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School of Business
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THE LONG RUN IMPACT OF MERGERS AND ACQUISITIONS ON PERFORMANCE – EMPIRICAL STUDY IN THE PULP AND PAPER INDUSTRY

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Yritysostoilla on ollut merkittävä rooli metsäteollisuuden rakenteiden muokkaajina. Toimialan heikko kannattavuus ja pirstaleinen rakenne, ylikapasiteettiongelmat sekä globalisaatio ovat ajaneet metsäteollisuusyrityksiä yhdistymään. Tämän tutkimuksen tavoite oli selvittää, kuinka yritysostoja tehneiden metsäteollisuusyritysten kannattavuus on kehittynyt pitkällä aikavälillä yritysoston jälkeen ja onko ostoksen ominaispiirteillä ja kohteesta maksetun preemion suuruudella ollut vaikutusta kehitykseen.

Tutkimustulosten perusteella näyttää siltä, että yritysostoja tehneiden metsäteollisuusyritysten kannattavuus on heikentynyt pitkällä aikavälillä mutta pysynyt kuitenkin toimialan mediaanin yläpuolella. Transaktion luonteella tai preemion suuruudella ei ole ollut vaikutusta kannattavuuteen. Tulosten tilastollista merkitsevyyttä testattiin muutosmallilla ja regressioanalyysillä. Kannattavuutta arvioitiin tulokseen, kassavirtoihin ja markkinainformaatioon pohjautuvien mittareiden avulla. Tulokset ovat selitettävissä behavioristisen teorian avulla: johtajat ja sijoittajat ovat ylioptimistisia arvioidessaan synergiahyötyjä.

ABSTRACT

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Mergers and acquisitions (M&A) have played very important role in restructuring the pulp and paper industry (PPI). The poor performance and fragmented nature of the industry, overcapacity problems, and globalisation have driven companies to consolidate. The objective of this thesis was to examine how PPI acquirers' have performed subsequent M&As and whether the deal characteristics have had any impact on performance.

Based on the results it seems that PPI companies have not been able to enhance their performance in the long run after M&As although the performance of acquiring firms has remained above the industry median, and deal characteristics or the amount of premiums paid do not seem to have had any effect. The statistical significance of the results was tested with change model and regression analysis. Performance was assessed with accrual, cash flow, and market based indicators. Results are congruent with behavioural theory: managers and investors seem to be overoptimistic in determining the synergies from M&As.

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Background

The pulp and paper industry (PPI) stands in a very interesting development stage since many structural parameters of the industry are constantly changing and competitive environment is evolving. This restructuring phase is characterized by companies consolidating and value chain becoming truly global as well as breaking up to become leaner and less diversified. The need to consolidate arises from the fragmented nature of the PPI, overcapacity problems, poor performance, and the desire to attain global reach. The latter can be seen as a necessity for staying alive, since market areas and raw material sources are changing, but also as a possibility to grow and exploit business opportunities. Together with new information technology, shifting market areas, new substitutes and complementary products, changing customer needs and environmental awareness, globalization has played an important role in restructuring the forest industry during the 1990s. (Sande 2002, 1)

Since globalization seems to have so vast effects extending wider than only PPI, it is important to understand the meaning of the term. Sande (2002, 2) has described globalization as functional integration of internationally dispersed activities. The rapid change in information technology has opened the doors for economic competition over the national borders towards the global markets and economic competitiveness too needs to be assessed in this global context. Economic globalization, that is globe-spanning economic relationships (Chase-Dunn 1999, 192), changes the economic geography for example by restructuring industries, economies as well as reorganizing companies and has led the product markets for PPI companies to become more integrated. Foreign direct investment and thus cross-border mergers and acquisitions (M&A) constitute one type of economic integration whose trend has been upward in the 1990s (Sande 2002, 4).

M&As have played a very important role in restructuring the pulp and paper industry. Kenny (1998, 21) believes the reasons for increased M&A activity to be the poor performance of the paper industry as a whole and the globalization, especially the opportunities created by Asia's financial crisis at the end of the 1990s. Other researches too have found evidence that the performance and value creation ability of PPI companies has been worse than the average in the markets (e.g. Andersson, Harju & Larjomaa 2002, 33; Joensuu et al. 2006, 2). This inferior performance has been said to be a consequence of the cyclicity and fragmented nature of the industry (Sandle 2002, 6; Kenny 1998, 21). Also, the depreciation of the US dollar, continuing over capacity, high transportation costs, and the shift of capital to the emerging markets have been said to have a high impact on industry's low profitability (Pricewaterhousecoopers 2007, 5) as well as declining product prices and increasing labor, raw material, and energy costs (Diesen 2007, 15). Fragmentation has lead to overcapacity that PPI companies have tried to solve by consolidating and reducing the number of suppliers. The question whether these consolidation procedures have been profitable and succeeded in reducing the sector's volatility however remains vague.

The first merger wave began already in 1985 (Pesendorfer 2003, 501) following a true golden age for consolidation procedures in the 1990s. According to Metsäteollisuus ry (2007) the restructuring phase began also in Finland at the end of the 1980s and speeded up in the 1990s. The Finnish companies merged into large entities and production began to internationalize: at present Finnish forest industry companies are among the worlds largest and some 60 % of the paper industry's production capacity and a third of the sawmilling industry's capacity locates abroad. At the beginning of the 1980s there were over 20 PPI companies in Finland from which only a few large global players still exist today (Diesen 2007, 123).

Eagerness for M&As exploded again at the turn of the century when the level of activity reached a new high. In Europe and in North America the portion of the largest companies of total capacity and market share has increased noticeably after 1997; as a consequence they have grown much faster than the middle size and small companies (Diesen 2007, 12). Colclough (2000) lists the reasons for this new wave to be the desire for companies to increase their global reach, improve the shareholder value and gain from synergies and rationalization. Due to the overcapacity problems and the price volatility in the industry M&As have been seen as the best possible way to get bigger whereas building new mills would only damage the markets more.

The number of mergers and acquisitions globally and across all industries has continued to speed up since 2003 reflecting also the development of PPI. The driving forces behind these actions have predominantly remained the same, growth and global reach without adding new capacity as well as alluring synergies, but also the growing importance of recycled fiber as a raw material, in which especially Scandinavian producers have limited access to, and the raising interest of private equity investors in PPI have enhanced M&A activity (Diesen 2007, 121-122).

1.2 Research problem and objectives

As we saw the pulp and paper industry is characterized by poor performance, continuing overcapacity and the need to become truly global. The companies in PPI have answered to these challenges either or both by new investments, shutting down existing facilities, and M&As. However, M&As seem to be the only alternative in which both growth and global reach is assessed without compounding the overcapacity problem and hampering the global accessibility.

The purpose of this study is to examine the long run post M&A performance of acquiring firms in PPI in order to evaluate whether M&As have succeeded in improving the performance of the companies in the industry and making them more attractive in the eyes of the shareholders. The research question is: how do acquiring PPI companies perform after M&As? The prior research in this field is divided into two cardinal approaches. The first approach uses event study methodology to determine whether M&As have created value for shareholders; the second approach uses accounting and financial data to assess the impact on operating performance.

The evidence provided is somewhat controversial. While part of the event studies report significant stock return underperformance for the acquirer's shareholders three to five years after an M&A (e.g. Agrawal, Jaffe & Mandelker 1992, Loderer & Martin 1992, Rau & Vermaelen 1998, Loughran & Vijh 1997,), some (e.g. Franks, Harris & Titman 1991, Lyon, Barber & Tsai 1999, Mitchell & Stafford 2000) have attributed it to be a consequence of estimation bias and find no long term abnormal returns. Accounting studies have not reached more coherent picture and, depending on the measure used, they have found also positive abnormal performance. There are many strengths and weaknesses concerning both approaches that will later be pondered more.

Many of the previous studies have found remarkable differences in the acquirer's performance depending on the individual characteristics of the transaction. These include the 1) *method of payment*, 2) *business similarity* between participants, 3) *geographical location* of the target, and 4) whether the acquirer is *a value or a growth firm*. In addition, the impact of the *premium paid* has exercised the minds of the earlier researchers. Premiums have been accused to be the source of the inferior performance after M&As (e.g. Yook 2004; Healy, Palepu & Ruback 1992; Ravenscraft & Scherer 1987), but they are important also because they seem to reflect the expected synergies of the

deal and, therefore, have a function as an important tool in negotiations. Following previous research the second objective of this work is to determine whether the characteristics of the transaction as well as the premium paid has affected the performance of acquiring PPI companies.

There are many interest groups that have economic interests concerning an M&A: primarily of course the buyer and the seller but also shareholders, advisors, creditors, suppliers, customers, employees and governments are affected by the final outcome. Because this paper approaches M&As from a financial point of view and in order to take the responsibility that a firm has towards its owners into account, the research problem will be examined from the perspective of the shareholders. This can bee seen from the theoretical background and especially from the parameters chosen to reflect the profitability. The level of analysis is an M&A thus it places some challenges to the final sample and to the interpretation of the results. For example, the same firm can carry out several acquisitions near one another and the impact of one particular deal remains unclear. Also, the performance before the deal can be affected by some antecedent deal. On the other hand, a deal level analysis enables the valuation of transaction characteristics and the effect of premiums. Another possibility would have been a firm level analysis. Had that been used would the sample creation been much simpler but the impact of a particular or a certain type of transaction would have remained blurred. The problems described above are mitigated by data adjustments.

1.3 Limitations

The data available with reasonable resources and time used to search it has limited the number of observations included in the final sample. Especially, premiums were reported for only a small number of deals and performance ratios were found only for few target companies. The sample construction is described more specifically under chapter 4 Methodology. The phenomenon

is studied only in the PPI meaning that the acquirer must be allocated to PPI according to its SIC code. Mitchell & Mulherin (1996) have found that mergers occur in waves and strongly cluster by industry. Further, Anrade, Mitchell & Stafford (2001) and Mitchell & Mulherin (1996) have argued that industry shocks and especially deregulation and other fundamental factors in the 1990s are dominant factors behind M&A activity. Therefore, it would have been interesting to compare the effects on PPI to other similar industries - for example metal, chemical, oil, and steel industry (Siitonen 2003, 241) - to find out can one see some industry related events behind the consolidations or are macroeconomic factors more prominent interpreters as well as how the performance has varied between industries.

Although it might be interesting to contemplate the value perceived by the shareholders' of both the bidder and the target to find out the possible value transformation between these groups, this study concentrates only to the bidders' shareholders. This is in order to find out whether consolidation has succeeded in improving the performance of the company and, thereby, improved the value for the shareholders. This study does not answer whether M&As have served to reduce the overcapacity problems, volatility, or fragmentation in the PPI.

The time period is predefined to 1985-2001 and the transaction must have taken place in this period. Because performance is assessed five years before and after the deal, no later transactions than the ones occurred in 2001 can be considered into the sample. The records of the financial data for most distant observations are defective that has limited the number of deals included, and the small quantity of deals for which premiums are reported distorts some of the results. Finally, the decision to use the industry median as a control group has been criticized because it has been found that the acquirers' usually have above median performance before M&As (Lyon et al. 1999 and Ghosh 2001).

1.4 Methodology and data

The strategy of this research is to quantitatively examine the impact of M&As to the long run performance of the acquiring firm in the pulp and paper industry. The previous research is extensive but largely concentrated on many industries in the U.S., UK, or around the world. There are studies that have shed light on M&As in the PPI, mostly based on case studies or dealing with M&As as a part of globalization, but it seems that no vast statistical long run performance study has been concluded.

The impact of M&As on performance in the PPI is studied by the change model and linear regression analysis. Performance is measured with accrual, cash flow, and market based indicators.. The overall influence of time is controlled when the pre and post M&A returns are accounted by subtracting the industry median value from the acquirer specific value in equivalent year. The approach method is chosen to be accounting study because of the methodological concerns of long run event studies and its inaptitude for single industry research. The performance after M&A is set against industry median to attain perceived performance compared to other PPI firms. Then, it will be investigated whether the performance has varied with the characteristics of a deal and with the premium paid.

The data will be collected from Securities Data Corporation (SDC) Platinum Mergers and Acquisitions and Thompson One Banker databases. The former will provide information on a deal basis and from the latter the performance measures will be collected. The time period in which the deal has to be occurred is 1985-2001. The long rung performance is examined until five years after the completion year and compared to the pre-acquisition and industry performances. Methodological selections, performance measures, data, and sample definitions are discussed in detail in chapter 4.

1.5 Structure

The remainder of this thesis is organized as follows. While the first part of this work gave an introduction to the study and M&As in the pulp and paper industry, the second and the third part form the theoretical framework of long run performance after M&As. First, the vast research on long run performance after M&As is presented. Previous studies are divided into two widely used methods, and explanations for the performance behavior are presented. Second, the theoretical background introduces the most common theories by which the motivations for M&As have been explained according to earlier studies. Also, the deal making process and the concept of M&As is presented at the beginning of chapter three as well as some reasons for why M&As occur in waves. The choices made during an acquisition process have suggested having an impact on performance, and understanding the wave effect behind M&As can help to distinguish the motivations behind M&As in different time periods. Figure 1 serves to clarify the theoretical framework of performance after M&As on which the hypotheses of this study rest. Theoretical background is aggregated by presenting the hypotheses derived from it.

The data and the methodology as well as the variables used in regression analysis are presented more detailed in part four. The hypotheses are tested and the results are presented in part five. Finally, chapter six summarizes the findings of this study and concludes the thesis by proposing suggestions for future research.

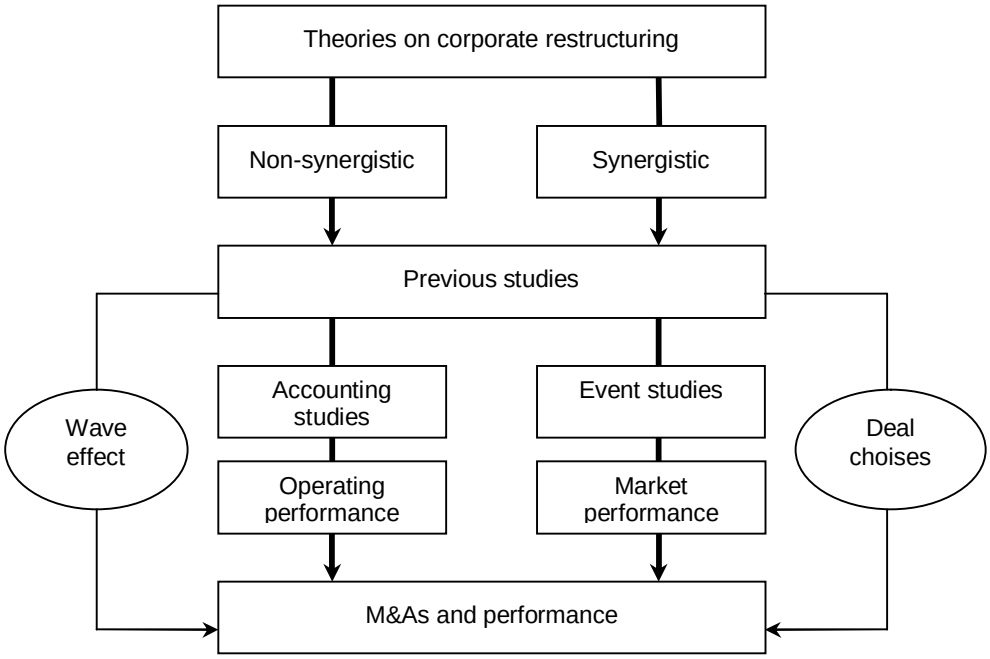


Figure 1: Theoretical framework of performance after M&As

2 PREVIOUS RESEARCH

The financial performance after M&As has been one of the most actively researched topics in finance, especially after the increased M&A activity in the 1980s. Also, the facts that the researchers have not reached unanimous results, continue to argue over methodical issues, and find widely found negative results unsettling because, as Jensen & Ruback (1983, 20) noted, they are inconsistent with market efficiency by suggesting that stock price changes during takeovers overestimate the future gains, have made the topic popular among academics. Many studies have concentrated on the short term returns around announcement dates but a lot of empirical work from long run performance can be found also.

There are two widely used methods to measure the long run performance: long run event studies and accounting studies. Also, Burner (2002, 50) has specified surveys of executives and case studies which due to different research approaches can yield to new insights but the results are often poorly generalized. Long run event studies examine the abnormal returns to shareholders following three to five years after a transaction. The most popularly used measure of abnormal returns are CARs (cumulative abnormal returns), which are calculated by averaging the abnormal returns of all acquirers for example every month and then summing these averages over time. Another measure used for example by Loughran & Vijh (1997) and Mitchell & Stafford (2000) are the buy-and-hold returns (BHAR) that measure the average multiyear return from investing in firms that complete an acquisition and selling them at the end of the holding period compared to investing in otherwise similar ones that do not acquire. Event study approach can further be divided into the traditional event study framework based on the control firm approach and the calendar-time portfolio approach discussed by Fama (1998).

Accounting studies examine the acquirers' financial and accounting data before and after the deal to see how financial or operating performance has changed and then compare it to industry performance (Healy et al. 1992) or to size and industry matched non-acquirer (Ghosh 2001). The measures used to evaluate performance vary from adjusted cash flow and operating income measures to return on equity, assets, capital or shareholders, economic value added (EVA), leverage, and liquidity of the firm.

There is one result concerning M&As that nearly all researchers seem to agree: target firm shareholders earn large positive abnormal returns (Bruner 2002, 51; Agrawal & Jaffe 2000, 7). However, when the question is about bidders' shareholders, the results seem to be more ambiguous. Next, the results of the studies examining the post M&A returns to acquirers' shareholders will be summarizer first according to the event study approach and second according to the accounting studies. Also, the findings concerning the individual characteristics of the transaction used to explain the variation in performance are presented. In addition, summary of the studies is provided in appendix 1.

2.1 Event studies

According to Agrawal & Jaffe (2000, 9) the work of Franks et al. (1991) altered the literature of M&A performance by devoting solely to post acquisition performance and using more sophisticated measurement techniques. That is why in this literature review will be concentrated on performance studies made after Franks et al. (1991). Only to mention from earlier studies the findings indicate poor performance that is, however, likely to be due to benchmark errors rather than mispricing at the time of the takeover (Franks et al.1991; Agrawal & Jaffe 2000). Thus, it would seem that there is no anomaly concerning the post M&A returns and the market efficiency holds.

Franks et al. (1991) find that the performance is not robust to the choice of the benchmark (value-weighted, equally-weighted, ten-factor, and eight-portfolio) and finally come to the conclusion that abnormal returns are not significantly different from zero. Similar, Loderer & Martin (1992, 73) find that there is weak evidence of negative post acquisition performance three years after the transaction but it diminishes into insignificant when the time period is five years. In addition Loderer & Martin (1992, 77) examine whether performance exhibits time patterns by sorting the sample into three decades. According to their results the negative performance is most prominent in the 1960s, less in the 1970s, and disappears in the 1980s suggesting that if the negative performance was concentrated in only some of the calendar years it would not really be systematic and would thus be consistent with market efficiency.

However, in contradictory to Franks et al. (1991) and partly to Loderer & Martin (1992) the majority of studies report significant negative abnormal returns suggesting an anomaly might after all exist. Agrawal et al. (1992, 1605) find significant negative abnormal returns of about 10 % over a five year period after a takeover and difference between the performance in the 1970s, 1960s, and 1980s. Agrawal et al. (1992, 1614) examine the period from 1975 to 1984, which was the sample period in the study of Franks et al. (1991) too, and conclude that the results of the latter are specific to their sample period since the performance is significantly positive only from 1975 to 1979 and significantly negative between 1980 and 1984 resulting in insignificant combined performance. Still, Agrawal et al. (1992, 1616) agree with Franks et al. (1991) that the negative returns do not arise from market inefficiency but from unrelated causes. Loughran & Vijh (1997) introduce a new methodology of buy-and-hold returns (see chapter 2.1). The results are consistent with much of the previous literature reporting -15,9 % abnormal five year period return after mergers. Also, Rau & Vermaelen (1998) find significant -4,04 % abnormal returns over three years following mergers.

As the research of long run abnormal stock returns evoked the interests of academics, the criticism towards it began to increase as well. It was suggested already in the 1980s that long-horizon event studies will have low power but Kothari & Warner (1997, 337) argued they might lead to misspecification as they often indicate abnormal performance when none is present and are sensitive to test methodology. Though, Kothari & Warner (1997, 336) conclude that procedures like bootstrapping could be used to address these debilities. Fama (1998, 291) specifies the weaknesses of long run event studies to the bad-model problems and the sensitivity towards not only the method used but also the choice of the return metric. Also, Lyon, Barber & Tsai (1999) come to the conclusion that long run event studies are treacherous. They report the causes of misspecification to be the new listing or survivor bias, which creates a positive bias in test statistics, and rebalancing and skewness biases that create a negative bias. Additionally, cross-sectional dependence and a bad model of asset pricing create risk factors which traditional event study is unable to control. Lyon et al. (1999, 167) state that even the most careful application of methodologies is not sufficient to yield reliable test statistics when samples are drawn from nonrandom samples (e.g. samples concentrated in one or only few industries), thus the market efficiency cannot be rejected reliably enough.

While others questioned the statistical reliability of long run event studies, Mitchell & Stafford (2000) developed estimates of long run performance that are robust to above mentioned statistical concerns. They too strongly criticize especially the bootstrapping procedure because it assumes the independence of multiyear abnormal returns for event firms causing a positive cross-correlation and, hence, producing biased test statistics. In contradiction to majority of prior research authors found no significant abnormal returns after taking the cross-correlation into account and propose that the prior evidence against market efficiency is irrelevant. Abhyankar, Ho & Zhao (2005) try to overcome the methodological concerns of traditional event

studies by using an alternative stochastic dominance perspective. Similar to Mitchell & Stafford (2000) and Franks et al. (1991) they found no significant underperformance three years after a merger. Rosen (2006), however, found again negative long run performance after mergers by using two methods robust to above mentioned biases (Lyon et al. 1999 and Mitchell & Stafford 2000). Thus, the puzzle around long run stock performance remains unsettled.

