

November 2012

## Creation or Destruction of Value in Mergers? An Empirical Analysis on the Italian Stock Market

Fabrizio Rossi

*University of Cassino and Southern Lazio, f.rossi@unicas.it*

Follow this and additional works at: <https://knowledgecenter.ubt-uni.net/ijbte>



Part of the [Business Commons](#)

---

### Recommended Citation

Rossi, Fabrizio (2012) "Creation or Destruction of Value in Mergers? An Empirical Analysis on the Italian Stock Market," *International Journal of Business and Technology*: Vol. 1 : Iss. 1 , Article 4.

DOI: 10.33107/ijbte.2012.1.1.04

Available at: <https://knowledgecenter.ubt-uni.net/ijbte/vol1/iss1/4>

This Article is brought to you for free and open access by the Publication and Journals at UBT Knowledge Center. It has been accepted for inclusion in International Journal of Business and Technology by an authorized editor of UBT Knowledge Center. For more information, please contact [knowledge.center@ubt-uni.net](mailto:knowledge.center@ubt-uni.net).

# Creation or Destruction of Value in Mergers? An Empirical Analysis on the Italian Stock Market

Fabrizio Rossi<sup>1</sup>

Department of Electrical and Information Engineering,  
University of Cassino and Southern Lazio, Italy.

**Abstract.** The objective of this paper is to investigate whether mergers create value for shareholders in both the short and long term. For this purpose, 120 announcements of mergers that were registered in Italy during the period 1994-2006 among listed companies were examined. The short-term analysis was conducted using the event study methodology in order to estimate the cumulative abnormal returns (CARs) in the time window around the announcement date (-10, +10). In this work, the sample of 120 mergers was divided into two sub-samples: the first considers the mergers that were carried out in all sectors of the economy, and the second focuses only on bank mergers. From the results obtained it would appear that, while the sub-sample of all mergers registered a statistically significant value creation for the shareholders of both the bidder and target companies, values also confirmed by combined analysis, the second sub-sample registered negative values for bidder companies and positive values for target companies. Negative values also seem to be confirmed by the results of the combined analysis both at the date of announcement and throughout the entire period of observation. For the long-term analysis the Buy and Hold Abnormal Returns methodology (BHARs) was used, with which it was possible to observe the returns for three years. In the 36 months following the merger, the portfolio showed a significant destruction of value.

**Keywords:** Post-Merger Performance; Buy and Hold Abnormal Returns; Cumulative Abnormal Returns; Banks; Italian Stock Market.

## 1. Introduction

In Italy the market for Mergers and Acquisitions (M&As) has shown an upward trend during the nineties, continuing more slowly during the last decade. In particular, there has been significant trend during the time period 1994-2000 and another more restrained trend in the period 2001-2006. In the period under studies, a "liveliness" was detected in the banking sector in the midst of reorganization process which began in the early nineties.

From 1994 to 2006, the value of M&A shares varied from 20,000 million to 140 billion Euros in 1999. From 2000 to 2006 it rose from 129 billion to 100 billion Euros (KPMG, Annual report). The average value of transactions stood between 30 and 260 million Euros in the period examined. The market value of the targets amounted to 208,068 million Euros and that of the bidders around 467,484 million Euros. The relative size assumed values of 44.51% (Table 1).

The market value of the bank targets stood at over 53,000 million Euros and that of the bidder's at 251,714 million Euros, for a relative size equal to 21.26%.

**Table 1:** Number of Mergers announcements, Market Value of Bidder and Target, Total Market Value and Relative size of sample for the period 1994-2006. The data are in millions of Euros.

Period	Announcements	MV <sub>B</sub>	MV <sub>T</sub>	Relative Size	MV <sub>B+T</sub> /MV
1994	4	2,993	981	32.76%	2.55%
1995	10	4,847	2,187	45.12%	4.10%
1996	10	15,165	12,300	81.11%	13.55%
1997	6	5,539	4,703	84.91%	3.25%
1998	13	41,006	10,140	24.73%	10.54%
1999	7	75,069	19,753	26.31%	13.05%
2000	7	18,017	7,011	38.91%	3.06%
2001	10	122,175	30,546	25.00%	25.78%
2002	16	66,966	18,892	28.21%	18.75%
2003	6	2,886	19,523	676.39%	4.60%
2004	2	34,869	37,529	107.63%	12.46%
2005	8	43,577	6,068	13.93%	7.34%
2006	5	34,375	38,437	111.81%	9.48%
1994-2006	104	467,485	208,069	44.51%	10.49%
Descriptive statistics of the sample					
Average	8	35,960	16,005	99.76%	9.89%
Median	7	34,375	12,300	38.91%	9.48%
Min	2	2,886	981	13.93%	2.55%
Max	16	122,175	38,437	676.39%	25.78%

*Note.* Sixteen announcements were subtracted from the 120 initial announcements because of a lack of data. The Market Value of Bidder and Target refer to the last year prior to the merger announcement. MV is the overall Market Value.

On average, the total value of the companies involved in the merger process has affected 9.89% of the total market value. In the period 1994-2006 their weight was equal to 10.49% of the total capitalization of the Italian stock market and the highest value was recorded in 2001 and 2002 with a number of transactions equal to 10 and 16 and an average of 8. The MV average of bidders and targets amounted around 35,960 and 16,005 million Euros, respectively. During the reporting period, average (9.89%) and median (9.48%) took on very similar values.

The objective of this work is to investigate the value created (or destroyed) by the merger transactions in both the short and long term. In particular, starting from 120 merger announcements registered during the period 1994-2006, the equity performance of bidders and targets were investigated in the period around the announcement date of the deal. The total sample was divided into two subsamples (banking and non-banking), which were examined during the 20 days around the announcement date with the event study methodology for the short term and the Buy and Hold Abnormal Returns methodology (BHARs) for the long term. The post-merger performance of 40 bidders was observed in the three years following the merger.

The short-term results indicate a destruction of value for the bidders of the banking sector and statistically significant and positive cumulative abnormal returns for the targets. The non-banking sample, on the contrary, shows significant value creation for shareholders of both bidder and target companies.

The long-term analysis, however, shows a high and statistically significant destruction of value for both samples, and the tendency of the portfolio of non-banking bidders to increase losses compared to the banking portfolio.

