International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Employment Growth and Capital Profitability in Mergers and Acquisitions: An Empirical Study

Dimitris Kalimeris, PhD

Abstract: ***This study examines the influence of employment growth on capital profitability in the context of 154 mergers and acquisitions (M&As) conducted globally between 1990 and 1997. Drawing from neoclassical growth theory and applying an Ordinary Least Squares (OLS) regression model, the research finds that capital profitability prior to acquisition and post-acquisition employment growth contribute positively to post-acquisition capital returns. Conversely, growth in sectoral employment before acquisition appears to negatively influence profitability. By incorporating dummy variables for majority ownership and vertical integration, the analysis reveals nuanced patterns with limited statistical significance. These findings highlight the multifaceted nature of value creation in M&A scenarios and underscore the importance of human capital considerations during corporate restructuring.***

Keywords: capital return, mergers, acquisitions, value creation, trend analysis, European law about acquisitions

1. Introduction

The return of capital of the newly emerged company in a merger/acquisition is an indication of its evolvement after the acquisition process. The most important factors that influence capital return have been already analysed, factors like the difference between the kind of information that managers and the market have (insider/outsider information), the expectations of the acquirers and of the market as a whole, which is reflected on the stock's price, the eventual over-evaluation of the acquiring company by the acquirer-company's managers (known as 'the hubris phenomenon') and the ways of financing an acquisition, that is, by cash, by stocks, or by a combination of both means. The purpose of this study is to show the effect that employment growth has on capital profitability in the case of M&A, taking into account the majority ownership (more than 50.1%) and the case of vertical acquisition.

The theory of economic growth and capital yield suggests that there are 4 determinants of growth and profitability, namely i) growth in labour force, when population grows or participation rates rise, ii) investment in human capital, such as formal education and on-the-job experience, iii) investment in physical capital, such as factories, machines, etc, and iv) technological change, brought about by innovation that introduces new products. Growth in labour implies that as more labour is used, more output is produced, and therefore, more profitable the capital is. This neoclassical growth theory is depicted by the aggregate production function, which shows decreasing returns when either factor is increased on its own, and constant returns when all factors are increased in the same proportion.

M&A continue to emerge strong globally, according to Dealogic's data, a company that thoroughly studies companies' concentrations in any form (be it merger, acquisition, joint venture, conglomerate merger, and so on)[1]. It is a common fact that the global economy is experiencing a wave of corporate consolidations, which do not strict themselves in just one sector, but are scattered throughout the whole economic system. According to Citigroup's forecasts, this trend does not mean to end soon. Along with that, new synergies and greater effectiveness are achieved along with expansion of their clients' lists. This is main target of deals in the banking sector. In some cases, of course, a M/A's target is none other than investing excessive cash liquidity on a company with high returns. Such strategic moves can be witnessed during the 1990's, in the age of inconsiderate reinforcing of markets and expansionary tactics of businesses. Most, if not all, concentration deals that are announced during the last months are of strategic importance and takes place between companies that are aware of the shortage of their inward capabilities and of the saturated markets they are into. That is why the market's reactions are generally positive, which explains why both the acquiring and acquired companies often benefit from the acquisition process.

This research is organised as follows: In the first section (Introduction) I refer to the theory of economic growth and capital yield, and to some issues of the global economic condition as far as competition is concerned. The second section introduces the literature focusing on M&As and abnormal returns on stock prices. The third part refers to the data and analyses the data used to reach the results of the study. The fourth section deals with the presentation of the empirical findings and comments on them. The fifth section discusses the conclusions drawn from the empirical findings. Finally, at the Appendix presents an explaining table for the data used and a forecast table.

2. Literature Review

The majority of studies focuses on abnormal returns of stock prices, on the way of financing an acquisition (cash, stocks, or a combination of both), and on the motives for

[1] Their total value surpassed $1,1 trillion within the year 2005. This rising trend has commenced about a year and a half ago (in the year 2005). M&A's total value during the year 2005 has risen by $871 billion comparing with 2004. Some worth-mentioned examples, Guidant, a big company dealing with medical equipment, accepted a bid offer from Boston Scientific, a bid worth of $27 billion; Mittal Steel's bid over $18billion for acquiring Arcelor is still being discussed. In most cases, a company's motive to carry on an acquisition is the search for further development, and the company's optimism about the economy in which it is willing to invest.