2.2 Accounting studies

While event studies directly measure the performance perceived by shareholders, the methodological problems of them remain severe. An alternative method to evaluate the performance is an accounting study that examines the returns estimated from financial statements. Accounting studies directly asses the operating performance and hence measure the actual economic benefit of an acquisition. Also, credibility of the figures used and the fact that the financial statements are used by investors in decision-making are benefits of this approach. Accounting studies have been criticized for their incompetence of measuring the true shareholder value, possibility of manipulation, retrospection, dismissal of the value of intangible assets, and differences in accounting principles. (Yook 2004, 68-69; Bruner 2002, 51) However, Chatterjee & Meeks (1996, 857) express two hypotheses favoring the use of the accounting study methodology: 1) the stock market is semi-strong effect meaning that fresh information released after a takeover reflects in accounting rates of return, and 2) the informational efficiency of the stock market has been over-estimated making the event study approach fatally flawed. Moreover, event studies cannot be used for measuring the pre- and post-acquisition performance of unquoted companies (Ooghe, Laere & Langhe 2006, 225).

Two perhaps the most cited studies measuring the operating performance after M&As are the ones of Healy et al. (1992) and Ravenscraft & Scherer (1987). Ravenscraft & Scherer (1987, 152) studied the post takeover performance of 153 tender offers occurred between 1950 and 1976 and their performance in a three year period in 1975-1977 and found that the mean operating income to assets was well below their non-merger control group. The findings of Ravenscraft & Scherer (1987) are criticized because they examine post merger years that are not aligned with the merger, making the performance comparisons troublesome, and focus exclusively on acquired firms' lines of business (Bruner 2002, 58). Inconsistently, using more sophisticated methods Healy et al. (1992) find significant operating cash flow improvements after mergers between 1979 and mid-1984. Later Healy, Palepu & Ruback (1997), however, specify their results and report that the increase in cash flow covers only the premiums paid making M&As break-even investments.

Chatterjee & Meeks (1996, 865) discover that before 1984 the profitability after mergers in UK showed now significant increase but after 1985, when a new accounting regime was introduced, the profitability trend turned into significantly positive. Ghosh (2001) argues that the method used by Healy et al. (1992) leads to biased results because the sample firms systematically outperform the industry-median firms. Instead of using the industry median as a control group Ghosh (2001) uses the matching control firm procedure and modifies the regression equation initially introduced by Healy et al. (1992) but finds no evidence of improvements. Respectively, Sharma & Ho (2002) do not find improved operating performance in Australian companies between 1986 and 1991 and Yook (2004) presents that the performance slightly deteriorates compared to the industry average.

Given the serious methodological problems of event studies, Mitchell and Stafford study the performance puzzle again with Andrade (Andrade, Mitchell

& Stafford 2001) employing the accounting study perspective. As Healy et al. (1992) they found significant improvements in operating performance in contrast to their industry peers (Andrade et al. 2001, 116). Also Gugler, Mueller, Yurtoglu & Zulehner (2003) perceive positive performance, if conclude that the result depends on the measure used to determine the success. They further suggest that the increases Healy et al. (1992) observed were mostly due to increases in market power, not in efficiency, that probably arises from the sample of only large firms. Paralleled to the results of Healy et al. (1992), Powell & Stark (2005) report modest but significant improvements in operating performance.

2.3 The cross-sectional variation in post acquisition performance changes

The previous two chapters demonstrated that previous literature has failed to reach coherent picture of the long run performance after mergers and acquisitions. Because of the unsatisfying results, recent studies have searched for explanations. Some of them are reviewed next.

The method of payment has been said to have an effect on the post M&A performance. Berkovitch & Narayanan (1990), Eckbo, Giammarino & Heinkel (1990), Loughran & Vijh (1997), Linn & Switzer (2001), Ghosh (2001), and Abhyankar et al. (2005) argue that performance is significantly better if the deal is financed with cash or combination of cash and stock than after stock financed transactions. These returns are compatible with signaling and principal-agent theories: cash is likely to be used for positive NPV acquisitions as a signal to the market; paying out funds or issuing debt benefits shareholders by limiting the managements' access to free cash flow and due to the disciplinary role of debt (Yook 2003, 479). Still, many of the studies have failed to find any significant correlation with performance and the method of financing (e.g. Franks et al. 1991; Healy et al. 1992, Rau &

Vermaelen 1998; Sharma & Ho 2002; Yook 2004; and Powell & Stark 2005); Healy et al. (1997) found superior performance of equity and debt compared to cash.

An M&A with a firm with highly related business could in theory offer vast operational synergies. On the other hand, if the business of the target is unrelated, potential of attaining new markets or creating new products is created. Healy et al. (1992, 1997) found the performance improvements to be particularly strong for firms with similar businesses. Similarly, Gugler et al (2003) found conglomerate mergers to decrease sales more than non-conglomerate ones. These studies are consistent with Jensen's (1986) argument that conglomerate mergers more likely fail due to managers' unfamiliarity with the business acquired. Priority of the studies, again, found no significant difference between conglomerate and non-conglomerate mergers; whereas Agrawal et al. (1992) state that non-conglomerate mergers perform worse than conglomerate ones.

Cross border mergers can be seen as an important instrument for efficient resource allocation offering large synergies (Meschi 1997, 10). Except exploitation of comparative advantage, cross border mergers can be justified by exigencies of globalization. Especially in the PPI globalization can be seen as a necessity for survival and M&As as an effective means to attain global supply chain. Hitherto only few studies have modeled the difference between cross-border and domestic M&As. For example, Gugler et al. (2003) found no significant difference in performance. This strengthens the view that strategic synergies are hard to achieve (Goold & Campbell 1998, 133) and financial benefits resulting from diversification are equally available for investors and firms.

The difference in performance after mergers and acquisitions could differ among value and growth firms. Rau & Vermaelen (1998, 223) posit this as

the performance extrapolation hypothesis that relies on behavioral finance stating that both the market and the management over extrapolate the bidders past performance when assessing the value of a new acquisition. They propose that the underperformance after transactions is predominately caused by low book-to-market glamour growth firms and find supporting evidence: because growth firms are usually overvalued at the time of the acquisition announcement and markets reassay slowly new information, long run post transaction performance should hence be negative. Rau & Vermaelen (1998). An alternative study of Abhyankar et al. (2005), however, disagrees with Rau & Vermaelen (1998) stating that no significant difference can be found between value and growth firms.

Finally, premiums paid have been said to cause the deteriorating performance after mergers and acquisitions (Healy et al. 1997; Yook 2004; Abhyankar et al. 2005). This too implies that managers have been overoptimistic when estimating the benefits from restructuring activities. Sharma & Ho (2002), on the other hand, found premiums to have no impact on performance. According to signaling theory large premiums mirror the amount of expected synergies and, hence, the performance ought to be better when premiums paid have been large. Yook (2004) found evidence supporting the signaling theory but Abhyankar et al. (2005) conclude quite the contrary that when the premiums have been large has the performance been worse.

3 THEORETICAL BACKGROUND

3.1 M&A process and key concepts

The points that should be taken into consideration while planning and evaluating M&As on one hand and while doing the deal on the other hand are presented under this chapter. Also, some terminology and definitions concerning M&As are introduced. If the starting point of an M&A is difficult to explicate, the deal making process always starts with the seller's decision to sell and/or the buyer's decision to buy and ends with either accepting an offer or rejecting it (Lee & Colman 1981, 2). The process of M&As is clarified in figure 1.

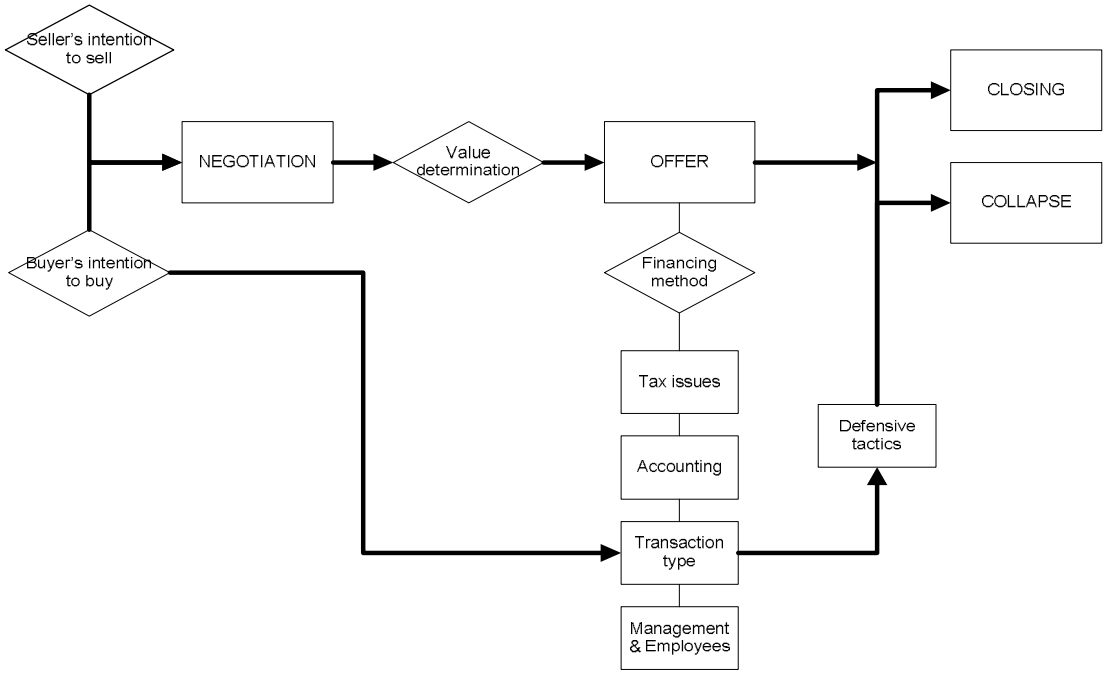


Figure 2: The structure of the deal making process (modified from Lee & Colman 1981, 2)

The end result of the negotiations is affected by various factors, from which the determination of value and the strategic direction chosen are one of the most important ones. Both the type of an M&A, whose choice inevitably has

bearing on tax consequences as well as management and personnel related questions, and accounting method influence the financing alternatives of the deal, and vice versa, and together with the perceived value of an M&A form the basis for the offer. These are further discussed in the remainder of this chapter.

The goal of the whole process is to reach an offer that meets the objectives of both the acquirer and the target as well as the requirements of the shareholders and other interest groups. Of course, as we saw in the literature review, the planned outcomes might never truly realize that could negatively affect the post transaction performance of the combined firm. If the process ends with refusal, the other party might view the offer displeasing or too risky and try to prevent the closing of the deal. Depending on the attitude of the offer and the type of the transaction the target's management might choose to use defensive tactics in order to make the transaction less tempting for the acquirer, to receive a higher premium for the shareholders, or possibly some compensation for themselves.

The terminology of defensive tactics is most colorful and, hence, some of the most fictitious examples deserve to be mentioned. Starting with the most common ones divestitures, including a sale of assets, a spin-off, or a tracking stock, will narrow the strategic focus of a firm and possibly increase the stock price making the attempt too expensive. Others are amendment of the corporate charter, repurchases, self-tenders, going private and leveraged buyouts as well as crown jewels, poison pill, shark repellent and white knight. Also, there are inducements, often called golden parachutes, offered to the target's management as compensation if a takeover occurs, or the offer can be made so attractive in the eyes of the management, a bear hug, that they can only accept it. (Ross et al. 797-798, 815-818) Additionally, the seller has various mechanisms to defend the deal, such as stock and asset options,

bust-up fees, and no-shop and window-shop agreements (Wasserstein 2000, 672).

At their best mergers and acquisitions provide true economic benefits and maximize the overall shareholder wealth. Also, they provide an active market for corporate control motivating the management to act in the interests of the shareholders. M&As may encourage the allocation of economic resources, increase economic flexibility and provide an incentive to invest in new businesses. However, mergers are not all good. They have been accused to induce the overleveraging of corporations with serious consequences to communities, workers, and industries. Also, the premiums paid have been said to represent wealth transfer, not creation, and the true reason behind mergers to bee the self interest of managers. (Wasserstein 2000, 162-185)

3.1.1 Determining the value

The acquisition of a firm is an investment decision and thus the basic principles of valuation apply: the target should be acquired only if it generates a positive net present value (NPV) for the shareholders of the acquirer. NPV is determined as a difference between the synergy from the merger and the premium to be paid (Ross et al. 2005, 796); whereas synergy is the expected increase in the value of equity as a result from the acquisition and premium the price paid for it. The value of equity after an M&A is the sum of the market values of the target and the acquirer and the synergies less the cash, stock, or other non-equity component of the purchase price ($V_{combined}=V_{acq.}+V_{target}$+Synergies-Price) (Arzac 2005, 148-151).

In general, the valuation models can be divided into asset-based, income-based, and market approaches and into combinations of them (David & Jenkins 2006; Penman & Sougiannis 1998). Different methods are used depending on the user of the information. When valuating mergers and

acquisitions, there seem to be some generally used methods: break-even analysis, accretion dilution or market multiple approach, comparable acquisition transaction analysis, break-up/restructuring analysis, and discounted free cash flow analysis (see e.g. Arzac 2005; Mackie & Oss 1998). In addition, the methods used in smaller, private transactions are often more informal and simplified (Mackie & Oss 1998).

The process of valuation starts by projecting the target's historical performance and the forecast of the combined firm into a financial model. Break-even analysis can be used to find out how much the annual free cash flow and/or net income of the combined firm should increase in order to justify the transaction. However, although knowing the break-even point may be helpful, it does not tell the acquirer much about the value of the target; also basing valuations on market comparisons of similar transactions gives only a rough estimate of value. One should be careful using market multiple approaches too, especially alone, because it can give misleading results if the fundamentals behind the multiple are not carefully studied. For example, if the value is measured with growth in earnings per share (EPS), future growth may be sacrificed for short run profits (Arzac 2005, 155).

The value seems to be better assessed with break-up analysis, where the value of an organization is measured by the value of its parts, or with free cash flow method. Both of them can be used to detect the sources of synergies and free cash flow resulting from M&As (Mackie & Oss 1998; Arzac 2005; Ross et al. 2005). However, in the latter adequate attention should be paid to the determination of discount rate because the risk profiles and capital structures of both firms equate only once in a blue moon. As most of the models are based on uncertain assumptions of the future the robustness of the valuations should be tested by sensitivity and scenario analyses.

3.1.2 Different classifications

When choosing the right form for an M&A, a firm has to take the tax consequences, legal requirements, and the ability to attain the shareholder approval into consideration (Arzac 2005, 144). Ross et al. (2005, 797) classify the basis forms of acquisitions into three categories. First, two firms can either merge or consolidate. In a *merger* one firm absorbs into another and the acquiring firm, usually the bigger one, maintains its name and entity and the acquired firm ceases to exist. All the assets and liabilities of the target are transferred to the acquirer. A *consolidation* is otherwise the same except an entirely new firm is created and the legal existences of both the acquiring and the acquired firm's come to an end. Arzac (2005, 144) further separates a forward merger (described above as a merger) and a triangular merger. The latter is a subsidiary merger where the target is merged into a subsidiary of the acquirer or a reverse subsidiary merger where the subsidiary of the acquirer is merged into the target. In triangular merger the acquirer creates a special subsidiary to merge with the target (Wasserstein 2000, 625).

Mergers and consolidations are legally straightforward and have a clear cost advantage compared to other forms of acquisitions. They are flexible, as the transfer of assets and liabilities can be done without complicated documentation and the shareholders of the target have appraisal rights giving them a right to demand the payment of a fair price for their shares, but, however, usually also unwieldy while the directors and in some cases also the shareholders of each company must accept the merger before legal validity. The triangular merger can be used to smooth the process and eliminate the need for a shareholder vote, as well as to insulate the parent from the liabilities of the target. (Wasserstein 2000, 624-626)

Second, in the *acquisition of stock* the acquirer purchases the stocks of the target with cash, shares of stock, or other securities. Third, in the *acquisition*

of assets another firm is acquired by buying all of its assets. When the offer to buy shares is made directly to the target's shareholders, usually by public announcements, an acquisition of stock is called a tender offer. Payment for the target can be cash, stock, debt, or other property (Wasserstein 2000, 628). Stock acquisition avoids the arrangement of shareholder meetings since no vote is required as in mergers and in asset acquisitions when over 50 % of the assets are sold. However, when the shareholders have individual rights to abstain from the offer, the target can only rarely be completely absorbed. The acquisition of assets will avoid this problem. After a stock acquisition no assignment of existing contracts is required unlike in an asset acquisition (Arzac 2005, 144). Also, the target firm's management can be bypassed in tender offers making them often unfriendly transactions used to displace the target's management.

Additionally, acquisitions can also be classified as horizontal, vertical, or conglomerate. In a horizontal acquisition both the target and the buyer are in the same industry making the same products whereas in a vertical acquisition the firms are at different steps of the production process. In a vertical acquisition the firms are usually at least partially in the same industry but the strategy behind the transaction is for example to extend the value chain from not only selling the product but also manufacturing or maintaining it. In a conglomerate acquisition the counterparts are unrelated to each other. (Ross et al. 798)

An acquisition can be carried out as a taxable, partially tax-free, or a tax-free transaction. If the transaction is paid with the shares of the acquirer, taxes can be avoided at the corporate level and the acquirer can use the net operating losses of the target but cannot write up the target's assets or deduct goodwill (Arzac 2005, 144). The shareholders of the target have to pay taxes on their capital gains but the payment can be deferred until the shares are further sold; if the payment is made with cash there are immediate

tax consequences for the seller (Ross et al. 800). Also, according to Wasserstein (2000, 634) in a tax-free deal a continuity of business enterprise and a continuity of interest tests must be satisfied and, hence, if the payment is made in combination of cash and stock, the amount paid with stock has to exceed 80 % in reverse subsidiary merger and 50 % in other mergers and consolidations to be considered as a tax-free deal. In an asset acquisition the seller is exposed to taxes and according to the U.S. tax code the buyer can write up the basis of the acquires assets and amortize goodwill over 15 years for tax purposes. However, the acquirer is not able to use the target's net operating losses to lower the taxes. (Arzac 2005, 144 & 147) The Finnish accounting legislation allows the goodwill to be depreciated according to the depreciation plan in five years or if the influence time is longer in 20 years, most, but the International Financial Reporting Standards (IFRS) prohibit the amortization and require annual impairment tests instead (Kirjanpitolautakunta 2006, 18; IASB 2007, 310).

3.1.3 Accounting alternatives

There are two methods of reporting acquisitions: the purchase method and the pooling method. In the former the assets of the target must be reported at their fair value on the books of the combined firm (Ross et al. 2005, 801). The latter has been off limits since 2001 in the U.S.; also the IFRS 3 Business Combinations –standard requires all business combinations to be accounted for by the purchase method only (IASB 2007, 308). According to the Finnish accounting legislation (KPL 6:8 § and KPL 6:9 §) companies should use the purchase method as a primary accounting method but the pooling method can be used when the restrictions provided in the law are fulfilled (Kirjanpitolautakunta 2006, 15). However, since all public companies in Finland are forced to follow IFRS, there is only a marginal group of mergers and acquisitions that can even consider the use of the pooling method.

In the purchase method the assets of the target are reported at their market value on the books of the acquirer and if goodwill is created, the purchase price exceeds the fair market value, it has to be recognized. The goodwill consists of the expected income that cannot be separately fixed to any specific asset. If the purchase price has been below the market value of assets, negative goodwill is formed. The negative goodwill is allocated pro-rata to the purchased assets and debt from which it is seen to be composed of. In the pooling method the target's assets are accounted at their book value and no goodwill is formed since the difference between the purchase price and the book value of assets is focused directly into the acquirer's equity. (Kirjanpitolautakunta 2006, 18; Arzac 2005, 148) As a consequence, while the purchase method might result lower earnings, the balance sheet is stronger (Aboody, Kaszink & Williams 2000, 263).

Before the pooling method was forbidden it was exposed to wide criticism. When the assets of the target can be written up in their book value and because the goodwill is not recognized, the pooling method can lead to higher reported earnings. Hence, it was suggested that due to these higher earnings the companies using the pooling method make abnormal returns from higher stock prices but according to Hong et al. (1978) there is no empirical evidence supporting this argument. If there is no difference in the value creation potential between the two methods, why do others then choose pooling and others purchasing method? Aboody et al. (2000, 277-279) find that firms are more likely to choose pooling when the synergies associated are comparatively large in order to avoid asset write ups and when the managers' compensation plans are more sensitive to reported earnings. They also find that when the firm's leverage ratio is high managers are more inclined to use the purchase method in order to make the firm's balance sheet stronger.

3.2 Wave effect and industry clustering

The concept of time and time cycles is often linked to the research on mergers and acquisitions. Although time cycles do not seem to be reasons for merger activity, there is evidence that mergers and acquisitions cluster through time by industry and occur in waves.

Merger waves can be classified at the industry level or at the more comprehensive level of an economy. In the introduction we already saw how merger waves have occurred in the PPI. As an example of an economy level effect there has been found five distinctive merger waves in America and characters for each: between 1890-1904 the rise of monopolies; the booming 1920s and oligopolies; the 1960s with the goal of diversification through conglomerates; the 1980s and survival and expansion by hostile takeovers; and the 1990s with strategic goals and globalization (Wasserstein 2000, 53-189; Mitchell & Mulherin 1996, 194).

Why do mergers happen in waves? It has been suggested that mergers occur in waves due to the link between merger activity and stock market cycles but according to Meschi (1997, 22) the reason has to be something beyond the effect of cyclicity because there is no significant causality nor correlation between mergers and industrial production. Mergers seem to cluster in industries that are exposed to industry level shocks (e.g. Mitchell & Mulherin 1996, Andrade & Stafford 2004). Further, Mitchell & Mulherin (1996, 195) imply that a takeover announcement of a firm gives information about its industry peers that may be tied to economic fundamentals rather than market power. These shocks are any factors that alter the industry's structure, e.g. deregulation and other legislative changes, energy dependence, foreign competition, and technological and financing innovations. Deregulation can open the doors for new markets and M&As provide an effective tool for expansion without excess capacity while a shock driven fall in demand, such

as the oil price shock of the 1970s, can cause pressure to merge in order to maintain the economies of scale under the new industry structure of fewer firms. (Mitchell & Mulherin 1996, 196-197; 209) Additionally, technological and other innovations can create overcapacity and launch the need for industry wide consolidation (Andrade et al. 2001, 107).