## 2. Literature review

M&As are one of the most explored areas of research. The majority of empirical studies examine M&A together, with no differentiation between the two types of transactions. The results found do not allow to come to a clear conclusion<sup>1</sup>. For example Dodd & Ruback (1977), Kummer & Hoffmeister (1978), Bradley<sup>2</sup> (1980), Jarrell and Bradley (1980), Asquith, Bruner, & Mullins (1983), Bradley, Desai, & Kim (1988) and Franks & Harris (1989), found significantly positive values for both bidder and target companies.

Smith & Kim (1994) examined 177 bidders and targets in the period 1980-1986 in the ten days around the announcement date and found negative and significant values for the bidders equal to -0.23%. Walker (2000), on a sample of 278 M&As during the period 1980-1996 in the four days around the announcement date, found negative and significant values (-0.84%) for the acquiring companies. Sudarsanam & Mahate (2003), after examining a sample of 519 buyers in the period 1983-1995, found negative and significant values in both the short and long term. The abnormal return in the following 750 days range from -8.71% to -21.89% and are all statistically significant regardless of the methodology used<sup>2</sup>.

Campa & Hernando (2004) investigated 262 M&As announcements involving EU companies in the period 1998 to 2000 and concluded that the targets, on average, registered positive and statistically significant cumulative abnormal returns of 9%; the CARs of the bidders, in contrast, do not appear significantly different from zero, and, in relation to cross-border M&As, in certain cases assume negative values.

Instead, Martynova & Renneboog (2006), after examining a sample of 3,216 M&As announcements of 25 European countries, during the period 1993-2001, found in most cases positive values for both companies in almost all time frames observed.

Sudarsanam & Mahate (2006), after examining a sample of 519 buyers in the period 1983-1995 and considering multiple methods and multiple contexts (Friendly, Hostile, White Knight and Multiple hostile) confirmed negative values throughout the pre and post acquisition period.

With regard to the short term results on mergers, there are the works of Asquith (1983), Eckbo (1983), Asquith, Bruner, & Mullins (1983), which found abnormal positive values for both bidder and target companies in the month from the date of announcement of the mergers. Dodd (1980) instead examined a sample of 151 merger proposals during the period 1971-1977 and found that at the announcement date the abnormal return for the target was more than 13% while for the bidder it was negative and equal to -1.09%<sup>3</sup>.

Jensen & Ruback (1983) examined the results of several studies and concluded that the target companies recorded values of 20%, while the bidders accomplished zeroing the case of successful mergers. On the contrary, in the case of unsuccessful mergers, both companies registered negative values.

Franks, Harris, & Titman (1991) and Serves (1991) found positive and statistically significant values for the target companies and negative values for the bidders.

Healy, Palepu, & Ruback (1992), during the ten days around the announcement date in the period 1979-1983 on a sample of 50 large U.S. industrial mergers, found positive, high and statistically significant values for the target companies equal to +45.6% and negative but not significant values for the bidders (-2.2%). From the combined analysis they found positive and statistically significant values of +9.1%.

Koehers & Koehers (2000) examined a sample of 1,634 mergers between high-tech companies in the period 1987-1996 and found positive and statistically significant values (+1.37%) for bidder companies between the announcement date and the day following the announcement, regardless of the method of payment of the merger.

Andrade, Mitchell & Stafford (2001), on a sample of 4,256 mergers completed between 1973 and 1998, found positive and significant values for the target companies and negative but not significant values for the bidders. The combined analysis of values shows a significant creation of value equal to 1.8% in the three days around the announcement date. In the long run instead, Mandelker (1974), Langetieg (1978), Asquith (1983), Malatesta (1983), Barnes (1984), Magenheimer & Muller (1988), Agrawal, Jaffe, & Mandelker (1992), Loderer & Martin (

<sup>1</sup> For a thorough review, please refer to Agrawal & Jaffe (2000), Bruner (2003), Tuch & O'Sullivan (2007). <sup>2</sup> Dodd & Ruback (1977), Kummer & Hoffmeister (1978), and Bradley (1980) divide the sample into successful and unsuccessful transactions.

<sup>2</sup> Sudarsanam & Mahate (2003) use four different methods: Market adjusted, mean adjusted, Size-adjusted and Market to Book value adjusted. The observation period varies from -1 +1 +41 to +750 days.

<sup>3</sup> Dodd's study differs from the others for two reasons. On the one hand, because the author establishes the event date as the date of announcement and not of completion of the transaction, and on the other because it is the first work that uses daily returns instead of monthly ones.

## International Journal of Business and Technology

1992), Loughran & Vijh (1997), Rau & Vermaelen (1998), Jaffe & Agrawal (2000) found a significant underperformance in the post-merger period.

Malatesta (1983), for example, after examining 336 mergers during the period 1969-1974, found negative and significant average abnormal returns (-5.4%) for acquiring companies in the six months following the public announcement of the merger, while during the same period the acquired companies experienced positive and significant abnormal returns equal to 7.0%. In the 12 months post-merger, considering the date of approval of the merger, the average abnormal returns were highly negative (-13.7%) and statistically significant.

Franks & Harris (1989), on a sample of more than 1,800 mergers in the UK in the period 1955-1985, found that the acquiring companies registered significant and negative abnormal returns (-12.6) in the two years following the completion of the merger.

Franks, Harris, & Titman (1991) investigated a sample of 399 acquisitions in the U.S. during the period 1975-1984, using different dates of announcement and in the following 36 months found values with different signs depending on the benchmark used. While confirming the presence of negative post-merger performance, the authors attribute this phenomenon to "benchmark errors". Loughran & Vjih (1997) investigated a sample of 788 U.S. mergers during the period 1970-1989 and in the 5 years post-merger found size and book-to-market adjusted BHARs equal to -15.9%.

Gregory (1997) observed a sample of 452 M&As in the UK during the period 1984-1992 using six different benchmarks and pointed out negative and statistically significant and variable CARs between -11.8% and -18%. Rau & Vermaelen (1998), in the period 1980-1991 in the U.S., observed a sample of 3,169 mergers and found negative and statistically significant values equal to -4.04% in the three years following the merger. In the same period for a sub sample of glamour buyers they found negative and significant abnormal returns of -17.26%. The authors concluded by confirming the underperformance in the long run for mergers and small but significant positive abnormal returns for buyers in the tender offers. Mitchell & Stafford (2000) examined a sample of 2,068 acquiring companies during the period 1961-

1993 and through the construction of two different Equal-Weight (EW) and Value-Weight (VW) portfolios found negative and significant abnormal returns in the three years' post-merger varying between -5% and -9% for the EW portfolio and an abnormal but not significant return of -1.4% for the VW portfolio.

