Are Small Bidders Better Bidders?

An Investigation of Explanatory Factors of Bidder Size Effect on Announcement Abnormal Returns

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A Thesis in The John Molson School of Business

Presented in Partial Fulfillment of the Requirements

for the Degree of Master of Science in Administration at

Concordia University

Montreal, Quebec, Canada

August 2005

Your file Votre référence
ISBN: 0-494-10334-5
Our file Notre référence
ISBN: 0-494-10334-5

Abstract

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Small bidders are found to be consistently better rewarded by the market at the announcement of mergers and acquisitions. They obtain significant positive gains, while large bidders register negative or close to zero absolute and relative abnormal returns. This is hypothesized to be due to the differences in the M&A motives, informational asymmetry and more efficient use of operational capacities.

It is found that small bidders mostly engage into value creating transactions, in contrast to large ones that often erode shareholder's value.

There is no confirmation of a large correction in the informational asymmetry for small bidders, explanatory of the higher announcement abnormal returns. Actually, there is no evidence of significant changes in neither the quantity nor the quality of the information provided by the analysts around the announcement of the event, regardless of the size of the bidder.

As about the changes in operational performance that occur after the completion of the transaction, there are no large or strongly significant differences between the bidders of different sizes that would justify the large differential in the abnormal returns. This fact indicates that the high announcement valuation of small bidders does not reflect the operational synergy potential of the transaction, considered one of the most important in financial research.

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I. Introduction

Mergers and acquisitions are among some of the most significant restructuring activities that a company can embark on. Along years of financial research, a number of questions were posed regarding what are the expectations of the market and of individual companies of these activities and what drives them.

The results are rather surprising. The market reaction to an acquisition is a complex value that is distributed between the target and the bidder's stock around the announcement. What is interesting is that overall the market benefits to the acquirer are not large and are rarely significant and for the last 40 years the situation continually deteriorated.

The inconsistency between the permanent loss in shareholder value and the active mergers and acquisitions market can be rationalized by the diversity of the bidders and their motivations. If synergy potential of a combined operation determines the gains to a transaction because it increases value, manager's ulterior motives are explanatory of the losses, because managers are inclined to destroy value if they don't consider shareholders' interests.

At a closer look, although significant synergy effects explain a general sample of acquisitions, the gains are not large and in dollar terms even negative. The size of the bidder is always found to have a high explicative power of these abnormal returns and be negatively correlated to them.

Regardless of the fact that numerous transactions involving small cap acquirers secure them a solid place in the mergers and acquisitions market, the

empirical examination of these events is limited and only a fraction of them can be effectively studied.

First of all, there are a number of statistical difficulties in analyzing them. To make it easier to isolate any tendencies in a specific sample and to insure the significance of the detected trends, many studies impose restrictions on the size of the bidder, target and/or deal value. So at the end the transactions that involve small companies are discarded, because the gains that they can generate are small and they will fall into the statistical "noise", especially if the study does not clearly distinguish between groups of bidders of different sizes.

Secondly, small companies are not as transparent. The released information about their activities is limited. So it is hard to compose a sample with sufficient number of observations and obtain adequate and qualitative information needed.

Lastly, small companies are not as interesting to the market, because the number of their shareholders is small and these firms are usually closely held. They have less demand for analysts' attention and this causes a long-term informational asymmetry that is expressed in the incorrect valuation of the company stock.

To try and remedy this blank in financial research, some of the recent studies directed their attention to the examination of small bidder transactions and found that these acquisitions result in strongly significant positive shareholder returns, in contrast to large bidders that register significant losses. The abnormal return differential between small and large bidders is over 2%. This phenomenon is explained by differences in acquisition motives and the

tendency of large companies to overpay. The general conclusion is that, overall, small firms are better bidders, mostly because synergy is strongly present in the motivation of such transactions and these findings are robust to various deal and company specific characteristics.

The initial hypotheses of the present study are based on these results. Its main purpose is to try to isolate the key factors that make small bidders better in the opinion of the market.

It can be that small bidders are much more careful in selecting a target, because they face more financial constraints when deciding to engage in merger and acquisition activity compared to large ones and they make sure that the merger will bring synergistic gains.

It is also possible that small bidders are better at capitalizing on the presented synergies, under the assumption that market also accounts for the ability of the firms to take advantage of such synergies when incorporating their value into the price.

Another possibility is that the significant positive market reaction to the announcements made by small bidders is just a correction of the previous informational gap about the value of the company.

As the study is done parallel for separate groups of small and large bidders, the impact of the transaction on their market price should be more obvious and, therefore, abnormal returns detection is considerably enhanced and better inferences regarding merger motives and other explanatory factors can result.

The remainder of the paper is structured as follows. Section II presents the review of relevant previous work and, based on that, section III explains the study hypotheses. Section IV describes the sample selection process and the refining steps applied, as well as the construction of the measures used in the subsequent analysis. In section V and VI all the results of univariate and multivariate tests are reported. Conclusions are made and suggestions for future studies are proposed in section VII.

II. Review of Previous Studies

In this section the review of relevant previous work is done, emphasizing the findings regarding some factors, that subsequently will be hypothesized to have special importance in explaining the differences in market reaction to the merger and acquisition announcements of small and large bidders, such as motives for these transactions, as well as changes in informational asymmetry, operational performance and other factors.

2.1. General Findings Regarding Market Reaction to Merger and Acquisition Announcements

All reorganization activities that a company embarks on are meant to bring some sort of gains - be it financial, operational, marketing or management related. These decisions can be quite costly, involving direct transaction and transition costs, as well as indirect ones, like erosion of shareholders' wealth or loss of some investment opportunities. Generally, for a transaction to make economic sense, the company has to base its choices primarily on net present

value (NPV) analysis. Mergers and acquisitions are no exception - they have to be positive NPV projects in order for the bidder to consider them.

Assuming efficiency, the market has to recognize the benefits of this project and react positively, adjusting the aggregated market value of the companies involved by the expected value of the NPV. Asquith (1983), looking at sub-samples of successful and unsuccessful bids and separately at the market returns to the bidders and to the targets in periods before and after the announcement of an acquisition, concludes that the market does react appropriately to its efficient character.

The abnormal returns (AR) at the announcement, the surprise effect, are found to be one of the most useful and widely accepted tools in assessing the market opinion about a planned merger or acquisition, despite the conclusions of some studies that the announcement reaction contains limited information, first of all because of the uncertainty of the outcome (Asquith, 1983). Hietala et al (2003) agree and complete the idea, by mentioning that the announcement of an acquisition bares so much information, that it is practically impossible to distinguish between the market reaction to the transaction itself and the market adjustments to the new, non-acquisition information.

Although relative abnormal returns are most commonly used to express the announcement gains, Malatesta (1983) indicates that this is not an appropriate measure of the resulting wealth effect and that dollar gains and losses should be considered for its examination. At the same time he mentions that it is not well known how variables expressed in absolute currency terms behave statistically.

To assess how exactly the market acknowledges and distributes the change in value of two companies involved in a transaction, all the components have been quite extensively studied as well as their interaction – the separate gains to the target and bidder and the combined total gains.

Target Gains

All previous studies agree that target's shareholders register significant positive gains as a result of the announcement of a merger or acquisition. Berkovitch and Narayanan (1993), confirming the findings of Malatesta (1983) and Asquith (1983), conclude that the dollar gains to the target are positive and strongly significant. Bradley et al (1988) find significant 31.77% in relative target gains for the 1963 to 1984 period, Healy et al (1992) record 45.6% gains for 50 largest transactions at the beginning of the '80s, Andrade et al (2001) obtain 16% and Mulherin and Boone (2000) about 20.2% gains on samples covering the '90s. All these results indicate that, at least during the last 40 years, the targets always gained significantly from merging or being acquired.

Bidder Gains

The results are quite different in regards to bidder gains.

Malatesta (1983) finds that, in terms of dollar gains, immediate impact of the merger announcement is negative for bidders, result confirmed latter by Berkovitch and Narayanan (1993).

Mulherin and Boone (2000) obtain -0.37% and Andrade et al (2001) -1.0% in insignificant relative abnormal returns for the study period covering the '90s; Healy et al (1992) find -2.2% for the period from 1979 to 1984.

One of the observations of Caves (1989), that synthesizes the results of a number of studies on the topic, is that the bidder gains are deteriorating over time, mostly due to the increase of the acquisition premium paid while the total synergy potential of the mergers remains unchanged.

Contrary to this, Bradley et al (1988) find significant 0.97% in bidder gains. For the subsequent 1990-2000 period Fuller et al (2002), studying a sample of multiple bidders, register significant 1.77% average acquirer gains for all acquisitions, but significant -1.00% for transactions with public target.

One of the most recent and comprehensive studies about market reaction to the announcement of an acquisition is Moeller et al (2004) that looks at 12,023 announcements made between 1980 and 2001 and finds significant returns to the bidders of 1.1%.

Despite all the contradictory results, one common conclusion is still made: the positive gains to the bidder are neither systematically significant nor large.

Total Gains

Total gains are calculated by adding the bidder's and target's announcement gains, prorating the sum by the proportion of the targets' shares acquired, and expressing it in percentage points of the initial combined value of the two companies.

Generally, previous studies find positive and significant total gains. Bradley et al (1988) register combined acquisition gains of 7.43% for the period between 1963 and 1984; Mulherin and Boone (2000) record 3.56% for transactions that took place between 1990 and 1999 and Andrade et al (2001)

find 1.4% total gains for a similar period. Moeller et al (2004) record significant relative total gains of 1.35% for an interval of 20 years beginning in 1980.

According to these results, it is mainly concluded that merger and acquisition activities are value creating, resulting in small, but nevertheless positive significant gains.

So with all the evidence that, on one hand, the initiators of the acquisitions – bidders - do suffer permanent loss from these transactions and, on the other hand, the fact that mergers and acquisitions market is still very active, a number of different factors that have been previously hypothesized to have some explicative value for this phenomenon are evoked.

2.2. Motives for Mergers and Acquisitions

Looking for possible explanations on why companies still conduct mergers and acquisitions regardless of the negative market reaction to the bidders at the time of the announcement, one of the most interesting issues analyzed is the predominant motive for the transaction.

From all the studies done, a number of theories evolved and methods of measuring the influence of different factors on the decision to initiate a merger/acquisition were proposed. Although many motives were suggested, most of them can be aggregated into 3 dominant ones that the majority of the researchers agree upon.

Synergy

Synergy or value creating motive, assumes that a merger or acquisition is undertaken only if it presents opportunities to increase the value of combined

companies. This is the case when the summed value of the two parties involved – the bidder and the target – is smaller than the value of the new entity, after accounting for all operational, financial, distributional and other new opportunities, given the market belief that management teams can take advantage of them (Seth, 1990; Bradley et al, 1988). Mulherin and Boone (2000) for example, study a sample of restructuring events (acquisitions and divestitures) and conclude that, overall, in the '90s mergers were synergy driven and increased shareholders wealth. The authors also admit that the analysis methods used in their research neither indicate the sources of positive gains nor conclusively reject the non-synergy theories, although they mention that there is no evidence of such motivations in their sample.

To recognize synergy as the driving force of a transaction, Berkovitch and Narayanan (1993) develop a methodology that examines the relationships between different gains. They assume that if total, bidder and target gains are all positive and the first two are positively correlated, synergy is the main motive for acquisitions in a given sample. This is based on the idea that, if the capitalization of positive NPV is the only motive for the transaction, no matter how the gains are distributed, the bidder will not initiate it unless it will bring him some sort of benefits.

Applying this technique to their sample, Berkovitch and Narayanan (1993) find predominant synergy motivation for a sample of successful tender offers that took place between 1963 and 1988, with simultaneous weak presence of hubris.

Hubris

Hubris hypothesis is for the first time defined by Roll (1986) as managers' overconfidence in their skills to extract synergistic gains from an investment. It is not an intentionally bad motive, but nevertheless erroneous. Roll (1986) starts with a simple observation that during an acquisition, part of the value paid for the target company is nothing but a simple transfer of wealth from the bidder's shareholders, suggesting that the premium paid does not cover potential benefits that can result from the transaction. He suggests some gain/loss dynamics during the announcement period, which are tested later by Berkovitch and Narayanan (1993) and Seth et al (2000). In particular, if an acquisition is predominantly determined by hubris, total gains are slightly negative or zero, along with positive target gains and zero correlation between bidder and total gains.

Studying a sample of US takeover announcements, Roll (1986) finds evidence of extreme form of hubris, no synergistic gains to the acquisitions and the entire price paid for the target is a loss to the shareholders of the bidding company. As mentioned earlier, Berkovitch and Narayanan (1993) find evidence of moderate hubris motivation in tender offers.

Hayward and Hambrick (1997) and Malmendier and Tate (2004) conclude that there is a strong positive relationship between CEO hubris and losses to acquirer's shareholders.