The announcement of a takeover of a one firm in an industry may spur others to act too (spillover effect) and because firms undertake mergers and acquisitions in response to the industry shocks, the performance after a transaction can be volatile or even deteriorated and at the same time create value (Mitchell & Mulherin 1996, 220). According to Mitchell & Mulherin (1996, 220) takeovers should not be regarded as the actual source of performance changes; instead they communicate underlying economic changes in the industry. Also, Knickerbocker (1973, 5) has identified the spillover effect as a behavior of oligopolistic reaction; thus if firms in an oligopolistic industry merge, others may merge too causing a chain of mergers to take place.

Derived from the principal-agent theory the motives behind acquisitions can be identified as disciplinary and non-disciplinary (Ghosh & Lee 2000, 40). These can be seen as firm level motives but there also the wider industry level motives have been investigated. For example Andrade & Stafford (2000) have found both firm and industry level forces behind M&As and classified them to be either expansionary or contractionary. First, M&As, like internal investments, can be seen as a firm level means to grow and expand by expanding the capital base. Second, mergers seem to promote consolidation and reduction of the asset base facilitating the industry level contraction. In the perspective of economics the structure-conduct-performance paradigm from Bain (1951) suggests that by reducing the number of players in the market, mergers and acquisitions in an industry can result in enhanced collusion or tighter oligopoly and therefore market participants are able to raise prices and brush up performance (Meschi 1997, 11).

3.3 Non-synergistic theories on corporate restructuring

Non-synergistic theories on corporate restructuring deal with the market for corporate control and concentrate on the monitoring and guiding function of financial markets. Jensen & Ruback (1983, 2) determine the concept of corporate control as the rights to determine the management of corporate resources. Takeovers serve as an external control mechanism attending to the interests of shareholders. For example, the mere threat of an acquisition motivates managers to work harder and create value for shareholders. On the other hand, in mergers and acquisitions the control rights to the target firm's assets are transferred to the buyer that might inspire managers to build larger empires. With non-synergistic theories the initial force or motivation driving M&As is not the value maximization but something else like attempts to maximize growth or sales, to control more resources, or simply to fool the markets.

From financial perspective M&As should be made in order to maximize the wealth of the firm and, hence, the wealth of its shareholders. However, as the previous research on performance after M&As proved, there is contradictory evidence on value creation for the acquirer's shareholders and managers still promote takeover activity. The non-synergistic theories on corporate restructuring presented under this chapter rest on alternative rationalizations. Most of them are derived from the behavioral finance but some do expect markets to be efficient and arbitrage to exist.

3.3.1 Principal-agent theory: agency costs and free cash flow problem

Principal-agent theory approaches the difficulties arising between principals and agents that are derived from asymmetric information. It was first introduced by Ross (1973) and later studied by Jensen & Meckling (1976) among others. While Jensen Jensen & Meckling (1976) studied the agency problems associated with the ownership-management structure of a firm,

Jensen (1986) later extended his work to cover corporate finance and takeovers.

In the business world a principal-agent relationship arises when managers, designated as the agent, act for, on behalf of, or as representative of owners, cited as the principal, and the difficulty associated with it from monitoring the act that the agent chooses to perform (Ross 1973, 134 and 138). In today's business environment, especially in public companies, the owners only rarely lead the normal day-to-day business themselves but instead hire professional managers to attend to their interests. The problem of motivating the managers to act on behalf of the owners is referred as the principal-agent problem and the expenses derived from it as the agency costs. If both the agent and the principal wish to maximize their utilities, there is a reason to presume that the agent will not always act in the best interests of the principal. The agency costs consist of the costs of monitoring and bonding the management and the residual loss of efficiency because the conflicts of interest can never perfectly be resolved. (Jensen & Meckling, 1976) The existence of these agency costs usually make intensive monitoring of the agents' actions economically unfeasible, although it would be rational for owners to ensure that their objectives are met.

Agency costs of free cash flow are one source of conflict of interest between shareholders and managers. According to Jensen (1986, 323) free cash flow is the cash flow left after all positive net value projects are covered. The conflict arises from different objectives with the payout policy: if the firm wishes to maximize the value for shareholders, all free cash flow should be paid out to them but from the managements' perspective it reduces the resources under their control, and thereby their power, and subjects them under monitoring by capital markets (Jensen 1986, 323). While the shareholders' goal is to maximize the value of the firm, managers have incentives to grow the firm size beyond the optimal, in order to gain more

power and better compensation, and invest in projects that, although might have positive effects on the short run, are below the cost of capital.

The owners have basically three ways to respond to the wasteful behavior of managers: pay larger dividends, repurchase stock, or issue more debt (Jensen 1986, 324). Also, when the agency costs are relatively large, the threat of an acquisition can reduce them as well as in the actual case of a takeover attempt severance contracts, for example “Golden Parachutes” that compensate managers for the loss of their jobs, can be used to reduce the conflict of interest between shareholders and managers (Jensen 1988, 28 and 39). Besides of using the internally generated free cash flows to finance M&As, the acquirer can issue more debt. The principal-agent theory, also referred as the benefit of debt theory, has been used to explain the better performance after cash financed takeovers compared to stock financed ones (e.g. Yook 2003, 481). The increase in leverage mitigates the principal-agent problem by making the managers’ work harder because of the threat of bankruptcy and the free cash flow problem by reducing the cash flow available for managers thereby binding them to pay out future cash flows to creditors.

As Ross (1973, 134) mentioned the problems of agency are most interesting when seen as involving a choice under uncertainty that M&As as an investment decisions naturally contain. According to Jensen (1986) takeovers can be seen as both evidence of the principal-agent problem and as a solution to it, and, more importantly, the free cash flow theory can be used to predict which M&As are profitable. Jensen (1986, 328-329) states that the managers of firms with large free cash flows and unused borrowing capacity are more likely to engage low benefit or value-destroying mergers; acquisitions made with cash and debt generate more benefits than the ones financed with stock; horizontal mergers in declining industries will create value whereas conglomerate mergers are more likely to be non-profitable;

value increasing takeovers should occur in response to inefficient management; and hostile takeovers are more profitable than friendly mergers.

In addition, Yook (2003,496) has found that if the acquirer's debt rating is downgraded, the returns after a cash financed takeover are more likely to be larger, though negative, but if at the same time the firm has high free cash flow, the gains are significantly positive. Also, free cash flow theory predicts an exceptionally good performance for the acquirer prior the transaction and that targets either have poor management or they have been performing exceptionally well and have large free cash flow but are unwilling to distribute it to shareholders.

3.3.2 Signaling theory and asymmetric information

Signaling theory is based on the assumption that the markets are not fully efficient and as a result there is an information asymmetry between management and the market. Asymmetry in information may cause managers may choose to use financial policy decisions to convey information to the market (Yook 2003, 479) and in some cases even try to fool the markets to react in a favorable way. Signaling theory argues that an acquisition offer is a signal of the value of the target or of information concerning more efficient way to lead the company (Halpern 1983, 309) and it was introduced by Ross (1977).

The role of the signaling theory and asymmetric information in M&As, more specifically in the choice of their financing has been studied for example by Hansen (1987), Fishman (1989), Berkovitch & Narayanan (1990), and Eckbo, et al. (1990). The evidence shows that the returns for the acquirer are significantly higher in M&As financed with cash rather than stock. In addition, when the deal is financed with a mixture of cash and stock, the return seems

to be larger than in all-cash deals (Eckbo et al. 1990, 673) and positively related to the proportion of cash (Berkovitch & Narayanan 1990, 171).

The first studies investigating the role of asymmetric information in the choice of the medium of exchange considered the financing options to be only all-cash or all-stock offers (Hansen 1987; Fishman 1989). According to Hansen (1987, 75-76) the acquirer will prefer to offer stock when the target has private information regarding its value; when information asymmetry is both sided, acquirers present all-stock offers when they are overvalued and all-cash offers when undervalued. Fishman (1989) explains the role of a cash offer in preempting the competition by signaling a high valuation of the target and, thus, predicts that all-cash offers yield higher gains for the acquirer and lower probability of rejection.

Later the valuation effect of mixed cash-stock offers has been explained (e.g. Eckbo et al. 1990; Berkovitch & Narayanan 1990). The findings of Berkovitch & Narayanan (1990) fortify the deductions of Hansen (1987) by providing evidence that low-value firms signal their value through all-stock offers, while high-value firms prepare offers that include both stock and cash. Eckbo et al. (1990) too complement the argument of Hansen (1987) by adding that in mixed offers both the synergy revaluation component of all-cash offers as well as the signaling component of all-stock offers can be the source of abnormal returns. Referring to the former component Eckbo et al. (1990) seem to ignore the signaling effect of all-cash offers described by Fishman (1989). Although identifying the possible sources of abnormal returns, the model of Eckbo et al. (1990) fails to identify from which component the incremental gain is derived from. Yook (2003) approaches the source of value dilemma by examining the power of both the leverage effect, discussed in the previous chapter, and the signaling effect.

In summary, according to the explanation provided by the signaling theory higher returns associated with cash offerings occur because an acquirer with private information offers stock only when it believes that its shares are overvalued and cash when the assets are perceived to be undervalued (Yook 2003, 479). In other words, a rationally behaving manager that attempts to maximize the shareholders' wealth will use equity financing only when he or she believes the assets of the firm are worth less than their market value and, thereby, financing the deal with these overvalued shares seems profitable. Markets see the reasoning behind this strategy and, thus, reward it with a share-price correction after the transaction. Similarly, a takeover financed with cash or a mixture of cash and stock is rewarded with an upward shift in the share-price since markets assume the pre-takeover market value of the acquirer has been under the true value of its assets.

Nonetheless, Yook (2003, 480) argues that in the corporate takeover market the asymmetric information stems more likely from the expected synergies and valuation of the combined entity than from the value of the bidders assets, and that managers may convey inside information via the choice of payment method intentionally. According to the above corrective to the source of the asymmetric information markets expect the deal to be financed with cash if it expects the bidder's assessment of the synergy and the value of the deal is higher than the markets' when the deal is announced.

Third explanation offered by signaling theory relies on the benefit of debt. Only rarely, especially when the deal value is large and thus the impact on performance most likely observable, a firm has so much free cash flow lying around that it can finance the whole acquisition with it. When the internally generated funds are limited, firms usually rely on debt financing. Thereby cash offers can be used as a signal to the shareholders from the benefits of debt in the capital structure pie of a firm (Modigliani & Miller 1963). The empirical results of Yook (2003, 477) imply that the benefit of debt

perspective explains better the source of value creation in cash acquisitions, whereas the synergy signaling effect outweighs the leverage effect in stock transactions.

3.3.3 Monopoly theory and market power

Growth is often associated to increase managers' power in the market by increasing resources under their control. Hence, according to the monopoly theory M&As are executed to achieve more market power. (Jensen 1986, 323) Often the market power explanation of acquisitions is integrated with synergistic theories because of the expected increase in cash flows but here it is assumed that the underlying motivation in increasing the market power is not value maximization for shareholders. Instead, acquisitions are seen as means to increase the managerial power.

On the other hand, if the motive behind consolidation is monopolization, it makes it easier for a firm to increase prices after the deal and generate positive returns afterwards (Halpern 1983, 308). The increased returns on the short run, however, tell us nothing about the real value creation, in other words is the transaction a positive NPV investment, although an increase in the stock market value of the merging firms may occur when the deal is announced. If the increase in market value is due to a rise in market power, the deal will lead to higher prices and market concentration and, hence, wealth is transferred from other stakeholders of the firm for example bondholders, employees, suppliers, and customers (Kim & Singal 1993). In short, M&As can be seen as transactions in which organizational power is transferred to the acquirer (Vos & Kelleher 2001).

Also, it has been recognized that utilizing market power will benefit competitors when they too are able to increase prices but if the market power hypothesis does not hold and efficiency gains are motivating acquisitions, the

acquirer alone enjoys the benefits of for example cost reduction and competitors are losing competitive advantage. According to Jensen (1988, 23) the source of gains from takeovers are efficiency gains instead of market power. By contrast Kim & Singal (1993, 567) found that the effect of market power dominated efficiency gains in explaining the takeover activity. Gugler et al. (2003) report that market power is more likely to be the success factor to large companies whereas increase in efficiency to small firms. The differences might result from differences in model structuring and sample: while Jensen (1988) and Gugler et al. (2003) studied several industries and large samples, Kim & Singal concentrated on airline industry.

There are many definitions of market power. It has been said to be “the capacity of those who posses power to bring about the effect they desire” (Vos & Kelleher 2001) or the ability of a firm to change the price of a good or a service without affecting the demand (Kim & Singal 1993). Theories such as empire-building, management entrenchment, and partly also principal-agent theory are constructed around the concept of power stating that managers promote M&As in order to maximize their own utility by attaining more power. Power can be increased by acquiring more resources and/or market share or it can be industry/firm bound. With increased power managers have the opportunity to implement self-serving actions. The existence of management bonus system or management options stimulates the empire-building behavior and gives managers an incitement to distort performance whereas market power serves as a means for it.

3.3.4 Behavioral finance, managerial optimism and hubris

Behavioral finance has evolved as an alternative view of financial markets for the traditional theory of finance relying on the efficient market hypothesis. Market efficiency has traditionally been investigated with event studies and according to efficient markets the share-price of a firm ought to jump up on

the announcement date of an acquisition to reflect the premium offered to target firm shareholders' for the markets to be semi strong efficient (Shleifer 2000, 8). The controversy over empirical evidence on market efficiency after M&As has led researchers to find alternative explanations for traditional shareholder value maximization view offered by the theory of finance.

Behavioral finance does not expect markets to be efficient; instead it recognizes that some people in the competitive financial markets are stupid, biased, or for some other reasons behave irrationally while some people are fully rational. The two major foundations that behavioral finance relies on are limited arbitrage, that explains why markets may be inefficient, and investor sentiment, which clarifies how investors form their beliefs and valuations. (Shleifer 2000, 24)

According to Shleifer (2000, 24) both limited arbitrage and investor sentiment are necessary for behavioral finance. However, many researches that can be labeled into behavioral finance are made from the recognition of the other one alone. For example, Shleifer & Vishny (2003) assume stock markets to be inefficient but managers completely rational whereas Roll (1986) suppose markets to be rational but managers not. In the former managers respond rationally to inefficient markets taking advantage of them for example by merger decisions (Shleifer & Vishny 2003, 296). In short, M&As are seen as a response to market mispricing. On the opposite, Roll's (1986) hubris hypothesis suggests that the managers of the bidding firms simply pay too much of their targets. It assumes that financial markets are strong form efficient reflecting all information and due to managers' exposure to hubris the combined value of the acquirer and the target decreases slightly around M&As (Roll 1986, 213).

The fundamental difference between these studies is that while Shleifer & Vishny (2003) attempt to explain the reasons of why takeovers occur, Roll

(1986) simply accounts for why they occur although they seem to create no value for shareholders of the acquirer. Based on the study of Roll (1986) many behavioral models have been developed to better explain the implications of managerial irrationality. Among these Heaton (2002, 43) suggests that the managerial optimism, firstly regarding to the value of the firm in the securities market and secondly in relation to the value of the investment projects available for the firm, might lead managers to pass up value creating acquisitions and encourage them to accept value destructive ones even when they try to maximize the shareholders' value.

The role of investor sentiment in explaining the controversy of post takeover long run returns has been studied e.g. by Daniel, Hirshleifer & Subramanyam (1997) and Barberis, Shleifer & Vishny (1998). The latter study proposes that "stock prices overreact to consistent patterns of good or bad news" (Barberis et al. 1998, 333) and hence "securities that have had a long record of good news tend to become overpriced and have low average returns afterwards" (Barberis et al. 1998, 308). When mergers and acquisitions tend to occur after a period of superior performance of the acquirer (see e.g. Ghosh 2001 or Mitchell & Stafford 2000), the acquirer's stock is overpriced at the moment of an acquisition leading investors to reevaluate their valuations and, on average, the stock returns closer to its true value leading to reversal in long term returns. Daniel et al. (1997) approach the phenomenon from another perspective relying on investor overconfidence and biased self-attribution. They state that after an event, for example an acquisition, the stock price of a firm tends to first overreact to private information, because investors overestimate their own abilities, but long term reversals occur as public information arrives. That is, in the long run the public information overwhelms the behavioral biases caused by overconfidence on oneself and biased self-attribution.

3.4 Synergistic theories on corporate restructuring

Whereas non-synergistic theories are based on some additional motivation besides value maximization, synergistic theories are founded on the theory of finance stating that an investment decision should be accepted only if it generates value to shareholders. The theory of finance is based on the assumption of utility maximizing behavior and rational expectations of market participants. Another basic default is that markets are efficient so that stock prices always fully reflect the available information (Fama 1970). In finance theory portfolio theory is used to explain how investment decisions are made in the world with risk.

According to the theory of finance and synergistic models an acquisition should meet same the criteria that are required from any other investment decision. Additionally, synergistic theories seek to divine what kind of competitive advantage could be attained if the transaction were completed and where are the foundations for generating such an advantage. For example, cross border mergers could be explained in terms of comparative advantage: as different countries have different production capabilities, cross-border mergers can bee seen as a tool for efficient resource allocation offering huge achievable synergies (Meschi 1997, 10). In contrast to non-synergistic theories, synergistic theories assume that managers act to maximize shareholder value and predict that M&As do in deed create value in some form of financial gain.

In the previous literature synergistic theories are often referred also as value creating, efficiency, or neoclassical theories, all of which see M&As as an efficiency improving response to various industry shocks (Shleifer & Vishny 2003, 296). Synergistic theories imply that the combination of two firms after an M&A will be more productive than without the transaction. Hence, as a result of synergy gains the value of the two firms combined is more than the

sum of the pre-merger values of the independent entities (Lee & Colman 1981, 150; Ahern & Weston 2007, 6). One explanation for the increased merger activity is that M&As enable firms to react to changes in the world economy more rapidly than internal growth would and without expanding the total capacity of an industry. Also, the change forces (see e.g. Ahern & Weston 2007, 6) have created new sources of synergies.

The allocation of theories into synergistic and non-synergistic ones is not as obvious as one could think. In many classifications (e.g. Rosen 2006; Halpern 1983; and Trautwein 1990) the motivations have been divided into theories that focus on shareholders' or on managers' interests. In these papers many of the theories that have in this study been classified as non-synergistic ones, having more managerial drivers, are grouped under neoclassical theories. However, the ultimate incitement in non-synergistic theories in this paper stems from managerial objectives and the effect of value creation to shareholders is more consequential than direct.

Referring to the valuation methods of M&As discussed in chapter 3.1.1, the source of value creation relies on synergies. Synergies have been determined and classified in countless of different ways. For example, Trautwein (1990, 284) distinguishes three types of synergies that improve efficiency of a firm: financial synergies, operational synergies, and managerial synergies. Ross et al. (2005, 802) find that synergies can come from revenue enhancement, cost reduction, lower taxes, and lower cost of capital. The last refers to Trautwein's financial synergies whereas revenue enhancement and cost reductions lead to operational synergies. Goold & Campbell (1998, 133) outline the source of synergies as shared know-how, shared tangible resources, pooled negotiating power, coordinated strategies, vertical integration, and combined business creation. According to the interviews made by Siitonen (2003, 140) the most important synergies in the PPI come from pooled negotiating power, production optimization, improvements in

capacity management, the use of alternative raw materials, joint procurement, complementary distribution channels, and synergies related to marketing and sales.

If the motive behind an acquisition is enhanced efficiency through synergies, the gains to both target and buyer shareholders should be positive. However, the previous research does not seem to support the synergy motivation: in some papers synergy, operational and strategic, has been reported to be the main reason of why managers engage takeovers (e.g. Mukherjee, Kiymaz & Baker 2004; Walker 2000) but contrary some have stated the managerial motivation to be other than pure improved economic performance (Brouthers, van Hastenburg & van den Ven 1998; Meschi 1997). Nevertheless, if we assume that synergies motivate takeovers, the answer to the mixed results of research could be that the predicted synergies fail to realize. Goold & Cambell (1998, 132) claim that the source of failure lies in the management's biased thinking, which in turn makes synergy seem more attractive and more easily available than it truly is. Finally, it has bee suggested that past empirical studies are inadequate due to methodological issues.

3.4.1 Financial synergies

Financial synergies come from lower cost of capital, which reduces the overall interest expenses the combined firm has to pay compared to the situation of both firms operating separately. It has even been claimed that shareholders gain in M&As at the expense of bondholders by increasing the firm's risk and wealth redistributes from creditors to shareholders but no strong evidence is found, leveraged buyouts being an exception (Warga & Welch 1993; Asquith & Kim 1982). Other sources of financial motivations are tax gains, which can come from the use of tax losses from net operating losses, unused debt capacity, or surplus funds (Ross et al. 2005, 802-806), increased leverage, and avoidance of bankruptcy costs (Jensen & Ruback 1983, 24).

Except from benefits associated with increased leverage, financial synergies can be achieved by lowering the company's systematic risk by investing in unrelated businesses, through economies of scale by increasing the company's size, or by establishing an internal capital market (Trautwein 1990, 284). According to the portfolio theory investors can reduce their risk by diversifying their portfolios across many investments. The risk is composed of unique/unsystematic risk affecting only one firm and of market/systematic risk affecting overall stock market. The former can be reduced by diversifying but the latter is the same for all companies quoted in the same markets. If the markets are efficient, companies should gain no additional benefit from diversifying their businesses on behalf of investors and, hence, no synergy ought to build up from conglomerate mergers because investors can reduce the risk of their portfolio just as effectively. However, the evidence is controversy (Healy et al. 1992; Agrawal et al. 1992). In the real world companies often have lower costs of diversifying, greater negotiating power, and more enthusiasm to invest in markets that can locate far away. Needless to say that in the light of portfolio theory systematic risk cannot be reduced by investing only in unrelated businesses but also in different stock markets.