Kohers & Kohers (2000) examined a sample of 304 mergers between high-tech firms in the period 1984-1995 and found negative (-37.39%) but not statistically significant values in the five years after the merger.

Black, Carnes, & Jandik (2001) during the period 1985-1995 examined 361 successful U.S. bidders and found BHARs ranging between -13.2% and -22.9% for the following three and five years, respectively.

Ferris & Park (2002) investigated a sample of 56 mergers in the telecommunications sector in the period 1990-1993 and found negative (-19.80%) and statistically significant values in the five years following the merger.

With regard to the banking sector next to the event study methodology, it is common to use the accounting approach and the analysis shifts to the observation of the evolution of fiscal indicators (ROE, ROA, operating income, cost/income ratio, etc.) monitoring them throughout the period before and after the transaction.

For example, Berger, Demsetz, & Strahan (1999) considered the static and dynamic analysis of the effects of M&As. The case of economies of scale and scope of the transactions under consideration are the focus of static research, while the observation of accounting ratios, the search for efficiency and increased profitability achieved through cost reductions and/or revenue growth, are elements that characterize the dynamic analysis.

Vander Vennet (2002) and Focarelli & Panetta (2003) found that the efficiency resulting from risk diversification can be achieved in the short term, while the benefits to be gained through economies of scope and cost reduction calls for a longer period of time to achieve them.

Piloff (1996) examined 48 banks during the period 1982-1991, using both the first and second approach, and didn't find significant changes in performance in the two years following the merger. De Long (2003) investigated 54 bank mergers during the period 1991-1995 and found that the only variable that can explain the differences in long-term performance is the relative volatility of earnings. This shows that banks mergers get small benefits from the diversification strategy.

Gupta & Misra (2007) examined 503 mergers during the period 1981-2004 in the three days around the announcement date and found significant losses for the bidder banks (CARs -1.84%) and significant and positive returns for the target banks (CAR +16.12%). In the long term they examined 214 transactions and in the following 24 months they found positive and significant values (BHAR +4.64%).

More solid evidence to support the benefits of M&As can be found in the work of Haynes & Thompson (1999) who, after examining a sample of 93 British companies in the period 1981-1995, found significant and substantial returns in terms of efficiency in the five years after the event.

## International Journal of Business and Technology

With regard to the event study methodology, the contributions of Neely (1987) are noted, who after observing a sample of 26 transactions in the period 1979-1985 found positive but not statistically significant values for the bidders. Becher (2000) examined 558 bank mergers in the period 1980-1997 and also found positive and significant values for the targets (CAR +22.64%) and insignificantly positive values for the bidders (CAR -0.1%). In the same work, however, after observing the subperiod 1986-1990, he found negative and significant values for the bidders (CAR -2.14%)<sup>4</sup>. The results achieved by Baradwaj, Fraser, & Furtado(1990), Cornett&Teharian(1992), De Long(2001), Houston, James, & Ryngaert(2001) seem more solid; they found high and significantly positive values for the targets and significantly negative values for the bidders. Similarly to the work of Becher (2000), Houston, James, & Ryngaert (2001) also found significantly negative and higher values for the bidders by examining the sub-period 1985-1990.

Conversely, the results that emerge from an examination of the M&As in the European banking sector prove to be more fragmented.

Cybo-Ottone&Murgia(2000), for example, investigated 54 transactions in the period 1988-1997 and found significantly positive values for both bidders (CAR +2.19%) and targets (CAR +15.30%).

Among the studies that examine M&As in Italy it is noted the work of Bigelli&Mengoli(1999) who, after examining the acquisition announcements of 56 listed companies in the period 1989-1996, found values not significantly different from zero (CAR + 0.48%) for the bidders in the thirty days around the announcement.

Rossi (2005) studied 12 events of M&As involving 29 large Italian companies during the period 1999-2003, and overall found results that were in line with other works: a loss of value for the bidders and an increase for the targets in the thirty days around the announcement. Unlike the bidders, however, on the day of the announcement the abnormal returns of the targets were significantly positive. (+2.86%)<sup>5</sup>.

With reference to the Italian banking sector, some works dwell on the operational (or accounting) approach, and others on the event study approach and still others on both.

Resti (1998), for example, found an improvement in the efficiency and productivity of merged banks compared to a similar sample that wasn't involved in M&As during the period 1988-1998.

Resti & Siciliano (1999) restricted the analysis to a sample of acquisitions on 14 Italian banks (9 acquired and 5 buyers) in the period 1992-1997 and observed the behavior of the returns in three time windows, finding positive cumulative abnormal returns for both buyers and acquired companies, and for the latter even negative values in one of the three time windows. The two authors also proceed, through some fiscal indicators, with a check on the possible link between stock market performance and fundamentals and concluded that there is a weak correlation between CARs and fundamentals. Ferretti (2000) examined 75 announcements for bank takeovers in the period 1994-2000, out of these, 35 were Italian banks and 40 were banks in European countries. The author observed the reaction of the market in three time windows, considering the bidders only, and concluded that the negative abnormal returns of Italian banks are more substantial than those of banks in other European countries.

Savona (2002) also examined the bidders only, considering the period 1989-1997, and found close to zero values in two time windows out of three. Considering the period that goes from the date of the announcement, the one in which the Boards of Directors have deliberated, until the fiftieth day after, he found negative CARs and concluded that on average the transactions examined did not create value.

Focarelli, Panetta, & Salleo (2002) found an improvement in ROE due to a more efficient use of capital and the utilization of tax benefits. The acquired company showed an increase in profitability which, according to the authors, is related to the improvement of the quality of the loan portfolio.

Intrigano & Rossi (2012) examined a sample of 72 M&As in the banking sector during the period 1994-2005 and found values in line with literature: the bidders registered negative and statistically significant abnormal returns and the targets positive and highly significant values. The results of the combined analysis point to a statistically significant value destruction.

---

<sup>4</sup> Becher (2008) examined 619 operations which were carried out between 1993 and 1994 and found confirmation in the previous results. During this period, the banking sector, however, subject to the Reformation, showed insignificantly negative values for the bidders (-0.61%).