Managerialism

Managerialism or agency drive for acquisitions is discussed for a long time in the literature. At the basis of this motive is the classical agency

problem, when the interests of shareholders and managers of a company oppose. In this case, the acquisition does not bare any synergy potential and even destroys value. Berkovitch and Narayanan (1993) argue that if acquisitions result in negative total gains, given the fact that targets always benefit from such transactions, bidder's shareholders lose value, that not only covers the price paid for the target but also the eventual value depreciation of the combined entity. They find strong evidence of managerialism in their sub-sample with negative total gains.

Morck et al (1990) also investigate the results of predominant managerial objective in mergers and reach the conclusion, that it is a very important factor in the negative market reaction.

2.3. Size Factors Found to Influence the Announcement Abnormal Returns

Besides the differences in motivation, some researchers looked at diverse size factors that might be explanatory of negative announcement abnormal returns to the bidder in conjunction with an active mergers and acquisitions market.

Asquith et al (1983) illustrate with an example the importance of taking into account the differences in size between the bidders and their targets, but it shows the effect of bidder size on the interpretation of the market reaction as well. The authors argue, that if there are two target companies, comparable by size and synergy potential, their bidders will receive the same dollar gains. But because of the considerable size difference, the larger bidder (compared to its target or to other bidders) gets a negligible relative gain and the smaller one obtains a positive, statistically significant relative abnormal return.

Relative Size of the Target to Its Bidder

In an attempt to explain the inconsistent pattern of bidders' gains in an acquisition, Asquith et al (1983) look at the relative size of the targets to their bidders and suggest that previous results are inconclusive because these size differences are not considered and that it is especially important when the relative size of the target is small. The empirical analysis of their study shows that bidders' abnormal returns are positively and significantly related to the relative size of the target company, results confirmed by Moeller et al (2004) on a later sample. Asquith et al (1983) also find that after controlling for the relative size effect, bidder's shareholders benefit from mergers in all cases.

Mulherin and Boone (2000), analyzing their sample of restructuring events, note that the relative size of the acquired firms is on average 42% (median 27%) of the size of the bidder and find that the synergy effects, the positive combined bidder and target returns, are significantly and positively related to the relative size of the target. That implies that if the target has a similar size as the bidder, its shareholders have more control over the acquisition conditions and, assuming that they normally wouldn't want to see a functional company devaluing, will try to improve their chances of synergies in the transaction, fighting the acquirers that have other motives than that of value creation. In the same line of reasoning, the market, seeing two companies, that are close to each other in size, will be better assured that synergy possibilities will be taken advantage of. If the target is small, hubris and agency motives can drive an acquisition, receiving little opposition and dragging the total gains down.

To complement that, Fuller et al (2002) investigate the importance of the relative size of the target in explaining the bidder's abnormal returns depending on the public status of the target. They find that for public targets, during the acquisition of which bidder's usually lose more compared to the transactions involving private firms or subsidiaries, the larger the relative size of the target the more significant is the loss to the bidder. Some of the explanations they offer are (a) the larger the target compared to its bidder, the harder it is to integrate the operations of the two companies together or/and (b) larger targets have more negotiating power to extract additional gains from the transaction.

Bidder Size

The relative size of targets is not the only size effect that has to be accounted for. The size of the bidders also plays an important part in how the announcement gains are distributed and recognizing this fact many studies include it as control variable for the cross-sectional analysis. For example, Chemmanur and Paeglis (2002) and Moeller et al (2004), by doing so, find that abnormal returns to the acquirer are strongly and negatively related to its size.

The latter study is one of the most recent and comprehensive examinations of differences in the market reaction to the acquisition announcements depending on the size of the bidder. As mentioned before, for their entire sample, the equally weighted average cumulative abnormal returns to bidders are found to be 1.1%. It implies that acquirer company shareholders' wealth increases at the announcement of an acquisition. However, their average dollar gains, as defined by Malatesta (1983), are negative. This is explained and proven to be a factor of the size differences between bidders. Specifically, small

acquirers register positive significant relative CAR, but they are small in dollar terms; large bidders have significant dollar losses. So in total, the dollar returns are negative, because losses of the large companies are greater than the gains of the small ones. Accounting for that, value-weighted bidder relative CAR for the entire sample is -1.18%. Controlling for their size, this study also finds that announcement CAR for large bidders is statistically insignificant (0.08% equally and -1.25% value-weighted CAR) compared to the strong positive result for small ones (2.32% and 1.27% for different weights, respectively). Generally, small acquirers register about 2% larger CAR and their transactions bare some dollar synergy gains, while in the case of large bidder acquisitions there are none.

In addition, Moeller et al (2004) conclude that the relative size of the target plays a different role in explaining the announcement abnormal returns to the bidder depending on the size of the latter. For large bidders this relationship is significantly negative, for small ones - it is significantly positive.

2.4. Why Small Bidders Are Better?

Overall, there are no conclusive results on why small companies are better bidders in the market opinion. First of all, some of the elements that are evoked in previous research papers as having considerable explanatory power of the announcement abnormal returns are found to be only marginally significant and highly sensitive to the applied model. Secondly, most of these studies do not distinguish between groups of bidders of different sizes.

The rest of this section is dedicated to the review of these factors and the particularities of the results depending on the size of the bidders, where available.

2.4.1. Differences in Motives for Mergers and Acquisitions

Moeller et al (2004), in their examination of market reaction to transactions initiated by bidders of different sizes, find that the total relative gain for the entire sample is a statistically significant 1.35%. This value is mostly determined by much larger total relative abnormal returns of 3.8% to small bidder acquisitions, in contrast to statistically significant but economically very small 0.7% for transactions with large bidders. As about total dollar gains, small bidders shareholders' wealth increases by statistically significant $5.34 mil, compared to the $55.50 mil loss for large bidders.

Based on that, the authors conclude that the acquisitions initiated by small companies have a solid synergy based motive for the transaction, while findings about the large bidders are consistent with the existence of negative synergies. Indeed, after a more extensive analysis of premiums paid and the probability of success of the acquisition, they also find that hubris is more relevant for large bidders than it is for small ones.

On the other hand, Demsetz and Lehn (1985) show that overall managers' ownership of small companies is higher, compared to the large firms. That limits the influence of managerialism in the acquisition decision of small bidders as well.

2.4.2. Informational Asymmetry

One of the factors that are assumed to explain the increased abnormal returns for small companies is the larger informational asymmetry at the moment of the announcement of the acquisitions.

First of all, there is an argument that the announcements made by small bidders are more of a surprise, because they normally have fewer shareholders and the market is not as interested in their progress as it is about large companies. Moeller et al (2004) mention though, that under this assumption, the announcements of large bidders should not have any surprise effect at all. Although it is partially true and some research papers find insignificant bidder relative gains at the announcement, there are a number of studies that register significant and negative abnormal returns for big acquirers and that should not be the case.

Secondly, in terms of information not relevant to the transaction itself that is incorporated into the price at the moment of the announcement, it is assumed that in the case of small bidders the informational asymmetry prior to the event is much more severe (Chang et al, 2004; Chemmanur and Paeglis, 2002; Chung et al, 1995; Bhushan, 1989).

There is an extensive body of literature on how the degree of market informational asymmetry influences different financial and performance measures, changes in the market price etc. For example, Chemmanur and Paeglis (2002) find that larger informational asymmetry of the bidder determines its smaller abnormal returns.

There are a number of variables used to measure the quantity and quality of available information and so determine the level of informational asymmetry.

One of the large groups of such proxies is related to the analysts' forecasts of a company's future earnings. These opinions are proved to influence the stock market prices (Francis and Soffer, 1997; Lys and Sohn, 1990, among others), one of the reasons being that it is considered hard for an average investor to interpret correctly a piece of information that is made available to the market and to evaluate the entire impact that it can have on the future performance of specific companies or industry.

In addition, the analysts' professional estimation of possible implications of some news might be important to investors in making an informed decision, because, as suggested by Chang et al (2004), an analyst can obtain some private information about a company.

There are a number of widely used measures of informational asymmetry that are based on the analysts' interest. The number of analysts following, the accuracy and the consensus of the earnings forecasts have been very useful in assessing the way the market absorbs the available information.

2.4.2.1. Number of Analysts Following a Company

An accepted fact is that the number of analysts following a company is directly and positively related to the level of its informational asymmetry (Ramnath et al, 2005; Chang et al, 2004; Brennan and Subrahmanyam, 1995; Chung et al, 1995). More interesting is how different factors determine the analysts' interest for a firm.

Bhushan (1989) looks at how a few firm specific characteristics influence the number of analysts following taking into account the cost of acquiring information. He finds that this interest is determined by how widely the company is owned and if there are institutional investors. So the primary aim of the forecasts release is to inform the existing shareholders and not to attract new investors, results confirmed by Chung et al (1995) as well.

Another firm specific feature that greatly influences the analysts' interest is the variability of company's returns (Bhushan, 1989): if high – it is associated with higher potential rewards, so the number of analysts will increase because the information about such companies is more valuable.

As in regards to small companies, although they have less complicated divisional structure and the lack of information about them should attract better the analysts' interest - it is not the case. Large companies usually release more information and there is a higher demand for the analysts' professional opinion, because of the previously mentioned observation that larger possible gains make this information more valuable. Generally, it is found that the analysts' interest in smaller companies is limited (Chang et al, 2004; Chung et al, 1995; Bhushan, 1989).

2.4.2.2. Earnings Forecasting Errors and Opinion Dispersion

The use of other measures related to the analysts' opinion is based on the theoretical model, developed and proposed by Blackwell and Dubins (1962), that opinions tend to converge when the quantity and quality of the available information increases. This theory is later applied to the empirical study of the analysts' expectations about a firm's earnings and the findings are that the

analysts' consensus, vs. individual estimations, improves the quality of the forecasts (Brown, 1993, 1991; O'Brien, 1988).

According to O'Brien (1988), who also compares the accuracy of different forecasting statistical models with analysts' forecasts of EPS, the latter perform much better, the proposed explanation being that these predictions incorporate information that is usually hard to quantify, including professional experience and intuition.

Elton et al (1984) look into the nature and the dynamics of forecasting errors and find that during the fiscal year the magnitude of errors is reducing monotonically as the end of the year approaches, given that during that year analysts permanently follow a company and the information released to the market is continuous. So the forecasts are more accurate closer the announcement of the earnings, one of the characteristics of the forecasting errors confirmed by other studies as well (Ramnath et al, 2005; Philbrick and Ricks, 1991; O'Brien, 1988).

Elton et al (1984) also find that, when the forecasting errors are partitioned into different components by their source, analysts rarely make large mistakes in regards to the expected growth rate of the economy, but often are inaccurate in assessing the performance of both industries and individual companies. Considering that overall the precision of the forecasts increases over the fiscal year, the error part attributable to the industry evolution also decreases and in the month before the year end more than 84% of the estimation error is company specific. Interesting thing is that these changes are not uniform in time and are more pronounced in the two months preceding the year-end.

Another characteristic of the forecasting accuracy is that the analysts tend to make the same error from year to year for the same company (Elton et al, 1984). That confirms the opinion of many other studies that the performance of some firms and industries is just harder to forecast. There are a number of explanations for that: earnings volatility of the company and/or industry (Clarke and Shastri, 2001; Bhushan, 1989), high diversification across industries and geographical dispersion of the divisions (Krishnaswami and Subramaniam, 1999; Bhushan, 1989), stock market cross-listings (Chung et al, 1995).

The validity of this hypothesis is confirmed by the fact that although the estimation errors are declining during the fiscal year, the disagreement between the analysts, as measured by the standard deviation of forecasts, does not change significantly, so greater the disagreement, higher the informational asymmetry (Chung et al, 1995).

In terms of the size of the company, on the one hand, large companies are much harder to forecast for, because they are more dispersed across geographical regions and industries and that increases the cost of getting and interpreting correctly the new information. As Chang et al (2004) mention, analysts are attracted to the companies that are easier to understand, thus less complex. But large companies are much more transparent and the information available is detailed and easily accessible and this insures more accurate estimations of future EPS.

2.4.2.3. Missvaluation of Stock

As noted before, announcement abnormal returns represent much more than just the effect of the acquisition. They also contain a component that is a value correction for non-event information that was not integrated into the price earlier. In order to incorporate the fact that large bidders register negative announcement gains into this assumption, the findings of Dong et al (2003) have to be considered, that firms with high valuations, as measured by book to market ratio, obtain lower abnormal returns because they communicate to the market that they are overvalued. Large companies generally have higher book to market values compared to small ones, so at the announcement the undervaluation is remedied for small bidders and overvaluation for large bidders.

But Moeller et al (2004) don't find confirmation for this hypothesis in their results and conclude that there is no evidence that big companies are overvalued more frequently than the small ones.

At the same time, Chemmanur and Paeglis (2002) find that there is a strong negative relationship between valuation errors and announcement abnormal returns and, as established previously, small bidders are more likely to have a higher market informational asymmetry, hence to be missvalued.