The increase in company's size may give it access to cheaper capital (Trautwein 1990, 284). The costs of issuing debt and equity are much lower for larger issues enabled by greater size as well as pooled negotiating power (Ross et al. 2005, 806; Goold & Campbell 1998, 133). Finally, an internal market may allocate capital more efficiently than a nonspecific capital market (Trautwein 1990, 284).

3.4.2 Operational synergies

Operational synergies associated with M&As stem from combining operations or knowledge transfers (Trautwein 1990), both of which may lower the costs or generate more revenues. According to Ross et al. (2005, 802-804)

revenue enhancement may come from marketing gains, strategic benefits, and market power, whereas the sources of cost reduction lie in economies of scale, economies of vertical integration, complementary resources, and in elimination of inefficient management. Trautwein (1990) categorizes the last mentioned into managerial synergies that will, as strategic benefits, be covered separately.

Many of the cost benefits are accessible for a firm after an acquisition by sharing resources and assets, gaining economies of scale, and avoiding duplicated effort. Related to economies of scale, with pooled negotiating power a company can win greater leverage over suppliers and, hence, negotiate better agreements. Vertical integration can make the coordination of closely related operations easier and enable access to new technologies which in turn can reduce inventory costs, speed product development, increase capacity utilization, and improve market access. Also, capacity utilization can be improved by complementary resources particularly in cyclical industries. (Ross et al. 2005, 802-804; Goold & Campbell 1998, 133)

If operational synergies are approached from the redistribution way of thinking, one might argue that wealth is transferred from suppliers and employees to shareholders. Through economies of scale and increased negotiating power of the combined firm, suppliers might have to adjust their prices. Suppliers might also lose customers if the separate entities of the combination former had different suppliers and now decide to combine their procurement. Further, when resources, operations, assignments, and units are combined, inevitably some of the employees have to be made redundant.

3.4.3 Managerial synergies

Managerial synergies come forward when the acquirer's managers have the ability and know how to lead the target better than its existing management. M&As can occur for example due to changes in technology or market conditions that require restructuring because the existing management is unable to see the forest for the trees (Jensen & Ruback 1983). In other words, when managers have been years formulating strategies and visions for the future state of the business and some basic conceptions of the economy change, they might bee unable or unwilling to change the path they have chosen, lose opportunities offered by the markets, and, hence, lead their business inefficiently.

The Idea behind managerial synergies is in part the same as in Jensen's (1986) free cash flow hypothesis, but in the latter mergers are not undertaken to promote efficiency or replace incumbent managers of target companies but, instead, to limit the wasteful behavior of the acquirer's managers with excess cash. However, the end result is the same: value is created to shareholders either directly or indirectly. Although there is evidence that target firms experience negative abnormal returns prior the transaction, nothing is found to prove the link between negative target returns and management inefficiency (Jensen & Ruback 1983, 26).

3.4.4 Strategic synergies

As M&As have become more and more strategic decisions, strategic motives like obtaining global presence, pursuing market power, acquisition of a competitor or raw materials, and creation of barriers to entry (Brouthers et al. 1998, 348) have grown in importance too. In addition, deregulation has played an important role especially in the 1980s (Mitchell & Mulherin 1996, 194) as well as the opening of some distant markets, such as Asian markets at the end of the 1990s in PPI, formerly being out of reach. Also, takeovers

can promote the creation of new businesses for example by combining know-how from separate entities or synergies may be achieved by coordination the strategies of both firms (Goold & Campbell 1998, 133).

Strategic motivations were earlier referred as change forces. By taking the opportunity offered by different strategies, the value of a firm can be enhanced or retained unchanged when the other option might be a decline in value caused by the change forces and inability of the management to react. Compared to other forms of synergies strategic synergy can be harder to achieve or the results may be more difficult to measure. Also, strategic benefits can be seen more like options to take advantage of the competitive environment or to exploit business environment dynamics than standard investment opportunities (Ross et al. 2005, 803).

3.5 Summary of the hypotheses

The primary focus of this study was to examine how acquiring PPI companies perform after M&As. In summary, according to event studies the abnormal returns after M&As seem to be more negative; accounting studies find also positive relationships between M&As and operating performance. However, the majority of both find no evidence of significant over/underperformance. We learned that the majority of the theories explaining acquisition activity predict enhanced performance resulting from synergies, reduced agency costs, replacement of inefficient management, utilization of market mispricing, or market power satisfaction and monopolistic returns.

Companies in the PPI have fought against the overall poor performance of the industry and the challenges created for example by globalization (see chapter 1.1) with various weapons, including M&As. This alone would imply that the profitability of PPI companies could have improved following M&As. Despite, by taking the contradictory results of previous studies and the

declining profitability of PPI companies after the 1990s (Diesen 2007, 119) into account the first hypothesis of this study is:

$H1_a$: the performance of acquiring PPI companies deteriorates in the long run after M&As, but

$H1_b$: the performance of acquiring PPI companies has declined less than the performance of the whole PPI.

This impaired performance can be explained with behavioral finance theories providing three possible reasons for underperformance. First, managers simply pay too much for their targets (Roll, 1986). Second, acquirers tend to perform particularly well prior M&As, become overpriced, and hence, the post M&A value of the acquirer depreciates as investors make reevaluations (Barberis et al 1998). Third, investors overplay one's hand and tend to overreact to private information necessitating long run reversals as public information arrives (Daniel et al. 1997). Also, the recognition of merger waves in the PPI could imply deteriorated long run operational performance afterwards and, at the same time, some value creation (Mitchell & Mulherin 1996, 220).

The second objective of this study was to asses have the individual characteristics of the deal and the size of the premium affected the performance. Figure 3 presents the hypotheses in connection with deal characteristics and premiums. Hypotheses are derived from theories presented under this chapter and the results from earlier studies have an essential effect on them. In addition, a summary of the theories is gathered up in appendix 2.

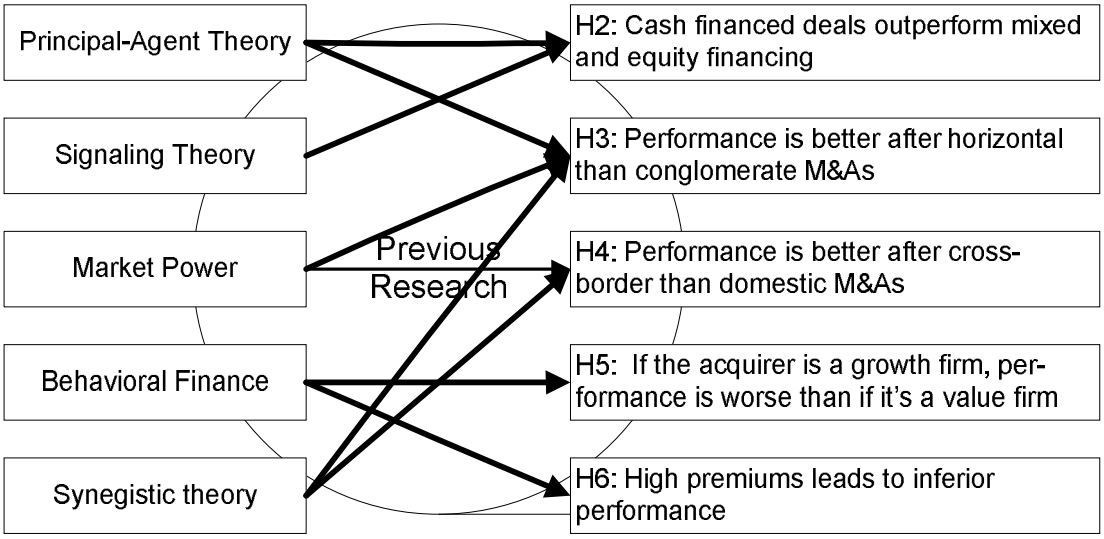


Figure 3: Hypotheses derived from theories and previous research

4 METHODOLOGY

4.1 Data

The influence of M&As to the long run performance of companies operating in the PPI is examined by using a data of individual deals and firm level performance. The data was collected from two databases: a list of completed M&As was drawn from Securities Data Corporation's (SCD) Platinum Mergers and Acquisitions Database and performance indicators were combined to the list from Thompson One Banker.

To be included in the sample the acquirer must have been a PPI company, the deal completed between 1.1.1985 and 31.12.2001, and the target company must have had a disclosed dollar value. Also, bidder had to acquire at least 50 % of interest in a target, raise its interest from below 50% to above 50%, or acquire the remaining interest it does not already own. The latter eliminates stake repurchases, repurchases, and all deals in which a self tender offer, recapitalization, or exchange offer is announced. In addition, following Ghosh (2001) all leveraged buy outs (LBOs) were ruled out. The industry of the acquirer was defined according to its two-digit SIC code and the time period was chosen so that the effects of the first merger wave in PPI starting in 1985 would be reflected in the results. The long run performance is measured five years after the year the deal has taken place, meaning that the year 2001 is the most recent year included.

The preliminary sample consisted of 2 307 events. To receive a more coherent sample, additional adjustments were made. If the target acquired is very small in size or value, the effect of an acquisition to a firm's performance is unlikely to be significant. Also, the occurrence of confounding events is less likely; that is the probability the acquirer will undertake equally large acquisitions before or after the event is less. (Healy et al. 1992, 138; Franks et al. 1991, 82) To eliminate the small deal bias the deal value was required

to be $ 1 million or more, which seems to be a common dividing line used in previous studies (e.g. Abhyankar et al. 2005 and Fuller et al. 2002). The deal value is determined as the total value of consideration paid by the acquirer, excluding fees and expenses. If the deal value was not reported, the asset value of the target was required to be at least 10 % of the asset value of the acquirer (Rosen 2006; see also Yook 2001, Ghosh 2001, or Healy et al. 1992 for alternative size cut offs). These adjustments dropped the sample size from 2 307 to 981 deals. Further, all acquirers to whom an entity key was not found were eliminated. Entity key was needed to combine the information of the two databases. This resulted in a final sample of 708 deals.

SDC database provided information about the deal announcement date, target and acquirer, M&A type, payment method, business similarity, and premiums paid. Acquirers were classified into growth and value firms based on their book-to-market ratios reported at the end of the year preceding the announcement year. According to Rau & Vermaelen (1998, 238) glamour acquirers', later growth firms, have book-to-market ratios below those of value firms. In this study growth firms are those with a book-to-market ratio equal or below the median for the entire sample while value firms' ratios are above the median. The median book-to-market ratio is 0.5837. If the ratio reported at the same year as the deal was announced would have been used, the information concerning the deal would have been reflected in the ratio. Book-to-market ratios were computed as an inverse from the price-to-book ratios picked up from Thompson One Banker Worldscope database.

Premiums are defined as the premium of offer price to target trading price four weeks prior to the original announcement date. It is accounted as the difference between the price paid per share by the acquirer in the transaction and the target stock price four weeks prior to announcement divided by the same target stock price four weeks prior to announcement. Premiums are then divided into a low premium group and a high premium group, similar as

growth and value firms, according to the sample median. The median for the entire sample was 0.3962. Premiums were reported only for 77 deals, from which 39 belonged to the low and 38 to the high premium group. The small number of deals for which premiums were reported might lead to reporting bias. Finally, data concerning the performance measures is gathered from Thompson One Banker's databases.

4.2 Performance measures

The purpose of this study is investigate whether M&As between 1985-2001 have succeeded in creating value to the acquirers' shareholders. Hence, the indicators of performance are chosen to reflect operating efficiency, returns to shareholders, and market reactions to acquisition announcements. Performance measures are roughly divided into three groups which are cash flow based measures, accrual performance indicators, and ratios indicating market valuations. Figure 4 represents the allocation of performance measures.

Cash flows present the actual economic benefits generated by operations and they are not affected by acquisition related selections like accounting method choice, provisions, or asset revaluations, unlike accrual earnings performance measures (Healy et al. 1992, 139; Sharma & Ho 2002, 170). Although, cash flows do not directly measure the benefit created for shareholders they reflect the profitability of an investment decision and, hence, if the generated cash flows are used productively, the value of the firm and its shareholders increases. In this study cash flows are scaled by total assets and sales following for example Ghosh (2001), Sharma & Ho (2002), and Powell & Stark (2005). Cash flows are determined as income before extra items and preferred dividends plus depreciation and amortization expenses. Sales represent gross sales and other operating revenue less discounts, returns, and allowances and total assets the sum of total current

assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.

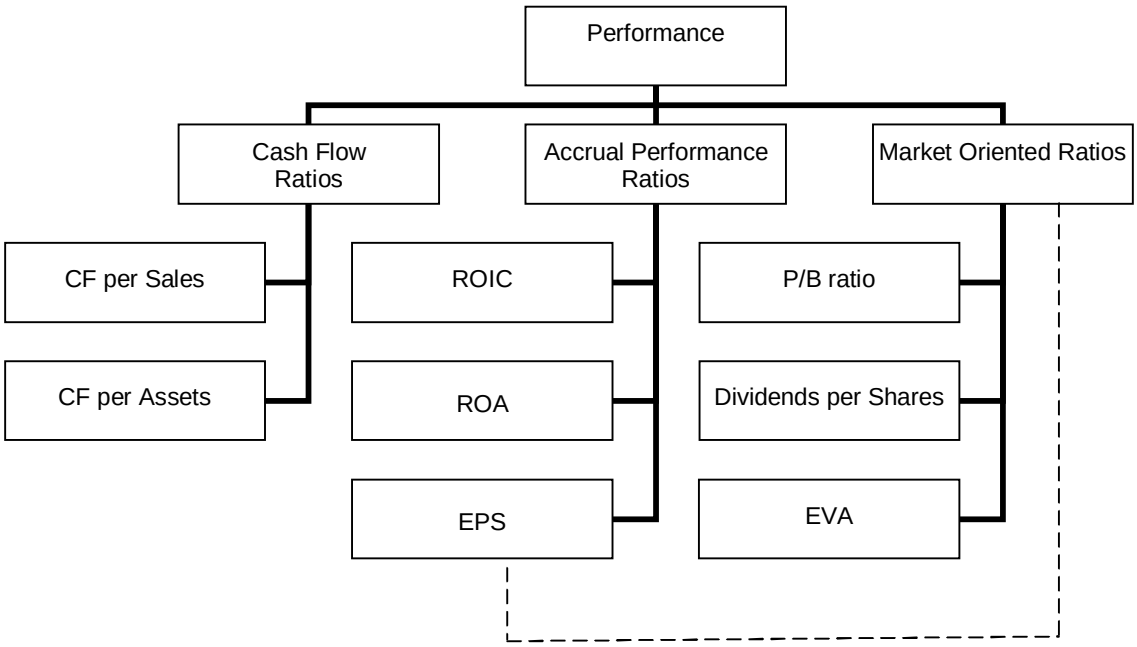


Figure 4: The concept of performance

However, cash flow based measures have not been spared from criticism. For example, using market based values to scale the cash flows has been said to lead biased results since acquirers' market values have been noticed to decline systematically over three to five years following acquisitions, which may cause scaled cash flows to increase even though no shift in cash flows has occurred (Ghosh 2001, 162). This is why in this study cash flows are scaled only by total assets and sales, not by market value of assets as Healy et al. (1992). Also, sales and total assets as dividers have some debility. The disadvantage of using sales as a divider is that it does not measure the productivity of assets and the operational improvements may not be detected whereas total assets based on book values may be affected by accounting choices and legislation requirements (see chapter 3.4.3) (Powell & Stark

2005, 298). The latter could be a problem in this study due to the international sample of M&As.

Accrual performance measures assess the profitability of a company relative to different items of balance sheet. Typically, these measures are used to evaluate the performance of management in leading the day to day business and, thus, communicate the success of their strategies. Also, according to Chatterjee & Meeks (1996, 857) the information released after takeover announcement is reflected in accounting numbers. Imitating Sharma & Ho (2002) accrual performance indicators in this study consist of return on assets (ROA), return on invested capital (ROIC), and earnings per share (EPS). The latter can also be seen as a market driven indicator.

Both cash flow and accrual performance ratios have been criticized for being defective measures of shareholder wealth maximization because they ignore the cost of capital (Yook 2004, 69). Although the growth in shareholders' value should eventually be reflected in operating performance measures too (Arzac 2005, 9), they might still be better off by investing in alternative securities with lower risk. Economic value added (EVA) takes the risk level of the investment into account and therefore, following Yook (2004), it is used as one of the market oriented performance indicators. Because EVA is not so popularly used by investors in forming their investment decisions, other more familiar market based ratios are also computed. These are market value to book value (P/B -ratio), and dividends per shares (div/shares).

4.3 Analysis

The research question will be approached with accounting study method. As was seen, event study methodology has severe methodological problems when measuring long run market reactions and it produces unreliable results in random samples (Lyon et al. 1999; Andrade et al. 2001). Biases resulting

from the latter, which lead to misguided empirical rejection levels, can be mitigated if the sample is evenly distributed among more than four industries (Lyon et al. 1999, 188), from which we can draw the conclusion that event study method is not suitable for this study.

To be able to answer the research question how do acquiring PPI companies perform we somehow need to estimate what the performance would have been in the absence of M&As. This is done by selecting a benchmark group and in accounting studies benchmarks are usually chosen according to the acquirer's industry (e.g. Healy et al. 1992, Ravenscraft & Scherer 1987, Gugler et al. 2003). Hence, in this study it is assumed that if the M&A would have never taken place the performance of the acquirer would have changed in the same way as the median performance of the whole industry.

Performance indicators are gathered five years before and five years after the announcement year for each deal and for the acquirer, target, and the PPI from Thompson One Banker Worldscope, Thompson Financial, and Datastream databases. Control group and time adjusted indicators of performance before and after the deal were computed to measure the change in performance. This was done by subtracting the median performance of the PPI from the performance of the acquirer in equivalent year, after which an average of the years from -5 to -1 and from +1 to +5 was taken. Figure 5 clarifies the formation of test variables (A=acquirer's performance, T=target's performance). The primary variable into which the performance after an M&A is compared in this study is the performance of the acquirer before the deal. This is because the data consisted also acquisitions where only a part of the target, for example one paper mill, was acquired. However, in many of the previous studies pre M&A performance if defined as a pro forma performance of the combined acquirer and target (X = (A + T) – PPI in figure 5). To test the robustness of the results of this study to the pre M&A performance

modifications an alternative measure of pre M&A performance was formed. The results of the latter are described under chapter 5.2.

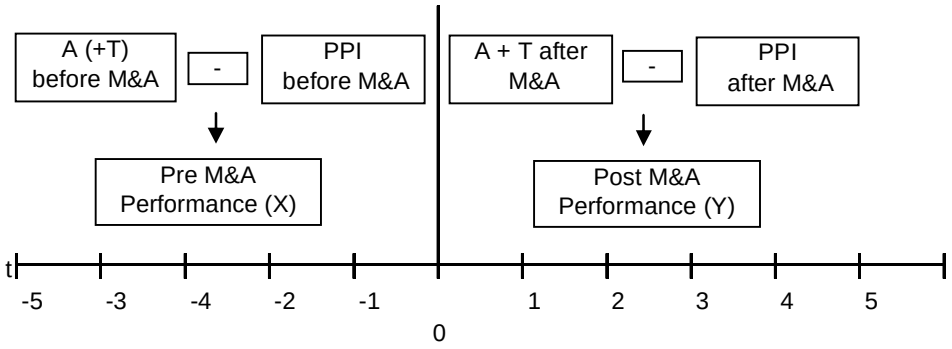


Figure 5: The formation of test variables (modified from Sharma & Ho 2002, 169)

The effect of M&As on PPI companies' performance is investigated by comparing the median annual industry adjusted performances before and after the deal. First, the statistical significance of possible performance changes is assessed by comparing the means of post and pre performances (change model). Linear regression analysis where the post M&A performance is predicted with the pre M&A performance will yield to biased results if acquiring firms outperform industry median firms as Ghosh (2001, 158) successfully demonstrated. In other words, the constant term will not give any reasonable explanation if the mean of the pre M&A performances differs from zero and β is less than 1. The magnitude of the bias depends on how large is the difference between merging and industry median firms. However, the methodology is used in various studies (e.g. Healy et al. 1992 and Sharma & Ho 2002). To test if regression model overestimates the long run performance after M&As as Ghosh (2002) suggested and to be able to compare the results to some of the previous studies also a regression model is formed.

Second, a methodology presented by Ghosh (2001, 161) will be adapted to estimate the impact of the deal characteristics and premiums paid. This will be done by regressing the change in relative performance on several dummy variables. In contrast to Ghosh (2001) the industry median is used as a control group despite its weaknesses. The formation of dummy variables is described together with the results. The change in performance is created by taking the difference between the pre and post M&A performances described above:

$$\Delta Performance_i = Performance_i^{POST} - Performance_i^{PRE}$$

where $Performance_i^{POST}$ is the median annual industry adjusted performance for deal i from the post M&A years and $Performance_i^{PRE}$ is the same for deal i from the pre M&A years. The change model (used for example by Sharma & Ho 2002, 180 to test the sensitivity of their results) will be used as comparative analysis to compare if it provides similar results as the regression model of Ghosh (2001)

When interpreting the results it is important to keep in mind the determination of value creation. Previous research showed us mixed results of how lucrative M&As truly are but when determining the success of an investment one should keep in mind that in economic terms an investment is justifiable if it does anything else than destroys value (Bruner 2002, 49). That is, if no statistically significant abnormal performance is found (e.g. Franks et al. 1991; Loderer & Martin 1992; Ghosh 2001; and Mitchell & Stafford 2002), it does not mean that investment was a failure; instead it earned just the return required.