<sup>5</sup> The sample examined was initially composed of 29 transactions involving multiple industrial sectors which involved bidders and targets. Only for 7 operations was it possible to examine the targets, because in the other cases they were not listed or there wasn't any data, this latter case being frequent in mergers where the merged company disappears from the list. Therefore, it is clear that the reduced sample size and the inability to examine all targets does not allow to formulate a completed opinion, but simply allows to express a broad opinion.

### 3. Data and methodology

The sample examined was made up of 120 mergers transactions carried out during the period 1994-2006. Its construction required the fulfilment of at least four requirements:

- knowledge of the announcement date of the merger<sup>6</sup> and its retrieval through the database of *Il Sole24 Ore*, an Italian financial newspaper;
- the presence of listed ordinary shares both for the bidder and target companies;
- the continuous time series of prices of the ordinary shares which was acquired by DataStream;
- The presence of significant number of bidders for the whole period 1994-2006<sup>8</sup>.

The data relating to the merger transactions were acquired by the <sup>7</sup>*Commissioned National per le Società e la Borsa* (CONSOB) and from the *Bollettini di Vigilanza* of Bankitalia.

The abnormal returns in the short term were calculated using the market adjusted model (or index model) for the full sample<sup>8</sup> and the MIBTEL index<sup>9</sup> was used as a benchmark. For the statistical significance the methodology of Brown & Warner (1985) was used. The Abnormal Returns were estimated as follows:

$$AR_{it} = R_{it} - R_{mt} \quad \text{where } R_{it} \text{ and } R_{mt} \text{ are respectively the return of the } i\text{-th}$$

security and of the "portfolio" at time  $t$  during the monitoring period, considering 234 days as the estimate range  $(-244, -11)$ <sup>10</sup>.

The Cumulative Abnormal Returns Standardized (CARs) was calculated as follows:

$$CARs_{it} = \frac{CAR_{it}}{\sigma_{it}} + A_{it} \quad (2)$$

Assuming a "buy and hold" strategy for the entire event period.

In order to investigate the market reaction to the announcement of the merger, two different time windows around the date of the event have been identified  $t(-10, +10)$  and  $t(-5, +5)$  as well as other asymmetric periods with respect to this date. In particular  $t(-1, 0)$  while the banking sector has also used the window  $t(-60, +60)$  e  $t(-30, +30)$  for the following period.

Finally, to quantify the value created or destroyed by the transactions as a whole, the combined values of the ARs, and similarly of the CARs, were calculated using the following formula:

$$A_i = (R_{B,i} - R_{T,i}) - (R_{B,i} - R_{T,i}) \quad (3)$$

<sup>6</sup> The sample made up of bank shares was also analyzed using the method of Fama, Fisher, Jensen & Roll (1969). The different methods lead to similar estimates (Brown & Warner, 1985).

<sup>7</sup> During the period of analysis two events were frequently registered: (a) that the bidders, in turn, became targets and were delisted; (b) that on the same day the bidders announced their merger with multiple targets. However, in view of 120 announcements it was not possible to examine a symmetric sample. The post-merger performances, however, were observed up to the delisting of the bidder.

<sup>8</sup> The sample made up of bank shares was also analyzed using the method of Fama, Fisher, Jensen & Roll (1969). The different methods lead to similar estimates (Brown & Warner, 1985).

<sup>9</sup> The MIBTEL index is a general basket which includes all the shares listed on the Stock Exchange and has been active since January 3, 1994. Its value weighted index that is calculated every minute during the continuous trading phase on the basis of prices. It is preferred to use this index, representative of all securities listed on the Italian stock market, because it is larger and closer to the "market portfolio". It is important to note, finally, that in calculating the returns, all the adjustments (dividends, stock splits, etc.) have been taken into account. Hence the prices for both the securities and the basket are "Official Price" and "Price Index", respectively, and were taken, as mentioned above, from Datastream. Currently it is no longer active as it has been replaced by the FTSE Italy All Share.

<sup>10</sup> The sample of bank mergers was also observed in the time window of 120 days around the announcement date but using different time windows including that of 20 days around the announcement date  $(-10, +10)$ , through which it was possible to compare the results with those obtained from the sample of total mergers. The decision to investigate the bank sample in a longer time window comes from the fact that the procedure for bank mergers is more complex at the procedural level.

$$MV_{B,i} + MV_{T,i} \quad MV_{B,i} + M_{T,i}$$

where  $AR_i(t)$ ,  $AR_{B,i}(t)$ , and  $AR_{T,i}(t)$  represent the abnormal returns at time  $t$  for the transaction  $i$ ,  $MV_B$ , and  $MV_{T,i}$  the capitalizations of the bidder and target companies, respectively of the last day of estimate.

To estimate the on-term abnormal returns the Buy and Hold Return methodology was used, suggested by Barber & Lyon (1997).

The returns of the sample firms were calculated as follows:

$$BHR_{i,T} = \prod_{t=1}^T (1 + R_{i,t}) - 1 \quad (4)$$

where  $R_{i,t}$  is the return of the firm  $i$  in the month of event  $t$  and  $T$  is the holding period ( $T=12, 24, 36$  months for a total of 756 days). For an equally-weighted portfolio of stock the returns are calculated as:

$$BHR_{P,T} = \frac{1}{n} \sum_{i=1}^n BHR_{i,T} \quad (5)$$

where  $BHR_{P,T}$  is the average BHR of the portfolio,  $n$  is the number of stocks in the portfolio, and  $T$  is the time period for which the BHR is calculated.

The next step consisted in estimating the Buy and Hold Abnormal Returns and the Buy and Hold Average Abnormal Returns as follows:

$$BHAR_{i,T} = \prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{bent}) \quad (6)$$

$$BHAAR_{i,T} = \frac{1}{n} \sum_{i=1}^n \left( \prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{bent}) \right) \quad (7)$$

The statistical significance of  $BHAR_{i,T}$  was calculated as follows:

$$t_{BHAAR} = \frac{BHAAR_{i,T}}{\sigma(BH_{i,T}) / \sqrt{n_t}} \quad (8)$$

Similarly for  $BHAAR_{i,T}$ :

$$t_{BHAAR} = \frac{BHAAR_{i,T}}{\sigma(BH_{i,T}) / \sqrt{n_t}} \quad (9)$$

Where  $\sigma(BHAR_{i,T})$  and  $\sigma(BHAAR_{i,T})$  represent the cross-sectional sample standard deviation of the returns of  $n$  firms and  $n_t$  is the number of Mergers in month  $t$ .



