

# Measuring the M&A Value of Control and Synergy in Central and Eastern European Transition Economies with the Case of Avast - AVG Acquisition

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## **Abstract:**

We examine the valuation of synergies and control in mergers and acquisitions (M&A) in Central and Eastern European (CEE) transition economies. We determine this value based on comprehensive contemporaneous financial findings extracted from the Thomson Reuters database. Worldwide the market of mergers and acquisitions (M&A) is increasing, reaching in 2016 a value of 6.000 billion EUR globally. Among the CEE transition economies, the M&A total value in the same period was 50 billion EUR. It is widely accepted that between 60% and 80% of M&As are unsuccessful in value creation, so we further research evidences about an alternative framework to value the M&A also qualitatively. We develop a valuation model for prediction of the value of control and synergy in M&A deals. We suggest further directions for analysis in the field of M&A value creation, and recommend an alternative to the most used earning per share metric to enhance the predictability and transparency of valuation worldwide.

**Key words:** Mergers; Acquisitions; Synergy; Control; Corporate Governance.

**JEL classification:** G34.

## **1 Introduction**

This article primarily aims to empirically demonstrate with a case-study evidences about the valuation of synergies and control of M&As in Central Eastern European transition economies, and secondly recommends improvements on the respective valuation framework. To address this purpose, the authors collected several M&A indicators available at Thomson Reuters terminal. The focus of this paper is on

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two major research questions. Firstly, do M&A synergy and control create value in CEE transition economies when measured by earnings per share metric? Secondly, is there an alternative qualitative framework to assess and evaluate the performance of M&A?

The total value of M&A activity among the studied countries reached 50 billion EUR, however the authors found that just a relatively small part of them created value when measured by the most commonly used valuation metric EPS (Farrell, Shapiro, 2001). The authors will explore the topic by reviewing empirically the concepts of value of synergy and control, and how these two variables influence the premiums and goodwill paid. The authors will also present a case study measuring the valuation of control and synergy of the company Avast acquisition of its peer AVG (the acquired company), in a 1.3 billion USD transaction. This is a major contribution of this paper and it addresses the questions raised by the authors. These two companies started in the Czech Republic before the dotcom revolution in the 90's and during the last few years became the worldwide leaders in the software anti-virus segment. This M&A was completed in October 2016. However, the process is still ongoing and has not been completed by the time of the paper presentation. The authors will also measure the difference between their intrinsic value and the potential synergies arising from the acquisition. The questions formulated by the authors add value to the scientific research because the current scientific evidence on the M&A post-transaction performance in the CEE region is almost non-existent. (Bradley, 1983).

## **2 Literature Review**

This article contributes to the current literature because it adds new significant findings related to the performance of M&A within the central and eastern European transition economies. The methodology applied, measures the variance of market capital before and after the M&A process is concluded and the EPS flow throughout the same period. In Europe the existing related literature is scarce and often contradictory. Some studies identified relevant improvements in operating results after the acquisition process (Rahman, 2004; Healy, 1992). However, other authors revealed a significant decrease in the operating performance after the acquisition (Clark, 1994; Kruze, 2002). In addition, other existing findings also show residual changes in the performance post-merger & acquisition (Sharma, 2002; Gosh, 2001).

### **3 Methodology**

#### **3.1 Valuation of synergy**

Often M&As deals are justified with the assumptions that they will create synergy and payback the values involved in the transaction. In this paper, the authors disclose two types of synergies: operating and financial. The M&A data examined was from the CEE region and the aim was to identify if the value attributed to synergies and control is related to prospective earnings per share or market capitalization after 1 year of the transaction is completed. Across the case study included, the authors test the value sensitivity of the potential synergy when applying different assumptions (Bhide, 1989). To summarize how much synergy value is in fact created in the case-study transaction, the authors conduct an examination to verify if the acquisition is correctly valued.

In a M&A, synergy is the additional value that companies expect to create when combining all the opportunities to add value that otherwise could not happen independently (Bradley, Desai, 1988). There are two main groups of synergies that are possible to create: financial and operational. The financial synergies are seldom related to the use of cash surplus, diversification, tax benefits, and higher debt capacity (Healy, Palepu, Ruback, 1992).