Paper ID: SR25926175828 DOI: https://dx.doi.org/10.21275/SR25926175828

acquisitions/takeovers. There are not many, if any, studies that focus on the relationship between the returns of capital and the level of employment before and after a M/A. In other words, if a change in the working sector, that is, a numerical rise or fall of employees, can affect the return of capital in a M/A. Our representative sample consists of 154 acquisitions that took place in the period 1990-1997 in several countries. The majority of the acquirer companies are from the USA, Germany, France and England, while the majority of acquisitions belong to the banking sector, the insurance sector and to the chemical industry[2].

It is generally accepted that the new period of company concentrations will last long enough, first because there is much liquidity in the market, and second current market conditions are suitable for trading liquidity. Low levels of interest rates provide an incentive to draw capital from the bonds market in order to finance these concentrations[3]. M&A function as a trading mechanism between poorly performing companies' managements. Should a company's managers do not deliver the goods, the company's stock price will fall and it will become an acquisition target. It is a generally accepted rule that a company's stock price reflects a great deal of information about its quality, its managing process, its technological and productive level. Many studies show that an acquiring company's shareholders face negative returns in the long-run, while the acquired company's shareholders enjoy a general rise in their returns (Gershon Mandelker, 1974).

Companies on the bring of bankruptcy are considered strategic financial targets by others. It is of great importance for the ambitious acquirer company to 'save' the target from failure and to analyse its dynamic capabilities in order for the latter to enter a normal operation mode. The company that announces its interest on another, sets the rules of the final buyout since there are no choices for second-comers to claim the 'prey'. Apart from that, though, financial analysis for future outcomes is essential. The acquirer must have realistic goals and competitive, professional, market analysts by its side (Theodore L. Koenig, 1993).

For the year 1993 the most popular target-destinations for M&A were the U.S.A., France, England, Hong Kong, and Italy, while the most important acquirer countries were the U.S.A., England, Germany, Canada, and France. Apart from that, differences in culture and the way of managing can lead to alternative ways of co integrating, for example, to joint venturing. Several studies emphasize on the importance of the location criteria, meaning the financial, political and social characteristics of a country, which can affect an inward investment in the form of M/A.

Milford B.Green & Stephen P.Meyer (1997), using Poisson regression, focus on three hypotheses, namely i) In which countries there are sufficient evidence of investment trough M&A, ii) Identification of the countries' motives for investment, and iii) If there is a different explanation of international M&A when we have high-technology companies' concentration rather than low-technology ones[4].

The most important outcomes were: i) Most of the developed countries are likely to become both buyers and targets of acquisitions, except the U.S.A. and Japan, which are 3 times more likely to be buyers' countries, ii) Acquisitions between companies of low-technology are 3 times greater than acquisitions between high-technology companies, and iii) Characteristics of both the acquirer and the target company are important for understanding the international acquisition process.

Some studies prove the way of value creation in M&A and how it changes, and the effect of meta-acquisition change or rejection of companies' financial assets on the long-run evolution of horizontal M&A. The proof of this phenomenon is based on the cost return of M&A and other economic theories. The final conclusion is that, if, during a merger or an acquisition, the rejected assets (be it machinery or human force) and the restructuring of financial resources belongs to the acquired company, then there is the risk of negative performance (Laurence Capron, 1999).

Anju Seth, Kean P. Song & R. Richardson Pettit study (2000) shows the results of research on advantages and disadvantages' sources in international M&A, based on three criteria: a) q synergy pursuit, b) way of managing, and c) acquiring company's misevaluation from managers. International M&A differ from domestic ones in the way of retrieving value and synergy. Furthermore, companies' profits are examined along with synergies' sources. The statistical sample is taken from all international M&A that took place in the U.S. industrial sector between 1981-1990.

The European market is protected by legislation that rejects any kind of cooperation between companies which can prove a hazard for mutual competition. The new legislative regulations have to do with the unification of the European market. M&A's control on a European level was agreed at the end of 1989 and published on the 21/12/1989 with the European Communities Merger Regulation. It was applied right away the following year. Besides referring to M&A within the European Union, it also refers to companies outside the E.U. but which sell products and/or services in the E.U. In the 2nd article of the legislation it is clearly mentioned that every company concentration which creates or strengthens a dominant state in the market and, therefore, confines competition, shall be declared incompatible to the common European market. This is the widely-known 'Dominance Test'. The equivalent legislation in the U.S.A.

---

[2] Any company concentration, whether it is a merger or an acquisition, has to be controlled by the European Committee, which has legislated some basic criteria that must be fulfilled by the involving companies. These criteria (are mentioned lower down), exist to separate companies' concentrations in those that have a communal dimension and that have a national or in-border dimension.