5 RESULTS

5.1 The long run performance after M&As in the PPI

The final sample consisted of 708 M&As where the acquirers' primary industry was PPI and which were implemented between 1985 and 2001. The annual distribution of these transactions can be seen from appendix 3, which also reports the occurrence of different types of M&As. The latter is needed to test whether the characteristics of the deal have had any impact on performance. From the 708 deals included in the sample drawn from the PPI only 56 were categorized as tender offers which were followed by a merger agreement agreeing to purchase the remaining shares not tendered under the offer. The payment method was reported for 530 M&As, from these over 50 percent were financed with cash, only 19 percent with stock, and the remaining 25 percent with both cash and stock or other. 53 percent of the deals were horizontal meaning that the target was also a PPI firm, and in 58 percent of the deals the target was situated in the same country as the acquirer.

It can be seen from appendix 3 that the overall amount of M&As in the PPI has grown from 1985 to 2001 but there seem to be some years when the growth has been particularly strong. Cash has been the most popular payment method throughout the time period examined. The amount of conglomerate M&As has been clearly superior at the beginning of the time period but since 1993 there has been more horizontal than conglomerate M&As. This might reflect the more strategic nature of the acquisitions in the 1990s. The number of cross-border deals accelerated drastically between 1985 and 1990 but the growth has calmed down since. The large share of both domestic and cross-border deals could reflect that although the need to grow and become truly global has been strong in the 1990s, also the overcapacity in domestic markets drives PPI companies to merge locally. There seems to be no clear systematic between value and growth acquirers'

investment behavior measured with the amount of M&As and because premiums are reported for so low number of deals it is impossible to draw conclusions of their temporal behavior.

Each of the performance measures was aligned five years before and after the deal. The main interest of this study was to investigate how acquiring PPI companies perform after M&As. First, it was examined how the acquirers' performance had changed in the long run after an acquisition. In order to do this, indicators of pre and post acquisition performance of the acquirer were conducted by taking an average of the acquirer's performance before and after the deal. From this mean performance we formed an industry and time adjusted median centered measure for each deal by subtracting the industry median value from the acquirer specific value in equivalent year. Summary statistics and results from difference of means tests for each performance indicators are reported in table 1.

It can bee seen from panel A in table 1 that on average the performance of PPI acquirers has been better than the overall industry's performance before engaging an M&A. This supports the findings of previous studies (e.g. Ghosh 2001 and Lyon et al. 1999) that acquiring firms tend to outperform industry median firms. Similar, the long run performance of acquiring companies in PPI has on average been above the industry median performance but when the difference between post and pre acquisition performances is measured it can be seen (panel B) that expect PB –ratio and EVA all performance indicators allude that the performance of the acquiring PPI companies has declined. Also, panel B in table 1 reports that the mean of the change in performance significantly differs from zero for all other indicators except EPS and dividends per shares.

Table1: Summary statistics of performance indicators

Table presents summary statistics of each performance indicators. Panel A represents the acquirers' performance five years before and after an acquisition. Performance is control group and time adjusted by subtracting the median performance of PPI from the acquirer's performance deal by deal and in equivalent year. Panel B reports the results of paired-samples t test, in which the difference of the acquirer's performance after and before an acquisition was tested against zero.

Panel A: Control group and time adjusted performance measures

	CF/ Sales	CF/ Assets	ROIC	ROA	EPS	PB -ratio	Div/ Shares	EVA
Mean Performance^{PRE}	0,013	0,017	0,030	0,021	0,981	0,468	0,439	285,81
Standard deviation	0,052	0,044	0,058	0,040	8,322	1,450	2,193	5149,76
Minimum	-0,134	-0,105	-0,141	-0,100	-4,997	-8,619	-0,002	-60622,45
Maximum	0,586	0,245	0,384	0,355	124,027	10,016	34,757	19338,41
N	605	604	590	590	598	583	594	235
Mean Performance^{POST}	-0,002	0,006	0,004	0,002	0,681	0,637	0,403	473,251
Standard deviation	0,053	0,049	0,077	0,044	5,396	2,095	1,064	3313,95
Minimum	-0,428	-0,382	-1,162	-0,381	-9,452	-9,788	-0,001	-10804,63
Maximum	0,215	0,171	0,231	0,153	105,885	20,970	17,776	25262,82
N	617	616	620	618	618	607	595	432

Panel B: Difference of means test

Mean ΔPerformance (=Mean Performance^{POST}- Mean Performance^{PRE})	-0,014***	-0,008***	-0,022***	-0,017***	-0,473	0,220**	-0,043	615,77*
Standard deviation	0,053	0,048	0,085	0,047	7,513	2,481	1,856	5165,33
Minimum	-0,538	-0,338	-1,332	-0,277	-126,613	-7,825	-33,486	-2480,79
Maximum	0,133	0,130	0,184	0,126	10,979	24,852	5,320	65 623,76
95 % Confidence interval of the difference Lower	-0,018	-0,012	-0,029	-0,021	-1,092	0,121	-0,198	-90,32
Upper	-0,009	-0,004	-0,015	-0,013	0,145	0,427	0,112	1321,86
N	573	572	561	560	569	552	553	208

* Denote significance at the 10 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
*** Denote significance at the 1 % level for a two-tailed test.

The results shown in table 1 confirm our theoretical hypotheses 1_a and 1_b stating that the performance of acquiring PPI companies deteriorates in the long run after M&As but the decline is less than the overall recession of the performance in PPI. This is the case for all other performance indicators except PB –ratio and EVA. The same can be seen from diagrams reported in appendix 4, which also brings forward the time behavior of PPI acquirers' performance. On the basis of our sample, it can be said that although the operational performance measured with accrual performance indicators has declined noticeably since 1985 the cash flow based measures have remained more stable. For example, when looking at the differences between CF/Assets and ROA, the acquirers seem to have been either more successful in pertaining their cash flows while returns have gone down, other things being equal, or, more probably, when the asset base of a firm has increased, as usually happens after M&As, acquirers' have been able to increase their cash flows but not returns. In addition, at least the four first diagrams in appendix 4 confirm the arguments of Diesen (2007, 119) stating that in the PPI the 1980s has been a decade of growth, in 1991-1997 the industry experienced a transition period that culminated to the fight against overcapacity that still continues today. The sharp decline in performance after 1999 can be explained with the significant write-downs made by especially Finnish and U.S. companies (Diesen 2007, 125).

To be able to compare the results in the PPI to the results of Healy et al. (1992) and Sharma & Ho (2002) a regression analysis was formed. The regression analysis examined the relation between pre and post performance and the equation takes the following form:

$$Performance_i^{POST} = \alpha_0 + \beta_1 Performance_i^{PRE} + \varepsilon_i \qquad \text{(Eq. 1)}$$

where $Performance_i^{POST}$ is the median annual industry adjusted performance for deal i from the post M&A years and $Performance_i^{PRE}$ is the median annual industry adjusted performance for deal i from the pre M&A years. Constant α_0 measures the abnormal industry adjusted return, whereas regression coefficient β, measures the correlation between pre and post M&A performances. Error term ε_i represents a residual for deal i that the model fails to explain. (Healy et al. 1992, 147)

The performance of the acquirer is measured with cash flow per sales, cash flow per assets, ROIC, ROA, EPS, PB –ratio, dividends per shares, and EVA. The definitions of these measures were explained more in detail in chapter 4.2. The regression analysis was repeated for each of the performance indicators. The main results represented in table 2 indicate continuance of pre acquisition performance on post acquisition performance since the betas for all performance indicators are significant. Also, all of the models were significant and the statistical zero hypotheses could be rejected but the coefficients of determination (R^2) remained rather low indicating that the variation in the performance before the deal can explain only a fraction of the variation in the long run performance after the deal.

The second column in table 2 shows the effect of M&As on industry adjusted performance. According to regression results M&As seem to have some positive impact on performance in the PPI measured with market based performance indicators but the operational performance, on the other hand, seems to either slightly deteriorate or, at best, weakly improve. However, measured with CF/Assets, ROIC, and ROA the impact is not statistically significant. Also, for some indicators the statistical assumptions of linear regression analysis do not hold indicating that these measures fit poorly for hypotheses testing purposes and, except dividends and earnings per share, the data seems to be slightly autocorrelated since the results of Durbin-

Watson test (not reported here) remain under the critical limits. The latter could be a consequence of temporal correlation of residuals although we controlled pre and post performances for time by deducting the median performance of PPI from the acquirer's performance at equivalent year.

Table 2: Regression results of post M&A median centered acquirer' performance on pre M&A median centered acquirer' performance

Table reports the results of regression analysis testing whether performance after the deal can be predicted by the performance of the acquirer before the deal. Regression analysis is an alternative method to the change model (results in table 1) that, though, can yield to biased results if acquiring firms outperform industry median firms.

Variable	α_0	t value	β_1	t value	R^2	F value
CF/Sales	-0,005	-2,85***	0,406	11,50***	0,188	132,24***
CF/Assets	0,001	0,70	0,442	10,73***	0,168	115,16***
ROIC [a]	-0,003	-0,87	0,232	4,18***	0,030	14,45***
ROA	-0,002	-0,92	0,269	7,04***	0,082	49,53***
EPS [a, b]	0,351	2,73***	0,194	12,98***	0,229	168,44***
PB-ratio [a]	0,613	6,41***	0,149	2,40***	0,010	5,76***
Div/Shares [a]	0,289	8,46***	0,260	17,60***	0,360	309,61***
EVA [a, b]	790,77	2,97***	0,363	7,40***	0,210	54,68***

*** Denote significance at the 1 % level for a two-tailed test.
[a] some or all of the statistical assumptions of the model (i.e. the error term is normally distributed, homoscedastic, and non-autocorrelated) do not hold and the estimates may be biased or standard errors skewed.
[b] the difference between post and pre mean performance did not significantly differ from zero.

The results of regression analyses reported in table 2 show some consistency with the results of the change model reported in table 1; the direction of the change seems to be the same for five of the eight models and for the ones it differs either one of the methods provides statistically insignificant results. However, as Ghosh (2001, 158) proved the results of regression analyses are biased upwards and, compared to the results in table 1 (panel B), regression models systematically predict slightly more positive or less negative performance. All of the regression models predict that the effect of pre M&A performance on post M&A performance is significantly positive meaning that industry adjusted performance tends to persist over time in the PPI. Finally,

the results derived from the PPI seem to be inconsistent with the ones of Healy et al. (1992, 147) and Ghosh (2001, 163) but weakly support the results of Sharma & Ho (2002, 179).

5.2 Robustness tests

The robustness of the above described results is controlled by data modifications for each of the models described above. First, outliers are removed from post and pre acquisition performance measures. Outliers are observations whose value significantly differs from the values of other observations and, hence, it might be possible that some part of the connection predicted by the model is biased due to the pure existence of outliers. Second, the analysis is repeated by taking a 50 percent random sample of observations. Third, the robustness of the results on time is accounted by dividing the sample into three time periods: 1985-1991, 1992-1996, and 1997-2001. These time periods reflect the three merger waves encountered by the PPI in 1985-2001. The results for both the difference of means tests and the regression model of Healy et al. (1992) are reported in appendix 5.

The results reported in table 1 remain somewhat the same when outliers are eliminated for cash flow based measures, ROIC, and ROA, while they altered when EPS and other market based measures were used as indicators of performance: EPS became positive (but still insignificant), PB –ratio insignificant, dividends per shares positive and significant, and EVA diminished substantially. The results of table 1 were similar when the sample was split in half.

CF/Sales seems to be the only measure whose change between pre and post M&A years remains significant and near the same throughout the whole time period. Also, the change in performance measured with ROIC and ROA

remains negative but even more so when the end of the whole time period draws nearer. For CF/Assets the last sub period 1997-2001 is predominant cause of significant negative change, which can be explained by the large write-downs made by PPI companies (Diesen 2007, 125). Overall, the change in operational performance seems to be more negative in the end of the 1990s. Measured with EPS the results in table 1 seem to present the development in 1985-1991 because the two subsequent periods override each other. On the contrary, for PB –ratio and dividends per shares the last period 1997-2001 reflects best the results in table 1 and the change seems to be largest in the last period. The year 1997 was the first year for which pre and post M&A EVA could be determined and therefore the last period naturally reflects the results in table 1.

Results from regression analysis in table 2 denoted that measured with market based indicators M&As seem to have some positive impact on acquiring PPI companies performance but their operational performance either deteriorates slightly or, at best, weakly (and insignificantly) improves. However, some of the performance measures could not come up to the assumptions of linear regression model and, hence, produce unreliable estimators for post M&A performance. Above mentioned robustness tests were performed to check the validity of the results, see what models keep the conditions of regression analysis and to pursue to improve those that do not.

Both cash flow per sales and cash flow per assets faced no severe model problems but the error terms seemed to be autocorrelated and in the former also slightly heteroscedastic. When the outliers were eliminated, the error terms became homoscedastic and by splitting the sample no autocorrelation was observed. In both modifications the results preserved close to the original model and the coefficient of determination improved. Also, in ROA the assumptions of regression analysis were met although some autocorrelation

was observed. Results were not altered when outliers were eliminated but when the sample was split in half the coefficient of determination weakened. For all other performance measures there seemed to be more severe outliers that affected the results. By eliminating these outliers the models interpreting post ROIC, PB –ratio, and dividends per shares became more reliable and the coefficient of determination improved but the error terms became slightly autocorrelated. By splitting the sample, the models faced same problems as the original ones. Regardless, the interpretation of the main results remained the same. The outcome for models predicting post EPS and EVA was not so positive: the results were not robust and the basic assumptions of regression analysis were constantly disrupted.

Even after eliminating outliers it seemed that the error terms of all the measures that were otherwise fit were somewhat autocorrelated. To test whether the autocorrelation implied by low Durbin Watson coefficient is dependent on time the data was divided into three time periods: 1985-1991, 1992-1996, and 1997-2001. The regression analysis was repeated for variables that did not show any powerlessness in the first analysis. These were CF/Sales, CF/Assets, and ROA. However, some autocorrelation was observed even when the sample was split into time periods.

There seems to be some periodical differences in performance after M&As. For CF/Sales the results remain close to each other but in 1997-2001 the constant becomes significant indicating that CF/Sales for acquiring PPI companies significantly deteriorates in the long run after M&As while in previous periods the impact was not so clear. Measured with CF/Assets the time period 1992-1996 seems to be the only period while performance of PPI acquirers has been better after M&As. When it comes to ROA it seems to be clear that years between 1997 and 2001 have been the drivers behind the deteriorated, though insignificant, performance for the whole time period

investigated. Compared to the results of the robustness tests of difference of means results regression analyses again predict more positive development.

In addition, performance^{POST} was compared to the combined performance^{PRE} of the acquirer and the target to test whether the results are robust to an alternative definition of preformance^{PRE}. In above described regressions the long run performance after M&As was predicted only with the acquirers' pre M&A performance (similar with Healy et al. 1992). However, in many studies (e.g. Ghosh 2001, Powell & Stark 2005, and Sharma & Ho 2002) the independent variable used is the pro-forma performance of combined acquirer and target before the transaction. In this study acquirers' performance is used as the primary measure on pre M&A performance because in the data gathered from PPI performance ratios were reported only for few target companies and the data included all M&As, also the ones in which the acquired object was only a part (for example one plant or division) of the target.

The combined performance^{PRE} was defined only for those deals that were tender offers or mergers. The results of both the change model and the regression analysis are also reported in appendix 5 (panels D). The direction of the results of both the change model and regression analysis remained somewhat the same but the significance levels suffered. Hence, if the performance after M&As in the PPI is compared to the combined performance of the acquirer and the target before the deal, the change in performance is no longer significant.

5.3 Sensitivity of the results to the deal characteristics and premiums paid

Previous chapters investigated the first theoretical hypothesis and the robustness of the results; in this chapter the remaining five shall be tested. Thus, the potential effect of deal characteristics and premiums paid on the change in performance is investigated next. Change model is used to determine whether there is a significant difference in the performance change between deal characteristics and high and low premium groups and the relations between them are examined with regression analysis. To be able to test the impact of deal characteristics and premiums several dummy variables are formed. First, hypotheses are tested one at a time, with both the change and regression models, and, then, a multiple regression is formed to catch the interaction of deal characteristics.

As the suitability of performance indicators was already evaluated and the robustness of the results tested, the best suitable samples are used in next regression models. That is, when it is appropriate (for CF/Sales, CF/Assets, ROIC, EPS, PB –ratio, Dividends/Shares, and EVA) outliers are eliminated so that the underlying assumptions of regression analysis are better met and/or the coefficient of determination is higher. The original model was used only for ROA. Although, the assumptions could not be met with EPS and EVA in spite of various modifications they will be kept in for comparison.

Hypothesis 2 investigated the *effect of different M&A financing methods on post transaction performance*. Financing alternatives are all cash, all equity or a mix of both cash and equity. Classification mixed includes also all deals financed with something other than pure cash or stock. Based on results from one-way ANOVA (see table 3 and panel A) the method of financing does not seem to have any significant impact on the performance change subsequent to M&As of acquiring PPI companies. That is the mean of the change in

performance of any financing method does not significantly differ from the overall mean performance change.

Table 3: Median centered post M&A performance differences for different financing methods

Table represents the differences in post M&A performance of PPI acquirers' between different types of M&A financing. In panel A are the results of one-way ANOVA investigating if the change in performance after an M&A has varied among all cash and all stock financed deals and deals where both cash and stock or some other form of financing has been used. In panel B are the results of regression analysis of equation 2.

Panel A: one-way ANOVA

		N	Mean	Standard Deviation	F value
CF/Sales	Mixed	119	-0,011	0,044	
	cash	162	-0,015	0,052	
	stock	44	-0,004	0,048	0,938
CF/Assets	Mixed	119	-0,007	0,048	
	cash	162	-0,011	0,058	
	stock	43	-0,001	0,042	0,636
ROIC	Mixed	117	-0,018	0,064	
	cash	162	-0,029	0,126	
	stock	42	-0,008	0,054	0,930
ROA	Mixed	117	-0,016	0,045	
	cash	162	-0,018	0,053	
	stock	42	-0,009	0,037	0,595
EPS	Mixed	118	-0,832	9,802	
	cash	159	0,154	1,604	
	stock	43	0,030	0,786	0,938
PB-ratio	Mixed	114	0,290	3,683	
	cash	163	0,316	2,938	
	stock	40	0,324	1,645	0,003
Div/Shares	Mixed	116	-0,077	1,884	
	cash	156	0,047	0,539	
	stock	40	0,082	0,129	0,437
EVA	Mixed	46	-61,48	396,955	
	cash	56	1124,69	8781,44	
	stock	22	1038,02	2029,81	0,547

Table 3 -continued

Panel B: Regression Analysis

Variable	α_0	α_1	α_2	R^2	F value
CF/Sales	-0,013***	-0,010**	-0,004	0,054	6,292***
CF/Assets	-0,006	-0,007	-0,001	0,016	1,791
ROIC	-0,017***	-0,018***	-0,008	0,065	7,521***
ROA	-0,018***	-0,015***	-0,009	0,103	12,46***
EPS	0,149	0,054	0,029	0,005	0,562
PB-ratio	0,047	-0,267*	0,290	0,015	1,662
Div/Shares	0,044	0,086**	0,076	0,022	2,349*
EVA	-6,952	-7,251	21,359	0,006	0,222

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

To test the differential effect of payment method on long run performance after M&As the change in performance is regressed on three dummy variables: Cash, Mixed, and Stock. Dummy variables equal one when the deal has been financed with cash, a mix of cash and equity or other, and stock, respectively. The equation used in regression analysis is:

$$\Delta Performance_i = \alpha_0 * Cash_i + \alpha_1 * Mixed_i + \alpha_2 * Stock_i + \varepsilon_i \qquad \text{(Eq. 2)}$$

where α_0, α_1, and α_2 measure post transaction development of relative performance indicator for cash, mixed, and stock financed M&As. Each M&A is denoted by a subscript i. The regression analysis is modeled without an intercept term similar to Ghosh (2001).

The results of equation 2 are reported above in panel B of table 3. Measured with CF/Assets, EPS, PB –ratio, and EVA the result support the results of panel A indicating that the method of financing does not have any significant impact on post M&A performance in the PPI. However, regression results on CF/Sales, ROIC, and ROA indicate that cash and mixed M&As are followed

by a slight decline in performance. On the contrary, dividends per shares seem to have improved following M&As financed with mixed. Also, PB –ratio has somewhat declined following mixed M&As but the whole model remains insignificant. The coefficient of determination (R^2), however, remains considerably low for all regressions as well as the part and partial correlations. The results of Ghosh (2001, 166) suffered as well from low R^2. Although, measured with CF/Sales, ROIC, ROA, and dividends per share, the method of payment seems to have some significant (but very low) explanatory power over post M&A performance in the PPI, the difference between the mean performance changes remains insignificant indicating the theoretical hypothesis presented earlier has to be rejected. In other words, the performance of the PPI companies after M&As in 1985-2001 has been unaffected by the choice of the method of payment. The results are consistent with the ones of Healy et al. (1992), Rau & Vermaelen (1998), Sharma & Ho (2002), Yook (2004), and Powell & Stark (2005).

The third hypothesis was that *the performance after M&As is better after horizontal than conglomerate deals*. In this study horizontal acquisitions are defined as transactions where both the acquirer and the target are in the same industry according to their two-digit SIC code. According to independent samples t-test (table 4, panel A) the change in performance of PPI acquirers' is not significantly affected by the similarity of the businesses of the target and the acquirer. Also, measured with all other indicators than dividends per shares the direction of the change in performance seems to be the same with both horizontal and conglomerate M&As: slight decline in operational performance and some improvements in market based performance. Also, conglomerate deals appear to have performed somewhat worse than horizontal ones but, once again, the difference is insignificant.

Regression results (Table 4, Panel B) were derived by modifying the above presented equation 2. Two new dummy variables were entered to detect the

differences across horizontal and conglomerate M&As: horizontal and conglomerate. Now, the equation used in regressions is:

$$\Delta Performance_i = \alpha_0 * Horizontal_i + \alpha_1 * Conglomerate_i + \varepsilon_i \quad \text{(Eq. 3)}$$

The results of the regression analysis reported in panel B of table 4 indicate that the degree of business similarity between the target and the acquirer could explain the performance deterioration but, similar with the method of payment, because the difference in performance between horizontal and conglomerate M&As has not been significant, it cannot be reliably said that

Table 4: The impact of business similarity on median centered post M&A performance of acquiring PPI companies
Table represents the differences in post M&A performance of PPI acquirers' between horizontal and conglomerate M&As. Panel A shows the results by comparing the means of performance change and panel B the results form regression analysis of equation 3.