#### 4. Results and discussion

Table 2 shows how the bank mergers registered negative values for bidder companies and positive values for targets. With the exception of the three days around the announcement date, the values of which are not significant, in the remaining cases the values are negative and statistically significant for bidders, while for the target companies they are always positive and statistically significant. In a single sub-period, the bidder company recorded positive (0.81%) and statistically significant abnormal returns.

**Table 2:** Cumulative Abnormal Returns Standardized (CARs) of Bidders and Targets for Mergers (1994-2006).

The table shows the results of the event study for 34 Mergers in the Italian Banking Market between Italian Banks within the period 1994-2006. The number of Bidder companies is 34 and the number of Targets is 10.

Time	CAARs <sub>B</sub>	Z-test	%Po <sub>s</sub>	CAARs <sub>T</sub>	Z-test	%Po <sub>s</sub>
(-5, +5)	-0.63% <sup>b</sup>	-2.31	38.2	4.40% <sup>c</sup>	5.17	70.0
(-10, +10)	-0.57% <sup>a</sup>	-2.01	55.8	5.06% <sup>c</sup>	7.98	60.0
(-1, +1)	-0.14%	-0.33	44.1	3.98% <sup>c</sup>	5.61	80.0
(-30, +30)	-2.96% <sup>c</sup>	-10.55	54.5	6.78% <sup>c</sup>	10.87	70.0
(-1, 0)	-0.34%	-1.25	44.1	2.91% <sup>c</sup>	2.94	50.0
(-60, 0)	-3.13% <sup>c</sup>	-14.50	38.2	4.58% <sup>c</sup>	7.31	60.0
(0, +60)	0.81% <sup>c</sup>	2.86	44.1	1.95% <sup>b</sup>	2.40	50.0
(-60, +60)	-2.60% <sup>c</sup>	-12.50	50.0	4.13% <sup>c</sup>	6.90	60.0

Z-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

The analysis of the combined values showed in Table 3 confirms the trend of negative abnormal values. With the exception of the window including the twenty days around the announcement date in which the values are close to zero and not statistically significant, in all the other intervals the mergers were destructive of value in line with the results produced from literature. The highest and statistically significant loss was recorded in the ten days following the date of the announcement (-3.01%).

**Table 3:** Combined Cumulative Average Abnormal Returns standardized (CCAARs) for Mergers (1994-2006).

The table shows the results of the event study for 34 Mergers in the Italian Banking Market between Italian Banks within the period 1994-2006. The number of Bidder companies is 34 and the number of Targets is 10.

Time	CCAARs <sub>B</sub>	Z-test	%Pos
(-60, +60)	-1.10%	-1.45	0.0
(0)	-1.41% <sup>a</sup>	-1.87	0.0
(0, +10)	-3.01% <sup>c</sup>	-3.98	0.0
(-10, +10)	0.63%	0.24	1.0

Z-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

From the results shown in Table 4 it is easy to notice that unlike the sample made up only of bank mergers, the sample which includes all mergers registered positive and statistically significant cumulative average abnormal returns throughout the period observed for both the bidders and the targets.

**Table 4:** Cumulative Average Abnormal Returns Standardized (CAARs) of Bidders and Targets for non-banking Mergers (1994-2006).

The table shows the results of the event study for 70 Mergers in the Italian Stock Market within the period 1994-2006. The number of Bidder companies is 39 and the number of Targets is 67.

Time	CAAR <sub>SBN</sub> B	Z-test	%Po s	CAAR <sub>STN</sub> B	Z-test	%Po s
(-5, +5)	1.65% <sup>a</sup>	2.00	53.85	4.70% <sup>c</sup>	5.44	62.68
(-10, +10)	2.49% <sup>c</sup>	5.28	66.66	5.55% <sup>c</sup>	8.69	64.18
(-1,0)	2.22% <sup>c</sup>	7.95	53.85	2.48% <sup>c</sup>	19.06	61.19

Z-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

The analysis of the combined values shown in Table 5 confirms the trend towards creating value for the non-banking sample. Within the twenty days around the announcement date, in fact, there was a statistically significant creation of value equal to 3.05%.

**Table 5:** Combined Cumulative Average Abnormal Returns standardized (CCAARs) for non-banking Mergers (1994-2006).

The table shows the results of the event study for 28 Mergers in the Italian Stock Market within the period 1994-2006.

Time	CCAAR <sub>SNB</sub>	Z-test	%Pos
(-10, +10)	3.05% <sup>c</sup>	7.65	53.84
(-10, 0)	2.58% <sup>c</sup>	6.07	53.84

Z-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

In the short term the results are different pending on the sample examined. For the banking sector the values obtained are in line with Becher (2000), Ferretti (2000), DeLong (2001), Houston, James, & Ryngaert (2001), Intrinsicano & Rossi (2012). Instead, with regard to the total sample the results show a significant value creation for the shareholders of both the bidder and target companies, also confirmed by the combined analysis. These results are in line with the work of Asquith (1983), Eckbo (1983), Malatesta (1983), Asquith, Bruner, Mullins (1983), Loderer & Martin (1990), Kohers & Kohers (2000), Martynova & Renneboog (2006), who found positive abnormal returns for both companies. The results of the combined analysis, instead, are in line with Malatesta (1983), Franks, Harris & Titman (1991), Servaes (1991), and Healy, Palepu & Ruback (1992), who found positive and statistically significant combined values.

#### a. Long-term performance

The long-term results appear to conflict with short-term results in relation to the total sample examined. In Table 6, in fact, negative results emerge for both portfolios examined. In the 36 months following the merger, the portfolio showed a significant destruction of value (BHAAR<sub>SB</sub>-1.72% -24.64% BHAAR<sub>SNB</sub>). In particular, the highest and most significant losses were registered in the two years following the merger in the banking sector (BHAAR<sub>SB</sub>-4.61%). The results found in this work are contrary to those of Gupta & Misra (2007), who found positive and significant values (BHAR +4.64%). In a single sub-period the bidders' stocks registered positive but not statistically significant values in the order of 1.35%. The portfolio of non-banking mergers, however, always registered negative and statistically significant abnormal returns and between the second and third year it registered the greatest losses (BHAAR<sub>SNB</sub>-45.90%). For both samples there was a tendency to increase the losses in the two years following the merger with the difference that while the portfolio of bank mergers contained the losses after two years, the non-banking portfolio registered the greatest part of the loss between the second and third year.