2.4.3. Changes in Operating Performance

Numerous studies looked at whether operating performance of the bidders improves after a merger or an acquisition. This is in line with the synergy theory and, indeed, the long-term improvement of the financial ratios of the combined company after the completion of the transaction seems plausible,

if it has synergy potential and the bidder management team is able to take advantage of it. Although most of the previous studies concentrated exclusively on large companies, there is still no consensus in the findings (Caves, 1989). In line with that, Healy et al (1992) motivate their examination of the changes in the operating performance in the post-acquisition period with the facts, that previous studies (a) by analyzing the announcement abnormal returns, failed to establish beyond doubt whether takeovers create value or not and (b) did not succeed in proving that the changes in operational performance have any explanatory power over the announcement gains, even after intensely being hypothesized to be the main factor that is able to increase value.

The studies of the changes in the operating performance are structured similarly to each other. First of all, it needs to be established whether the bidder and/or target have more efficient operations prior to the merger, compared to other companies that do not engage into reorganizing transactions. Only after that any improvements due solely to the analyzed event can be recognized.

By doing so, Heron and Lie (2002) use the operational income scaled by sales as proxy for operational performance and find that both bidders and targets prior and the combined entities after the transaction outperform the matching, non-event companies. Healy et al (1992), using a similar proxy, reach the same conclusion, but only for the bidders in their sample. Both studies also agree that there are no improvements in the operational performance subsequent to the reorganization of the companies.

At the same time, Heron and Lie (2002), find that the changes in the operational performance are strongly and positively related to the market to book ratio of the bidders' assets and, due to the obtained results, only

hypothesize that the announcement abnormal returns can be explained by the changes in the capital structure or investors' perceptions about future growth opportunities of the merged company.

In contrast, Healy et al (1992) go further and also use another proxy for the operational performance, specifically the operational income scaled by assets. Although the results are highly sensitive to the industry adjustments, there is strong evidence that prior to the announcements neither bidders nor targets have a superior operational performance compared to other companies. However, after the event, it improves significantly and it is due mostly to the transaction itself. This leads the authors to the conclusion that the operational performance improvement after the merger is due to the more efficient use of the available assets. When looking at how this influences the announcement abnormal returns, a strong positive correlation between the two is found.

Healy et al (1992) and Heron and Lie (2002) also examine if the diversifying character of the transaction, the financing method or the relative size of the target can be explanatory of the changes in operational performance. Both studies find strong confirmation of the fact that significant overlap in the lines of business of bidders and targets is positively related to the improvements in the operating efficiency and did not find any such evidence for the method of payment. Neither the size of the acquisition nor the relative size of the target are found to influence the post-event operating performance.

2.4.4. Method of Payment

Method of payment proved to be one of the main factors in how the market distributes the gains from an acquisition, especially important in

explaining the gains to the bidder. A number of studies, including those done by Moeller et al (2004), Chemmanur and Paeglis (2002), Fuller et al (2002), just to name the most recent ones, found that on a general sample, acquisitions paid for with equity register much lower, usually negative gains compared to cash or mixed payment transactions and the difference between all of them is statistically significant.

Fuller et al (2002) also find that, as the relative size of the target increases, the returns to the bidders become more positive for cash, more negative for stock, and unchanged for mixed payments.

III. Hypotheses development

In an attempt to find an explanation why the market rewards better small bidders at the announcements of mergers/acquisitions compared to large ones, the departure point is the previous work that theorized and confirmed the influence of some factors on the market reaction, like dissimilarities in motivations to initiate the transaction, differences in the market informational asymmetry and optimized use of operational capacities. The development of the hypotheses for this study is presented in this section.

3.1. Motives for Merger and Acquisition Activity

It is quite easy to argue that small and large companies have different reasons to initiate a merger or acquisition.

First of all, small bidders have less internal financial capacity to perform an acquisition - to pay for the target and finance the subsequent reorganization

projects. They also have limited possibilities to raise additional funds externally. Therefore, under the assumption that any major investment is preceded by a meticulous NPV value analysis regardless of the size of the company, small bidders will be more careful and conservative in selecting their targets, to ensure gains from the transaction, compared to larger companies, that have greater financial freedom to invest and are more risk tolerant.

So small bidders will be predominantly motivated by the possibility to take advantage of some sort of synergy effects, especially of operational character, while for large bidders, it might not be as important.

H1a: Synergy is the dominant motive in transactions with small bidders and secondary in those with large bidders.

The major assumption is that total gains reflect the synergy potential that can be capitalized from combining two operations, so a positive value indicates that the transaction is value creating. At the same time, the adjustments made to the value of the bidder are a reflection of the market's opinion about the resulting changes in the shareholders' wealth. A company can initiate an acquisition based on the possible synergy gains only if its own shareholders receive a part of it, so assigning a positive gain to the bidder is an acknowledgment that the motives for the transaction are value enhancing.

Secondly, it is proven that managers of large companies are inclined to manifest overconfidence in their investment decisions, based on their previous successful experience and its recognition. Contrary to that, because the activities of small firms are less interesting to the market and major events are

covered superficially, their managers are not as likely to develop hubris attitude and to let it play a major role in motivating an investment.

At the same time, the smaller the company, the more significant the managers' ownership, making the interests of the executives better aligned with those of the shareholders. Also, small firms are more likely to have fewer shareholders holding larger stakes of the total equity. These factors limit the manifestation of managerialism as motive for transactions as well. For large bidders, on the other hand, agency can be a big problem. Since the shares of these companies are widely held and there are rarely separate groups of shareholders with sufficient authority to monitor and stop damaging tendencies, managers are not as attentive to shareholders' welfare.

H1b: Non-value creating motives (hubris and managerialism) are predominant in transactions with large bidders and not as important in those with small bidders.

The value destruction motives are more likely to be present or be more evident when the value is lost, meaning when the total gains are negative - the case of value erosion of bidder and target shareholders' value.

3.2. Changes in Informational Asymmetry

To study the differences in informational asymmetry depending on the size of the bidder, first of all it is needed to determine what are the dissimilarities in the market informational coverage for these companies before the announcement.

Considering that the bidders in the studied samples are exclusively public companies, all of them are subject to the same basic disclosure regulations and financial statements are done by the same rules and principles, so the quantity and quality of the available primary financial information is similar for all companies. But it can be argued that the pool of information is too big. If it is not analyzed periodically, it has little value for average investors. That is why they rely on the professional analysts' opinions about the impact that the new information will have on the future performance of companies.

The size of the firm determines the degree of informational coverage. Professional analysts that study and, generally, keep a company in the light, providing the market with qualitative and up-to-date information, follow closer the activities of larger companies, because of greater possible gains and demand for professional opinions. Consequently small firms are subject to greater informational asymmetry, because the gains from following and forecasting their activities are small and the parties interested in analysts' estimations are less numerous.

H2a: The informational asymmetry is greater for small bidders compared to the large ones in any given year.

So the number of analysts following should be less and the error and standard deviation of their forecasts should be larger for small bidders at all times.

Subsequently, the announcement of a merger/acquisition brings the participating companies to the market's attention and that increases the

demand for professional opinions, because the existing and potential investors are interested in the progress of such a major transaction. Trying to satisfy the demand, analysts should provide a more detailed analysis of past activities of these companies. That would correct for the possible previous market missvaluations and help a more precise assessment of how the new transaction will influence the future performance, consequently, allow for a better estimation of its future value as seen at the moment of the announcement.

Given the fact, that large bidders are already well covered, the increase in the analyst's interest should be more significant for small bidders, that are less known to the market and have a more pronounced informational asymmetry prior to the announcement.

H2b: The increase in informational coverage around the announcement is more significant for small bidders compared to the large ones.

So it would be expected that the changes in the number of analysts and/or the quality of their forecasts at the announcement are larger for small bidders.

Another factor that has to be accounted for is whether the improvements in the analysts' coverage are permanent or temporary. The difference is that if the analysts' interest remains the same subsequently to the announcement, it will ensure better forecasts latter, so the market will be more knowledgeable and there will be less chance for future missvaluations. Only in this case we can talk about long-term improvements in informational asymmetry. If the analysts' interest is temporary, the adjustments that are made are only a one-

time correction of past informational asymmetry and the market will continue making the same mistakes in valuing the company as soon as the analysts' coverage returns to its pre-event level.

For large bidders, because it is expected that the correction for any previous valuation mistakes will be small, it can be safely assumed that the increase, if any, in the analysts' interests at the announcement will not be permanent. For small bidders it is hard to say. Although it can be argued that once brought to the attention of the market, its interest for a small company will persist, because the management team proved that it is able to create shareholders' value, it is more likely for analysts to lose interest in the activities of this firm. Even after a merger or acquisition, it remains a small company and the demand for analysts' coverage is still limited, for the reason that, as showed by previous studies, analysts' forecasts are mostly directed toward the existing shareholders.

H2c: The change in analysts' coverage at the announcement is temporary for all bidders.

3.3. Changes in Operational Performance

As mentioned before, at the moment of the announcement of a merger/acquisition the market also assesses if the bidder can take advantage of the presented synergies and fully capitalize them, like the possibility to improve the operational performance.

One can argue, that because small bidders have a more flexible organizational structure and they are more sensitive to any operations that are

not optimized, an increase in the operational performance of the combined entity can be expected after the event. At the same time, large companies, by being more diversified and having a less binding financial constraint, have better capacity to integrate the two operations easier. But for these companies, as in the case of announcement gains, if the target is significantly smaller compared to its bidder, the changes in the operational capacity will be insignificant and hard to detect.

H3a: If there are any permanent improvements in the operational performance of the new entity after the completion of the transaction, it will be more pronounced for small bidders.

IV. Data Set

In this section, the data set selection criteria and refining conditions are presented, as well as the basic statistical description of the samples studied. In the final part the construction of the subsequently analyzed measures is explained along with the presentation of initial sources of their components.

4.1. Sample Selection Criteria and Refining Steps

For this study, US Mergers and Acquisitions Database of Securities Data Company (SDC) is used as the source of mergers and acquisitions announced between 1980-2002. The transactions have to be completed and involve only public bidders and targets, as defined by SDC bidder and target public status variables respectively, regardless of the size of the deal or size of the target. The

final ownership of the target is 100% and at least 50% of it is acquired during the analyzed event.

All sample-refining steps are presented in Table 4.1.1. As seen, SDC query results yield a total of 6,408 observations that initially are matched with CRSP database. More than half of the original observations are lost after Utility and Financial industry segments bidders are excluded, based on the available CRSP SIC codes (4000-4999 and 6000-6999 respectively). The samples of small and large bidders are formed at this point, based on their market capitalization 61 days prior to the announcement. Similar to Moeller et al (2004), if the market capitalization of the bidder matches the first quartile of the NYSE listed firms at the year-end before the announcement it is defined as a small bidder, otherwise as a large bidder.

Subsequently, the resulting data set is matched with Compustat database. Because a long-term analysis of financial data for the bidders is performed, in order for the event to be included into the final sample, the necessary financial information about the acquirer has to be available for at least three consecutive years out of seven around the announcement (-3 to 3 year). Also, multiple events for the same company for the respective seven-year periods are excluded, resulting in the Basic sample with a total of 2,726 observations.

The analysis of multiple measures of informational asymmetry and operational performance requires further refining steps, so the main concern is to be able to keep as many observations as possible and to work with a statistically representative sample. That is why two different matching criteria are separately applied.

Table 4.1.1. The Description of the Data Set Refining Steps

US mergers and acquisitions sample resulted from SDC query of announcements made between 1980-2002, involving public targets only, with the final ownership of the targets of 100%, with most of it acquired during the analyzed transaction. The bidders from the SDC sample are matched with both CRSP and Compustat databases. Based on the CRSP SIC codes, companies from the Utility (40-49) and Financial (60-69) industrial segments are excluded. The remaining sample is divided based on the market capitalization of the bidder 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. The sample is refined further, requiring the availability of financial data on Compustat for at least 3 consecutive years from 7 around the announcement. This basic sample is subsequently separately matched with I/B/E/S database information for bidders, obtaining the Analysts' Forecasts sample, and with available pre-announcement CRSP and Compustat information on the respective targets, Operational Performance sample. The Combined sample is the combination of the latter two. Percentage Excluded is calculated based on the number of observations in the previous step.
* indicates that the value is reported relative to the Basic sample.

Bidders	**Small**	**Large**	**Total**	**% excluded**
SDC				
Initial sample	-	-	6408	-
CRSP				
Initial matching	-	-	5591	13%
After excluding Utility and Financial Companies (based on CRSP SIC codes)	929	2254	3183	43%
Compustat				
Initial matching of bidders after excluding observations with insufficient data for ratio analysis	805	2006	2811	12%
Basic Sample				
Observations with at least three consecutive years of data available during the seven-year period around the announcement	731	1995	2726	3%
Analysts' Forecasts sample				
Initial matching with IBES (at least three consecutive annual forecasts within the seven years and at least 3 analysts following in any of those years)	82	1050	1132	58%*
Operational Performance sample				
Matching of pre-announcement Compustat data for bidders and targets	84	601	685	75%*
Combined sample				
Combined Analysts' Forecasts and Operational Performance	132	1077	1209	56%*

The first sample, meant to be studied for the changes in the informational asymmetry of the bidders around the announcement, is obtained by matching the Basic sample with the US Earnings Forecasts and Actuals files of I/B/E/S database, that contain all the necessary information about the earnings forecasts made by professional analysts. Further, there are two restrictions that are applied. First is that the analysts' estimations are available for at least 3 consecutive years, including the year-end before the announcement. The second restriction is that if in any year the number of analysts following is less than 3, it is modified to 0, as suggested by Elton et al (1984) which, after examining the statistical properties of the earnings estimations, mention that this cutoff point is a fair tradeoff between a large sample and statistically correct measures of analysts' interest.