[3] The only way for this trend to be prevented is to have a significant fall levels of liquidity or by increasing money supply. Other than that, though, none of the 2 mentioned problems are expected, in the near future at least.

[4] From a sum of 1.828 acquisitions during the year 1993, 54,7% of it is shared among the U.S.A., England, France and Germany, while just 28,3% of the total number of acquisitions is between high-technology companies. Milford B.Green & Stephen P.Meyer (1997) preferred the Poisson regression analysis because the dependent variables of the sample were normally distributed.

permits any merger or acquisition which can cause a threat to competition or creates a monopoly. The European legislation's goal is to achieve a steady and easy unification and co-integration of the various communal member markets, something that has not been achieved yet since the introduction of the Eurocurrency.

According to E.U. regulation which has immediate implication to all the member-states, a concentration of companies is of a communal dimension if i) The sum of total sales globally concerning the new company exceeds €500 millions, and ii) The sum of the total sales within the European community for every individual part of the acquisition is more than €250 millions[5]. This paper consists of 3 sections. The 1st section introduces the topic and summarises the most important articles about M&A in chronological order; the 2nd section contains data analysis, methodology and its results; the 3rd section contains the empirical findings and section 4 discusses the final conclusions.

3. Data and Methodology

3.1 Data

Our model consists of calculated indexes of 5 variables which refer to 154 cases of acquisitions of different percentages, which were examined in the period of 1990-1997. The values are continuous in time. The main source of which is the database of D.O.M.E[6]. The way of calculating capital profitability (earnings before tax and dividends / capital employed), is the same for all companies except those in the financial sector. In this particular sector, the companies' own assets and reserves have been used instead of own assets only, since these companies rarely announce their working capital. In order to avoid double estimation, capital profitability is weighted to the average of the sector's working level. In calculating the growth of employment, due to several problems of the working condition in many countries of the E.U., mergers and acquisitions are valued according to their impact on the employment level. So, the number of working employees before and after the acquisition is in absolute values adjusted to the mean of each corresponding sector of employment. In addition, I input two dummy variables, one concerning the majority of ownership of the acquired company and the other whether it is a vertical acquisition or not, in order to examine the extent to which capital profitability is affected by these two conditions, and if their affect is statistically significant. Interestingly enough, in combination with the rest of the X variables, the dummy variables technique yields slightly different results.

3.2 Methodology

The method of linear regression with OLS parameters is used.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_t \quad (1)$$

where α is the constant coefficient, Y is capital profitability after the acquisition, X_1 is capital profitability before the acquisition, X_2 is the change in employment growth after the acquisition, X_3 is the change in the sector's employment growth before the acquisition and X_4 is the change in the sector's employment growth before the acquisition.

After calculation of the above equation (1), I input two dummy variables, namely

D_1 = 1 if acquisition is more than 50.1%
0 if otherwise

D_2 = 1 if vertical acquisition
0 if otherwise

holding the rest of the variables the same, in order to test the impact of the level of acquisition (i.e. more than 50,1%) and the presence or absence of a vertical acquisition.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 D_1 + \beta_6 D_2 + e_t \quad (2)$$

By performing a trend analysis (without the dummy variables), we can safely predict the next 15 values of the Y time-series along with equation connecting Y and time t. The equation to apply is:

$Y_t = \beta_1 + \beta_2 t + u_t$ (Fitted Trend Equation) (3)

Where: $\beta_1 = \Delta Y_t - u_t$

In this way we can see if Y has a positive or negative trend.

4. Empirical findings

The linear regression (without the dummy variables) gives us the following:

Table 4.1 Table of results without dummy variables

Ordinary Least Squares Estimation				
Dependent variable is Y 154 observations used for estimation from 1 to 154				
regressor	coefficient	standard error	t ratio	p value
α	- 0.6838	0.8981	- 0.76	0.448
Capital profitability before the acquisition	0.80702	0.091321	8.8372	0.000
Change in employment growth after the acquisition	0.023868	0.029175	0.81811	0.415
Change in the sector's employment growth before the acquisition	-0.097706	0.058813	-1.6613	0.099
Change in the sector's employment growth before the acquisition	-0.041552	0.043452	-0.95627	0.340

$\bar{R}^2$ 0.33184 R2 0.34494 DW-statistic 1.9337
Standard deviation of Y 11.5053

[5] Since 21/9/1990 when the legislation was applied, until June of 2001, the European Committee recorded 1.782 acquisition announcements. These involve cases of joint ventures, or major/minor stock buyouts.