There are two main schools of thought regarding the worthiness of valuating synergies. One school argues that it is useless to value it because there is little existing evidence that it is possible to attach a value to it taking in consideration so many different assumptions and variables. If this former school of thought is correct, companies should not pay such large sums of premiums for synergy if they cannot value it. The latter school of thought is the one that the authors support and which assumes that it is possible to make synergy estimation despite the fact that assumptions are made with an unknown future. Even though the valuation process of synergy accounts with the assumptions related to growth and cash-flows with questionable certainty, it is possible to measure the expected effect of the synergy.

#### **3.2 Operating synergy**

These are the four key inputs in the valuation process:

- Cash-flows from assets arising from costs savings and economies of scale.
- Growth rates as an effect of increased reach and market expansion.
- Growth period assuming higher competitive advantages.
- Debt capacity taking in consideration lower cost of capital.

### **3.3 Financial Synergy**

The authors considered mainly 3 different sources of financial synergy with significance in valuation such as: tax benefits from accumulated losses, improved debt capacity, and increased cash capacity.

Tax benefits can be assumed to raise its valuation, if there is the possibility to explore certain legal opportunities and joint financial synergies. In the case that one company is losing money and the other has significant income, the merge of both can be used to offset tax burdens and deductions contributing positively to tax efficiency. Some countries allow companies to get additional tax deductions as a claim on rate of return of book equity. The companies eligible for this tax benefit after the M&A may claim the tax deduction at the level of the given tax rate, which will respectively increase the present value valuation by the related interest tax savings. Other type of tax savings can arise from writing up assets depending also on each country legal framework (Hong, Kaplan, Mandelker, 1978). This is also considered a major reason to pursuit a M&A due to the financial synergy coming from the favourable treatment granted by tax authorities when a company was allowed to reflect higher market value on its assets and to claim depreciation from these revaluated assets.

Debt capacity is another financial synergy often resulting in an increased valuation. Several researchers investigated the benefits of increased debt ratios. Lewellen (1971) analysed the effect of more balanced cash-flows after M&As deals in terms of risk rating and debt capacity. He developed a framework to explain the larger debt capacity after the deal is concluded and how this debt power may affect negatively the stockholders' equity wealth. Other researchers argued that the debt capacity is always positively increased after the M&A deal is made despite the fact that companies often have cash income perfectly correlated (Stapleton, 1985).

The valuation of cash strength in a M&A is done by calculating which projects could not be taken by the poorer part due to its shortage of cash capacity. The opportunity cost of losing these projects is the value to be taken in consideration to the value of the combined firm.

### **3.4 Valuation of control**

In a valuation of a M&A, the premiums paid related to the value of control are frequently high. The main question the authors address in this context is related to the estimation of value attributed to the change of control in a company after being acquired (Jensen, Ruback, 1983). In the case study included in this paper the authors describe the findings related to the change of control after Avast acquired AVG. The authors examine the value attached to the potential improvement of a firm management when its control changes and becomes more efficient. This

paper shows how the change of control in a company may increase a price of publicly traded firm.

The measurement of the value as a result of a different management board comes from the belief of investors that the management can operate differently and improve the performance of the firm. There are two main dimensions to consider when measuring the effects of a change in control: firstly the new corporate policies that will be applied by the new controlling management, secondly the likelihood rate that the new policies will be successfully implemented.

The general determinants of valuation are related to the investment decisions taken by managers, the strategy how to fund the investments, and the value of dividends returned to the stockholders. The managers who will run the business shall have a value attached that is often called “status quo value.” The difference of value between an optimal management team and a less optimal one is the status quo value that can be considered to value the control of a company after a M&A.

### 3.5 Determinants to value a company

The value of an asset is determined by the sum of its expected cash flows during a period, the growth of that asset value, and its riskiness or discount rate. This means the value of an asset is accepted as the net present value of the expected cash flows, during the lifetime  $N$ , and a discount rate  $r$  representing the mix of debt incurred to fund the asset and the cash flows risk (Tichy, 2001).

$$\text{Value of an asset} = \sum_{t=1}^{t=n} \frac{E(CF)^t}{(1-r)^t} \quad (1)$$

If these are accepted assumptions to value an asset, the valuation of a company incorporates also the growth of the cash flows in the future. The cash flow estimation shall be after tax and reinvestments. The other way how to calculate these cash flows is to measure the reinvestment ratio to after-tax operating income.