At this stage, 58% of the observations from the Basic sample are dropped and the data set used for the examination of the changes in the informational asymmetry as measured by the analysts' interest for the bidders' activities consists of 1,132 events, 82 of them involving small and 1,050 large bidders.

As mentioned previously, the time between the announcement of the forecast and the announcement of the actual EPS is very important and the most recent aggregate forecast is more accurate, having the lowest absolute errors (Ramnath et al, 2005; Philbrick and Ricks, 1991; O'Brien, 1988). So the available forecast closest to the announcement of the actual earnings are considered, usually taking place in the period of 6 month after the closure of the fiscal year. Also, according to Ramnath et al (2005) when using the I/B/E/S forecasted EPS as proxy for the market expectation, it is the best to use the median value of the forecasts.

Matching the Compustat information of the bidders in the Basic sample with the same data for their respective targets for the pre-event years forms the second sample, allowing a long-term analysis of changes in Operational Performance. Only the observations, with a full set of financial information available for both bidders and targets on Compustat and CRSP are considered.

As expected, a significant number of observations from the Basic sample are dropped because of lack of necessary target data (75%) and the final sample used for the examination of the changes in the financial ratios of the combined companies is formed of 84 transactions involving small and 601 with large bidders.

Because there are observations from the Basic sample, that were not included in any of the final samples, the latter were combined together for the reporting of the basic statistics, in order to be more accurate about the composition of the analyzed total data set. It also may have a dissimilar structure from the samples examined before, disparity explained by the differences in the imposed restrictions.

4.2. Statistical Summary of the Samples

Table 4.2.1 presents the structure of the analyzed final samples by year of announcement and bidder size, as well as the statistics on the Combined sample.

Similarly to other studies, the number of events increases constantly throughout the 80's, reducing in the early 90's and reaching 121 observations in 1999, that being the top year for merger and acquisition activity for the analyzed sample, regardless of the size of the bidder.

Table 4.2.1. Sample Structure by Announcement Year and Bidder Size

The Combined sample is the combination of the Analysts' Forecasts sample and Operational Performance sample. All bidders are divided into separate samples based on their market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large.

Bidder size/ Year of ann.	**Analysts' Following sample**			**Operational Performance sample**			**Combined sample**		
	Small	**Large**	**All**	**Small**	**Large**	**All**	**Small**	**Large**	**All**
1980	0	2	2	0	0	0	0	2	2
1981	0	18	18	0	1	1	0	19	19
1982	1	14	15	1	3	4	2	15	17
1983	1	14	15	0	7	7	1	14	15
1984	1	38	39	3	19	22	3	38	41
1985	4	35	39	6	23	29	8	37	45
1986	3	36	39	0	24	24	3	37	40
1987	2	38	40	2	25	27	4	41	45
1988	7	37	44	4	20	24	10	38	48
1989	3	27	30	4	18	22	5	27	32
1990	0	18	18	2	12	14	2	19	21
1991	0	23	23	2	13	15	2	24	26
1992	2	17	19	2	8	10	3	17	20
1993	2	24	26	3	17	20	5	24	29
1994	6	38	44	4	19	23	8	40	48
1995	7	65	72	7	44	51	10	68	78
1996	9	73	82	6	32	38	11	75	86
1997	9	88	97	7	44	51	14	91	105
1998	9	102	111	11	62	73	16	104	120
1999	11	106	117	12	67	79	14	107	121
2000	2	107	109	4	63	67	5	107	112
2001	1	84	85	2	58	60	3	86	89
2002	2	46	48	2	22	24	3	47	50
Total	**82**	**1050**	**1132**	**84**	**601**	**685**	**132**	**1077**	**1209**

Table 4.2.2. Samples Summary Statistics

The Combined sample is divided into two sub-samples, based on the bidders' market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. In Panel A, the market capitalization of both bidders and targets is as of 61 days before the actual announcement and is expressed in $mil. In Panel B, the Relative Size Ratio is calculated by dividing the pre-announcement market capitalization of the target to the respective value of its bidder; the Days to Completion is the number of days from the announcement of the merger/acquisition to its official completion according to SDC information. In both panels, the values are winsorized at 5% and 95% levels. In Panels C through E the number of cases is also presented relative to the total number of announcements. In Panels C and D observations are separated into different methods of payment and tender offers vs. mergers groups as defined by the respective SDC fields. In Panels E and F the exchange codes and SIC codes used are those available from CRSP.

Bidder Size	Small	Large	All
Panel A. Market Capitalization Before the Announcement (in $mil)			
Bidder	86.305***	8,426.739***	7,572.092***
	[80.831]***	[1,969.648]***	[1,516.261]***
	N=112	N=981	N=1093
Target	37.483***	386.905***	351.100***
	[23.359]***	[122.513]***	[102.306]***
	N=112	N=981	N=1093
Panel B. Relative Size Ratio and Days to Completion			
Relative Size ratio	0.5467***	0.1430***	0.1844***
	[0.3507]***	[0.0714]***	[0.0837]***
	N=112	N=981	N=1093
Days to Completion	123.89***	106.66***	108.55***
	[110.00]***	[94.00]***	[95.00]***
	N=132	N=1077	N=1209

As shown in table 4.2.2, Panel A, in the Combined sample the number of considered observations involving large bidders is about 9 times the number of those with small bidders and their market capitalization is 98 times larger. These two factors drive the average market capitalization of the bidders to $7,572 mil [median $1,516 mil]. As much as for targets, those acquired by large bidders are only 10 times as large as those purchased by small bidders, resulting in the average market capitalization of the targets of $351 mil [$102 mil]. Therefore, the resulting relative size of the targets, defined as the market

Table 4.2.2. Samples Summary Statistics (cont')

Bidder size		Small	Large	All	
				N	%
Panel C. Method of Payment					
Cash		43	409	452	37.39%
Stock		48	417	465	38.46%
Cash/Stock Combination		25	180	205	16.95%
Other		16	71	87	7.20%
Total		132	1077	1209	
Panel D. Tender Offers vs. Mergers					
Tender offers		23	338	361	29.86%
Mergers		109	739	848	70.14%
Total		132	1077	1209	
Panel E. Distribution by Stock Exchanges					
Bidder	NYSE	24	629	653	59.74%
	AMEX	11	22	33	3.02%
	Nasdaq	77	330	407	37.24%
Target	NYSE	8	277	285	26.08%
	AMEX	19	65	84	7.69%
	Nasdaq	85	639	724	66.24%
Total		112	981	1093	
Panel F. Differences in Bidder and Target SIC Codes					
Different SIC codes		45	478	523	47.85%
Same SIC codes		67	503	570	52.15%
Total		112	981	1093	

capitalization ratio of the targets to that of their bidders 61 days prior to the announcement, is 0.55 [0.35] in the case of small bidders and only 0.14 [0.07] for large bidders (Panel B). That is in context with previous studies that found that the relative size of the targets gets smaller as the size of the bidder increases.

The number of days necessary for a merger/acquisition to close is slightly higher for small bidder transactions compared to those with large bidders, averaging to 123.89 days [110] and 106.66 days [94] respectively (Panel B), values significantly different only at 10% level. Also, in about 10% of the cases small bidders would announce the transaction at its completion; there are no such cases involving large bidders (results not tabulated).

In terms of frequency of different methods of payment used by bidders of different sizes, cash and stock acquisitions occur with the similar incidence for small and large bidders, followed by the combination of the two (Panel C).

Small bidders initiate a tender offer for every five mergers they are involved in, contrary to large bidders where the proportion is of one to two respectively. As expected, large bidders are about 2.5 times more likely to initiate a tender offer than small bidders. It can be explained by the fact that large bidders are more apt to win a tender offer because of the less important financial constraint that is crucial for small bidders (Panel D). In regards to the attitude of the acquisitions (not tabulated), the larger the bidder the more frequent is the hostility of the event, although this is the case of only 2.3% of the total number of observations. Mergers of equals are also rare in the studied sample - there are only 6 occurrences for large companies and none for small ones.

Panel E in table 4.2.2 presents the distribution of the bidders of different sizes and their respective targets by the stock exchanges they are listed on. As expected, 69% of small bidders are listed on the NASDAQ (vs. 34% of large bidders) and 64% of large bidders are listed on NYSE (vs. only 21% of small ones). An insignificant percentage of all bidders are listed on the AMEX. In the case of targets, again without surprise, most of them are listed on NASDAQ

(76% targets of small bidders and 65% of large bidders) that also explains the fact why the targets are much closer in size to each others compared to their bidders.

When looking at the differences in the two digit SIC codes of the bidders and their respective targets (Panel F), we can notice that there is a slightly higher tendency to acquire targets from the same industry for small bidders (1.5/1 ratio between non-diversifying vs. diversifying transactions) compared to large bidders (1.2/1 respectively). So small companies engage in diversifying transaction less frequently compared to large ones. Also, the number of days necessary to complete a transaction does not differ significantly whether the SIC codes of the bidder and target coincide or not (not tabulated).

The structure of the samples by industry division and two digits SIC codes of the bidders are presented in table 4.2.3. As seen, the industry with the most observations for both small and large bidders is the Business Services, with 17.19% of the total sample, followed by the Chemical and Allied Products (11.21%), Machinery and Computer Equipment (10.75%), Electric and Electronic Equipment (10.11%) and Instruments and Related Products (8.27%). Overall, it seems that the sample reflects the major industrial trends in the merger and acquisition activities of the last 20 years.

Table 4.2.3. Combined Sample Structure by Two Digit SIC Codes and Size of Bidders

The Combined sample is the combination of the Analysts' Forecasts and Operational Performance samples. It is divided into two sub-samples, based on the bidders' market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. CRSP SIC codes are used.

Bidder Size	**Small**		**Large**		**Total**	
SIC And Description	**N**	**%**	**N**	**%**	**N**	**%**
1	2	3	4	5	6	7
Division B: Mining						
10 Metal Mining	1	0.91%	9	0.92%	10	0.92%
13 Oil And Gas Extraction	9	8.18%	32	3.27%	41	3.77%
Division C: Construction						
15 General Building Contractors	0	0.00%	3	0.31%	3	0.28%
Division D: Manufacturing						
20 Food And Kindred Products	0	0.00%	28	2.86%	28	2.57%
21 Tobacco Manufactures	0	0.00%	1	0.10%	1	0.09%
22 Textile Mill Products	0	0.00%	4	0.41%	4	0.37%
23 Apparel And Other Textile Products	0	0.00%	5	0.51%	5	0.46%
24 Lumber And Wood Products	1	0.91%	6	0.61%	7	0.64%
25 Furniture And Fixtures	1	0.91%	4	0.41%	5	0.46%
26 Paper And Allied Products	0	0.00%	22	2.25%	22	2.02%
27 Printing And Publishing	1	0.91%	21	2.15%	22	2.02%
28 Chemicals And Allied Products	12	10.91%	110	11.25%	122	11.21%
29 Petroleum And Coal Products	0	0.00%	9	0.92%	9	0.83%
30 Rubber And Miscellaneous Plastics Products	2	1.82%	10	1.02%	12	1.10%
32 Stone, Clay, And Glass Products	0	0.00%	5	0.51%	5	0.46%
33 Primary Metal Industries	3	2.73%	19	1.94%	22	2.02%
34 Fabricated Metal Products	3	2.73%	40	4.09%	43	3.95%
35 Machinery And Computer Equipment	19	17.27%	91	9.30%	110	10.11%
36 Electric And Electronic Equipment	12	10.91%	105	10.74%	117	10.75%
37 Transportation Equipment	2	1.82%	40	4.09%	42	3.86%

Table 4.2.3. Combined Sample Structure by Two Digit SIC Codes and Size of Bidders (cont')

1	2	3	4	5	6	7
38 Instruments And Related Products	11	10.00%	79	8.08%	90	8.27%
39 Miscellaneous Manufacturing Industries	1	0.91%	13	1.33%	14	1.29%
Division F: Wholesale Trade						
50 Wholesale Trade-Durable Goods	3	2.73%	14	1.43%	17	1.56%
51 Wholesale Trade-Nondurable Goods	1	0.91%	15	1.53%	16	1.47%
Division G: Retail Trade						
53 General Merchandise Stores	0	0.00%	17	1.74%	17	1.56%
54 General Merchandise Stores	0	0.00%	8	0.82%	8	0.74%
56 Apparel And Accessory Stores	0	0.00%	5	0.51%	5	0.46%
57 Furniture And Home Furnishings Stores	1	0.91%	6	0.61%	7	0.64%
58 Eating And Drinking Places	1	0.91%	4	0.41%	5	0.46%
59 Miscellaneous Retail	1	0.91%	18	1.84%	19	1.75%
Division I: Services						
70 Hotels And Other Lodging Places	2	1.82%	6	0.61%	8	0.74%
72 Personal Services	0	0.00%	7	0.72%	7	0.64%
73 Business Services	15	13.64%	172	17.59%	187	17.19%
75 Auto Repair, Services, And Garages	0	0.00%	3	0.31%	3	0.28%
78 Motion Pictures	0	0.00%	3	0.31%	3	0.28%
79 Amusement & Recreation Services	1	0.91%	3	0.31%	4	0.37%
80 Health Services	3	2.73%	18	1.84%	21	1.93%
82 Educational Services	0	0.00%	3	0.31%	3	0.28%
83 Social Services	0	0.00%	6	0.61%	6	0.55%
87 Engineering, Accounting, Research, Management, And Related Services	4	3.64%	10	1.02%	14	1.29%
999 Not Classified	0	0.00%	4	0.41%	4	0.37%
Total	**112**		**981**		**1093**	

4.3.Construction of Analyzed Measures

Measures of Informational Asymmetry

As mentioned previously, widely used measures of informational asymmetry are based on the analysts' forecasts of earnings, specifically (a) the actual number of analysts following a company, (b) their forecasting errors, related whether to the closing stock price or to the announced actual EPS, and (c) the standard deviation of the forecasts. All formulas, along with the exact sources of the items used, are presented in table 4.3.1, Panel A.