## International Journal of Business and Technology

**Table 6:** Buy and Hold Average Abnormal Returns for banking (BHAAR<sub>SB</sub>) and non banking (BHAAR<sub>SNB</sub>) Mergers (1994-2006).

The number of Bidders is 21 for the banking sector and 19 for the non-banking sector. The test of significance is calculated using the Barber& Lyon (1997) procedure.

Months	BHAAR <sub>SB</sub>	Z-test	%Pos s	BHAAR <sub>SN</sub> B	t-test	%Pos s
1-6	-0.32% <sup>c</sup>	-2.96	33.33	-2.04% <sup>c</sup>	-4.82	0.0
1-12	-1.91% <sup>c</sup>	-3.55	16.66	-4.78% <sup>c</sup>	-5.16	0.0
13-24	-4.61% <sup>c</sup>	-11.79	0.0	-23.24% <sup>c</sup>	-12.80	0.0
25-36	1.35%	1.71	66.66	-45.90% <sup>c</sup>	-51.40	0.0
1-36	-1.72% <sup>b</sup>	-2.13	27.77	-24.64% <sup>c</sup>	-6.00	0.0

t-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

The total returns of portfolio shown in Table 7 confirm the results previously found. The highest and most statistically significant losses were recorded in the three years following the merger. In the following 36 months the BHAAR<sub>STS</sub> amounted to -11.78%. This confirms the trend to increase the losses between the first and third year with the prevalence between the second and third year (BHAARs -19.90%).

**Table 7:** Buy and Hold Average Abnormal Returns (BHAAR<sub>STS</sub>) for total sample of Mergers (1994-2006).

The number of bidder firms is 40. The test of significance is calculated using the Barber& Lyon (1997) procedure.

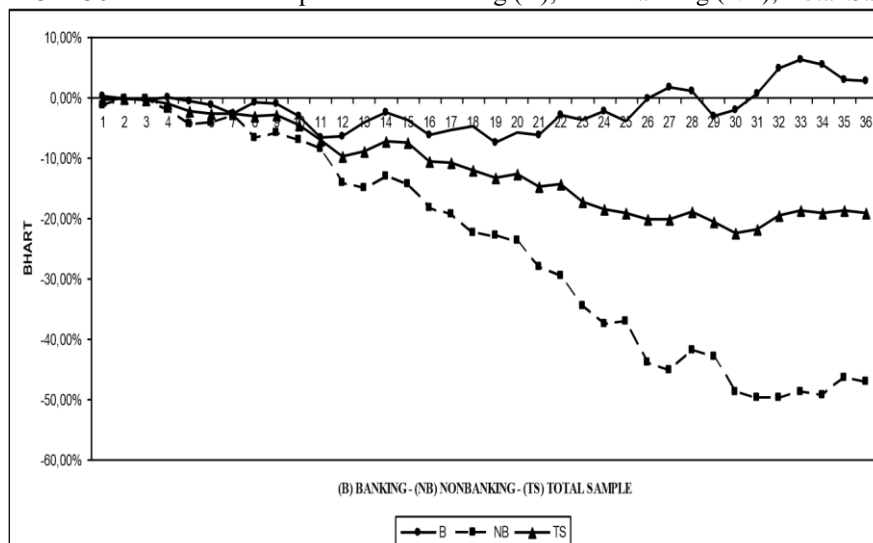
Months	BHAAR <sub>STS</sub>	t-test	%Pos
1-6	-1.14% <sup>c</sup>	-6.73	0.0
1-12	-3.08% <sup>c</sup>	-6.76	0.0
13-24	-12.35% <sup>c</sup>	-21.40	0.0
25-36	-19.90% <sup>c</sup>	-99.98	0.0
1-36	-11.78% <sup>c</sup>	-9.69	0.0

t-test significance at the 10%, 5%, and 1% levels are denoted by <sup>a</sup>, <sup>b</sup> and <sup>c</sup>, respectively.

In nosub-period is there assign reversal in the values. The Figure 1 shows the trend for BHAARs following 36 months.

**Figure 1:** The trend of Buy and Hold Average Abnormal Return (BHAAR<sub>T</sub>).

T = 1, 2, and 3...36 months for three portfolios: Banking (B); Non-Banking (NB); Total Sample (TS).



Right from the start the market perceives the merger as not generating value and maintains negative reaction for the following 36 months. Apart from the portfolio of bank bidders which seems to show a zero trend with a

substantial rise between the thirty-first and thirty-sixth month, the other portfolio assumes a persistent and consistent negative trend throughout the entire period. The total portfolio instead assumes an intermediate trend while showing a negative persistence.

## Conclusion

A sample of 120 merger announcements was the subject of study in this work during the period 1994-2006 in the short and long term. In particular, two equally weighted portfolios composed of stocks of banking and non-banking bidders were formed. In the short term the sample made up of banking stocks registered a significant loss for the bidder companies and positive and significant abnormal returns for the target companies. The portfolio consisting of non-banking securities, on the contrary, registered positive and statistically significant abnormal values for both the bidder and target companies.

The long-term analysis, however, showed that mergers do not create value, and that the portfolio of non-banking mergers tends to register greater significant losses than banking mergers. The trend is seen particularly between the second and third year where the abnormal returns are higher and more statistically significant in all periods examined. The banking portfolio shows a tendency to recover the returns between the second and third year, ending the period with a loss of -1.72%. Unlike the banking portfolio, the non-banking portfolio shows a tendency to increase the losses significantly between the second and third year, closing the observation period with a statistically significant loss ( $BHAAR_{SNB} -24.64\%$ ).

The examination of the total portfolio composed of two sub portfolios confirms a significant loss of value in the 36 months following the merger ( $BHAAR_{TS} -11.78\%$ ).

In Italy, mergers are not "good news" and the results obtained both in the short and long-term analysis is in line with literature. With regard to the long term, as in the work of Agrawal, Jaffe & Mandelker (1992), Loughran & Vijh (1997), Rau & Vermaelen (1998), Jaffe & Agrawal (2000), Park & Ferris (2002), Kohers & Kohers (2000), Black, Carnes, & Jandik (2001), Sudarsanam & Mahate (2003) and Sudarsanam & Mahate (2006), in this one also negative results are confirmed, and in particular that mergers do not appear to generate value for shareholders. The results obtained in this study confirm those found by Intrusion & Rossi (2012) for the short term in the banking sector.