Panel A: Independent samples t-test

		N	Mean	Standard Deviation	t value
CF/Sales	conglomerate	265	-0,017	0,054	
	horizontal	308	-0,011	0,053	-1,49
CF/Assets	conglomerate	265	-0,011	0,054	
	horizontal	307	-0,005	0,042	-1,50
ROIC	conglomerate	257	-0,025	0,071	
	horizontal	304	-0,020	0,095	-0,62
ROA	conglomerate	257	-0,020	0,050	
	horizontal	303	-0,014	0,044	-1,36
EPS	conglomerate	263	-0,848	10,215	
	horizontal	306	-0,151	3,905	-1,10
PB	conglomerate	257	0,157	2,905	
	horizontal	295	0,274	2,045	-0,54
Div/Shares	conglomerate	253	-0,135	2,448	
	horizontal	300	0,034	1,138	-1,06
EVA	conglomerate	85	124,12	1150,41	
	horizontal	123	955,53	6638,80	-1,36

Table 4 -continued

Panel B: Regression analysis				
Variable	α_0	α_1	R^2	F value
CF/Sales	-0,009***	-0,015***	0,067	20,41***
CF/Assets	-0,001	-0,009***	0,022	6,49***
ROIC	-0,015***	-0,022***	0,087	26,39***
ROA	-0,015***	-0,020***	0,120	37,89***
EPS	0,052	0,032	0,001	0,237
PB-ratio	0,190**	-0,174*	0,014	3,962**
Div/Shares	0,091***	0,007***	0,036	10,13***
EVA	9,303	-21,386	0,014	1,345

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

either one of the groups would have been the main force behind the overall deteriorated performance after M&As in the PPI. CF/Assets seems to be the only indicator of performance suggesting the performance to be significantly worse after conglomerate deals; with all other performance measures both of the independent variables are equally significant or insignificant and near to one another. Based on the results reported in table 4 it can be concluded that the business relatedness or independence does not seem to have any significant impact on the acquirers' long run performance after M&As in the PPI or, at the best, the impact is very small and in the favor of horizontal M&As. That is, if there have been any synergistic gains available in the PPI in 1985-2001, they are more likely to be exploited in horizontal than conglomerate M&As.

According to synergistic theories on M&As globalization can offer companies vast strategic synergies. Hence, our fourth hypothesis is that the *performance of acquiring companies is better if the target locates abroad than if it locates in the same country as the acquirer*. To investigate the effect of globalization on long run performance we divided the sample into deals where the target was domestic and where the target located abroad. The dummy variables

used in regression analysis were domestic and cross-border and the equation is:

$$\Delta Performance_i = \alpha_0 * Domestic_i + \alpha_1 * Cross-border_i + \varepsilon_i \quad \text{(Eq. 4)}$$

The results reported in table 5 indicate that the performance of acquiring PPI companies has been approximately the same in both domestic and cross-border mergers. The results in PPI are consistent with the findings of Gugler et al. (2003) who also find no significant differences. These results further fortify the assumption that strategic synergies are harder to achieve than other forms of synergies and, also, they may offer benefits that are hard or even impossible to measure in financial terms. Hence, strategic synergies can easily be used to justify deals that otherwise could seem infeasible.

Table 5: The impact of globalization on median centered post M&A performance of acquiring PPI companies
In this table the differences in post M&A performance of PPI acquirers' is represented by domestic and cross-border M&AS. Panel A shows the results by comparing the means of performance change and panel B the results form regression analysis of equation 4.

Panel A: Independent samples t-test

		N	Mean	Standard Deviation	t value
CF/Sales	cross-border	244	-0,014	0,049	
	domestic	329	-0,014	0,056	-0,039
CF/Assets	cross-border	244	-0,008	0,042	
	domestic	328	-0,008	0,052	0,033
ROIC	cross-border	239	-0,020	0,058	
	domestic	322	-0,023	0,100	0,446
ROA	cross-border	238	-0,017	0,041	
	domestic	322	-0,017	0,050	-0,113
EPS	cross-border	244	-0,618	8,231	
	domestic	325	-0,365	6,935	-0,398
PB	cross-border	230	0,148	1,735	
	domestic	322	0,270	2,901	-0,569
Div/Shares	cross-border	243	-0,042	2,185	
	domestic	310	-0,044	1,553	0,014
EVA	cross-border	101	617,58	6538,12	
	domestic	107	614,06	3431,54	0,005

Table 5 -continued

Panel B: Regression analysis

Variable	α_0	α_1	R^2	F value
CF/Sales	-0,011***	-0,012***	0,063	19,09***
CF/Assets	-0,006**	-0,006**	0,020	5,65***
ROIC	-0,017***	-0,019***	0,084	25,35***
ROA	-0,017***	-0,017***	0,117	36,82***
EPS	0,150*	-0,100	0,007	2,11
PB-ratio	-0,015	0,075	0,001	0,29
Div/Shares	0,074***	0,096***	0,036	10,22***
EVA	3,811	-10,172	0,003	0,333

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

The fifth hypothesis presumed that *value firms outperform growth firms in long run post M&A performance* and the reasoning behind it was found from behavioral finance. Growth firms tend to become overpriced near the announcement date leading to a deteriorated long run performance. This performance extrapolation hypothesis, as Rau & Vermaelen (1998) name it, was tested by dividing the acquirers into two groups according to their book-to-market ratio. Firms whose ratio was lower than the median book-to-market ratio for all the acquirers were categorized as growth firms and, vice versa, the high book-to-market firms were assumed to be value firms. Again, regression equations were modified with new dummy variables ValueFirm and GrowthFirm:

$$\Delta Performance_i = \alpha_0 * ValueFirm_i + \alpha_1 * GrowthFirm_i + \varepsilon_i \qquad \text{(Eq. 5)}$$

By comparing the means of the performance indicators (see table 6, panel A) it seems that measured with CF/Assets, ROIC, ROA, PB –ratio and EVA the value firms have outperformed growth firms although the difference is insignificant. If measured with CF/Sales, EPS, or dividends per shares,

growth firms in the PPI tend to have had better performance than value firms after M&As. The latter can be systematically said to be the case only measured with EPS. The results reported in panel A of table 6 indicate that the operating performance, measured with all other indicators than CF/Sales, of value acquirers' in PPI has slightly, but insignificantly, declined less than the operating performance of growth acquirers'. Market based performance has been on average better for growth firms measured with EPS and dividends per share but inferior measured with PB –ratio and EVA. The difference is however significant only when measures with EPS: while the EPS of growth firms in the PPI has improved after M&As, it has been significantly less and even declined for value firms.

Table 6: The impact of firm type on median centered post M&A performance of acquiring PPI companies
This table presents whether the performance after M&As has been different between acquiring value and growth firms in the PPI. In panel A the means of the differences between post and pre M&A performance of value and growth firms are compared. In panel B are the results of regression analysis on equation 5.

Panel A: Independent samples t-test

		N	Mean	Standard Deviation	t value
CF/Sales	Growth Firms	264	-0,014	0,063	
	Value Firms	283	-0,016	0,044	0,479
CF/Assets	Growth Firms	264	-0,011	0,049	
	Value Firms	283	-0,007	0,047	-0,970
ROIC	Growth Firms	263	-0,028	0,069	
	Value Firms	278	-0,018	0,099	-1,387
ROA	Growth Firms	263	-0,021	0,050	
	Value Firms	278	-0,014	0,043	-1,610
EPS	Growth Firms	264	0,246	1,618	
	Value Firms	280	-0,164	1,441	3,124***
PB	Growth Firms	267	0,160	3,435	
	Value Firms	285	0,275	0,942	-0,527
Div/Shares	Growth Firms	265	0,099	0,606	
	Value Firms	269	0,063	0,178	0,930
EVA	Growth Firms	83	213,77	1263,64	
	Value Firms	125	882,69	6580,55	-0,914

Table 6 -continued

Panel B: Regression analysis

Variable	α_0	α_1	R^2	F value
CF/Sales	-0,015***	-0,010***	0,076	22,23***
CF/Assets	-0,004*	-0,010***	0,032	8,92***
ROIC	-0,011***	-0,027***	0,105	31,47***
ROA	-0,014***	-0,020***	0,125	38,60***
EPS	-0,162*	0,242***	0,018	5,019***
PB-ratio	0,275***	-0,253***	0,030	8,45***
Div/Shares	0,063**	0,098***	0,034	9,29***
EVA	9,725	-24,566	0,017	1,63

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

Regressions support the results of the change model (see panel B in table 6). Thereby, the results based on sample of acquirers in the PPI seem to be inconsistent with behavioral finance and with the results of Rau & Vermaelen (1998) but support the results of Abhyankar et al. (2005) reporting that there is no evidence that growth acquirers would under perform value ones.

Behavioral finance also predicts that managers are often too optimistic while evaluating the benefits from M&As and, hence, they are tempted to pay too large premiums. On the other hand, high premiums can be used to signal from vast synergies, but it can also be assumed that rationally thinking investors see the gap between promises and reality. Also, as expected synergies can be hard to realize, investors may even punish from large premiums. Therefore, the *sixth hypothesis of this study was that high premiums lead to inferior performance.*

The sample was split into two groups according to the median of the premiums paid. When looking at the means of the median annual adjusted performance changes of these two groups it can be seen that on average the

performances of the acquirers' in the PPI was modestly (but insignificantly) less if the premium paid was larger than the median premium for the whole sample (see panel A in table 7). The difference is significant only for EVA implying that when the premium paid has been low, the EVA of the acquirer has strengthened in the long run after M&As but if the premium paid has been large, the development has been reverse.

Table 7: The impact of the size of the premium paid on median centered post M&A performance of acquiring PPI companies
Table 7 presents whether there is a performance difference between acquiring PPI companies that have paid relatively large or small premiums. Panel A shows the results by comparing the means of performance change of high and low premium deals and panel B the results form regression analysis of equation 6.

Panel A: Independent samples t-test

		N	Mean	Standard Deviation	t value
CF/Sales	premiumLow	33	-0,000	0,034	
	PremiumHigh	36	-0,010	0,046	1,010
CF/Assets	premiumLow	32	0,007	0,037	
	PremiumHigh	36	-0,006	0,036	1,485
ROIC	premiumLow	32	-0,001	0,053	
	PremiumHigh	36	-0,011	0,058	0,774
ROA	premiumLow	32	-0,002	0,041	
	PremiumHigh	36	-0,011	0,041	0,923
EPS	premiumLow	33	0,306	1,103	
	PremiumHigh	35	-0,183	1,449	1,556
PB	premiumLow	31	0,443	1,131	
	PremiumHigh	36	0,561	2,013	-0,290
Div/Shares	premiumLow	31	0,154	0,220	
	PremiumHigh	33	0,065	0,223	1,608
EVA	premiumLow	17	908,78	1796,02	
	PremiumHigh	22	-157,10	738,14	20,187**

Table 7 -continued

Panel B: Regression analysis

Variable	α_0	α_1	R^2	F value
CF/Sales	-0,012	0,000	0,033	1,13
CF/Assets	-0,008	0,008	0,031	1,07
ROIC	-0,013	-0,001	0,021	0,72
ROA	-0,014	-0,002	0,041	1,42
EPS	-0,214	0,358	0,037	1,27
PB-ratio	0,499*	0,393	0,088	3,14*
Div/Shares	0,117*	0,278***	0,223	8,89***
EVA	50,69*	-27,47	0,107	1,85

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

To find out whether regression results would support the difference of means tests dummy variables HighPremium and LowPremium were used as independent variables. The regression equation is:

$$\Delta Performance_i = \alpha_0 * High\,\mathrm{Pr}emium_i + \alpha_1 * Low\,\mathrm{Pr}emium_i + \varepsilon_i \qquad \text{(Eq. 6)}$$

where $HighPremium_i$ equaled one, when the premium paid in deal i was above the median premiums for all the deals a premium was announced, otherwise zero and LowPremium, respectively, when it was below the median premiums. The results provided by regression analysis (panel B in table 7) support the results reached by comparing the means of the high and low premium groups. The performance of the acquiring PPI companies' seems to be indifferent to the amount of the premiums paid or, at best, the performance is only a little worse after M&As where the premium paid was relatively large. However, it must be said that these result may suffer from the low amount of observations for which the premiums was reported when the wideness of the time period is catered to.

Finally, a combined model of all the hypotheses was formed to investigate the combined influence of all independent variables. Variables were added into the model one at a time. The results remained approximately the same until dummy variable premium was added, when the results probably suffer from low amount of premium observations making the predicted results open to doubt. Therefore, two models were interpreted: one testing the combined effect of hypotheses from one to five and one testing them all. To be able to run the regressions in SPSS an intercept was included in equations that are:

$$\Delta Performance_i = \alpha_0 + \beta_1 * Cash_i + \beta_2 * Mixed_i + \beta_3 * Horizontal_i + \beta_4 * Domestic_i + \beta_5 * ValueFirm_i + \varepsilon_i \quad \text{(Eq. 7)}$$

$$\Delta Performance_i = \alpha_0 + \beta_1 * Cash_i + \beta_2 * Mixed_i + \beta_3 * Horizontal_i + \beta_4 * Domestic_i + \beta_5 * ValueFirm_i + \beta_6 * High\,\mathrm{Pr}emium_i + \varepsilon_i \quad \text{(Eq. 8)}$$

The results reported in appendix 6 confirm the results of previous analyses: there is not enough evidence of significant performance variations following different types of M&As and the amount of the premium does not seem to have any significant impact on the performance change after M&As in the PPI.

6 SUMMARY AND CONCLUSIONS

The objective of this work was to investigate the long run performance of PPI companies after M&As and to find out whether the deal characteristics and the amount of the premium paid for the target have had any impact on performance as theory suggests. In the PPI consolidation has been one of the means by which companies have pursued to enhance their performance, fight against overcapacity problems, and answer to the challenges arising from globalization and shifting market structures. In this study the attention is paid to financial objectives merely; that is, whether M&As have succeeded to improve performance measured with cash flow based, accrual, and market based performance indicators.

In the academic literature financial performance after M&As has been a popular research theme since the 1970s. The results have been contradictory and there seems to be some debate over the most appropriate research methodology. Also, most of the studies are based on samples of several industries in U.S. or UK environment. The data used in this study is based on an international sample of M&As where the acquirer is a PPI company. The time period examined is between 1985 and 2001 and it comprises three early merger waves encountered by the industry.

Besides the vast research on the impact on M&As on performance, motivations for companies consolidating can be found from many theories. In this study theories have been divided into synergistic and non-synergistic theories. The former justifies M&As only if they create value or produce competitive advantage, whereas theories categorized as non-synergistic ones acknowledge also other objectives.

The effect of M&As on PPI companies' performance is measured by comparing the annual and industry adjusted performance of the acquirer five years before the deal to the same performance five years after the deal. Hence, the difference in performance indicates directly how the acquirer has performed on average compared to the median performance of the whole PPI in the equivalent year. The statistical significance of the performance change as well as the impact of deal characteristics and premiums paid is tested with both the change model and regression analysis.

On average, the performance of PPI acquirers' has been better than the median performance of the whole industry as well as the long run performance after engaging an M&A. In accordance with the results, the performance of acquiring PPI companies has deteriorated in the long run after M&As that have taken place between 1985 and 2001 but the decline has been less than the overall recession of the performance in the whole PPI. Thereby, our first theoretical hypothesis holds. PB –ratio and EVA are the only measures for which the change in performance seems to be significantly positive. The results hold when the sample is split in half but when outliers are eliminated only operational performance seems to deteriorate, while measured with market based ratios the change is more positive but significant only for dividends per shares.

As Ghosh (2001) proved, if the acquirers constantly overperform industry median, a regression model with an intercept that pursues to explain the long run performance after M&As with the performance before the deal gives biased results. By comparing the results of the change model to the ones of the regression model it can be seen that the latter predicts systematically more optimistic results than the change model, supporting the argument of Ghosh (2001).

The previous literature has searched for explanations on the mixed results of long run performance studies. Based on theories on corporate restructuring and the results of previous studies it was hypothesized that the method of M&A financing, degree of business similarity, location of the target, as well as the nature of the acquirer and the premiums paid for the target could affect the outcome. However, based on our sample the characteristics or the amount of the premiums paid do not seem to have any significant impact on the change in performance after M&As in the PPI.

In summary, our results seem to be consistent with the behavioral finance suggesting that managers either simply pay too much of the targets, acquirers' performance prior the deal is extraordinary good and is about to decline in the long run, or investors overreact to the private information available at the time of the deal. Also, the wave effect in PPI may cause the long run reversal as Mitchell & Mulherin (1996, 220) suggested. However, if there are any synergies in the PPI, as suggested by Siitonen (2003), companies have either been incapable to realize them or the price paid has been too high to begin with. There is no evidence that the deal characteristics or premiums would affect the performance change. Hence, based on a sample of M&As in the PPI the results do not show any support to other theories on corporate restructuring except behavioral theory.

The main contribution of this study is to present the performance of PPI acquirers' compared to the mean performance of the whole industry and the change in it subsequent M&As; as a secondary goal was to determine the impact of deal characteristics and premiums on performance. It seems that by consolidating companies have succeeded in keeping their performance above the industry median but, however, some decline is observed and deal characteristics have had no influence on performance. In spite of many adjustments the data included friendly and hostile takeovers, divestitures, and a mix of tender offers that may have affected the results. Because this was a

single industry research, sample size restrictions hampered single type comparisons. Also, by comparing the acquirers' performance to another control group, for example a matched firm that have not performed any M&As in the time period observed before and after a deal, the results might be altered.

This research adduces that operational and market based performances after M&As may move to opposite directions and that the long run performance compared to the performance before the deal, or at least the significance of the difference, is affected by the time period examined. Also, supporting Ghosh (2001) it is found that the method introduced by Healy et al. (1992), and applied by many since, provides results that are biased upwards. This research adds our knowledge on performance after M&As in PPI and indicates that the benefits expected following consolidation may remain unattained. Whether this is due to false determination of synergies, misspricing, or inability to unite former independent entities and company cultures is, however, left unanswered.

Future research could extend this study by comparing the performance to a matched firm control group and to other industries. Also, the impact of multiple deals encountered by the same firm on the pre and post M&A performance was left without notice. The effect of the premiums paid is still ambivalent because it was reported for such a remote number of deals. The determination of horizontal and conglomerate deals could be extended to include vertical mergers also: determining horizontal M&As to include all deals for which the target was in the same industry according to its two-digit SIC code is in practice too wide definition for horizontal mergers that should occur between companies producing similar goods or services. Finally, some effort could be made to determine the reasons behind the performance change and to test whether the motivations PPI companies have had said to have for consolidating ever realized.

REFERENCES

ARTICLES:

Abhyankar, A., Ho, K-Y. & Zhao, H. 2005. Long-run post-merger stock performance of UK acquiring firms: a stochastic dominance perspective. Applied Financial Economics, vol. 15, pp. 679-690.

Aboody, D. Kaszink, R. & Williams, M. 2000. Purchase versus pooling in stock-for-stock acquisitions: Why do firms care?. Journal of Accounting and Economics, vol. 29, pp. 261-286.

Ahern, K. & Weston, J. 2007. M&As: The Good, the Bad, and the Ugly. Journal of Applied Finance, vol. 17, no.1 , pp. 5-20.

Andersson, H., Harju, T. & Larjomaa T. 2002. Value creation - it is time to get serious. Pulp & Paper International, vol. 44, no. 2, pp. 33-35.

Andrade, G., Mitchell, M. & Stafford, E. 2001. News Evidence and Perspectives on Mergers. Journal of Economic Perspectives, vol. 15, no. 2, pp. 103-120.

Andrade, G. & Stafford, E. 2004. Investigating the economic role of mergers. Journal of Corporate Finance, vol. 10, pp. 1-36.

Agrawal, A. & Jaffe, J 2000. The Post-merger Performance Puzzle. Advances in Mergers and Acquisitions, vol. 1, pp. 7-41.

Agrawal, A., Jaffe, J. & Mandelker G. 1992. The Post-Merger Performance of Acquiring Firms: A Re-eximination of an Anomaly. The Journal of Finance, vol. 47, no. 4, pp. 1605-1621.

Asquith, P. & Kim, H. 1982. The Impact of Merger Bids on the Participating Firms' Security Holders. The Journal of Finance, vol. 37, no. 5, pp. 1209-1228.

Barberis, N., Shleifer, A. & Vishny, R. 1998. A model of investor sentiment. Journal of Financial Economics, vol. 49, pp. 307-343.

Berkovitch, E. & Narayanan, M. 1990. Competition and the Medium of Exchange in Takeovers. The Review of Financial Studies, vol. 3, no. 2, pp. 153-174.

Brouthers K., van Hastenburg P. & van den Ven J. 1998. If Most Mergers Fail Why Are They so Popular? Long Range Planning, vol. 31, no. 3, pp. 347-353.

Bruner, R. 2002. Does M&A Pay? A Survey of Evdence for the Decision-Maker. Journal of Applied Finance, vol. 12, no. 1, pp. 48-68.

Chase-Dunn, C. 1999. Qlobalization: A World Systems Perspective. Journal of World-Systems Research, vol.5, no. 2, pp. 187-215.

Chatterjee, R. & Meeks, G. 1996. The Financial Effects of Takeover: Accounting Rates of Return and Accounting Regulation. Journal of Business Finance & Accounting, vol. 23, no. 5&6, pp. 851-868.

Colclough, N. 2000. The big just keep on getting bigger. Pulp & Paper International, vol. 42, no. 9, pp. 17-23.

Eckbo, B., Giammarino, R. & Heinkel, R. 1990. Asymmetric Information and the Medium of Exchange in Takeovers: Theory and Test. The Review of Financial Studies, vol. 3, no. 4, pp. 651-675.