To insure the quality of the measures of informational asymmetry, there are a few requirements to the data. First of all, the forecasts closest to the announcement of the actual annual EPS are used, because they are proven to be the most accurate. Secondly, the necessary information has to be available for at least 3 consecutive years of observations, including the year of the announcement. Thirdly, if there is no information in the I/B/E/S database on the number of analysts following a company in any given year or if it is less than 3 at any time, the value of this variable is replaced by 0. Lastly, if the number of analysts following is 0 for any particular year, the forecasting errors and standard deviation of the estimates are treated as missing.

For the measures of the forecasting errors, it is customary to relate the absolute difference between the estimated and the actual EPS to either the closing stock price (Forecasting Error 1) or to the actual value of the EPS (Forecasting Error 2), representing the relative error to the market price or to the actual EPS, respectively. Similarly to Ramnath et al (2005), in order to calculate the forecasting error relative to the stock price, the fiscal year-end closing price for the respective year is taken from Compustat.

Table 4.3.1. Construction of the Analyzed Measures

The measures of Informational Asymmetry are based on Analysts' Forecasts of the EPS and are calculated using the items from the Summary Statistics and Actuals Files of I/B/E/S. For the calculation of the Forecasting Error reported to the market price, the Closing Price for the fiscal year is taken from Compustat. All the information needed for calculation of the measures of Operational Performance is taken from Compustat Annual Files.

Panel A. Measures of Informational Asymmetry Based on Analysts' Forecasts			
Measure	**Items**	**File and Database**	**Formula**
Number of Analysts following	- Item I "Number of Estimates"	Summary Statistics file I/B/E/S	
Forecasting Error 1	- Item L "Median Estimate" - Item G "Actual EPS" - Data 199 "Fiscal Year Close Price"	Summary Statistics file Actuals Data file I/B/E/S Annual Data Compustat	$\frac{\lvert Actual\ EPS - Estimated\ EPS \rvert}{Closing\ Price}$
Forecasting Error 2	- Item L "Median Estimate" - Item G "Actual EPS"	Summary Statistics file Actuals Data file I/B/E/S	$\frac{\lvert Actual\ EPS - Estimated\ EPS \rvert}{Actual\ EPS}$
Standard Deviation of Forecasts	- Item N "Standard Deviation" - Item G "Actual EPS"	Summary Statistics file Actuals Data file I/B/E/S	$\frac{Standard\ Deviation}{Actual\ EPS}$

Panel B. Measures of Operational Performance			
Measure	**Source**		**Formula**
Return on Assets (ROA)	- Data 6 "Total Assets" - Data178 "Operating Income after Depreciation"	Annual Data Compustat	$\frac{Operating\ Income}{Total\ Assets}$
Sales Margin (SM)	- Data12 "Net Sales" - Data178 "Operating Income after Depreciation"	Annual Data Compustat	$\frac{Operating\ Income}{Net\ Sales}$

The standard deviation measure of informational asymmetry is standardized by the actual EPS, representing the dispersion among the analysts' forecasts.

Measures of Operational Performance

The construction of the measures of operational performance is presented in table 4.3.1, Panel B. As seen, all necessary items for the calculation of the respective ratios are on annual bases and taken from Compustat.

The changes in operational performance are assessed based on the evolution of the Return on Assets (ROA) and the Sales Margin (SM). For the pre-announcement period, the basic items used to calculate these ratios (Total Assets, Net Sales and Operating Income after Depreciation) are aggregated for bidders and targets to present the approximate combined value of the two companies most appropriate to be compared to the same ratios of the merged companies after the completion of the transaction. For all these ratios the negative observations are considered missing.

V. Results

In this section, the main statistical results and their examination are presented. First, the results of the performed event studies are discussed. Based on that, an analysis of the motives of the bidders to initiate a merger/acquisition is done. Subsequently, the basic results on the measures of informational asymmetry and operational performance are investigated.

5.1. Market Reaction to the Announcement of Mergers and Acquisitions and the Distribution of Resulting Gains

Event studies are performed for both bidders and available targets, in order to assess whether or not the market perceives differently the acquisitions initiated by bidders of different sizes. The normal returns are estimated based on [-300, -46] days period before the announcement (default Eventus estimation period) and both CRSP equally- and value-weighted market indexes are applied.

Table 5.1.1 presents the mean and median announcement cumulative abnormal returns (CAR) of the bidders, their targets, and calculated combined total relative gains, separately for small and large bidders and the entire sample, for two basic windows – [-1, 1] and [-3, 3] days.

Total gains are calculated by multiplying the gains to the bidder and to the target to their respective pre-announcement market capitalization values, combining them together and expressing it as percentage of the initial combined market capitalization of both parties. Normally, the formula calls for the proportion of ownership by the bidder company in target, but it is unnecessary for the present study, because one of the initial sample selection criteria is that the final ownership of the target should be 100%.

The results are similar irrespective of the event window analyzed or whether the value- or equally-weighted market index model is used. Because the difference in bidder size is important for this study, value-weighted results will be examined, unless indicated otherwise.

Table 5.1.1. Bidder, Target, and Total Announcement Abnormal Returns

The estimation period for the event studies is [-300, -46] days, using both CRSP equally and value weighted market models. Total gains are calculated by multiplying the bidder and target gains to their pre-announcement market capitalization, combining them together and expressing it as percentage of the initial combined market capitalization of both parties. The values reported are means [medians].
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

Bidder Size	Gains to	N	EWCAR	VWCAR
Panel A. (-1, 1)				
Small	Bidder	123	2.63% ***	2.66% **
			[1.15%] ***	[0.80%] *
	Target	102	17.92% ***	17.82% ***
			[13.65%] ***	[13.96%] ***
	Total	101	5.18% ***	5.14% ***
			[2.86%] ***	[2.81%] ***
Large	Bidder	1071	-1.50% ***	-1.53% ***
			[-0.77%] ***	[-0.85%] ***
	Target	973	25.26% ***	25.21% ***
			[21.26%] ***	[21.26%] ***
	Total	973	0.91% ***	0.88% ***
			[1.04%] ***	[0.90%] ***
All	Bidder	1194	-1.07% ***	-1.09% ***
			[-0.60%] ***	[-0.68%] ***
	Target	1075	24.57% ***	24.51% ***
			[20.58%] ***	[20.73%] ***
	Total	1074	1.31% ***	1.28% ***
			[1.13%] ***	[1.01%] ***

The number of large bidders is about 90% of the entire sample by the number of observations and this fact makes the results of the sample of larger bidders and those of the entire sample similar. Particularly, all bidders record on average –1.09% and large bidders –1.53% CAR for the three days around the announcement. In contrast, market rewards the targets with a significant three-day CAR of 24.51% and 25.21% for full and large bidders samples, respectively.

Table 5.1.1. Bidder, Target and Total Announcement Abnormal Returns (cont')

Bidder Size	Gains to	N	EWCAR	VWCAR
Panel B. (-3, 3)				
Small	Bidder	123	4.35% ***	4.56% **
			[1.29%] ***	[1.68%] *
	Target	102	18.62% ***	18.56% ***
			[14.72%] ***	[15.00%] ***
	Total	101	6.27% ***	6.32% ***
			[4.36%] ***	[4.35%] ***
Large	Bidder	1071	-1.61% ***	-1.66% ***
			[-1.36%] ***	[-1.43%] ***
	Target	973	27.80% ***	27.82% ***
			[23.32%] ***	[23.71%] ***
	Total	973	0.96% ***	0.92% ***
			[1.16%] ***	[0.82%] ***
All	Bidder	1194	-1.00% ***	-1.02% ***
			[-1.03%] ***	[-1.28%] ***
	Target	1075	26.93% ***	26.94% ***
			[22.76%] ***	[22.96%] ***
	Total	1074	1.45% ***	1.43% ***
			[1.22%] ***	[1.10%] ***

For the total gains, the results are positive and significant, although not very large: 1.28% for the entire sample and 0.88% for the sample of large bidders for the three-day window. This indicates that overall the merger and acquisition activity is value creating, even when large bidders initiate it. All these results are similar for the seven-day period around the announcement.

For the sample of small bidder transactions the abnormal returns are statistically significantly different. First of all, there is a strong significant gain to the bidders: 2.66% for the three-day and 4.56% for the seven-day periods. At the same time, the gain assigned to the targets is much smaller compared to that of the firms acquired by large bidders, just about 17.82% and 18.56% for

the two periods, respectively. When it comes to the total gains, transactions involving small bidders record 5.14% and 6.32% in significant gains.

So overall, small bidder transactions result in 4 to 6% more bidder and total abnormal returns and approximately 10% less in announcement gains to the targets. All differences are statistically significant.

In terms of dollar gains (table 5.1.2), as expected and similar to other studies, the value-weighted gains[1] to small bidders are statistically much lower in their absolute value (on average an insignificant $0.340 mil) compared to the losses of the large bidders (average of $96.568 mil). Although the gain to the targets is much higher if a large bidder initiated the merger/acquisition ($73.790 mil vs. $5.441 mil), it is barely enough to cancel out the losses to the acquirers themselves, so the total gain of the large bidder transactions is still much lower than the gain to the small mergers (insignificant loss of $1.364 mil vs. gain of $5.754 mil), the difference that is statistically significant. Therefore, although the total relative gains are on average positive, in absolute terms the large bidder transactions still don't gain much.

For that reason, the conclusion of Moeller et al (2004) and other authors is confirmed. On the one hand, transactions initiated by large companies mostly carry negative synergies and this means that their management teams are subject to significant hubris and/or agency (managerialism) motives when it comes to mergers and acquisitions, but it is impossible to differentiate between the two at this point, that is, to say exactly if the value is destroyed or just transferred.

[1] The results for equally weighted dollar gains are similar and, therefore, not reported.

Table 5.1.2. Distribution of Observations Based on Registered Positive and Negative Gains

Value weighted gains (mean and median) are reported in $mil. The relative number of observations is calculated out of the total number of observations per class. All bidders are divided into separate samples, based on their market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. The dollar gains are winsorized at 5% and 95% levels.
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

Bidder Size	Gains to	All		Positive			Negative		
		N	$ gains	N	%	$ gains	N	%	$ gains
Small	Bidder	105	0.340	58	55%	5.201***	47	45%	-5.659***
			[0.403]			[3.279]***			[-3.174]***
	Target	102	5.441***	86	84%	6.755***	16	16%	-1.621***
			[2.743]***			[5.028]***			[-1.429]***
	Total	101	5.754***	69	68%	160.326***	32	32%	-6.318***
			[2.877]***			[56.196]***			[-5.735]***
Large	Bidder	977	-96.568***	407	42%	160.326***	570	58%	-280.000***
			[-9.809]***			[56.196]***			[-68.430]***
	Target	973	73.790***	860	88%	84.059***	113	12%	-4.397***
			[21.078]***			[28.492]***			[-4.888]***
	Total	973	-1.364	564	58%	202.125***	409	42%	-281.970***
			[10.069]***			[70.053]***			[-73.794]***

On the other hand, the acquisitions done by small firms result in positive gains and create value, but only 6% of it is assigned to the bidder. That implies that the transaction motivation is not homogeneous across the samples of acquirers of the same size. It is possible that some of the small bidders are also subject to value eroding motives, although not as frequently as their large counterparts.

To analyze this aspect in more detail, the occurrence of positive and negative dollar gains in samples with different bidder size can be looked at (table 5.1.2). It is noticeable that there is a slightly higher frequency of negative gains for large bidders compared to the small ones and the dollar losses are greater than the dollar gains ($280.00 mil vs. $160.33 mil respectively), while

for small bidders they are similar in value. At the same time, there are cases of negative gains to the target, but their number constitutes only 16% and 12% of the number of observations, respectively, for small and large bidders, and the losses are considerably smaller compared to the gains to the rest of the targets. This is interesting to see. In line with the assumption about market's efficient character, it implies that it foresees the destruction of the value of the target.

