with high cash flow record. Method of payment of merger has also a deep trace in the merger parties' financial properties. Firms that offer cash to targets retain high liquidity and are much larger than their targets. The value acquirers targets with higher growth potential, whereas growth bidders aim to purchase companies with strong cash flows.

The remainder of the paper is organized as follows. Section II describes sample and data used in the study. Section III describes research predictions, variables, subsamples and statistical tests used in the study. Section IV analyzes premerger discrimination between acquirer and targets. Section V gives a brief conclusion.

II. DATA

2.1. Sources

I have two main sources of data. Merger data come from Mergerstat database, which reports the exact date of the merger announcements, the deal size and other relevant information about acquirer and targets.

The balance sheet, income statement and market data are retrieved from Compustat (North America) database. This database contains up to 20 years of annual, 12 years of quarterly, seven years of business and geographic segment, and 240 months of stock prices and dividend data. This database retains financial and market data for over 10,300 active and 7,600 inactive U.S. and Canadian companies that no longer

file with the Securities and Exchange Commission due to a merger, liquidation, or bankruptcy, etc.

2.2. Sample

The sample of 629 mergers in US economy, which is announced and completed between 1992 and 1997, are drawn from Mergerstat. The banks, insurance, and railroad companies are subject to different regulations, therefore, they are excluded from the sample. Since public concern is triggered by large merger deals due to their effects on the competition, I exclude the merger transactions valued at less than $ 350 million from my sample space.

The mergers gains economic significance when target's relative size to acquirer's is significant. Therefore, I put another restriction of relative size: the size of target should exceed 5% of the size of acquirer. Target company size is computed from Compustat as the market value of common stock plus the net debt and preferred stock at the beginning of the year before the acquisition.

Data availability in Compustat database imposes another restriction on the sample. Since some variables are computed over three-year premerger window, the acquiring and target companies are required to have at least, three years premerger financial and market data available on the Compustat tapes.

As a result of these restrictions, the sample space of 629 mergers reduced to 56 merger cases.

III. RESEARCH METHODOLOGY

3.1. Testable Predictions

Financial literature predicts that some variables may have profound effects on the natural selection of acquirer and target in the merger process. I test whether acquirer and targets are discriminated in terms of financial dimensions in the premerger period.

Undoubtedly, the relative size of the acquirer and target companies is the most important determinant of the selection of acquirer in the merger process. Generally, larger companies afford to buy smaller ones, since they have sufficient funds for takeovers. Smaller companies attempt to buy larger companies only if they are fully backed by capital markets or other larger companies. Therefore, I predict:

Prediction 1. Acquirers are bigger than their targets.

The arguments are twofold about relative cash flow strength and operating efficiency of the merger parties. If the target and acquirer companies are about in the same size, the company with stronger financial and operational record is expected to launch the merger bid. However, if the acquirer is larger than target, it will desire to takeover the target with a strong cash flow record hoping synergetic gains. Considering that in only 4 merger cases targets are larger than acquirers out of 56 mergers, I predict:

Prediction 2. Targets have higher cash flows than their acquirers.

Prediction 3. Targets have higher operating efficiency than their acquirers.

If the companies' sizes of two candidate companies are nearly equal, then company with higher price to book ratios are more eligible to be acquirer, since market favors growth companies, though the merger decisions of these companies may not be value increasing and may be infected by hubris (Rau and Vermaelen (1998)). The same reasoning applies to the past stock price performance of targets. A good past market performance may make companies to be acquirers, since market favors their merger decisions. However, if acquirers are larger than targets, acquirers may desire to takeover targets with higher growth potential and market performance. Regarding the fact that acquirers are larger than targets in our sample, next predictions follow.

Prediction 4. Targets have higher price to book ratios than their acquirers.

Prediction 5. Targets have higher market returns than their acquirers.