$$\text{Free Cash Flow to the Firm} = EBIT(1-t)(1-\text{Reinvestment Rate}) \quad (2)$$

The expected growth in the operating income is a significant input in the valuation of synergy control. The variables assessed to determine the growth rate when the control changes are related to working capital (inventories plus receivables minus payables), earnings forecasts, and capital expenditures (Kaplan, Weisbach, 1992). The asset life from a publicly traded company does not have finite live, therefore the authors imposed a time period in the valuation of synergy in this case study. The approach used to compute the terminal value was the discounted cash flow model assuming that cash flows will grow at a constant rate forever beyond the terminal year.

$$\text{Terminal Value} = \frac{EBIT_{n+1}(1-t)(1 - \frac{g_n}{ROC_n})}{(WACC_n - g_n)} \quad (3)$$

The assumptions made to evaluate the control in the case study are connected with the time when the company achieved stable growth, the cost of capital at that time, and the return of capital (Linn, McConnell, 1983).

### 3.6 Earnings Per Share (EPS)

The earning per share metric sets out how to calculate both basic earnings per share (EPS) and diluted EPS. The calculation of basic EPS is based on the weighted average number of ordinary shares outstanding during the period, whereas diluted EPS also includes dilutive potential of ordinary shares (such as options and convertible instruments) if they meet certain criteria. Several researches have proven that the EPS metric is used most frequently to evaluate M&A performance, despite the existence of several opponents. There are two types of earning per shares: EPS accretion is the total profit allocated per each outstanding stock, and EPS dilution is applied if all convertible securities are exercised (Meeks, 1977).

*EPS*

= Net profit or loss attributable to ordinary shareholders during a period  
/ by the weighted average number of ordinary shares in issue during the period. (3)

### 3.7 Evidences of added value from synergy and control in M&As

There are essentially two ways viable to assess the value of synergy and control in a M&A. The first is looking at the market announcements of an acquisition and measure its market capitalization (Bhide, 1993). The authors considered in this paper that to acknowledge the existence of value creation from synergy and control after a M&A, the market value of two companies there were combined has to be greater than the sum of those companies measured individually before the announcement of the M&A (DeAngelo, Rice, 1983)

## 4 Data, Results, and Discussion

The methodology considered in this research includes data of mergers and acquisitions from the region of Central and Eastern European (CEE) transition economies including the following selected countries: Czech Republic, Poland, Slovakia, Romania, Hungary, Estonia, Lithuania, and Latvia. The sample was collected using the Thompson Reuters Eikon database for information related to the M&As transactions, and the Bureau Van Dijk database to analyse the earnings per share and market value flow of one stock before and after the M&A is concluded. From the Eikon database, the authors only included transactions within

the referred CEE regions whether cross-border or domestic. We did not include into our sample the transactions in the sample of companies which the target is a subsidiary, or the acquirer the employee or manager, and we also removed M&As which were financial institutions such as pension and mutual funds, trusts, and banks (Cartwright, Cooper, 1992). The initial complete sample was a selection of 4.000 M&As. The authors, sourcing information from Bureau Van Dijk, solely included companies which were having accounting income and balance-sheet statements available for the period of at least one year before, and one year after the deal was completed.