[6] The D.O.M.E. database consists of 1.123 cases of mergers and acquisitions that have examined by the European Committee in the period 1990-1999. Information that can be found in the D.O.M.E. database are: i) the date of the acquisition announcement, ii) the names of the companies and their countries, iii) the companies' sectors, iv) the value of the transaction/buyout Apart from that, it contains a detailed presentation of the acquisition's percentage, the capital return before and after the acquisition, just as imminent change in the working sector of the companies.

According to p value results, as long as p-value > 0.05% or p-value > 0.01%, we can, with 95% and 99% confidence correspondingly, accept the fact that the estimated β is the β parameter of the population. Looking at table 3.1 we can accept that fact for every X_i, with the exception of X_1. The rest of the results have values within the desired limits. There is no sign of serial autocorrelation, according to the DW statistic results (1.9337). Finally, 33% of the results of the dependent variable Y can be interpreted by the Xs' values, according to $\overline{R^2}$.[7]

Inputting the two dummy variables previously mentioned, we look at how majority ownership and the fact of having a vertical acquisition can affect capital profitability. Results are somewhat different:

Table 4.2 Table of results with dummy variables

Ordinary Least Squares Estimation			
Dependent variable is Y 154 observations used for estimation from 1 to 154			
regressor	coefficient	t ratio	p value
α	0.21	0.13	0.899
Capital profitability before the acquisition	0.813	8.77	0.00
Change in employment growth after the acquisition	0.0229	0.77	0.442
Change in the sector's employment growth before the acquisition	0.0857	-1.39	0.166
Change in the sector's employment growth before the acquisition	-0.026	-0.055	0.585
D_1	0.088	0.11	0.916
D_2	-1.32	-0.76	0.449

DW stat 1.94

There is no serial autocorrelation (the DW statistic remains the same), and the negative signs of X_3 and X_4 still remain, while coefficient α becomes positive. We accept all the coefficient values, except that of X_1, because of its 0 p value and its high t ratio. The only coefficients that are statistically significant are that of constant α and D_2.

Our fitted trend equation gives us rather optimistic results. Y's trend is, apart from stationary[8], positive as well (Table 3.3 in appendix).

$Y_t = -2.18321 + 0.0296*t$

where Y_t is the Y's trend, -2.18321 is β_1 and 0.0296*t is $\beta_2 t$. The value of β_1 implies a negative start, while $\beta_2 t$'s value shows a rather small but gradual increase in time.

5. Conclusions

As we see from the regression's results, capital profitability before acquisition and change in employment growth *after* the acquisition have a positive affect on capital profitability *after* the acquisition. In detail, a change of 1 unit in each of the two mentioned variables will cause a like wise positive change of 0.807 and 0.0239 correspondingly on capital profitability.

On the contrary, sector employment growth *before* the acquisition and the company's employment growth *after* the acquisition have a negative effect on capital profitability *after* the acquisition. An increase of 1 unit in the level of employment of the company's sector (i.e. banking sector) *before* the acquisition will bring a reduction of 0.0977 in capital profitability after the acquisition, and likewise, an increase of 1 unit in the sector's employment growth *after* the acquisition will bring a decrease of 0.0415 in capital profitability after the acquisition. Even if the X variables' influence seem to be small, in combination with other variables can be rather important, something that can be further studied.

The acquisition of the majority of stocks in an acquisition has a positive effect on the company's capital profitability *after* the takeover, while in the case of a vertical acquisition, there are marginal negative effects on the outcome. A vertical acquisition (D_2) seems to negatively affect the investment's outcome.

The value of coefficient α means that the capital profitability has a negative start. This result could dangerously be generalised and dismiss, ceteris paribus, all acquisitions in negative results, something that does not hold. Capital returns of a company are affected, besides employment growth, by other variables, such as the level of foreign capital employed, the level of borrowing, the kind of market expectations for the new acquisition, and the economic and political climate of the host country. All of these are the major participants in influencing, positively or negatively, a buyout of a firm. In addition to that, future values of Y tend to have a positive trend at least for the next 15 periods of time.

Generally speaking, employment growth plays a crucial part in affecting capital yield in an acquisition process. Human labour force issues are number one priority for most of the companies' managers who wish to overcome negative impact on the firm. It is widely observed that after an acquisition, despite its money value in terms of exchange, many changes take place in the employment sector, either the two companies exchange human labour force with each other (know-how transfer) or there is a decrease in numbers of employees in order to counterweight the loss of financial assets paid for the deal of the acquisition.