The function of liquidity in the selection process of acquirer and targets is very interesting. In practice, companies invest large sums of money in very liquid assets. A company's decision to invest in liquid assets requires careful consideration of both the costs and benefits of holding liquid assets. Investment in liquid assets (e.g., treasury securities) is costly because the company incurs transaction costs when buying and selling financial securities, and because they lead to higher taxation (relative to stockholders holding such securities directly). Moreover, liquid assets may endanger more severe agency problems than less liquid assets. Despite these costs, companies will generally maintain some cash and cash equivalents for business transaction needs. Excess liquidity can also be maintained for "precautionary" and "speculative" motives. The precautionary motive argues that companies maintain excess liquidity to take advantage of profitable future investments. One of these potentially profitable future investments is a takeover. It could be argued that acquirer companies are trying to accumulate excess liquidity for merger purposes. Therefore, acquirer companies are supposed to be more liquid than targets. I predict:

Prediction 6. Acquirers have higher liquidity than their targets.

3.2. Variables

According to research predictions, I examine size, cash flow, operating efficiency, price-to-book ratio, market return, and liquidity dimensions.

The *size (SIZE)* of companies is measured by the market value of equity plus the book values of net debt and preferred stock. I use market value of equity to provide a measure that is comparable for all companies. Cash flows is measured by *return on assets (ROA)* defined as earnings before tax, interest, and depreciation (EBITD) scaled by company size (SIZE).

The empirical proxy used to measure operating efficiency is the *sales on total employment (SALEFF)*. Growth potential is measured by *price to book ratio (MKBK)*, which is the ratio of the market value of the company's assets to the book value.

Two different empirical proxies are employed to measure *market returns; three-year (TRT3Y) and one-year total market return (TRT1Y)* prior to the announcement of merger bid. The market return proxies are annualized rate of returns reflecting cumulative monthly price appreciations plus reinvestment of monthly dividends and the compounding effect of dividends paid on reinvested dividends. I measure *liquidity (LIQRAT)* as the ratio of cash plus marketable securities to the market value of total assets.

I compute *SIZE, MKBK, TRT1Y* and *LIQRAT* variables for each company for a year prior to the merger announcement. *ROA* and *SALEFF* are calculated as the median of each variable for each company over three-year premerger window. *TRT3Y* is the annualized rates of return calculated over three-year window.

3.3. Research Methodology

The parametric paired sample t-test is very powerful to test paired samples. However, this test requires the mean differences to be normally distributed, which is not met by the sample. Normality tests of the mean differences show that only TRT1Y (one-year market return) variable satisfies the normality condition. Therefore, I apply non-parametric Wilcoxon signed rank test throughout the study to test whether there are significant differences in variable values of acquirer and targets. I base my conclusions on the standardized test statistic Z, which for samples of at least 10 follows approximately a standard normal distribution.

In addition to Wilcoxon test, I use a (binomial) proportion test to determine whether the proportion (p) of companies experiencing greater variable values in a given direction. The finding that an overwhelming proportion of companies experience greater variable values in the same direction is as informative as a finding concerning the magnitude of differences in variable values.

3.4. Subsample Analysis

In addition to analyzing the full sample of merged companies, I perform similar tests for subsamples divided according to below-specified criteria.

1. *Business Overlap Subsamples:* The business overlap degree of acquirer and target industries may be effective on the premerger discrimination between acquirer and targets. Premerger discrimination pattern are hypothesized to be different in related and diversifying mergers. I divide sample into two different subsamples based on the business overlap degree of acquirer and targets. Related mergers are

merger cases between those acquirer and target companies whose at least three first SIC Code[1] numbers are the same, whereas the remaining mergers are classified as diversifying mergers. The sample analysis shows that 33 (59 %) out of 56 mergers are related mergers, whereas 23 (41 %) cases are diversifying mergers.

2. *Method of Payment Subsamples:* If the merger is cash-financed, it is usually assumed that acquirer is much larger than target and retain higher liquidity for the bid purposes. The properties of acquirer and targets are hypothesized to have a deep trace on the selection of method of payment in mergers. To analyze this hypothesis, I divide total sample into three subsets based on the form of payment. The first subset is called equity-financed and includes cases where only the acquirer's common stock was used to pay for an acquisition. The second subset is called cash-financed and includes cases where only cash was used for payment. The third subset is called mixed-financed and includes all other cases in which the payment terms were neither pure stock nor pure cash. In some cases, both stock and cash were used and in other cases cash and senior securities were used. Sample analysis show that 33 (59%) out of 56 mergers are equity-financed mergers, whereas 12 (21%) cases are cash-financed and 11 (20%) cases are mixed-financed.