Fama, E. 1998. Market efficiency, long-term returns, and behavioral finance. Journal of Financial Economics, vol. 49, pp. 283-306.

Fama, E. 1970. Efficient Capital Markets: A Review of Theory and Empirical Work. The Journal of Finance, vol. 25, no. 2, pp. 383-417.

Fishman, M. 1989. Preemptive Bidding and the Role of the Medium of Exchange in Acquisitions. The Journal of Finance, vol. 44, no. 1, pp. 41-57.

Ghosh, A. & Lee, C-W. 2000. Abnormal Returns and Expected Managerial Performance of Target Firms. Financial Management, spring 2000, pp. 40-52.

Ghosh, A. 2001. Does operating performance really improve following corporate acquisitions? Journal of Corporate Finance, vol.7, no.2, pp. 151-178.

Goold, M. & Campbell, A. 1998. Desperately Seeking Synergy. Harvard Business Review, vol. 76, no. 5, pp. 131-143.

Gugler, K., Mueller, D., Yurtoglu C. & Zulehner, C. 2003. The effects of mergers:an international comparison. International Journal of Industrial organisation, vol. 21, pp. 625-653.

Halpern, P. 1983. Corporate Acquisitions: A Theory of Special Cases? A Review of Event Studies Applied to Acquisitions. The journal of Finance, vol. 38, no. 2, pp. 297-317.

Hansen, R. 1987. A Theory for the Choise of Exchange Medium in Mergers and Acquisitions. The Journal of Business, vol. 60, no. 1, pp. 75-95.

Healy, P., Palepu, K. & Ruback, R. 1992. Does corporate performance improve after mergers? Journal of Financial Economics, vol. 31, pp. 135-175.

Healy, P., Palepu, K. & Ruback, R. 1997. Which Takeovers Are Profitable? Stategic or Financial? Sloan Management Review, vol. 38, no. 4, pp. 45-57.

Heaton J. 2002. Managerial Optimism and Corporate Finance. Financial Management, vol. 31, pp. 33-45.

Hong, H., Kaplan, R. & Mandelker G. 1978. Pooling vs. Purchase: The Effects of Accounting for Mergers on Stock Prices. The Accounting Review, vol. 53, no. 1, pp. 31-47.

Jenkins, D. & Kane, G. 2006. A Contextual Analysis of Income- and Asset-Based Approaches to Private Equity Valuation. Accounting Horizons, vol. 20, no. 1, pp. 19-35.

Jensen, M. 1988. Takeovers: Their Causes and Consequences. Journal of Economic Perspectives, vol. 2, no. 1, pp. 21-48.

Jensen, M. 1986. Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American Economic Review, vol 76, no. 2, pp. 323-329.

Jensen & Meckling 1976. Theory of the Firm: Managerial Behavioral, Agency Costs and Ownership Structure. Journal of Financial Economics, vol. 3, no. 4, pp. 305-360.

Jensen, M. & Ruback, R. 1983. The Market For Corporate Control: The Scientific Evidence. Journal of Financial Economics, vol. 11, pp. 5-50.

Kenny, J. 1998. More mergers to come in the race to consolidate. Pulp & Paper International, vol. 40, no. 9, pp. 21-24.

Kim, E. & Singal, V. 1993.Mergers and Market Power: Evidence from the Airline Industry. The American Economic Review, vol. 83, no. 3, pp. 549-569.

Kothari, S. & Warner, J. 1997. Measuring long-horizon security price performance. Journal of Financial Economics, vol. 43, no. 3, pp. 301-339.

Linn, S. & Switzer J. 2001. Are cash acquisitions associated with better postcombination operating performance than stock acquisitions? Journal of Banking & Finance, vol. 25, pp. 1113-1138.

Loderer, C. & Martin, K. 1992. Postacquisition Performance of Acquiring Firms. Financial Management, vol. 21, no. 3, pp. 69-79.

Loughran, T. & Vijh, A. 1997. Do Long-Term Shareholders Benefit From Coprorate Acquisitions? . The Journal of Finance, vol. 52, no. 5, pp. 1765-1790.

Lyon, J., Barber, B. & Tsai, C-L. 1999. Improved Methods for Tests of Long-Run Abnormal Stock returns. The Journal of Finance, vol. 54, no. 1, pp. 165-201.

Mackie, J. & Oss, M. 1998. What are mergers and acquisitions worth? Behavioral Health Management, vol. 18, no. 2, pp. 26-29.

Meschi M. 1997. Analytical Perspectives on Mergers and Acquisitions. A Survey. Centre for International Business Studies Research Papers in International Business, no. 5-97. London: South Bank University.

Mitchell, M. & Mulherin, J. The impact of industry shocks on takeover and restructuring activity. Journal of Financial Economics, vol. 41, pp. 193-229.

Mitchell, M. & Stafford, E. 2000. Managerial Decisions and Long Term Stock Price Performance. Journal of Business, vol. 73, no. 3, pp. 287-329.

Modigliani, F. & Miller, M. 1963. Corporate Income Taxes and the Cost of Capital: A correction. American Economic Review, vol. 53, no. 3, pp. 433-443.

Mukherjee, T., Kiymaz, H. & Baker, H. 2004. Merger Motives and Target valuation: A Survey of Evidence from CFOs. Journal of Applied Finance, vol. 14, no. 2, pp. 7-24.

Ooghe, H., Laere, E. & Langhe, T. 2006. Are Acquisitions Worthwhile? An Empirical Study of the Post-Acquisition Performance of Privately Held Belgian Companies. Small Business Economics, vol 27, pp. 223-243.

Penman, S. & Sougiannis, T. 1998. A Comparizon of Dividend, Cash Flow, and Earnings Approaches to Equity Valuation. Contemporary Accounting Research, vol. 15, no. 3, pp. 343-383.

Pesendorfer, M. 2003. Horizontal mergers in the paper industry. RAND Journal of Economics, vol. 34, no. 3, pp. 495-515.

Powell, R. & Stark, A. 2005. Does operating performance increase post-takeover for UK takeovers? A Comparison of performance measures and benchmarks. Journal of Corporate Finance, vol. 11, pp. 293-317.

Ravenscraft, D & Sherer, F. 1987. Life After Takeover. The Journal of Industrial Economics, vol. 36, no. 2, pp. 147-156.

Rau, P. & Vermaelen, T. 1997. Glamour, value and the post-acquisition performance of acquiring firms. Journal of Financial Economics, vol. 49, pp. 223-253.

Roll, R. 1986. The Hubris Hypotheses of Corporate Takeovers. Journal of Business, vol. 59, no. 2, pp. 197-216.

Rosen, R. 2006. Merger Momentum and Investor Sentiment: The Stock Market Reaction to Merger Announcements. Journal of Business, vol. 79, no. 2, pp. 987-1017.

Ross, S. 1973. The Economic Theory of Agency: The Principal's Problem. The American Economic Review, vol. 63, no. 2, pp. 134-139.

Ross, S. 1977. The Determination of Financial Structure: The Incentive-Signalling Approach. The Bell Journal of Economics, vol. 8, no. 1, pp. 23-40.

Sharma, D. & Ho, J. 2002. The Impact of Acquisition on Operating Performance: Some Australian Evidence. Journal of Business Finance & Accounting, vol. 29, no. 1-2, pp. 155-200.

Shleifer, A. 2000. Inefficient Markets: An Introduction to Behavioral Finance. Oxford : Oxford University Press.

Shleifer, A. & Vishny, R. 2003. Stock market driven acquisitions. Journal of Financial Economics, vol. 70, pp. 295-311.

Trautwein, F. 1990. Merger Motives and Merger Prescriptions. Strategic Management Journal, vol. 11, no. 4, pp. 283-295.

Vos, E. & Kelleher, B. 2001. Mergers and Takeovers: A Memetic Approach. Journal of Memetics – Evolutionary Models of Information Transmission, vol. 5, no. 2.

Walker, M. 2000. Corporate Takeovers, Strategic Objectives, and Acquiring-Firm Shareholder Wealth. Financial Management, vol. 29, no. 1, pp. 56-66.

Warga, A. & Welch, I. 1993. Bondholder Losses in Leveraged Buyouts. The Review of Financial Studies, vol. 6, no. 4, pp. 959-982.

Yook, K. 2005. The Measurement of Post-Acquisition Performance Using EVA. Quarterly Journal of Business & Economics, vol. 42, nos. 3 and 4, pp. 67-83.

Yook, K. 2003. Larger Return to Cash Acquisitions: Signaling Effect or Leverage Effect? Journal of Business, vol. 76, no. 3, pp. 477-498.

BOOKS:

Arzac, E. 2005. Valuation for mergers, buyouts and restructuring. Hoboken: Wiley.

Diesen, M. 2007. Economics of the Pulp and Paper Industry. Helsinki : Finnish Paper Engineers' Association : Paperi ja puu oy.

IASB (International Accounting Standards Board) 2007. International financial reporting standards (IFRSs) 2007 : including International accounting standards (IASs) and interpretations as at 1 January 2007. London : IASCF Publications Department.

Knickerbocker, F. 1973. Oligopolistic reaction and multinational enterprise. Boston, MA : Harvard University.

Lee, S. & Colman, R. 1981. Handbook of mergers, acquisitions and buyouts. Englewood Cliffs, NJ : Prentice-Hall.

Ross, S., Westerfield, R. & Jaffe, J. 2005. Corporate Finance. Boston : McGraw-Hill/Irwin.

Siitonen S. 2003. Impact of globalisation and regionalisation strategies on the performance of the world's pulp and paper companies. Helsinki : Helsinki School of Economics.

Wasserstein, B. 2000. Big deal: 2000 and beyond. New York: Warner Books.

ELECTRONIC SOURCES:

Daniel, K., Hirshleifer, D. & Subramanyam, A. 1997. A Theory of Overconfidence, Self-Attribution, and Secutity Market Under- and Over-reactions. Unpublished working paper. [In EconPapers webpage] [Retrieved 22 January, 2008] From: http://129.3.20.41/eps/fin/papers/0412/0412006.pdf.

Joensuu, E., Kuittinen, H., Kyläheiko, K., Sandström, J. & Tapper, A. 2006. A. Game Global in Pulp and Paper Industry – Technological Investment Strategies, Profitability and Value Creation. [In iamot webpage] [Retrieved 15 October, 2007] From: http://www.iamot.org/conference/index.php/ocs/9/paper/viewFile/1884/883

Kirjanpitolautakunta 2006. Yleisohje konsernitilinpäätöksen laatimisesta. [www-document]. Kauppa- ja teollisuusministeriö, Helsinki 7.11.2006 [Retrieved 21.11.2007]. From: http://ktm.elinar.fi/ktm/fin/kirjanpi.nsf/Yleisohjesuomi?openView

Metsäteollisuus ry 2007. Finnish Forest Industry Companies among the World's Largest. [Updated 6.4.2007] [Retrieved 17.10.2007]. From: http://www.forestindustries.fi/infokortit/ompanies/Pages/default.aspx

Pricewaterhausecoopers 2007. Growth: Global Forest, Paper & Packaging Industry Survey. [In pwc webpage] [Retrieved 15 October, 2007]. From: http://www.pwc.com/gx/eng/about/ind/fpp/global-fpp-survey2007_pwc.pdf

Sande, J. 2002. Restructuring and globalization of the forest industry: a review of trends, strategies and theories. [www-document]. Agricultural

University of Norway, Ås, Norway. [Retrieved 15 October, 2007] From: http://wfi.worldforestrycenter.org/JBSande02nov1.pdf

APPENDIX 1: Summary of the results of long run event and accounting studies

Long run event studies:

Study	Sample Period, Size (Country)	Time Horizon	Main findings
Franks et al. 1991	1975-1984, 399 (U.S.)	3 years CAR	No statistically significant abnormal performance. Smaller firms tend to outperform larger firms. Cash as a payment method seems to perform better than stock, though the difference is insignificant.
Agrawal et al. 1992	1955-1987, 1164 (U.S.)	5 years CAR	Statistically significant loss of 10 % for whole sample; after tender offers insignificant + 2% returns indicating that tender offers outperform mergers. Non conglomerate mergers do worse than conglomerate ones. The results of Franks et al. are period specific.
Lodered & Martin 1992	1966-1986, 1298 (U.S.)	5 years CAR	No statistically significant abnormal performance 5 years after, weak evidence 3 years after. The size and the form of the acquisition do not matter.
Loughran & Vijh 1997	1970-1989, 947 (U.S.)	5 year BHAR	After mergers significant underperformance of 16 % but after tender offers insignificant 43 % over performance. Returns are related to both the mode of the acquisition and the form of the payment.
Rau & Vermaelen 1998	1980-1991, 3139	3 years CAR	Acquiring firms underperform 4 % after mergers and outperform 9 % after tender offers. Glamour bidders (low book-to-market ratio) tend to underperform value bidders irrespective of the method of payment.
Mitchell & Stafford 2000	1958-1993, 2767	3 years BHAR & CAR	No statistically significant abnormal performance.
Abhyankar et al. 2005	1985-2000, 305 (UK)	3 years BHAR	No evidence of significant underperformance. Cash financed mergers outperform stock financed ones. No evidence that glamour acquirers underperform value ones. When premiums paid were large, the performance was worse.
Rosen 2006	1982-2001, 6259 (U.S.)	3 years BHAR	Tender offers are excluded from the sample. Performance is significantly negative.

Accounting studies:

Study	Sample Period, Size (Country)	Time Horizon	Main findings
Ravenschaft & Scherer 1987	1950-1977, 153 tender offers (U.S.)	9 years	Operating income/asset of acquirers' 3 % below their industry peers indicating a significant negative relationship between performance and takeovers.
Healy et al. 1992	1979-mid 1974, 50 largest U.S. mergers	-5,+5	Cash flow returns/assets after a takeover significantly higher than the industry median. Improvements attributable to an increase in asset turnover rather than in operating margins. Mergers with high business overlap show significant improvements. No significant performance differences associated with the method of payment, type of the transaction, low business similarity, or the size of the acquisition.
Chatterjee & Meeks 1996	1977-1990, 144 (UK)	1-10 years	Before 1985 no significant improvements, but after 1985 significant improvements in accounting profitability returns.
Healy et al. 1997	same as 1992	-5,+5	M&As are zero NPV activity. Cash flow improvements covered only the premiums paid.
Ghosh 2001	1981-1995, 315	-1, +2	No evidence of performance improvements. Cash flows seem to increase significantly following cash acquisitions but decline after stock acquisitions.
Andrade et al. 2001	1973-1988, 2000	-1, +2	Operating margins (cash flow/sales) are on average improved relative to industry median.
Sharma & Ho 2002	1986-1991, 36, (Australia)	-3, +3	M&As do not lead to improved operating performance. Payment method and business similarity or the lack of it as well as the payment of premium do not influence.
Gugler et al. 2003	1990-1999, 14269	-1, +5	Profits seem to increase but sales are decreased. Horizontal mergers have more positive effects than conglomerate ones. No sig. differences between domestic and cross-border deals.
Yook 2004	1989-1994, 75 ,(U.S.)	-5, +5	Measured with EVA performance improves slightly but when the premium is accounted for the overall effect is reversed. Tender offers outperform mergers only when premiums are not catered suggesting that tender offers pay larger premiums; Method of payment and business similarity does not matter; Large premiums indicate better EVA.
Powell & Stark 2005	1985-1993, 191, (UK)	-1, +3	Modes improvements in operating performance. The impact of the payment method or business similarity is insignificant.

APPENDIX 2: Summary of the theories explaining deal specific performance differences

Theory	Description	Independent variable
Principal-Agent Theory Ross 1973, Jensen & Ruback 1982, Jensen 1986	Cash financed M&As perform better than equity financed due to the benefit of debt, which poses the managers to external monitoring and reduces free cash flow.	Payment method
	Hostile takeovers are more profitable than friendly mergers in response to inefficient management.	M&A type
	Horizontal M&As are outperform conglomerate ones.	Business similarity
Signaling Theory Ross 1977, Hansen 1987, Fishman 1989, Berkovitsch & Narayanan 1990, Eckbo et al. 1990, Yook 2003	M&As financed with cash or both cash and equity outperform stock financed ones, because stock is offered only when the firm's managers believe the firm's stock is overvalued. Also, cash financing signals from synergies and benefit from debt and acquirers are more willing to pay large premiums.	Payment method Premium
Market Power Jensen 1986, Halpern 1983, Kim & Signal 1993, Gugler et al. 2003	Firms acquire market power trough M&As and hence are able to displace competitors, increase prices, and evoke greater profits.	Geographical location
Behavioral Finance Roll 1986	Managers pay too much of the targets leading into decreased performance.	Growth vs. value and premiums
Synergistic Theories Lee & Colman 1981, Ahern & Weston 2007, Ross et al. 2005, Trautwein 1990	The performance increases post M&A due to synergies, which make the combined firm more valuable than the sum of the pre M&A values of the independent firms.	Synergies
	Diversifying lowers the firm specific risk and makes conglomerate and cross-border mergers alluring. However, related businesses offer vast operational synergies	Business similarity and geographical location
	Firms are more willing to pay large premiums when the expected synergies are large.	Premiums

APPENDIX 3: Case summaries and descriptive statistics for M&As in the PPI in 1985-2001

Table 1: Case summaries and descriptive statistics for M&As in the PPI in 1985-2001

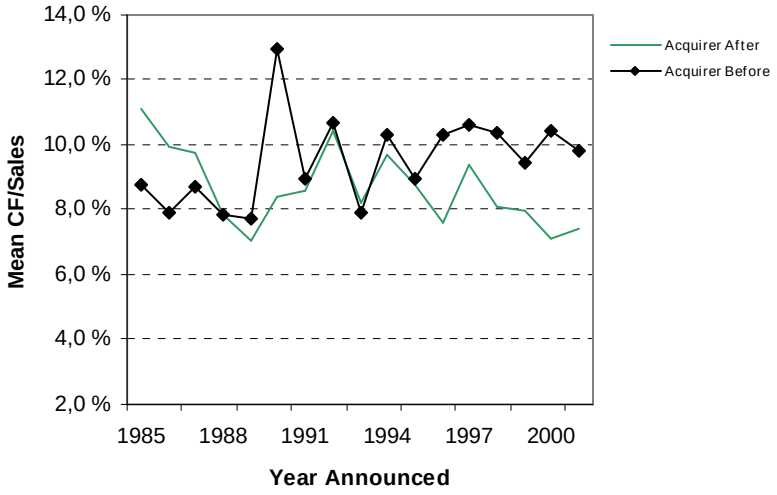
Table 1 gives additional information of nature of M&As in the PPI in 195-2001. It describes what kind of M&As have occurred in each year of the time period observed.