**Tab. 1 Sample with the selected M&A deals**

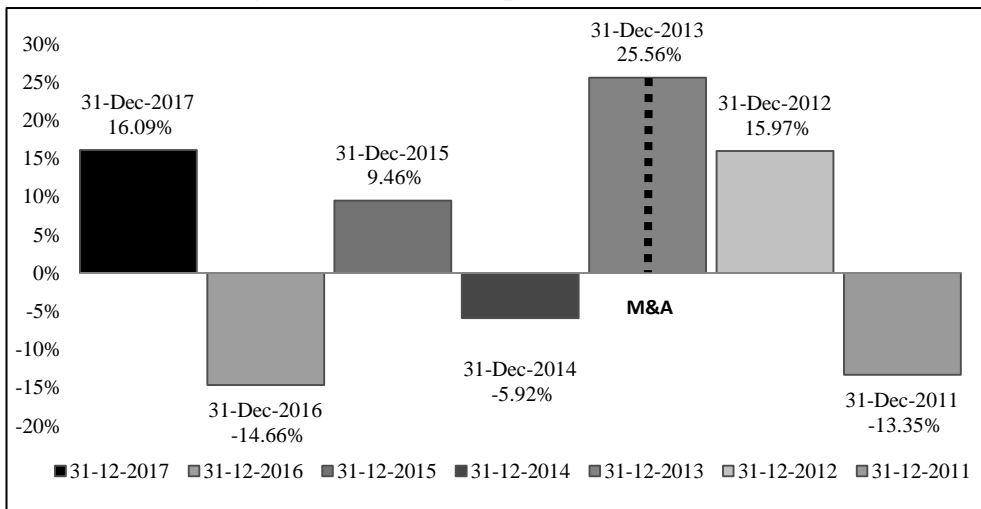
<b>Data sample</b>	
Number of CEE countries	8 (Czechia, Hungary, Poland, Estonia, Slovakia, Latvia, Romania, Lithuania)
Total number of M&As (sample)	4.000
Total number of completed M&As	3.198
Removed M&As	802
Number of M&As with available financials	1.625
Net number of M&As with EPS analysed	12

Source: Authors's computation.

The parameters selected in the Thompson Reuters Eikon terminal included the following variables: deal number, announcement date, deal size (M USD), reported deal value (M USD), deal status, target name, target nation, acquirer name, acquirer nation, form of the transaction, target industry, acquirer industry, rank date, industry sector for acquirer, industry sector for target, target business description, acquirer business description, target region, acquirer region, target public status, acquirer public status, synopsis, target financial advisor, acquirer financial advisor, deal purpose deal, attitude, price per share, prior announcement, ultimate parent target, EBITDA, multiple, sales multiple net income, date effective, and % acquired. After the first larger selection of M&A, a smaller second group was created taking in consideration several constrains such as: year of announcement 2013, deal size above 2M USD, only deals with status completed, all target industries except banking, insurance, brokers, and other financial institutions, sub-region of central and eastern Europe, friendly deal attitude, and a percentage of acquisition larger than 51%. After sorting the initial file including 4.000 companies in CEE, a final list of 11 companies was concluded taking in consideration their relevance to support the research about the central questions of this paper: are the M&As in CEE region creating value? Out of 12 M&T reported in Table 1, one was not further considered since it was an outlier, which leads to this final list of 11 companies.

The findings of the paper were achieved after a comprehensive analysis of these firms in terms of basic earnings per share and stock price between the years of 2000 and 2017. The strategy that the authors have chosen to assess the CEE market trend related to the value creation of M&As was the following: the year 2013 was selected as the year when the M&As was completed, and period spanning three years before (2010), and 3 years after (2013) to value the flow of stock prices and earnings per share. Regarding the former, the stock price history was collected with yearly intervals, currency exchanged to euros, closing quote, net % change, and volume traded.

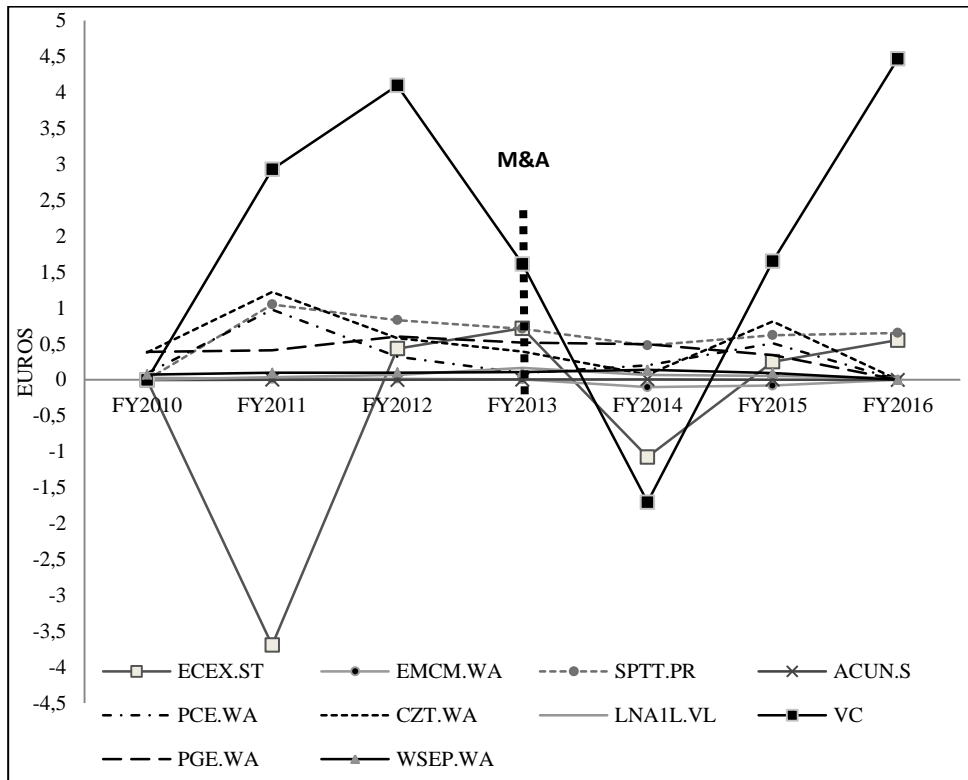
**Fig. 1 C.E.E. M&A stock value % Change from 2011 to 2017**  
**Stock closing value selected companies**