3. *Value-Growth Subsamples:* The merger decision may be viewed as portfolio diversification decision aiming to strengthen growth or cash flow dimensions. The impact of acquirer's price to book ratios on the selection of targets should be scrutinized to gain information about portfolio shifts of the acquirer companies. I rank the mergers into separate subsamples based on acquirers' price to book ratio relative to their industries' price to book ratio at the beginning of the year of merger announcement. Acquirer companies' price to book ratio is compared to the industry's median price to book ratio in the beginning of the year prior to announcement. If acquirer companies' price to book ratio is higher than their industry's[2] median price to book ratio book, the merger case is classified as 'growth' merger, otherwise as "value" merger. As a result of this ranking, 17 (30%) mergers appeared to be 'value' mergers and 39 (70%) acquirers as 'growth' mergers.

1 SIC Code is the primary SIC Code assigned to companies on the COMPUSTAT database. SIC is a four-digit system of classification under which a concern may be identified according to its activity. Individual companies are assigned a four-digit Primary SIC Code by analyzing the product line breakdown. The product line accounting for the largest percent of sales determine the Primary SIC Code.

2 Industries are defined under four-digit industry primary SIC Codes in Compustat.

IV. EMPIRICAL RESULTS

The empirical results for the complete sample of 56 mergers are presented in Table 1. I discuss whether there are significant differences between acquirer and targets with respect to selected variables. The subsample analyses are reported in tables 2 through 4[3] for business overlap, method of payment, value-growth subsamples.

4.1. Total Sample Analysis

The full sample analysis reveals that acquirers are discriminated from targets in terms of *size, cash flows and liquidity* dimensions.

The acquirers are on average significantly larger than targets. The average acquirer size (6,697 million USD) is nearly three times as big as average target size (2,299 million USD), whereas median value for acquirer size (3,317 million USD) is nearly four times as large as median target size (2,299 million USD) and 93 percent of all acquirers are bigger than their target counterparts. The Wilcoxon signed rank and binomial test statistics is significant at 1 percent level.

The prediction that acquirers prefer targets with a strong cash flow record is also supported by the merger findings. The average target three-year median cash flow ratio is 6 percent higher than average acquirer three-year median cash flow ratio and 61 percent of targets retain higher cash flow record than acquirers. The Wilcoxon signed rank test is significant at 5 percent level, whereas binomial test statistics is significant at 10 percent level using one-tailed test.

Though, Wilcoxon signed rank test do not yield significant results about differences in the liquidity ratio of target and acquirers, 62 percent of acquirers retain higher liquidity than targets and binomial test statistics is significant at 5 percent level. The acquirer median liquidity ratio is 1 percentage point higher than median target liquidity ratio. These results imply that acquirers retain higher liquidity than targets.

Contrary to the research predictions, no significant discrimination patterns among acquirer and targets are observed in terms of price to book ratios. Though, the mean differences are very high (8.79) in favor of targets, the standard deviation is also very high which leads to the statistically insignificant results. Only 52 percent of targets are retaining higher price to book ratios than acquirers.

Annualized three- and one-year market returns of acquirer and targets do not discriminate significantly in the premerger period. The similar non-significant discrimination pattern is observed for sales efficiency ratios. Though inconclusive, it appears that targets' sales efficiency and market return record is slightly stronger than acquirers'.

3 Table 2 through Table 4 is provided in the appendix.

Table 1

Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for the Full Sample of Mergers

I test the differences between bidder and targets across several financial dimensions. This table presents empirical results for our full sample of mergers. For each empirical proxy, I give the number of usable observation, the mean and median values, and standard deviation of the proxy, the mean and median difference between bidder and targets, and a test of significance of the difference in average values. The final two columns detail the percentage of firms whose proxy values differ as predicted, as well as a test of significance of this difference.