So based on AR analysis hypotheses H1a and H1b are confirmed. There is evidence that market sees small bidders as predominantly motivated by possible synergies in initiating a transaction. In contrast, in case of large bidders the value is mostly destroyed, suggesting that they are driven by hubris and/or managerialism.

5.2. Changes in Informational Asymmetry

In order to test the assumption that the difference in the CAR to small and large bidders is partially explained by the changes in informational asymmetry, four proxies are studied: the number of analysts covering a company, the analysts forecasting errors, reported to the closing market price and to the actual EPS, and, finally, the standard deviation of the forecasts.

As mentioned before, to insure the quality of the analyzed data, for all measures of informational asymmetry the analysts' interest has to be persistent over at least three years, including the year of the announcement. At the same time, for the years considered, the company has to be covered by at least 3 analysts to exclude any analyst specific errors.

Table 5.2.1 presents the results of measures of informational asymmetry based on the analysts' interest over the period from 3 years before to 3 years

after the announcement of the acquisition, separately for small and large bidders.

Normally, it is expected that small companies will be subject to a greater market informational asymmetry compared to the large firms. Because large bidders have a greater number of investors, the analysts' interest for them will be more intense. At the same time, small firms, regardless of the fact that it is easier to forecast their financial performance given the organizational simplicity, will not attract a lot of analysts in following them because of the reduced investors' interest. In terms of changes in the analysts' attention, the announcement of such a major investment as merger/acquisition should increase it, resulting in a larger number of interested analysts for all bidders, but much more significant for small ones, because (a) large bidders are already well covered due to their size and (b) a major transaction should bring small bidders into the market spotlight, allowing to correct for possible missvaluations due to the limited character of previously released information.

As expected, the number of analysts following small bidders is significantly smaller compared to the large bidders in any given year in the analyzed period (Panel A). For example, in the year of the announcement there are an average of 3.43 [median 3.00] analysts for small and 14.84 [13.00] analysts following large bidders.

As about the changes in the number of interested analysts for the seven-year period around the announcement, there are no strongly significant differences between the two samples. Nevertheless some weak but interesting tendencies of the analysts' attention depending on the size of the bidder they cover are noticeable.

Table 5.2.1. Changes in Informational Asymmetry

The information about the analysts' interest has to be available for at least three consecutive years, including the year of the announcement and the number of the analysts following is at least 3 during those valid years, otherwise the value of the indicator is 0. If the number of analysts equals 0 then for the other measures of informational asymmetry the corresponding observation is treated as missing. Panels B, C and D report also the number of observations that the calculations are based on. Forecasting Error 1 is related to the closing market price, Forecasting Error 2 to the actual EPS announced. Standard deviation is standardized by the actual EPS. All bidders are divided into separate samples, based on their market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. All measures of informational asymmetry are winsorized at 1% and 99% levels.
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

Panel A. Number of analysts following

Size of bidder/ Year code	**Small 82**	**Large 1050**	**Difference**
	mean *median*	**mean** *median*	**F** x^2
-3	1.1829 ***	11.5276 ***	78.7472 ***
	0.0000 ***	*10.0000* ***	*95.8464* ***
-2	2.2195 ***	12.4514 ***	81.8452 ***
	0.0000 ***	*11.0000* ***	*97.5104* ***
-1	3.2073 ***	13.5667 ***	88.7351 ***
	3.0000 ***	*12.0000* ***	*111.6676* ***
0	3.4268 ***	14.8352 ***	122.4329 ***
	3.0000 ***	*13.0000* ***	*153.6570* ***
1	3.8659 ***	15.0095 ***	117.3007 ***
	4.0000 ***	*14.0000* ***	*142.5864* ***
2	3.3537 ***	13.7562 ***	92.0689 ***
	3.0000 ***	*13.0000* ***	*103.2991* ***
3	2.5976 ***	11.8524 ***	63.4041 ***
	0.0000 ***	*11.0000* ***	*65.1431* ***
-1, 1	0.6585	1.4181 ***	1.1729
	2.0000	*1.0000* ***	*0.5526*
-2, 2	1.1341 *	1.2667 ***	0.0174
	0.0000	*1.0000* ***	*0.1691*
-3, 3	1.4146 **	0.2962	0.8422
	0.0000 **	*0.0000* **	*0.7025*
-1, 0	0.2195	1.2552 ***	4.7713 *
	0.0000	*1.0000* ***	*2.9742*
0, 1	0.4390	0.1486	0.3715
	0.0000	*0.0000* **	*0.0731*
-2, 0	1.2073 **	2.3524 ***	3.4421
	1.0000 **	*2.0000* ***	*2.0133*
0, 2	-0.0732	-1.1105 ***	1.7185
	0.0000	*0.0000*	*0.0341*

For the two years before the announcement there is a buildup of analysts' interest for all bidders, but contrary to what is expected, for small companies this increase is smaller – only 1.21 [1.00] vs. 2.35 [2.00] analysts for large bidders. In addition, for the three and five year periods around the announcement the increase in the analysts' attention is slightly larger for large

Table 5.2.1. Changes in Informational Asymmetry (cont')

Panel B. Forecasting Error 1 (reported to the closing market price)					
Size of bidder/ Year code	**Small N=82**		**Large N=1050**		**Difference**
	N	**mean** *median*	**N**	**mean** *median*	**F** x^2
-3	31	0.0121 *	806	0.0028 ***	25.7466 ***
		0.0020 ***		*0.0004* ***	*14.0429* **
-2	43	0.0060 **	881	0.0027 ***	5.5067 *
		0.0009 ***		*0.0005* ***	*1.7519*
-1	61	0.0732	966	0.0028 ***	40.4382 ***
		0.0033 ***		*0.0004* ***	*40.7541* ***
0	78	0.0538 **	1042	0.0030 ***	90.0099 ***
		0.0034 ***		*0.0005* ***	*68.4343* ***
1	70	0.0209 **	1014	0.0038 ***	49.2732 ***
		0.0030 ***		*0.0006* ***	*24.7862* ***
2	55	0.0290 **	913	0.0054 ***	40.7265 ***
		0.0032 ***		*0.0006* ***	*20.3842* ***
3	39	0.2311	771	0.0066 ***	20.5301 ***
		0.0035 ***		*0.0007* ***	*17.6227* ***
-1, 1	49	-0.0407	930	0.0007	10.5310 **
		0.0004		*0.0001* ***	*0.8208*
-2, 2	25	0.0243	759	0.0006	6.8412 **
		0.0019		*0.0001* **	*6.4246* *
-3, 3	15	-0.0041	597	0.0029 *	0.8684
		-0.0001		*0.0001* ***	*0.7548*
-1, 0	59	-0.0114	966	-0.0004	2.1962
		0.0002		*0.0000*	*0.0190*
0, 1	68	-0.0299	1006	0.0000	28.6002 ***
		0.0000		*0.0000* **	*1.1008*
-2, 0	41	0.0431 *	881	-0.0018	34.8454 ***
		0.0009 **		*0.0000*	*11.8892* **
0, 2	53	-0.0209	905	0.0021 **	9.2493 **
		0.0000		*0.0001* **	*0.4741*

bidders, while over the seven year period there are no changes in the analyst interest for any of the companies. This indicates that a major transaction by itself cannot bring a small company to the attention of the market and that it is more likely for large bidders to be covered even more extensively due to the announcement compared to small ones, but this effect is temporary, gradually disappearing during the three years following the event.

In the case of the forecasting errors, it is expected for the analysts following small bidders to register consistently larger errors, considering a higher informational asymmetry for them, including a limited number of analysts following. At the same time, there should be changes in these

Table 5.2.1. Changes in Informational Asymmetry (cont')

Panel C. Forecasting Error 2 (reported to the actual EPS)					
Size of bidder/ Year code	**Small N=82**		**Large N=1050**		**Difference**
	N	**mean** *median*	**N**	**mean** *median*	**F** x^2
-3	31	0.2855 *	805	0.1284 ***	3.9061 *
		0.0506 ***		*0.0227* ***	*6.4029* *
-2	43	0.1147 *	879	0.1138 ***	0.0003
		0.0256 ***		*0.0265* ***	*0.0475*
-1	61	0.3778 **	965	0.1173 ***	17.0580 ***
		0.0658 ***		*0.0208* ***	*22.7115* ***
0	78	0.4338 **	1041	0.0895 ***	42.5190 ***
		0.0678 ***		*0.0213* ***	*35.9656* ***
1	69	0.2509 **	1012	0.0926 ***	20.4572 ***
		0.0667 ***		*0.0233* ***	*12.0705* **
2	55	0.2744 **	912	0.1185 ***	4.6272 *
		0.0385 ***		*0.0204* ***	*10.1950* **
3	39	0.8527 *	771	0.1094 ***	51.5265 ***
		0.0645 ***		*0.0211* ***	*11.7806* **
-1, 1	48	-0.0135	928	-0.1164	0.1353
		0.0065		*0.0000*	*0.3134*
-2, 2	25	0.2780 *	756	-0.0112	3.9441 *
		0.0283 *		*0.0000*	*10.8322* **
-3, 3	15	-0.0757	596	-0.0354	0.0508
		-0.0364		*0.0000*	*0.8516*
-1, 0	59	0.0677	964	-0.1313 *	0.6482
		-0.0076		*0.0000* *	*0.0023*
0, 1	67	-0.0603	1003	-0.0342	0.0486
		0.0000		*0.0000*	*0.9686*
-2, 0	41	0.3870	878	-0.0716 **	19.8505 ***
		0.0157		*-0.0018* **	*6.7609* **
0, 2	53	-0.0389	903	-0.0126	0.0279
		-0.0123		*-0.0008* **	*1.7328*

measures around the announcement, indicating a reduction in the informational asymmetry, because of the additional information being released.

Panels B and C in table 5.2.1 present these results and it is noticeable that indeed, the errors for small companies are significantly larger compared to those for large companies, indifferent of the value reported to – the closing price (Forecasting Error 1) or the actual EPS (Forecasting Error 2). For the end of the announcement year the forecasting error for small bidders is about 5.38% from the market price and about 43.38% from the reported actual EPS and for large bidders these values are only 0.3% and 8.95%, respectively. Clearly there is a larger market informational asymmetry for small bidders. What is unexpected is

Table 5.2.1. Changes in Informational Asymmetry (cont')

Panel D. Standard Deviation					
Size of bidder/ Year code	**Small N=124**		**Large N=1076**		**Difference**
	N	**mean** *median*	**N**	**Mean** *median*	**F** x^2
-3	38	0.0429 **	853	0.0626 ***	0.3859
		0.0000 ***		*0.0192* ***	*2.9543*
-2	52	0.0867 **	938	0.0680 ***	0.4612
		0.0243 ***		*0.0202* ***	*0.8282*
-1	68	0.3101	1027	0.0526 ***	33.5060 ***
		0.0322 ***		*0.0172* ***	*5.9785* *
0	82	0.2071	1049	0.0466 ***	21.6991 ***
		0.0238 ***		*0.0192* ***	*0.5935*
1	71	0.1027 ***	1042	0.0579 ***	6.3738 *
		0.0531 ***		*0.0214* ***	*12.7281* **
2	62	0.0647 ***	1002	0.0667 ***	0.0049
		0.0308 ***		*0.0185* ***	*1.1984*
3	46	0.1698	904	0.0567 ***	14.9516 **
		0.0220 ***		*0.0172* ***	*0.6390*
-1, 1	57	-0.1102	1019	-0.0152	1.5208
		0.0238 *		*0.0000*	*7.3599* **
-2, 2	32	0.0391	890	0.0046	0.2238
		0.0011		*-0.0005* **	*3.9092* *
-3, 3	20	0.2188	733	-0.0336	3.2875
		-0.0019		*-0.0034* **	*0.0486*
-1, 0	68	-0.0603	1026	-0.0232	0.2016
		0.0006		*0.0000*	*0.0330*
0, 1	71	-0.1362	1041	0.0092	12.9199 **
		0.0105		*0.0000*	*1.2647*
-2, 0	52	0.0177	937	-0.0294 **	1.8301
		-0.0046		*-0.0005* **	*0.0047*
0, 2	62	-0.2000	1001	0.0163 *	20.9093 ***
		0.0060		*-0.0006* **	*0.0695*

the lack of significant changes in the forecasting accuracy for any of the companies during the analyzed periods. And although previous studies showed that the forecasting errors tend not to change from year to year for the same estimation (in this case annual EPS), it is surprising that even when a company undertakes such a major investment, it does not influence the quality of the forecasts, resulting in no significant change in the market informational asymmetry of the bidders.

The analysis of standard deviation of the forecasts should complement the previous findings. Again under the assumption that a merger/acquisition announcement contributes to the correction of informational asymmetry, the

variation of the analysts' opinion should reduce regardless of the size of the company in question. In case of small bidders, this change should be more pronounced and, although it was established that there is no qualitative change to the forecast, the information available to all analysts is more abundant, possibly leading them more frequently to similar forecasts.