Source: Eikon + authors's computation.

The Figure 1 shows that in general the stock prices among the selected companies from CEE region have a cyclical development strongly correlated with the dynamic of mergers and acquisitions. It shows abnormal positive returns in percentage changes in stock prices in the year of 2013, which was precisely the year when the company was acquired. This raise of stock prices suggests a high optimism at the side of the investors supported by the M&A acquisition momentum. In general, these trends and stock price reactions are strong evidences of the prospective value gains in synergy and control.



**Fig. 2 Basic normalized earning per share (EPS) - CEE companies**

Source: Eikon + Bureau Van Dijk + authors's computation.

This Figure 2, despite few outliers shows very little variation in EPS before and after the M&A happened in 2013. One of the possible reasons for this evidence can be related to the downside of the EPS metric being accretive. Usually, when an acquisition happens, one part is growing faster than the counterpart, therefore the two companies that were combined will counterbalance the impact of the two paces resulting in a no value creation.

## 5 Case Study

Avast and AVG history can be traced back to the Czechoslovakia period in the late 80's. Both of them have become leading players in the competitive antivirus software security market. The acquisition of AVG by Avast for 1.3 billion USD was concluded in 2016 and both will run as a single entity. Both of the combined companies are expected to reach 700M USD of revenue in 2016, from their now 400M users, becoming the largest security software company in the world. The announcement of this acquisition was justified with the prospective gains in

synergy and control, from the scale savings, reach, technological improvements, and geographical coverage (Baldwin, 1990). The authors conducted a valuation of synergy and control of this acquisition using the following framework:

**Tab. 2 Results of valuation of synergy and control after Avast acquiring AVG**

Value of Synergy		Value of Control	
Value of independent firms	\$1,355,775.53	Value of status quo	\$792,800.76
Value of combined firm	\$1,525,248.88	Value of optimal	\$993,124.01
Value of synergy	\$169,473.35	Value of control	\$200,323.25

M&A	AVAST Acquiring firm	AVG Target Firm	Total M&A After merger	Terminal year
Beta	1.20	1.18	1.19143	1.191439918
Pre-tax cost of debt	4.37%	4.37%	4.37%	
Tax rate	31.35%	31.35%	31.35%	
Debt to Capital Ratio	6.97%	6.97%	6.97%	
Revenues	\$230,000.00	\$396,000.00	\$626,000.00	
Operating Income (EBIT)	\$92,000.00	\$68,000.00	\$180,000.00	
Pre-tax return on capital	15.00%	15.00%	15.00%	
Reinvestment Rate	50.00%	50.00%	50.00%	
Length of growth period	5	5	5	

Source: Authors's computation.

## 6 Conclusion

In this paper, the authors investigated whether there was an alternative framework to earnings per share which could be used to assess the value creation of M&A. The findings strongly support the hypothesis that synergy and control do create value in M&A. However, the most frequently used metric to evaluate its performance, the EPS, shall not be used without a more comprehensive due diligence analysis.