References

[1] Gershon Mandelker, 'Risk and Return: the case of merging firms', *Journal of Financial Economics*, 1974
[2] Thomas R. Piper, Steven J. Weiss, 'The Profitability of Multibank Holding Company Acquisitions', *The Journal of Finance*, 1974
[3] Renato Mazzolini, 'Creating Europe's Multinationals: The International Merger Route', *The Journal of Business*, 1975
[4] Michael Lubatkin, 'Mergers and the performance of the acquiring firm', *The Academy of Management Review*, 1983

[7] R^2 tends to give an over-optimistic value of the variables' goodness of fit, that is why it is not used here, unlike $\overline{R^2}$.
[8] Since $\beta_1 \neq 0$ και $\beta_2 \neq 0$

[5] 8 Anup Agrawal, Jeffrey F.Jaffe & Gershon N.Mandelker, 'The post-merger performance of acquiring firms: a re-examination of an anomaly', *The Journal of Finance*, 1992
[6] Theodore L. Koenig, 'Avenues to value in the purchase of troubled companies', *Mergers and Acquisitions*, 1993
[7] Elazar Berkovitch & M.P. Narayanan, 'Motives for takeovers: an empirical investigation', *The Journal of Financial and Quantitative Analysis*, 1993
[8] Holmes Garrick, 'The downward turn of M&A in Europe', *Mergers and Acquisitions*, 1994
[9] Javier Bilbao Garcia & Isabel Martinez Torre-Enciso, 'Mergers and Acquisitions in the European Union Frame', 1995
[10] Zannoni, Diane C, McKenna, Edward J 'Employment, Growth and Finance: Economic Reality and Economic Growth', *Eastern Economic Journal*, 1996
[11] Milford B.Green & Stephen P.Meyer, 'International Acquisitions: Host and Home Country explanatory characteristics', *Geografiska Annaler, Series B., Human Geography*, 1997
[12] inder J. John, 'The event study methodology since 1969', *Review of Quantitative Finance and Accounting*, 1998
[13] Eswar Prasad, Alun Thomas 'A disaggregated analysis of employment growth fluctuations in Canada', *Atlantic Economic Journal*, Edwardsville 1998
[14] Laurence Capron, 'The long-term performance of horizontal acquisitions', 1999
[15] Anju Seth, Kean P.Song & R.Richardson Pettit, 'Value creation and destruction in cross-border acquisitions: an empirical analysis of foreign acquisitions of U.S. firms', *Strategic Management Journal* 2000
[16] Moon H. Song, Ralph A. Walkling, 'Abnormal returns to rivals of acquisition targets: A test of the 'acquisition probability hypothesis'', *Journal of Financial Economics*, 2000
[17] Berger, Robert DeYoung & Gregory F. Udell, 'Efficiency barriers to the consolidation of the European financial services industry', *European Financial Management*, 2001
[18] Hose Manuel Campa & Ignacio Hernando, 'Value creation in European M&As', *Centro Internacional de Investigacion Financiera*, 2002
[19] Frits D.J. Grotenhuis & Mathieu P. Weggeman, 'Knowledge management in international mergers', *Knowledge and Process Management*, 2002
[20] Kathleen Park, 'The metamorphosis motive for major U.S. mergers, 1993-2000', *M.I.T.,* 2003
[21] Carlos Ghosn, 'The Leadership challenge of mergers and acquisitions', *INSEAD Quarterly*, 2004
[22] Matts M Rosenberg 'Firm Risk, Investment, And Employment Growth', *Journal of Economics and Finance*, Murfreesboro: Summer 2004
[23] Paul Plummer, Michael Taylor 'Entrepreneurship and human capital: distilling models of local economic growth to inform policy' *Journal of Small Business and Enterprise Development*, 2004
[24] Felix Hammermann & Jorn Kleinert, D.O.M.E.-Database On Mergers in Europe

Appendix

Descriptive Statistics

Variable	Mean	Median	True Mean	Standard Deviation	SE Mean
Y	0.11	-0.41	0.39	11.51	0.93
X_1	1.51	0.24	0.87	8.32	0.67
X_2	7.36	4.15	4.9	27.33	2.2
X_3	4.33	3.4	4.03	12.57	1.01
X_4	8.95	6.38	7.69	17.15	1.38

Table 3.3: Trend Analysis Results

Row	Period	Prediction
1	155	2.40347
2	156	2.43306
3	157	2.46265
4	158	2.49224
5	159	2.52183
6	160	2.55143
7	161	2.58102
8	162	2.61061
9	163	2.6402
10	164	2.66979
11	165	2.69938
12	166	2.72897
13	167	2.75857
14	168	2.81775
15	169	2.78816