The results for the standard deviation measure are presented in panel D, table 5.2.1 and it looks like there is no consistent significant difference in the standard deviation of the analysts' forecasts following small or large bidders in any of the analyzed years and, once more, it does not change significantly over time.

So, the consensus between the analysts does not seem to improve and the difference in analysts' opinion persists regardless of the size of the bidders.

The conclusions about the lack of improvements in the quality of the forecasts can also be explained by the fact that the level of informational asymmetry is not the only factor that is important for the accuracy of the forecasts. The general risk of the company's operations, for example, also plays a major role, because the release of additional information about a company does not reduce the volatility of its earnings.

What is also interesting is that there is an indication that a greater number of analysts, like in the case of the weak increase in analysts' interest around the announcement for large bidders, doesn't necessarily mean better forecasting precision. This presents an interesting question for further studies.

The presented results prove consistently only one of the three hypotheses, particularly that the informational asymmetry before the announcement is greater for small bidders (H2a as proved by all measures

except for the standard deviation of the forecasts). In regards to other hypotheses, due to the lack of significant changes in the analyzed proxies there is neither consistent confirmation nor rejection of them.

In conclusion, it seems that the correction of informational asymmetry, as measured by proxies based on the analysts' interest, does not have a significant explanatory power of the higher abnormal returns to the small bidders at the announcement of a merger/acquisition. There is no significant increase in the number of analysts following, and the lack of changes in the forecasting errors and the standard deviation shows that there is no improvement in the quality of the forecasts or convergence of analysts' opinions during the analyzed periods.

5.3. Changes in Operational Performance

Another assumption of this study is that it is possible, that high announcement ARs to the small bidders are due to a more pronounced post-event increase in the operational performance compared to the large bidders.

It is expected that, although large bidders will have a stronger operational performance compared to the small bidders uniformly during the analyzed period, the changes in performance around and especially after the announcement would have to be larger and more significant for small companies to be explanatory of the registered abnormal returns.

For the two measures analyzed, the Return on Assets (ROA) and the Sales Margin (SM), the results are presented in table 5.3.1.

The ROA ratio allows expressing the dollar value of the operating income for every dollar of total assets. The alternative, SM ratio, represents the dollar value of the operating income for every dollar of net sales.

Table 5.3.1. Changes in Operational Performance

If any measure of operational performance is negative the respective observation is treated as missing. All bidders are divided into separate samples, based on their market capitalization 61 days prior to the announcement: if it matches the first quartile of the NYSE listed companies by market capitalization at the year-end before the announcement, bidder is defined as small, otherwise as large. All measures of operational performance are winsorized at 1% and 99% levels.
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

Panel A. Return on Assets (ROA)

Size of bidder/ Year code	Small N=84		Large N=601		Difference
	N	mean *median*	N	mean *median*	F x^2
-3	56	0.0627 *** *0.0802* ***	466	0.1221 *** *0.1204* ***	22.9333 *** *19.1752* ***
-2	66	0.0437 * *0.0747* ***	549	0.1245 *** *0.1183* ***	43.2697 *** *29.8399* ***
-1	74	0.0085 *0.0618* ***	579	0.1181 *** *0.1204* ***	65.8412 *** *40.4850* ***
0	84	-0.0155 *0.0632* **	601	0.1145 *** *0.1171* ***	99.3514 *** *46.1520* ***
1	82	0.0077 *0.0628* ***	592	0.1056 *** *0.1079* ***	49.2063 *** *27.4935* ***
2	75	-0.1148 * *0.0275* **	547	0.0032 *0.0540* ***	5.8180 * *13.3033* **
3	68	-0.0025 *0.0710* **	463	0.0954 *** *0.1017* ***	31.6532 *** *10.2558* **
-1, 1	72	0.0135 *-0.0024*	570	-0.0103 ** *-0.0069* *	4.0956 * *0.4566*
-2, 2	61	-0.1363 * *-0.0489* **	499	-0.0968 *** *-0.0710* ***	1.1643 *6.5822* *
-3, 3	48	-0.0072 *0.0210*	357	-0.0297 *** *-0.0142* ***	1.7171 *6.3783* *
-1, 0	74	-0.0139 *0.0019*	579	-0.0017 *0.0017*	2.2627 *0.4046*
0, 1	82	0.0213 *0.0048*	592	-0.0090 ** *-0.0028*	9.5599 ** *4.8203* *
-2, 0	66	-0.0135 *0.0025*	549	-0.0054 *-0.0023*	0.6645 *0.3138*
0, 2	75	-0.1120 *-0.0382* **	547	-0.1161 *** *-0.0711* ***	0.0078 *8.5025* **

First of all, to no surprise, the Return on Assets and the Sales Margin (Panel A and B, respectively) are better and more significant for large bidders in most of the separate years.

In terms of changes during the analyzed periods, for large bidders there is a decrease in ROA during the two years after the announcement. Generally for the seven-year period the operational performance of these bidders, as

Table 5.3.1. Changes in Operational Performance (cont')

Panel B. Sales Margin (SM)					
Size of bidder/ Year code	**Small N=84**		**Large N=601**		**Difference**
	N	**mean** *median*	**N**	**mean** *median*	**F** x^2
-3	56	0.0585 ***	466	0.1005 ***	1.3189
		0.0676 ***		*0.1081* ***	*19.5216* ***
-2	66	-0.1771	549	0.1003 ***	11.9180 **
		0.0636 ***		*0.1106* ***	*30.9230* ***
-1	74	-0.3498	579	0.0982 ***	23.1850 ***
		0.0486 ***		*0.1078* ***	*40.9527* ***
0	84	-0.2721 *	601	0.0765 **	20.6871 ***
		0.0439 **		*0.1081* ***	*54.0454* ***
1	82	-0.5533	592	0.0401	11.1241 **
		0.0575 ***		*0.1114* ***	*31.9645* ***
2	75	-0.1317	547	0.0323	2.5693
		0.0766 ***		*0.1066* ***	*14.1769* **
3	68	-0.2026	463	0.0998 ***	39.5640 ***
		0.0688 **		*0.0998* ***	*17.3178* ***
-1, 1	72	-0.2290	570	-0.0270	1.1495
		0.0086 **		*0.0050* **	*1.6399*
-2, 2	61	0.1735	499	-0.0181	10.5621 **
		0.0220 **		*0.0077* ***	*5.9979* *
-3, 3	48	-0.0526	357	-0.0096	2.3767
		0.0211		*0.0038*	*2.1908*
-1, 0	74	0.1478	579	0.0040	5.3652 *
		0.0006		*0.0037* ***	*2.1545*
0, 1	82	-0.2765	592	-0.0394 *	2.0306
		0.0135 *		*0.0048* ***	*4.7779* *
-2, 0	66	0.0603	549	-0.0006	1.3143
		0.0033		*0.0049* **	*0.5637*
0, 2	75	0.1595	547	-0.0483 **	15.2605 **
		0.0201 *		*0.0014*	*7.4241* **

measured by ROA, declined slightly, although statistically significant, while for small bidders there are no significant changes whatsoever.

As about the SM, there are no changes for any of the bidders, regardless of their size.

These results reject H3a that small bidders manage to improve more the operational performance of the combined operations in the long run and also weaken the accepted hypothesis H1a, that small bidders are motivated by possible synergy gains in their transactions, because operational synergies are considered one of the major sources of the increase in value.

It is also quite surprising and somewhat contradictory to the previous studies, that conclude that, due to the more efficient use of the available assets, the operational performance of the combined companies improves. However, what is found is that indeed, the changes in the operational performance are a factor to the changes in the effectiveness of the asset use (because the few observable changes occur in the ROA ratio). Applying the same rationale, if the operational performance decreases, it is because of the less efficient use of the greater asset base, as it is the case of large bidders. As for the small ones, they manage to preserve the same operational performance as before the announcement, thus proving to be more efficient. Nevertheless, these changes are small and overall marginally significant, so it will be hard to find any proof of these conclusions in the multivariate analysis.

Assuming that the market is efficient, the changes in informational asymmetry and operational performance are definitely reflected in the market price, but how explanatory they are of the announcement CAR is to be tested in the following section.

VI. Robustness tests

This section presents the results of the performed multivariate tests. First, general principles behind the construction of the models are presented. Secondly, models on the importance of the measures of informational asymmetry and operational performance in the market reaction at the announcement of an acquisition transaction are tested.

6.1. Construction of the Models

The constructed models will tell us which factors from the ones that are analyzed in the previous section, play the most important part in explaining the gains to the bidders at the announcement of a merger/acquisition. The abnormal returns used are value weighted for the period of seven days around the announcement. The results for the equally weighted abnormal returns and for the three-day period are similar and not reported.

Also, in most cases the observed changes in the measures applied are more significant for the two-year period following the announcement so this is the main window for the change in different proxies used. It also results in more explanatory models. The changes over other periods were also studied and the results are similar, but less significant.

All regressions are somehow controlled for the size of the bidder. If the size dummy is used, then it is 1 if the bidder is large and 0 if it is small.

6.2. Informational Asymmetry Model

First of all the correlation between the measures of informational asymmetry in the year of the announcement and the respective subsequent two year changes are looked at (table 6.2.1).

It is noticeable, that the measures of informational asymmetry are significantly correlated among themselves. Specifically, Forecasting Error 2, reported to the actual value of the EPS, is in a linear relationship to all other measures, in the following way:

*Forecasting Error 2= 0.1557 - 0.0053*Number of Analysts +*

*2.79*Forecasting Error 1 + 0.2508*Standard Deviation,*

all beta coefficients are significant, F=59.98 ($p<0.0001$), $R^2=0.1358$.

Another interesting fact is that the changes in the measures of informational asymmetry are always significantly negatively related to the measures themselves and analyzing the same correlation matrix separately for bidders of different sizes (not shown) is observable that these tendencies are much more significant for small bidders compared to the large ones. Particularly, the expected subsequent changes in the number of analysts are smaller the larger is the number of interested analysts at the announcement. So the analysts' coverage for small companies, that is initially limited, subsequently should increase more, compared to the large firms, conclusion not confirmed by the univariate tests, but supporting the initial hypotheses of the study.

The first group of multivariate models that are constructed are meant to explain how exactly the number of analysts following and the quality of their forecasts influence the abnormal returns at the announcement.

As presented in table 6.2.2, the influence of measures of informational asymmetry on the announcement abnormal returns is mostly insignificant. Only the number of analysts following is sometimes significant, especially for small bidders, at 5% level. This implies that the number of analysts is a more important factor of the announcement gains for small bidders than it is for large ones. On the full sample the significance of this factor is not consistent, depending highly on the control variable for the size of the bidder.

Table 6.2.1. Correlation Matrix of Informational Asymmetry Measures and Their Respective Subsequent Changes

The information about the analysts' interest has to be available for at least three consecutive years, including the year of the announcement and the number of the analysts following is at least 3 during those valid years, otherwise the value of the indicator is 0. If the number of analysts equals 0 then for the other measures of informational asymmetry the corresponding observation is treated as missing. Forecasting Error 1 is related to the closing market price, Forecasting Error 2 to the actual EPS announced. Standard deviation is standardized by the actual EPS. The changes in measures used are for the period of two years after the announcement of the transaction. The correlation coefficients, their significance and the number of observations that calculations are based on are reported. All measures of informational asymmetry are winsorized at 1% and 99% levels.