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z-Statistics for Significance of Proportion Differences*
Size (SIZE) – Million USD	55	6,697 (3,317)	10,798	2,299 (854)	4,338	4,397 (2,464)	6.13***	0.93	6.47***
Cash Flow Ratio (ROA) - %	56	0.15 (0.12)	0.19	0.21 (0.12)	0.37	-0.06 (-0.01)	1.92**	0.61	1.47*
Liquidity Ratio (LIQ) - %	53	0.12 (0.07)	0.20	0.56 (0.06)	3.44	-0.43 (0.01)	1.01	0.62	1.92**
Price to Book Ratio (MKBK) - %	51	4.16 (2.99)	3.15	12.95 (3.24)	57.83	-8.79 (-0.25)	0.45	0.52	0.14
Three-Year Total Return (TRT3Y) - %	42	0.23 (0.19)	0.21	0.20 (0.16)	0.30	0.03 (0.03)	0.28	0.51	0.00
One-Year Total Return (TRT1Y) - %	54	0.27 (0.23)	0.34	0.32 (0.26)	0.51	-0.05 (-0.03)	0.63	0.53	0.27
Sales Efficiency (SALEFF) - USD	56	220,636 (168,174)	223,477	269,759 (175,082)	372,998	-49,123 (-6,908)	0.96	0.55	0.67

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

4.2 Business Overlap Subsamples

The analysis of business overlap subsets for the discrimination of targets and acquirers provide interesting insights about the merger process. The empirical results reported in table 2 suggest that discrimination pattern in related mergers strongly differ from the discrimination pattern in the diversifying mergers.

Acquirers discriminate significantly from targets with respect to their *size, liquidity*, and *price to market ratios* in related mergers. Empirical results suggest that acquirers in related mergers are on average (median) 1.8 times (2.3 times) greater than targets. Acquirers in related mergers are in median 1 percent more liquid than targets. However, market valuation of targets is more favorable: targets in related mergers retain significantly higher price to book ratios than acquirers.

Though, there are insignificant differences between targets and acquirers in related mergers across market return dimension, average differences suggest that acquirers retain stronger market returns over either three- or one-year premerger windows. It is difficult to judge about cash flow differences between target and acquirers in related mergers. The operating efficiency of targets is slightly greater than acquirers.

Acquirers in diversifying mergers are discriminated significantly from targets in terms of *size, cash flow record and past market returns*. The size differences between average and median acquirer and targets in diversifying mergers are much greater than in related mergers. The acquirers are six times greater than targets on average and median. This result is statistically very strong. Diversifying merger targets retain significantly higher cash flow and one-year market return ratios than acquirers.

Though insignificant, three-year market return and operating efficiency variables of diversifying merger targets are stronger than their counterparts. No significant patterns are identified in liquidity and price to book ratio variables.

Summarizing the results for business overlap subsets, premerger discrimination analysis provides interesting clues about the merger motivations. It appears that related merger acquirers are stronger, bigger and yield higher market returns relative to their counterparts and they aim to exploit target's high growth potential which is reflected by target's higher price to book ratios. Significantly higher liquidity in acquirers is most reasonably retained to takeover targets, if merger is cash-financed or mixed-financed. Even if the merger is equity-financed, the acquirer retains excess liquidity to be prepared to launching aggressive takeover bid.

While related merger motivation is growth through takeover, diversifying merger acquirers try to acquire companies with stronger cash flows and create cash cows. It is reflected in the takeover pattern where targets have a stronger cash flow, operating efficiency, and market return record than acquirers. Since acquirers is much bigger than targets, their liquidity is much bigger than targets in absolute terms, considering equal liquidity ratio for acquirer and targets. Therefore, they are able to launch cash bids without retaining high liquidity ratios. The argument that

diversifying merger acquirers do not aim to enter to growing industries by mergers is approved by higher price-to-book ratios of acquirers than targets.

4.3. Method of Payment Subsamples

Method of payment bears information content about the motivation of the takeovers. The research findings indicate that discrimination across financial variables between target and acquirers vary considerably for cash, mixed, and equity-financed mergers.

According to research findings, cash-financed merger acquirers retain on average (median) 12 percent (4 percent) higher liquidity ratio than targets. This higher liquidity combined with acquirer size, which is on average (median) 4.5 times (5 times) bigger than targets' allows them to launch a cash bid. In the other hand, very interestingly, the relative size of acquirers to targets is the greatest for cash-financed mergers (median relative size value is 5) compared with mixed-financed (median relative size value is 3.5) and equity-financed (median relative size value is 2.8) mergers.

Cash-financed merger targets on average and median retain higher cash flow, market return, and market valuation record than acquirers. These findings suggest that cash is offered to better performing targets.