Mergers and acquisitions are seldom justified by a prospective increase of value after the transaction coming from expected synergy and control. In this paper the authors considered several sources of synergies and clustered them into the categories of financial and operating synergies. The main topic that was examined focused on the valuation mechanics of synergies and the respective assessment of its sensitivity in different dimensions. The latter part of the research reviewed the

attribution of value across the firms included in the M&A process and the respective value after the investment process is concluded.

A fundamental reason to incur in M&A transaction is the prospective gain of synergy and control that may be achieved. In this sense the authors concluded that by combining the two entities, the value created can be measured more accurately by an extensive due diligence rather than solely by the EPS accretive or EPS dilutive extensively used metrics (Andrade, 2001).

Taking in consideration the evidences found in this paper, the authors recommend several improvements on the valuation framework analysis for a better valuation in M&As worldwide.

### **Recommendations as an alternative to EPS and stock market capitalization to value M&As:**

Our recommendation for valuating M&A is essentially a framework where several qualitative variables are assessed based on the fundamentals of business value creation:

- Strategic analysis: market, economic trends, business portfolio, board administration.
- Due diligence
  - Activities: risks, business plan, opportunities, industry structure, distribution channels.
  - Operational: integration capabilities, synergies assessment, operational improvements, cost drivers.
  - Financial: funding structure of the M&A, assessments of financial statements.
  - Legal: competition authority framework, transaction implications, execution mechanics and closing, identify liabilities and risks.

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## References

- Andrade, G., Mark, M., Stafford, E., 2001. New Evidence and Perspectives on Mergers, *Journal of Economic Perspectives* 2, 103-120. DOI: 10.1257/jep.15.2.103.
- Baldwin, P., 1990. Mergers Placed in the Context of Firm Turnover, in Bureau of the Census, 1990. Annual Research Conference Proceedings, Washington, DC: US Department of Commerce, 53-73.
- Bhide, A., 1989. The Causes and Consequences of Hostile Takeovers, *Journal of Applied Corporate Finance* 2, 36-59. DOI: 10.1111/j.1745-6622.1989.tb00178.x.
- Bradley, M., Desai, A., Kim, E. H., 1983. The Rationale behind Interfirm Tender Offers, *Journal of Financial Economics* 1-4, 183-206. DOI: 10.1016/0304-405x(83)90010-7.
- Bradley, M., Desai, A., Kim, E. H., 1988. Synergistic Gains from Corporate Acquisitions and their Division between the Stockholders of Target and Acquiring Firms, *Journal of Financial Economics* 1, 3-40. DOI: 10.1016/0304-405x(88)90030-x.
- Cartwright, S., Cooper, C. L., 1992: *Mergers and Acquisitions: The Human Factor*, Oxford.
- DeAngelo, H., Rice, E. M., 1983. Antitakeover Charter Amendments and Stockholder Wealth, *Journal of Financial Economics* 1-4, 329-360. DOI: 10.1016/0304-405x(83)90016-8.
- Farrell, J., Shapiro, C., 2001. Scale Economies and Synergies in Horizontal Merger Analysis, *Antitrust Law Journal*, 685-711.
- Healy, P. M., Palepu, K. G., Ruback, R. S., 1992. Does Corporate Performance improve after Mergers? *Journal of Financial Economics* 2, 135-175. DOI: 10.1016/0304-405x(92)90002-f.
- Hong, J., Kaplan, S. N., Mandelker, G., 1978. Pooling Vs. Purchase: The Effects Of Accounting For Mergers On Stock Prices, *The Accounting Review* 1, 31-47.
- Jensen, M. C., Ruback, R. S., 1983. The Market for Corporate Control, *Journal of Financial Economics* 1-4, 5-50. DOI: 10.1016/0304-405x(83)90004-1.
- Kaplan, S. N., Weisbach, M. S., 1992. The Success of Acquisitions: The Evidence from Divestitures, *Journal of Finance* 1, 107-138. DOI: 10.2307/2329092.
- Linn, S. C., McConnell, J. J., 1983. An Empirical Investigation of the Impact of Anti-Takeover Amendments on Common Stock Prices, *Journal of Financial Economics* 1-4, 361-399. DOI: 10.1016/0304-405x(83)90017-x.
- Meeks, G., 1977. *Disappointing Marriage: A Study of the Gains from Merger*, Cambridge.

Tichy, G., 2001. What Do We Know About Success and Failure of Mergers? Journal of Industry, Competition and Trade 4, 347-394.