Most of the works examined showed negative abnormal returns before and after the merger regardless of the methodology and the statistical techniques used. In this regard a number of possible hypotheses can be formulated:

- (a) The market is inefficient and therefore the abnormal returns represent the "price of inefficiency." This explanation, however, remains weak, as Malatesta (1983) and Agrawal & Jaffe (2000) have noted;
- (b) the synergies are overestimated (and overpaid) compared to their full extent and therefore there is the phenomenon of "Hubris Hypothesis" (Roll, 1986);
- (c) the estimation models are inadequate to investigate this phenomenon and this explains the presence of abnormal returns. In this case, as Rau & Vermaelen (1998) pointed out, "Such tests should be used with caution" (p. 252).

The fact remains that further investigations are needed to provide more solid explanations for the continual presence of this anomaly that exists regardless of (1) the country, (2) the sector of the economy, (3), the size of the samples examined, and (4) the time horizon observed.

## References:

1. Agrawal, A., Jaffe, J.F., & Mandelker, G.N. (1992). The Post Merger Performance of Acquiring Firms: A Re-examination of an Anomaly. *Journal of Finance*, 4 (47), 1605-1621.
2. Agrawal A., & Jaffe J. (2000). The post-merger performance puzzle, in Cooper C., & Gregory A. (eds) *Advances in Mergers and Acquisitions*, 1, Elsevier Science, New York., 7-41.
3. Andrade, G., Mitchell, M.L., & Stafford, E. (2001). New evidence and perspectives on mergers, *Journal of Economic Perspectives*, 15 (2), 103-120.
4. Asquith P., Bruner R., & Mullins D. (1983). The Gains of Bidding Firms from Merger. *Journal of Financial Economics*, 11 (1-4), 121-139.

## International Journal of Business and Technology

5. Asquith, P. (1983). Merger Bids, Uncertainty, and Stockholder Returns, *Journal of Financial Economics*, 11 (1-4), 51-83.
6. Baradwaj, B.G., Fraser, D.R. & Furtado, P.H. (1990). Hostile Bank Takeover Offers: Analysis and Implications. *Journal of Banking and Finance*, 14 (6), 1229-1242.
7. Barber, B.M., & Lyon, J.D. (1997). Detecting long-run abnormal stock returns: the empirical power and specification of test statistics. *Journal of Financial Economics*, 43 (3), 341-372.
8. Becher DA. (2000). the Valuation Effects of Bank Mergers. *Journal of Corporate Finance*, 6 (2), 189-214.
9. Becher DA. (2008). Bidder Return and Merger Anticipation: Evidence from Banking Deregulation. *Working paper*, Drexel University, Department of Finance, Philadelphia. Retrieved from <http://fic.wharton.upenn.edu/fic/papers/08/0817.pdf>.
11. Berger A.N., Demsetz, R., & Strahan, P. (1999). The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future. *Journal of Banking and Finance*, 23 (2), 135-194.
12. Bigelli, M., & Mengoli, S. (1999). Acquisizioni di imprese e benefici privati dei gruppi di controllo: alcune evidenze empiriche per il mercato italiano. *Finanza, Marketing e Produzione*, 1, 871-14.
14. Black, E. L., Carnes, T. A., & Jandik, T. (2001). The Long-Term Success of Cross-Border Mergers and Acquisitions. Retrieved from <http://ssrn.com/abstract=270288>.
15. Bradley, M. (1980). Interfirm tender offers and the market for corporate control. *Journal of Business*, 53 (4), 345-376.
16. 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*, 21(1), 3-40.
17. Brown, S., & Warner, J. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1), 3-31.
18. Bruner RF. (2003). Does M&A Pay? Darden Graduate School of Business University of Virginia. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=306750](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=306750).
19. Campa J.M., Hernando I. (2004). Shareholder Value Creation in European M&As. *European Financial Management*, 10 (1), 47-81.
20. Commissione Nazionale per le Società e la Borsa (CONSOB). (Various years). *Annual report*. Rome.
21. Cornett, M.M., & Tehranian, H. (1992). Changes in Corporate Performance Associated with Bank Acquisitions. *Journal of Financial Economics*, 31 (2), 211-234.
22. Cybo-Ottone, A., & Murgia, M. (2000). Mergers and Shareholders Wealth in European Banking. *Journal of Banking and Finance*, 24, 831-859.
23. DeLong G. (2001). Stockholder Gains from Focusing Versus Diversifying Bank Mergers. *Journal of Financial Economics*, 59 (2), 221-252.
24. DeLong G. (2003). Does Long-Term Performance of Mergers Match Market Expectations? Evidence from the US Banking Industry. *Financial Management*, 32, 5-25.
25. Dodd, P. (1980). Merger proposals, management discretion and stockholder wealth. *Journal of Financial Economics*, 8 (2), 105-138.
26. Dodd, P., & Ruback, R. (1977). Tender offers and stockholder return: an empirical analysis. *Journal of Financial Economics*, 5(3), 351-374.
27. Eckbo E. (1983). Horizontal mergers, collusion, and stockholder wealth. *Journal of Financial Economics*, 11 (1), 241-273.
28. Fama, E.F., Fisher, L., Jensen, M.C., & Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review*, 10(2), 1-21.
29. Ferretti R. (2000). Le acquisizioni bancarie e la reazione del mercato borsistico: le analisi in Usa, Europa e Italia. *Bancaria*, 56, 26-33.
30. Ferris, S.P., & Park, K. (2002). How different is the long-run performance of mergers in the telecommunications industry? in Hirschey M., Kose J., & Makhija, A.K. (eds.) *Innovations in Investments and Corporate Finance (Advances in Financial Economics, Volume 7)*, Emerald Group Publishing Limited, 127-144.
31. Focarelli, D., & Panetta F. (2003). Are mergers beneficial to consumers? Evidence from the market for bank deposits. *American Economic Review*, 93 (4), 1152-1172.