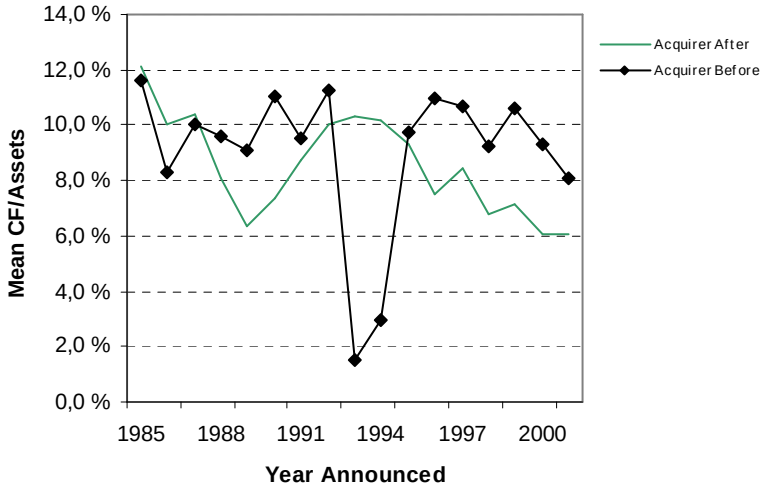
Case Summaries

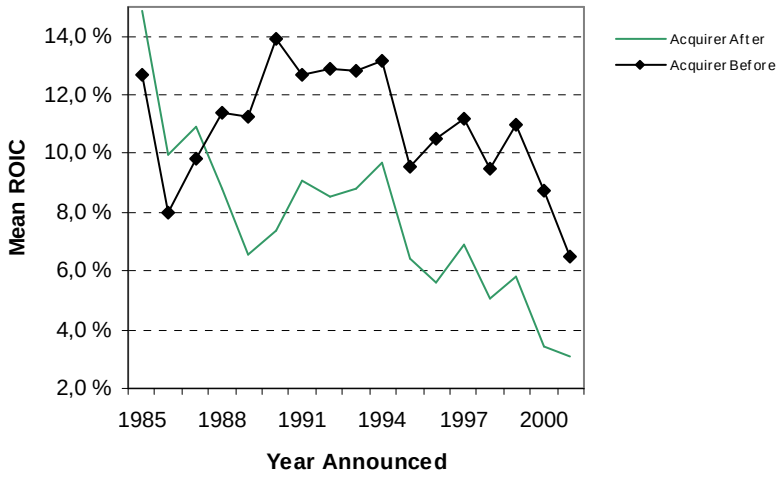
			Type				Financing method						Industry				Country				Firm nature				Premium			
Year	No. Of deals	g -%	Merger/ Tender	%	Other	%	Cash	%	Other	%	Stock	%	Horiz ontal	%	Conglo merate	%	Domes tic	%	Cross-Border	%	Value	%	Growth	%	Low	%	High	%
1985	11		1	*9,1*	10	*90,9*	4	*50,0*	1	*12,5*	3	*37,5*	5	*45,5*	6	*54,5*	11	*100,0*			1	*11,1*	8	*88,9*				
1986	15	***36,4***	6	*40,0*	9	*60,0*	6	*75,0*			2	*25,0*	4	*26,7*	11	*73,3*	14	*93,3*	1	*6,7*	4	*30,8*	9	*69,2*	1	*25,0*	3	*75,0*
1987	16	*6,7*	1	*6,3*	15	*93,8*	7	*53,8*	3	*23,1*	3	*23,1*	6	*37,5*	10	*62,5*	14	*87,5*	2	*12,5*	7	*43,8*	9	*56,3*	1	*33,3*	2	*66,7*
1988	30	***87,5***	2	*6,7*	28	*93,3*	9	*60,0*	3	*20,0*	3	*20,0*	13	*43,3*	17	*56,7*	22	*73,3*	8	*26,7*	17	*68,0*	8	*32,0*	1	*100,0*		
1989	41	***36,7***	6	*14,6*	35	*85,4*	18	*69,2*	7	*26,9*	1	*3,8*	28	*68,3*	13	*31,7*	18	*43,9*	23	*56,1*	18	*52,9*	16	*47,1*			1	*100,0*
1990	35	*-14,6*	1	*2,9*	34	*97,1*	12	*63,2*	5	*26,3*	2	*10,5*	20	*57,1*	15	*42,9*	15	*42,9*	20	*57,1*	13	*50,0*	13	*50,0*			2	*100,0*
1991	32	*-8,6*	1	*3,1*	31	*96,9*	10	*62,5*	5	*31,3*	1	*6,3*	15	*46,9*	17	*53,1*	18	*56,3*	14	*43,8*	9	*37,5*	15	*62,5*				
1992	33	*3,1*	3	*9,1*	30	*90,9*	14	*51,9*	7	*25,9*	6	*22,2*	16	*48,5*	17	*51,5*	23	*69,7*	10	*30,3*	11	*52,4*	10	*47,6*	1	*100,0*		
1993	26	*-21,2*	1	*3,8*	25	*96,2*	10	*62,5*	4	*25,0*	2	*12,5*	13	*50,0*	13	*50,0*	18	*69,2*	8	*30,8*	13	*72,2*	5	*27,8*	1	*100,0*		
1994	39	***50,0***	3	*7,7*	36	*92,3*	22	*64,7*	8	*23,5*	4	*11,8*	21	*53,8*	18	*46,2*	19	*48,7*	20	*51,3*	23	*82,1*	5	*17,9*	3	*100,0*		
1995	71	***82,1***	7	*9,9*	64	*90,1*	40	*57,1*	17	*24,3*	13	*18,6*	36	*50,7*	35	*49,3*	45	*63,4*	26	*36,6*	40	*65,6*	21	*34,4*	6	*60,0*	4	*40,0*
1996	57	*-19,7*	1	*1,8*	56	*98,2*	22	*53,7*	14	*34,1*	5	*12,2*	30	*52,6*	27	*47,4*	30	*52,6*	27	*47,4*	21	*45,7*	25	*54,3*	3	*75,0*	1	*25,0*
1997	70	***22,8***	2	*2,9*	68	*97,1*	32	*50,8*	15	*23,8*	16	*25,4*	38	*54,3*	32	*45,7*	40	*57,1*	30	*42,9*	34	*55,7*	27	*44,3*	4	*66,7*	2	*33,3*
1998	63	*-10,0*	2	*3,2*	61	*96,8*	21	*50,0*	8	*19,0*	13	*31,0*	39	*61,9*	24	*38,1*	34	*54,0*	29	*46,0*	27	*52,9*	24	*47,1*	7	*58,3*	5	*41,7*
1999	56	*-11,1*	7	*12,5*	49	*87,5*	29	*61,7*	13	*27,7*	5	*10,6*	29	*51,8*	27	*48,2*	28	*50,0*	28	*50,0*	21	*42,0*	29	*58,0*			9	*100,0*
2000	59	*5,4*	10	*16,9*	49	*83,1*	26	*49,1*	15	*28,3*	12	*22,6*	33	*55,9*	26	*44,1*	30	*50,8*	29	*49,2*	19	*36,5*	33	*63,5*	4	*33,3*	8	*66,7*
2001	54	*-8,5*	2	*3,7*	52	*96,3*	16	*50,0*	6	*18,8*	10	*31,3*	30	*55,6*	24	*44,4*	29	*53,7*	25	*46,3*	12	*26,1*	34	*73,9*	7	*87,5*	1	*12,5*
Total	**708**		**56**	***7,9***	**652**	***92,1***	**298**	*56,2*	**131**	*24,7*	**101**	*19,1*	**376**	***53,1***	**332**	***46,9***	**408**	***57,6***	**300**	***42,4***	**290**	***49,9***	**291**	***50,1***	**39**	***50,6***	**38**	***49,4***

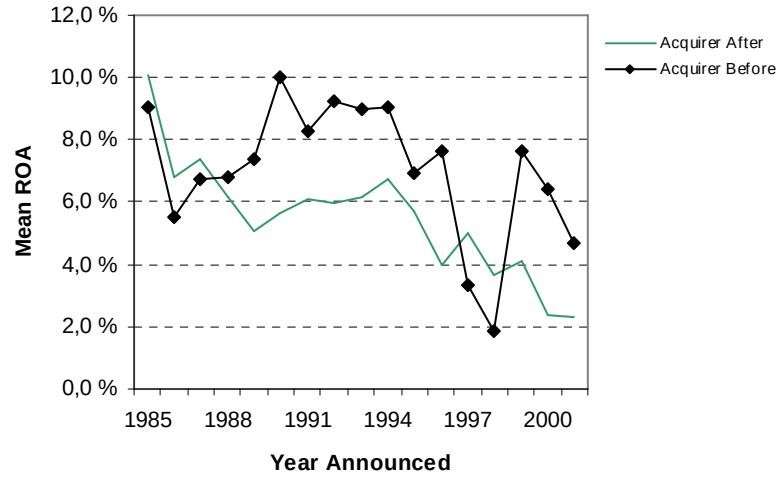
APPENDIX 4: The development of acquiring PPI companies performance in 1985-2001

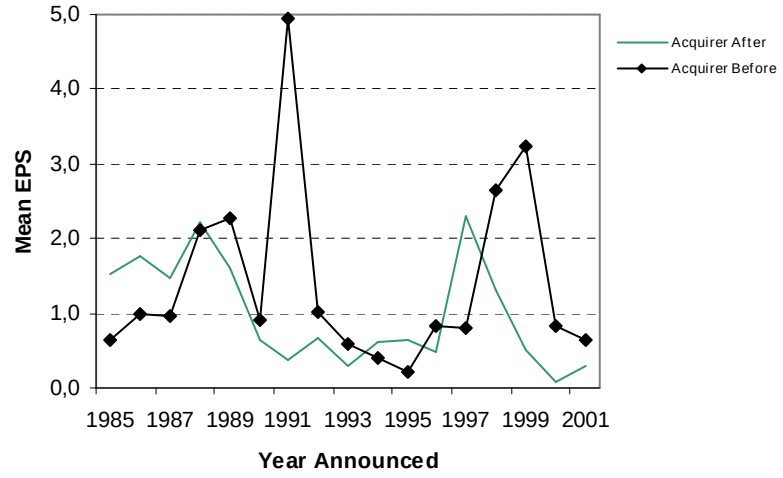
Figures 1-8: The following diagrams show the median annual industry adjusted performance of acquiring PPI companies before and after a completion of an M&A measured with different performance indicators. For example, if the deal was announced in year 1985, the marked line presents the mean performance of the acquirer from 5 years to 1 year prior the deal and the unmarked line the mean performance from 5 years to 1 year post the deal.

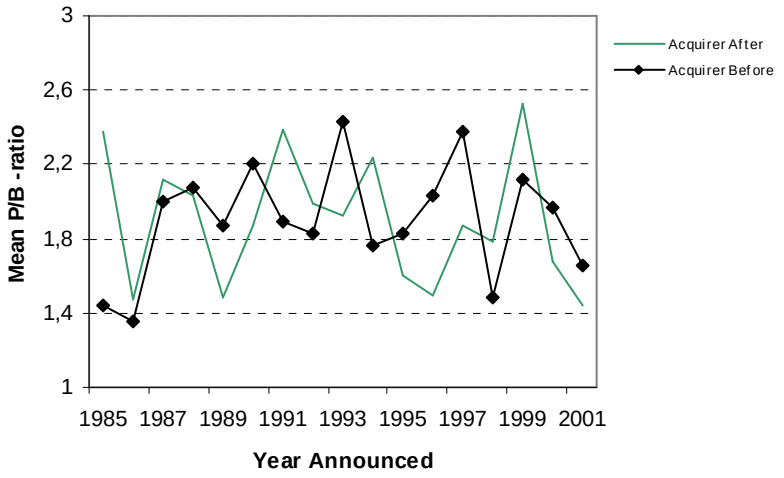


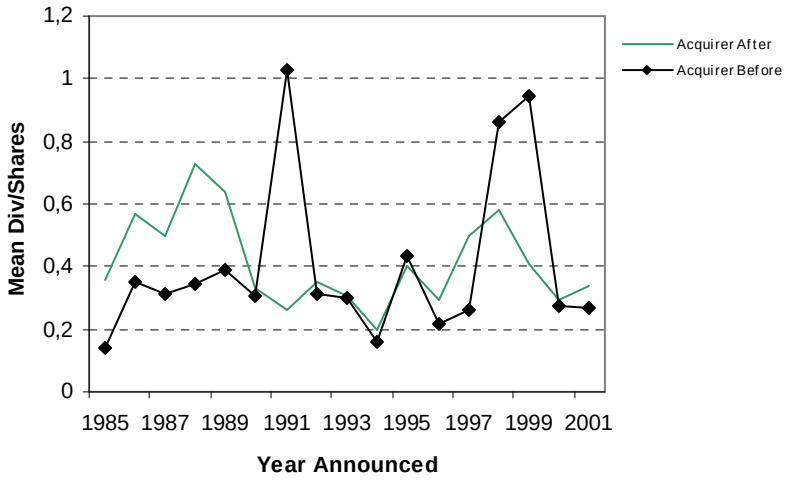


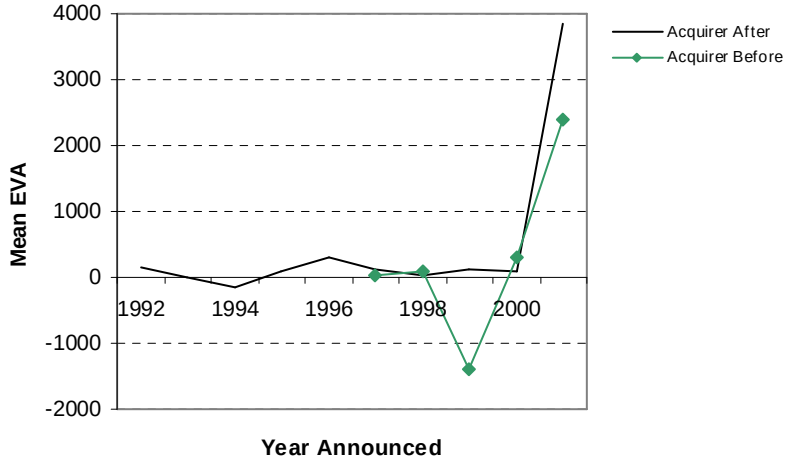

14,0 %
12,0 %
10,0 %
8,0 %
6,0 %
4,0 %
2,0 %
Mean ROIC
1985
1988
1991
1994
1997
2000
Year Announced
Acquirer After
Acquirer Before


12,0 %
10,0 %
8,0 %
6,0 %
4,0 %
2,0 %
0,0 %
Mean ROA
1985
1988
1991
1994
1997
2000
Year Announced
Acquirer After
Acquirer Before


5,0
4,0
3,0
2,0
1,0
0,0
Mean EPS
1985
1987
1989
1991
1993
1995
1997
1999
2001
Year Announced
Acquirer After
Acquirer Before


3
2,6
2,2
1,8
1,4
1
Mean P/B -ratio
1985 1987 1989 1991 1993 1995 1997 1999 2001
Year Announced
Acquirer After
Acquirer Before


1,2
1
0,8
0,6
0,4
0,2
0
Mean Div/Shares
1985 1987 1989 1991 1993 1995 1997 1999 2001
Year Announced
Acquirer After
Acquirer Before


4000
3000
2000
1000
0
-1000
-2000
Mean EVA
1992 1994 1996 1998 2000
Year Announced
Acquirer After
Acquirer Before

APPENDIX 5: Robustness tests on the results reported in table 1 and table 2

Table 1: Robustness tests on the relation between post and pre M&A median annual and industry adjusted performances
This table presents the robustness of the results reported in table 1. In panel A are the results after outliers are eliminated, panel B present the results in a random sample of 50 % of the final sample and Panel C in different time periods. In panel D the performance^{POST} is compared to the performance^{PRE} of the combined target and acquirer.

Panel A: outliers eliminated		CF/ Sales	CF/ Assets	ROIC	ROA	EPS	PB -ratio	Div/ Shares	EVA
Mean ΔPerformance$_i$		-0,012***	-0,006***	-0,018***	-0,015***	0,043	0,022	0,084***	-3,288
Standard deviation		0,045	0,043	0,060	0,041	1,521	1,527	0,439	132,07
95 % Confidence interval of the difference	Lower	-0,015	-0,010	-0,023	-0,018	-0,083	-0,106	0,047	-21,94
	Upper	-0,008	-0,003	-0,013	-0,011	0,168	0,151	0,121	15,37
N		570	568	557	555	566	546	550	195
Panel B: 50 % random sample									
Mean ΔPerformance$_i$		-0,013***	-0,009***	-0,023***	-0,017***	-0,385	0,260*	0,012	982,52
Standard deviation		0,055	0,049	0,099	0,047	6,160	2,468	1,158	6832,25
95 % Confidence interval of the difference	Lower	-0,020	-0,014	-0,034	-0,022	-1,079	-0,024	-0,120	-274,10
	Upper	-0,007	-0,003	-0,012	-0,011	0,309	0,544	0,145	2239,06
N		307	307	302	302	305	293	296	116
Panel C: three time periods									
1985-1991									
Mean ΔPerformance$_i$		-0,012**	-0,003	-0,004	-0,005	-0,499	-0,018	0,005	
Standard deviation		0,064	0,036	0,064	0,047	9,308	1,729	1,905	
95 % Confidence interval of the difference	Lower	-0,023	-0,009	-0,015	-0,013	-2,102	-0,307	-0,336	
	Upper	-0,001	0,003	0,007	0,003	1,104	0,271	0,345	
N		138	138	139	139	132	140	122	

1992-1996		CF/ Sales	CF/ Assets	ROIC	ROA	EPS	PB -ratio	Div/ Shares	EVA
Mean ΔPerformance$_i$		-0,009***	0,000	-0,025***	-0,018***	0,187*	0,202	0,067*	
Standard deviation		0,044	0,048	0,111	0,042	1,427	2,051	0,481	
95 % Confidence interval of the difference	Lower	-0,015	-0,007	-0,041	-0,024	-0,021	-0,106	-0,003	
	Upper	-0,002	0,007	-0,008	-0,012	0,394	0,511	0,138	
N		184	184	179	178	184	172	180	
1997-2001									
Mean ΔPerformance$_i$		-0,018***	-0,016***	-0,031***	-0,023***	-0,940*	0,371*	-0,146	615,76*
Standard deviation		0,053	0,053	0,070	0,048	8,953	3,064	2,379	5165,33
95 % Confidence interval of the difference	Lower	-0,025	-0,023	-0,040	-0,029	-2,049	-0,019	-0,441	-90,32
	Upper	-0,012	-0,010	-0,022	-0,017	0,168	0,760	0,150	1321,86
N		251	250	243	243	253	240	251	208
Panel D: Combined performance^{PRE}									
Mean ΔPerformance$_i$		-0,003	-0,010	-0,016	-0,015**	-0,920	0,059	-0,140	232,54*
Standard deviation		0,056	0,037	0,048	0,032	3,282	1,125	0,940	341,97
95 % Confidence interval of the difference	Lower	-0,029	-0,026	-0,037	-0,030	-2,668	-0,427	-6,142	-53,35
	Upper	0,234	0,007	0,004	-0,001	0,829	0,545	0,361	518,43
N		20	23	23	22	16	22	16	8

* Denote significance at the 10 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
*** Denote significance at the 1 % level for a two-tailed test.

Table 2: Robustness tests on regression results of post M&A median centered measures on pre M&A median centered measures

Table represents the results of robustness tests for equation 1. In panel A are the results after outliers are eliminated, panel B present the results in a random sample of 50 % of the final sample and Panel C in different time periods. In panel D the performance^{POST} is regressed by the performance^{PRE} of the combined target and acquirer.

Panel A: outliers eliminated

	α_0	t value	β_1	t value	R^2	F value
CF/Sales	-0,006	-3,67***	0,646	14,13***	0,262	199,59***
CF/Assets	0,001	0,41	0,520	12,21***	0,208	148,96***
ROIC	-0,001	-0,33	0,341	8,42***	0,113	70,91***
ROA	-0,002	-1,14	0,295	6,87***	0,078	47,26***
EPS	0,234	4,50***	0,270	5,38***	0,049	28,89***
PB-ratio	0,320	6,45***	0,401	10,02***	0,158	100,41***
Div/Shares	0,056	5,59***	1,081	44,24***	0,782	1957,2***
EVA	4,471	0,467	0,903	27,03***	0,793	730,65***

Panel B: 50 % random sample

	α_0	t value	β_1	t value	R^2	F value
CF/Sales	-0,006	-2,64***	0,521	9,63***	0,242	62,77***
CF/Assets	0,000	0,16	0,533	9,91***	0,258	98,25***
ROIC	-0,002	-0,32	0,121	1,10	0,004	1,22
ROA	0,000	-0,11	0,283	4,37***	0,064	19,13***
EPS	0,356	2,27**	0,118	4,97***	0,079	24,66***
PB-ratio	0,557	3,84***	0,208	2,15**	0,015	4,61**
Div/Shares	0,322	4,69***	0,245	11,65***	0,342	135,68***
EVA	1224,56	2,58**	0,359	5,70***	0,253	32,47***

Panel C: three time periods

		α_0	t value	β_1	t value	R^2	F value
CF/Sales	1985-1991	-0,001	-0,38	0,222	4,74***	0,142	22,51***
	1992-1996	-0,004	-1,29	0,674	9,81***	0,346	96,22***
	1997-2001	-0,010	-3,42***	0,444	7,04***	0,166	49,50***
CF/Assets	1985-1991	-0,001	-0,34	0,629	8,86***	0,366	78,51***
	1992-1996	0,014	4,15***	0,416	6,28***	0,178	39,40***
	1997-2001	-0,005	-1,61	0,329	4,75***	0,083	22,58***
ROA	1985-1991	0,005	1,58	0,318	5,47***	0,179	29,91***
	1992-1996	0,004	1,23	0,263	3,83***	0,077	14,64***
	1997-2001	-0,008	-2,96***	0,199	2,91***	0,034	8,44***

Panel D: Combined performance^{PRE}						
	α_0	t value	β_1	t value	R^2	F value
CF/Sales	-0,003	-0,211	0,854	1,837*	0,158	3,375*
CF/Assets	-0,009	-1,195	0,584	2,203**	0,188	4,854**
ROIC	-0,016	-1,871*	0,327	1,652	0,120	2,730
ROA	-0,013	-2,087**	0,381	1,625	0,117	2,642
EPS	0,376	1,622	-0,036	-0,500	0,018	0,250
PB-ratio	0,188	0,637	0,774	2,515**	0,231	6,325**
Div/Shares	0,400	3,484***	0,023	0,212	0,003	0,045
EVA	308,27	2,432*	0,383	0,849	0,107	0,720

*** Denote significance at the 1 % level for a two-tailed test.
** Denote significance at the 5 % level for a two-tailed test.
* Denote significance at the 10 % level for a two-tailed test.

APPENDIX 6: Combined model of all the hypotheses

Table 1: The effect of the deal characteristics and the premium paid on post M&A performance of acquiring PPI companies
Table presents the combined impact of the acquirers' performance prior M&As, the characters' of the deal, and the premium paid on the performance post M&A in the PPI in 1985-2001. Panel A shows the results from regression analysis of equation 7 and panel B of equation 8.

Panel A

Variable	α_0	β_1	β_2	β_3	β_4	β_5	R^2	F value
F/Sales	-0,007	-0,007	-0,005	0,006	0,000	-0,005	0,012	0,758
CF/Assets	-0,006	-0,006	-0,007	0,003	0,001	0,006	0,010	0,657
ROIC	-0,025	-0,008	-0,009	0,005	0,004	0,017**	0,024	1,559
ROA	-0,016*	-0,009	-0,007	0,004	0,001	0,006	0,012	0,793
EPS	-0,093	0,218	0,091	0,133	0,229	-0,398**	0,025	1,622
PB-ratio	-0,053	-0,264	-0,575**	0,287*	-0,016	0,499**	0,056	3,739***
Div/Shares	0,128	-0,032	0,010	0,015	-0,031	-0,041	0,005	0,312
EVA	-34,162	-14,065	-17,364	24,199	20,680	31,757	0,032	0,727

Panel B:

Variable	α_0	β_1	β_2	β_3	β_4	β_5	β_6	R^2	F value
CF/Sales	-0,013	0,006	0,010	0,007	0,002	-0,004	-0,014	0,024	0,228
CF/Assets	-0,016	0,017	0,018	0,004	0,003	0,009	-0,025	0,052	0,507
ROIC	-0,033	0,009	,010	0,006	0,006	0,019	-0,018	0,036	0,341
ROA	-0,020	0,001	0,004	0,005	0,001	0,008	-0,012	0,023	0,243
EPS	-0,664	1,396*	1,411	0,201	0,338	-0,287	-1,224**	0,102	1,037
PB-ratio	0,146	-0,702	-1,066	0,268	-0,072	0,447	0,486	0,070	0,675
Div/Shares	-0,040	0,327	0,415	0,033	-0,001	-0,023	-0,368**	0,088	0,816
EVA	71,050	-355,18***	-359,96***	11,710	27,864	49,390	295,97***	0,422	2,795**

*** Denote significance at the 1 % level for a two-tailed test. ** Denote significance at the 5 % level for a two-tailed test. * Denote significance at the 10 % level for a two-tailed test.