Mixed-financed merger target and acquirers do not differ very strongly with respect to financial dimensions. Average mixed-financed merger acquirer's cash flow ratio is 1 percent greater than target's. Market return proxies provide mixed results, whereas mixed-financed merger targets are valued better than acquirer's. The liquidity ratio of acquirer's is not apparently different from targets. This result may mean that mixed-financed merger acquirers were not much ready to launch merger bid if their mixed payment bid fails.

Significant discrimination between acquirer and targets are observed in equity-financed mergers. Equity-financed merger targets retain significantly stronger cash flows and operating efficiency, whereas acquirers are more liquid than targets. No significant patterns are observed for market returns and price to book ratios.

4.4. Value-Growth Subsamples

Whatever the underlying motives, mergers are realized under certain strategic considerations. The discrimination between acquirer and targets across value-growth dimensions subsets provide information about strategic choices of acquirers.

The strategic analysis of mergers in the value-growth subsamples shows that value acquirers are trying to takeover high growth companies. The price to book ratio of targets is significantly (1 percent level) higher than acquirers' in value mergers, whereas the cash flow ratio does not discriminate significantly between acquirer and targets.

Value acquirers retain significantly higher liquidity than their targets. This conclusion implies that value acquirers are launching or ready to launch cash bid if their stock offer fails due to the market's low valuation.

In the other hand, growth acquirers are attempting to takeover targets whose cash flow ratio significantly higher than acquirer's. The price to book ratio of targets is insignificantly lower than acquirer's in the growth mergers.

These results imply that growth acquirers are shifting their portfolios to strengthen their cash flows. In the other hand, value acquirers are investing in their future by mergers.

V. SUMMARY AND CONCLUSIONS

The results of the premerger discrimination study shows that acquirers discriminate across financial dimensions from targets and this discrimination is reflected in the purchasing power of acquirers and strategic motivations underlying merger event.

Acquirers appear to be significantly bigger than targets. Moreover, acquirers retain significantly high liquidity than targets. Combination of higher liquidity and bigger size implies strong financial sources of acquirers to finance the takeovers.

Acquirers are oriented to acquire companies with stronger cash flows. They do not attempt to acquire companies with high growth potential. No significant discrimination patterns are observed between acquirer and targets in terms of market returns, price to book ratio, and sales efficiency ratios.

Subsample analyses yield interesting insights about the merger process. Related merger acquirers involve in merger activities in growth dimension, whereas diversifying mergers prefer takeovers in cash flow dimension. Cash-financed merger acquirers retain higher liquidity ratio and relative target to acquirer ratio is highest among all subsets. This result offer that acquirers were already prepared to cash bids. Moreover, cash is offered to companies with stronger cash flows, whereas equity-financed mergers are realized in the growth dimension. The strategic analysis of mergers within value-growth subsamples show that growth acquirers are trying to strengthen their cash flows, whereas value acquirers are investing in their future by purchasing high-growth companies.

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REFERENCES

AMIHUD, Y. and B. LEV (1981). "Risk Reduction as a Managerial Motive for Conglomerate Mergers", *Bell Journal of Economics* 12 (Autumn), 605-17.

ASQUITH, P., R.F. BRUNER and D.W. MULLINS (1983). "The Gains to Bidding Firms from Mergers", *Journal of Financial Economics* 31, 121-139.

BERKOVITCH, E., and M.P. NARAYANAN (1993). "Motives for Takeovers: An Empirical Investigation", *Journal of Financial and Quantitative Analysis* 28, 347-362.

BRADLEY, M., A. DESAI and E.H. KIM (1988). "Synergetic Gains from Corporate Acquisitions and Their Division Between the Stockholders of Target and Acquiring Firms", *Journal of Financial Economics* 21, 3-40.

HANSEN, R. (1987). "A Theory for the Choice of Exchange Medium in Mergers and Acquisitions", *Journal of Business* 60, 75-95.

HARRIS, E.G. (1994). "Why One Firm is the Target and the Other Bidder in Single-Bidder, Synergetic Takeovers", *Journal of Business* 67, 263-280.

JENSEN, M., and R. RUBACK (1983). "The Market for Corporate Control", *Journal of Financial Economics* 11, 5-50.

KAPLAN, S.K., and M.S. WEISBACH (1992). "The Success of Acquisitions: Evidence from Divestitures", *Journal of Finance* 47, 107-138.