32. Focarelli, D., Panetta, F., & Salleo, C. (2002). Why Do Banks Merger? *Journal of Money, Credit and Banking*, 34 (4), 1047-1066.
33. Franks, J., & Harris, R.S. (1989). Shareholder wealth effects of corporate takeovers: the U.K. experience 1955–1985. *Journal of Financial Economics*, 23 (2), 225–249
34. Franks, J., Harris, R., & Titman S. (1991). The postmergers share-price performance of acquiring firms. *Journal of Financial Economics*, 29 (1), 81-96.
35. Gupta, A., & Misra, L. (2007). Deal size, premium paid and the gains in financial mergers: the impact of managerial motivation. *Working paper*, Bentley College of Business. Retrieved from <http://business.utsa.edu/wps/fin/0018FIN-092-2007.pdf>
36. Haynes M., & Thompson, S. (1999). The Productivity Effects of Bank Mergers: Evidence from the UK Building Societies. *Journal of Banking and Finance*, 23 (5), 825-846.
37. Healy, P., Palepu, K., & Ruback, R. (1992). Does Corporate Performance Improve After Mergers? *Journal of Financial Economics*, 31 (2), 135-175.
38. Houston, J.F., James, C.M. & Ryngaert, M. (2001). Where do merger gains come from? Bank mergers from the perspective of insiders and outsiders. *Journal of Financial Economics*, 60 (2), 285-331.
39. Il Sole 24 Ore. (Various years). CD-ROM. Milan.
40. Intrisano, C., & Rossi, F. (2012). Do M&As generate value for shareholders? An analysis of the Italian banking Sector. *Chinese Business Review*, 11 (2), 206-216.
41. Jarrell, G., & Bradley M. (1980). The Economic Effects of Federal and State Regulations of Cash Tender Offers. *Journal of Law and Economics*, 23 (2), 371-407.
42. Jensen, M. C., & Ruback, R. (1983). The market for corporate control: the scientific evidence. *Journal of Financial Economics*, 11(1-4), 5-50.
43. Kohers, N., & Kohers, T. (2000).The value creation potential of high-tech mergers, *Financial Analysts Journal*, 53 (3), 40-48.
44. KPMG.(Various years).*Report Merger & Acquisition*. Milan.
45. Kummer, D., & Hoffmeister, R. (1978). Valuation consequences of cash tender offers. *Journal of Finance*, 33 (2), 505-516.
46. Langetieg, T. (1978).An Application of a Three-Factor Performance Index to Measure Stockholders Gains from Merger.*Journal of Financial Economics*, 6 (4), 365-384.
47. Loderer, C., & Martin, K. (1992).Post acquisition Performance of Acquiring Firms. *Financial Management*, 21 (3), 69-79.
48. Loughran, T., & Vijh, A.M. (1997). Do Long-Term Shareholders Benefit from Corporate Acquisitions? *Journal of Finance*, 52 (5), 1765-1790.
49. Magenheim, E. B., & Mueller, D.C. (1988). Is Acquiring-Firm Shareholders Better off after an Acquisition, in Coffee, J.C., Lowenstein, L. Jr, & Rose-Ackerman, S. (eds), *Knights, Raiders and Targets: The Impact of the Hostile Takeover?* Oxford University Press. New York, 171193.
50. Malatesta, P. (1983). The wealth effects of merger activity and the objective function of merging firms. *Journal of Financial Economics*, 11 (1-4), 155-181.
51. Mandelker, G. (1974). Risk and Return: The Case of Merging Firms. *Journal of Financial Economics*, 1 (4), 303-335.
52. Martynova, M., & Renneboog, L. (2006).Mergers and Acquisitions in Europe.Working Paper N°.114/2006.ECGI Working Paper Series in Finance.Retrieved from [http://ssrn.com/abstract\\_id=880379](http://ssrn.com/abstract_id=880379).
53. Mitchell, M.L., & Stafford, E. (2000).Managerial Decision and Long Term Stock Price Performance.*Journal of Business*, 73 (3), 287-329.
54. Neely, WP. (1987). Banking Acquisitions: Acquirer and Target Shareholder Returns. *Financial Management*,16, 66-74.
55. Piloff, S.J. (1996). Performance changes and shareholder wealth creation associated with mergers of publicly traded banking institutions. *Journal of Money, Credit and Banking*, 28 (3), 294-310.
56. Rau, P.R., & Vermaelen, T. (1998). Glamour, value and post-acquisition performance of acquiring firms. *Journal of Financial Economics*, 49 (2), 223-253.
57. Resti, A. (1998). Regulation can foster mergers, can mergers foster efficiency? The Italian Case. *Journal of Economics and Business*,50 (2), 157-169.

## International Journal of Business and Technology

58. Resti, A., & Siciliano, G. (1999). Le acquisizioni di banche quotate creano valore per gli azionisti? Un confronto tra i prezzi di borsa ed i dati fondamentali di alcune banche italiane. *Banca Impresa Società, 1*, 93-124.
59. Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *Journal of business, 59* (2), 197-216.
60. Rossi, F. (2005). L'efficienza informativa del mercato azionario. Teoria ed evidenza empirica. *Aracne Editore*. Rome.
61. Savona, R. (2002). Fusioni e acquisizioni bancarie in Italia, 1989-1997: un'analisi empirica sulla reattività dei prezzi azionari. *Bancaria1*, 31-52.
62. Servaes, H. (1991). Tobin's Q and the gains from takeovers. *Journal of Finance, 46* (1), 409-419.
63. Smith, R., & Kim, J. (1994). The Combined Effects of Free Cash Flow and Financial Slack on Bidder and Target Stock Returns. *Journal of Business, 67* (2), 281-310.
64. Sudarsanam, S., & Mahate, A.A. (2003). Glamour Acquirers, Method of Payment and Postacquisition Performance: The UK Evidence. *Journal of Business Finance & Accounting, 30* (1), 299-341.
65. Sudarsanam, S., & Mahate, A.A. (2006). Are Friendly Acquisitions Too Bad for Shareholders and Managers? Long-Term Value Creation and Top management Turnover in Hostile and Friendly Acquirers. *British Journal of Management, 17*, S7-S29.
66. Tuch, C., & O'Sullivan, N. (2007). The impact of acquisitions on firm performance: A review of the evidence. *International Journal of Management Reviews, 9* (2), 141-170.
67. Vander Vennet, R. (2002). Cross-border mergers in European banking and bank efficiency. *Working paper* University of Gent. Retrieved from <http://www.ecri.be/new/system/files/11+Vennet.pdf>
68. Walker, M. (2000). Corporate Takeovers, Strategic Objectives, and Acquiring-Firm Shareholder Wealth. *Financial Management, 29* (1), 53-66.