	Number of Analysts Following	**Forecasting Error 1**	**Forecasting Error 2**	**Standard Deviation**	**Δ Number of Analysts Following**	**Δ Forecasting Error 1**	**Δ Forecasting Error 2**	**Δ Standard Deviation**
Number of Analysts Following	1.0000							
	1140							
Forecasting Error 1	-0.1060	1.0000						
	0.0004							
	1128	1128						
Forecasting Error 2	-0.1522	0.3099	1.0000					
	<.0001	<.0001						
	1127	1127	1127					
Standard Deviation	-0.0653	0.0560	0.1908	1.0000				
	0.0275	0.0601	<.0001					
	1139	1127	1127	1139				
Δ Number of Analysts	-0.3104	-0.0211	0.0432	-0.0108	1.0000			
	<.0001	0.4800	0.1473	0.7168				
	1140	1128	1127	1139	1140			
Δ Forecasting Error 1	0.0069	-0.8407	-0.2077	0.2270	0.0022	1.0000		
	0.8310	<.0001	<.0001	<.0001	0.9457			
	963	963	962	962	963	963		
Δ Forecasting Error 2	0.0462	-0.1670	-0.6687	-0.0552	-0.0675	0.2733	1.0000	
	0.1526	<.0001	<.0001	0.0872	0.0366	<.0001		
	961	961	961	961	961	961	961	
Δ Standard Deviation	0.0465	-0.0381	-0.1747	-0.8190	0.0277	-0.1616	0.2351	1.0000
	0.1286	0.2156	<.0001	<.0001	0.3645	<.0001	<.0001	
	1071	1061	1061	1071	1071	961	961	1071

Table 6.2.2. Regression Models for Measures of Informational Asymmetry

Value weighted announcement abnormal returns for the [-3; 3] event window are used as dependent variable. The information about the analysts' interest has to be available for at least three consecutive years, including the year of the announcement and the number of analysts following is at least 3 during those valid years, otherwise the value of the indicator is 0. If the number of analysts equals 0 then for the other measures of informational asymmetry the corresponding observation is treated as missing. Forecasting Error1 is related to the closing market price, Forecasting Error2 to the actual EPS announced. Standard deviation is standardized by the actual EPS. The changes in measures used are for the period of two years after the transaction. Relative size of the target is the market capitalization of the target reported to the same value of the bidder as of 61 days prior to the announcement. Size dummy equals 1 if bidder is a large firm, 0 if it is small. All measures of informational asymmetry and their changes are winsorized at 1% and 99% levels.
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

	Full Sample			**Large Bidders**		**Small Bidders**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
Intercept	0.0681 [4.75]	0.1205 [3.38]	0.1178 [3.94]	0.0630 [1.70]	0.0786 [2.53]	0.9022 [1.95]	0.8643 [1.34]
Number of Analysts Following	0.003 [0.98]	0.0012 [2.59]		0.0007 [1.64]		0.0113 [1.88]	
Forecasting Error 1	-0.0713 [-0.97]	-0.0235 [-0.32]		-0.2062 [-0.53]		-0.1329 [-1.18]	
Forecasting Error 2	0.0104 [1.35]	0.0115 [1.47]		0.0120 [1.08]		0.0137 [0.50]	
Standard Deviation	-0.0056 [-0.60]	-0.0031 [-0.33]		0.0122 [0.41]		-0.0115 [-0.79]	
Δ Number of Analysts			-0.0021 [3.27]		-0.0018 [-2.96]		-0.0061 [-1.24]
Δ Forecasting Error 1			-0.0317 [-0.49]		-0.1056 [-0.75]		0.1625 [1.33]
Δ Forecasting Error 2			-0.0003 [-0.09]		0.0012 [0.40]		-0.0364 [-1.48]
Δ Standard Deviation			-0.0012 [0.15]		-0.0023 [-0.16]		0.0241 [1.45]
Relative Size	-0.0639 [-4.16]	-0.0557 [-3.55]	-0.0901 [-5.10]	-0.1091 [-6.16]	-0.1208 [-6.45]	0.0060 [0.13]	-0.0229 [-0.35]
Log Bidder Market Value		-0.0100 [-3.76]	-0.0081 [-4.13]	-0.0054 [-1.97]	-0.0053 [-2.64]	-0.0787 [-2.00]	-0.0689 [-1.24]
Size Dummy	-0.0840 [-6.20]						
N	1001	1001	861	943	820	58	41
F-stat	8.12***	4.02***	6.80***	7.36***	8.68***	1.50	0.80
Adj R^2	0.0410	0.0178	0.0393	0.0389	0.0532	0.0502	-0.0307

Contrary to that, the changes in the number of analysts are mostly important for large bidders, implying that the increase in the number of analysts following is negatively related to bidder abnormal gains. Given the fact that for this group the number of analysts at the announcement is at its highest, it indicates that if it doesn't go down after the completion of the transaction, the abnormal returns will be slightly smaller. This might mean that an abnormally high number of analysts following a company is not well received by the market. Additional research is needed to look into the motives of such a behavior.

Even accounting for the fact that the measures of informational asymmetry are highly correlated, the exclusion of some of them from the regression does not add to the explanatory power of the models, indicating that overall, these measures have a small influence on the abnormal returns (results not reported).

6.3. Complex Models

The last series of constructed models includes variables from all the groups of measures that were examined previously. Only the proxies that were shown to have some influence on the announcement AR are used – the Number of Analysts following and its changes as measures of informational asymmetry and Sales Margin as proxy for the operational performance.

The dummy variable, added to control for the diversifying effect of the transaction, is 1 if the bidder and target share the same two digits SIC code and 0 if not. Another group of dummy variables is used to control for the method of payment: cash, stock or mix and others (1 if yes, 0 if no).

Table 6.4.1. Complex regression models

Value weighted announcement abnormal returns for the [-3; 3] event window are used as dependent variable. Relative size of the target is the market capitalization of the target reported to the same value of the bidder as of 61 days prior to the announcement. Diversifying Transaction is a dummy for the differences in the two digit SIC codes of bidder and target: it equals to 0 if the code is different and 1 if the same. Size dummy is 1 if bidder is a large company, 0 if it is small. All measures are winsorized at 1% and 99% levels.
***, ** and * indicate the significance level at 0.01%, 1% and 5% respectively.

	Full Sample		**Large Bidders**	**Small Bidders**
	(1)	**(2)**	**(3)**	**(4)**
Intercept	0.0514	0.1281	0.1148	1.1427
	[2.53]	[2.87]	[2.55]	[1.74]
Number of Analysts Following	0.0006	0.0010	0.0007	0.0173
	[0.14]	[1.70]	[1.26]	[1.64]
Δ Number of Analysts	-0.0010	-0.0009	-0.0011	0.0080
	[-2.31]	[-1.19]	[-2.48]	[1.16]
Sales Margin	-0.0275	-0.0309	-0.0086	-0.0520
	[-2.31]	[-2.85]	[-0.54]	[-1.52]
Δ Market to Book Value of Assets	0.0019	0.0018	0.0010	0.0023
	[2.78]	[2.52]	[1.19]	[0.25]
Diversifying Transaction	-0.0097	-0.0101	-0.0073	-0.0181
	[-1.34]	[-1.38]	[-1.02]	[-0.35]
Cash Transaction	0.0200	0.0223	0.0169	0.0133
	[2.05]	[2.29]	[1.77]	[0.17]
Stock Transaction	-0.0147	-0.0108	-0.0132	-0.0783
	[-2.52]	[-2.13]	[-1.39]	[-1.10]
Relative Size	-0.0705	-0.0756	-0.1104	0.1165
	[-3.48]	[-3.67]	[-5.13]	[1.38]
Log Bidder Market Value		-0.0094	-0.0081	-0.1023
		[-2.81]	[-2.41]	[-1.81]
Size Dummy	-0.0480			
	[-2.70]			
N	552	552	522	30
F-stat	7.69***	7.77***	7.20***	2.28
Adj. R^2	0.0986	0.0996	0.0967	0.2840

Table 6.4.1 presents the results of these models. The first two of them are applied to the full sample and very few of the variables are statistically important.

There is a marginally significant negative relationship between the announcement gains and changes in the number of analysts following (-0.0010), more pronounced for large bidders, and the sales margin (-0.0275), that is more important for small bidders. The latter is in line with the results of Moeller et al (2004) that don't find any evidence that the operational performance has a significant explanatory power of the abnormal returns of bidders of any size.

The only consistent result is the negative relationship of the control variables - the size of the bidders and the relative size of the targets – to the abnormal returns of the acquirers. Specifically, the significant coefficient to the size dummy in model 1 tells us, that large bidders register about 4.8% lower abnormal returns compared to the small ones. When the log of the market value of the bidder is used to control for the size of the companies this result is confirmed: the abnormal returns at the announcement are negatively related to the size of the bidder.

Contrary to Moeller et al (2004) and Asquith et al (1983), but similarly to Tavlos (1987), the relative size of the target is negatively related to the abnormal returns to the bidder. It can be explained by the fact that the market recognizes, that larger the target, more bidder effort it will take to effectively merge the two operations. But this relationship is significant only for large bidders. This indicates that the relative size of the target is another factor that potentially drags down the announcement abnormal returns to the large

acquirers. In fact, looking closer to the relationships between the abnormal returns and the log of target and bidder capitalization separately, the first value is more important in explaining the CAR compared to the latter (results not shown). So the impact of the relative size on the abnormal returns is mostly driven by the variations in the target and not bidder size.

The complex regression models also show that transactions paid in cash have about 2.00% higher abnormal returns and paid in stock about 1.47% lower abnormal returns, compared to other methods of payment, results that are not confirmed in separate samples of small and large bidders. These findings are in line with previous conclusions, inclusively those of Moeller et al (2004).

The additional variable, controlling for the diversifying character of the transaction, is not significant in any model.

All regressions were also done with other measures of informational asymmetry and operational performance, but the results are similar to those presented.

VII. Conclusions

Previously, very few attempted to study in more detail the activities of small companies that engage in merger and acquisition transactions, although the size of the bidder was proved numerous times to be an important factor in explaining the announcement abnormal returns. The main reason for that was the anticipation of major statistical problems related to limited information available. But now, both the quantity and quality of the accessible data about

different companies, including small ones, improved considerably, allowing researchers to finally satisfy their curiosity.

This study is a part of this trend. Its main purpose is the attempt to find what exact characteristics of a small company determine the high and significant merger and acquisition announcement gains, while larger bidders usually lose value.

A sample of 1,209 events is studied, including 132 small and 1077 large bidders, which announced and completed a merger or acquisition transaction between 1980 and 2002.

First of all, the analysis of ARs suggests that the transactions involving small bidders are motivated by the capitalization of the possible gains, because there is a significant increase in shareholder value for these companies. In the case of acquisitions initiated by large bidders, the primary drive is value destroying (hubris or/and managerialism). This is in line with previous studies that conclude that hubris and agency are mostly a problem for large firms.

So, as expected, the transactions initiated by small firms register about 2.66% in bidder gains, compared to large companies that lose 1.53% in value-weighted market index adjusted returns.

Although the results also indicate that for the general sample M&A activity is value creating, this tendency is not dominant, mostly because large bidders constitute about 90% of the total sample.

Care has to be taken in interpreting these conclusions, though. ARs analysis has its shortcomings, because in order to make some sort of inference, it imposes a certain dynamics of market gains that are not necessarily as flexible as needed. Large bidders often engage into competitive bidding and even

if there are major synergies to be found in a merger, multiple bidders can erode the possible acquirer gain, transferring it completely to the target.

Given the fact that some of the small bidders also register negative gains, further research is needed to explore the reasons of that, including the presence of multiple bidders and the value of the purchase premium paid for the targets.

At the same time, there are occurrences of negative gains to the acquired company. Although the number of cases constitutes only 16% and 12% of the number of observations, for small and large bidder transactions, respectively, it is interesting to look into it and try to isolate some factors that can determine such a reaction. Under the assumption of market efficiency, it seems that the market foresees the destruction of the value of the target and, possibly, penalizes it for not fighting back. It is generally presumed, that if the bidders' motives are not value creating, it will be reflected as reduced gains to them.

Another factor that is initially hypothesized to be explicative of the high abnormal returns is the correction in the previous market informational asymmetry of the bidders.

If the informational coverage is measured by the analysts' interest to the firm's operations, it is found that, indeed, the number of analysts following small bidders is significantly smaller and the forecasting errors of their EPS are higher, compared to the large ones in any given year in the analyzed period.

But the analysts' attention does not change for small bidders at the announcement, so there is no sign of a major, large informational asymmetry correction. Instead it is weakly suggested that for large companies there is an increase in the analysts' interest in the three and five years around the announcement. This fact indicates that overall even such a major transaction,

as a merger/acquisition, cannot bring a small company to the market's attention.

Further analysis indicates that there is no improvement in the accuracy of the forecasts for any of the bidders. This is probably due to the fact that the level of informational asymmetry is not the only factor that is important for the accuracy of the forecasts. The general risk of the company's operations is another issue, because the release of additional information about a company does not reduce the volatility of its earnings.

So, another interesting aspect for further studies is that it might be that a greater number of analysts doesn't necessarily mean better forecasting precision and that a persistently intense analysts' attention for the activities of a firm might not be viewed positively by the market.

Because the changes in the analysts' coverage are so insignificant, they are not found to have a consistent significant explanatory power of the higher abnormal returns to the small bidders at the announcement of a merger/acquisition.

In terms of changes in operational performance during the analyzed periods, the results show that for large bidders there is a small decrease in the efficiency of the operations and for small bidders there are no significant changes. This is suggested to be due to the fact, that large bidders reduce the effectiveness of the use of their assets, compared to the small ones that manage to preserve it at the pre-event level.

On the same note, another conclusion is that for larger bidders it takes more effort to effectively merge its operations with those of a larger target,

because the relative size of the target is negatively related to the abnormal returns to the bidder.

Although this suggests that small bidders are more successful in integrating the operations of the two companies, these differences are not large or significant enough to explain the high disparity between the announcement abnormal returns. This fact indicates that the high announcement valuation of small companies does not reflect the operational synergy potential of the transaction, considered one of the most important in financial research.

Because no evidence is found to support the ideas of higher synergy transactions and of more pronounced correction for the market informational asymmetry for small bidders, it still remains to be seen why the market reaction is so different for this particular market segment.

On a closing note, this study proved to be an interesting venture into the specifics of small companies that are definitely understudied. As the information about them becomes better and more easily available and new statistical techniques on isolating finer trends in the data are developed, the author hopes that the interest for small cap companies will increase as well, especially that they proved to have different important features compared to the larger companies, that were always in the attention of the financial research.

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