KIM, C.S., D.C. MAUER and A.E. SHERMAN (1993). "The Determinants of Corporate Liquidity: Theory and Evidence", *Journal of Financial and Quantitative Analysis* 33, 335-359.

MARTIN, K. (1996). "The Method of Payment in Corporate Acquisitions, Investment Opportunities and Managerial Ownership", *Journal of Finance* 51, 1227-1246.

MÜSLÜMOV, A. (2001). *The Financial Analysis of Mergers*, (Ph. D. dissertation), Bogazici University Institute of Social Sciences.

RAU, P.R. and T. VERMAELEN (1998). "Glamour, Value and the Post-Acquisition Performance of Acquiring Firms", *Journal of Financial Economics* 49, 223-253.

ROLL, R. (1986). "The Hubris Hypothesis of Corporate Takeovers", *Journal of Business* 59, 197-216.

SEYHUN, H.N. (1990). "Do Bidder Managers Knowingly Pay Too Much for Target Firms", *Journal of Business* 63, 439-464.

SMITH, R. L., and Joo-Hyun KIM, (1994). "The combined effects of free cash flow and financial slack on bidder and target stock returns", *Journal of Business*, 281-310.

Table 2

Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Business Overlap Subsamples

I test the differences between bidder and targets across several financial dimensions. This table presents empirical results for subsets divided according to bidder and target's industries overlap degree. For each empirical proxy, I give the number of usable observation, the mean and median values, and standard deviation of the proxy, the mean and median difference between bidder and targets, and a test of significance of the difference in average values. The final two columns detail the percentage of firms whose proxy values differ as predicted, as well as a test of significance of this difference.

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z-Statistics for Significance of Proportion Differences*
Size (SIZE) – Million USD									
Related Mergers	32	5,212	8,317	2,903	5,537	2,309	4.51***	0.94	5.13
		(1,961)		(856)		(1,105)			
Diversifying Mergers	23	8,827	13,520	1,459	1,307	7,368	4.11***	0.91	4.17
		(4,557)		(774)		(3,783)			
Cash Flow Ratio (ROA) - %									
Related Mergers	33	0.17	0.24	0.26	0.48	-0.09	0.97	0.55	0.35
		(0.13)		(0.12)		(0.01)			
Diversifying Mergers	23	0.12	0.04	0.15	0.09	-0.03	2.07**	0.70	2.09**
		(0.11)		(0.12)		(-0.01)			
Liquidity Ratio (LIQ) - %									
Related Mergers	31	0.17	0.25	0.90	4.50	-0.73	1.61*	0.71	2.51***
		(0.08)		(0.07)		(0.01)			
Diversifying Mergers	22	0.06	0.06	0.07	0.07	-0.01	0.47	0.50	0.21
		(0.05)		(0.05)		(0.00)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 2
Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Business Overlap Subsamples
Continued

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z-Statistics for Significance of Proportion Differences*
Price to Book Ratio (MKBK) - %									
Related Mergers	29	3.98	3.30	5.53	5.97	-1.55	1.37*	0.59	1.11
		(2.98)		(3.26)		(-0.28)			
Diversifying Mergers	21	4.41	2.99	23.27	89.25	-18.86	0.61	0.43	0.87
		(3.23)		(2.81)		(0.42)			
Three-Year Total Return (TRT3Y) - %									
Related Mergers	19	0.27	0.24	0.16	0.28	0.11	0.68	0.37	0.92
		(0.20)		(0.15)		(0.05)			
Diversifying Mergers	18	0.17	0.15	0.24	0.33	-0.07	1.07	0.67	1.65*
		(0.15)		(0.19)		(-0.04)			
One-Year Total Return (TRT1Y) - %									
Related Mergers	30	0.27	0.31	0.20	0.43	0.07	0.71	0.47	0.18
		(0.27)		(0.26)		(0.01)			
Diversifying Mergers	23	0.28	0.38	0.47	0.57	-0.19	1.64*	0.61	1.25
		(0.18)		(0.42)		(-0.24)			
Sales Efficiency (SALEFF) - USD									
Related Mergers	33	224,896	204.609	259,603	234,468	-34,70	0.60	0.55	0.70
		(172,039)		(180,414)		(-8,375)			
Diversifying Mergers	23	214,524	252,774	284,329	517,183	-69,805	0.73	0.57	0.83
		(158,583)		(144,331)		(14,252)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 3

Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Method of Payment Subsamples

I test the differences between bidder and targets across several financial dimensions. This table presents empirical results for subsets divided according to method of finance. For each empirical proxy, I give the number of usable observation, the mean and median values, and standard deviation of the proxy, the mean and median difference between bidder and targets, and a test of significance of the difference in average values. The final two columns detail the percentage of firms whose proxy values differ as predicted, as well as a test of significance of this difference.

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z Statistics for Significance of Binomial test*
Size (SIZE) – Million USD									
Cash-financed	12	5,493	5,569	1,213	994	4,280	2.75***	0.92	3.18***
		(3,959)		(806)		(3,153)			
Mixed-financed	11	11,381	19,322	1,985	2,849	9,396	2.93***	1.00	3.62***
		(3,435)		(1,007)		(2,428)			
Equity-financed	32	5,573	7,979	2,815	5,389	2,758	4.67***	0.91	4.77***
		(2,476)		(883)		(1,593)			
Cash Flow Ratio (ROA) - %									
Cash-financed	12	0.14	0.05	0.15	0.11	-0.01	0.39	0.58	0.29
		(0.12)		(0.14)		(-0.02)			
Mixed-financed	11	0.13	0.05	0.23	0.26	-0.10	1.33	0.55	0.60
		(0.13)		(0.12)		(0.01)			
Equity-financed	33	0.16	0.24	0.23	0.46	-0.07	1.33*	0.64	1.74**
		(0.12)		(0.12)		(0.00)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 3
Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Method of Payment Subsamples (Continued)

Variables	*N*	*Premerger Mean (Median)*	*Premerger Standard Deviation*	*Postmerger Mean (Median)*	*Postmerger Standard Deviation*	*Mean Change (Median)*	*Z-Statistics for Difference in Medians (Pre- and post- merger)*	*Percentage of Firms that Changed as Predicted*	*Z Statistics for Significance of Binomial test*
Liquidity Ratio (LIQ) - %									
Cash-financed	11	0.18	0.35	0.06	0.07	0.12	1.15	0.64	1.21
		(0.07)		(0.03)		(0.04)			
Mixed-financed	11	0.08	0.09	0.10	0.11	-0.02	0.62	0.55	0.60
		(0.06)		(0.06)		(0.00)			
Equity-financed	31	0.11	0.16	0.89	4.50	-0.78	0.98	0.65	1.80**
		(0.07)		(0.07)		(0.00)			
Price to Book Ratio (MKBK) - %									
Cash-financed	10	3.03	1.50	3.89	7.37	-0.86	0.36	0.60	0.95
		(2.91)		(3.85)		(-0.94)			
Mixed-financed	9	5.39	4.30	51.00	134.00	-45.61	0.77	0.56	0.67
		(4.11)		(4.98)		(-0.87)			
Equity-financed	31	4.12	3.07	4.72	4.57	-0.60	0.22	0.48	0.00
		(2.98)		(2.81)		(0.17)			
Three-Year Total Return (TRT3Y)-%									
Cash-financed	8	0.17	0.13	0.19	0.18	-0.02	1.26	0.63	1.06
		(0.11)		(0.19)		(-0.08)			
Mixed-financed	6	0.23	0.18	0.15	0.33	0.08	0.73	0.33	0.41
		(0.20)		(0.08)		(0.12)			
Equity-financed	23	0.25	0.24	0.21	0.34	0.04	0.21	0.52	0.42
		(0.20)		(0.18)		(0.02)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 3
Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Method of Payment Subsamples (Continued)

Variables	*N*	*Premerger Mean (Median)*	*Premerger Standard Deviation*	*Postmerger Mean (Median)*	*Postmerger Standard Deviation*	*Mean Change (Median)*	*Z-Statistics for Difference in Medians (Pre- and post- merger)*	*Percentage of Firms that Changed as Predicted*	*Z Statistics for Significance of Binomial test*
One-Year Total Return (TRT1Y) - %									
Cash-financed	12	0.21	0.21	0.29	0.53	-0.08	0.71	0.58	0.87
		(0.18)		(0.19)		(-0.01)			
Mixed-financed	11	0.22	0.31	0.53	0.60	-0.31	1.96**	0.64	1.21
		(0.16)		(0.50)		(-0.34)			
Equity-financed	30	0.31	0.38	0.25	0.47	0.06	0.58	0.47	0.18
		(0.30)		(0.19)		(0.11)			
Sales Efficiency (SALEFF) - USD									
Cash-financed	12	232,189	299,328	187,754	153,583	44,435	0.31	0.42	0.29
		(150,433)		(130,756)		(19,677)			
Mixed-financed	11	213,965	114,981	479,696	731,428	-265,731	0.71	0.45	0.00
		(170,842)		(286,797)		(-115,955)			
Equity-financed	33	218,658	225,473	229,599	210,947	-10,941	1.42*	0.64	1.74**
		(173,517)		(179,763)		(-6,246)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 4

Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Value-Growth Subsamples

I test the differences between bidder and targets across several financial dimensions. This table presents empirical results for subsets divided according to bidder and target's industries overlap degree. For each empirical proxy, I give the number of usable observation, the mean and median values, and standard deviation of the proxy, the mean and median difference between bidder and targets, and a test of significance of the difference in average values. The final two columns detail the percentage of firms whose proxy values differ as predicted, as well as a test of significance of this difference.

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z-Statistics for Significance of Proportion Differences*
Size (SIZE) – Million USD									
Value	17	2,932	3,235	907	810	2,025	3.29***	0.94	3.40***
		(2,062)		(656)		(1,406)			
Growth	38	8,338	12,459	2,922	5,088	5,416	5.24***	0.92	5.03***
		(3,985)		(1,177)		(2,808)			
Cash Flow Ratio (ROA) - %									
Value	17	0.14	0.06	0.28	0.63	-0.14	0.98	0.47	0.49
		(0.12)		(0.12)		(0.00)			
Growth	39	0.16	0.22	0.19	0.18	-0.03	2.23**	0.67	1.92**
		(0.11)		(0.12)		(-0.01)			
Liquidity Ratio (LIQ) - %									
Value	15	0.22	0.35	0.09	0.10	0.13	1.82**	0.73	1.55*
		(0.09)		(0.07)		(0.02)			
Growth	37	0.08	0.08	0.08	0.08	0.00	0.34	0.59	0.99
		(0.07)		(0.05)		(0.02)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.

Table 4
Premerger Discrimination Analysis: Summary of Results from Tests of Predictions for Value-Growth Subsamples (Continued)

Variables	*N*	*Bidder Mean (Median)*	*Bidder Standard Deviation*	*Target Mean (Median)*	*Target Standard Deviation*	*Mean Differences (Median)*	*Z-Statistics for Difference (Bidder and Target)*	*Percentage of Mergers with Predicted Difference Patterns*	*Z-Statistics for Significance of Proportion Differences*
Price to Book Ratio (MKBK) - %									
Value	14	2.02	0.77	5.13	4.88	-3.09	3.17***	0.93	2.94***
		(1.88)		(3.81)		(-1.93)			
Growth	36	4.96	3.34	16.45	69,50	-11.49	1.21	0.42	0.98
		(3.67)		(3.11)		(0.56)			
Three-Year Total Return (TRT3Y) - %									
Value	11	0.20	0.33	0.21	0.32	-0.01	0.34	0.36	1.21
		(0.18)		(0.19)		(-0.01)			
Growth	26	0.24	0.24	0.19	0.31	0.05	0.55	0.58	0.59
		(0.20)		(0.15)		(0.05)			
One-Year Total Return (TRT1Y) - %									
Value	16	0.21	0.33	0.21	0.42	0.00	0.10	0.56	0.25
		(0.18)		(0.23)		(-0.05)			
Growth	37	0.30	0.34	0.36	0.54	-0.06	0.88	0.51	0.00
		(0.24)		(0.32)		(-0.08)			
Sales Efficiency (SALEFF) - USD									
Value	17	149,035	56,047	203,345	154,865	-54,310	1.16	0.59	0.49
		(160,211)		(139,914)		(20,297)			
Growth	39	251,846	260,132	298,708	434,094	-46,862	0.43	0.54	0.32
		(172,039)		(180,414)		(-8,375)			

*, **, *** indicates significance at 10, 5, and 1% significance levels respectively using one-tailed test.