Mergers and Acquisitions: A pre-post analysis for the Indian financial services sector

Sinha, Pankaj and Gupta, Sushant

Faculty of Management Studies, University of Delhi

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PANKAJ SINHA and SUSHANT GUPTA

Faculty of Management Studies
University of Delhi

ABSTRACT

This paper examines the Mergers & Acquisitions scenario of the Indian Financial Services Sector. The data for eighty cases of M&A in the period from March 1993- Feb 2010 is collected for a set of ten financial parameters representing the various characteristics of a firm. All the cases have been analyzed individually and collectively to determine the overall effects of M&A in the industry. The results of the study indicate that PAT and PBDITA have been positively affected after the merger but the liquidity condition represented by Current Ratio has deteriorated. Also Cost Efficiency and Interest Coverage have improved and deteriorated in equal number of cases. Interest Coverage remains an important factor in determining the return on shareholders' funds both before and after the merger but Profit Margin also becomes important after the merger. And looking at the diversification effects of merger, in two out of the three cases there has been a reduction in total and systematic risk.

1. INTRODUCTION

Mergers and Acquisitions (M&A) activity is broadly driven by larger economic themes as companies reconfigure their strategic initiatives to match macro events and adjust to externalities that change the dynamics of their value chain or competitive landscape. If we were to trace M&A activity throughout history, we can observe such themes. As there building efforts started after World War II, M&A activity was driven by the need for business entities to achieve economies of scale, both from a geographical and product offerings perspective. In addition, the theme of "diversification" gave impetus to business entities acquiring businesses outside of their direct focus so as to mitigate the impact of the economy on their business portfolio. This trend gave rise to conglomerates for which acquiring disparate businesses was a stated growth strategy.

Indian enterprises were subject to a strict control regime before 1990s. This had led to the haphazard growth of Indian corporate enterprises during that period. The reforms initiated by the Government post 1991, have influenced the functioning and governance of Indian enterprises which has resulted in adoption of different growth and expansion strategies by the corporations. In that process, M&As have become a common phenomenon. M&As are not new in the Indian economy. In the past also, many companies have used this mechanism to grow and now Indian corporate enterprises are refocusing on the lines of core competence, market share, global competitiveness and consolidation. This process of refocusing has been further hastened by the arrival of foreign competitors.

1.1. Indian Financial Services Sector

The Indian financial industry underwent rapid transformation post liberalization in the early 90's, resulting in greater inflow of investments from FII's into the capital market. Despite the foray of foreign banks in the country, nationalized banks continue to be the biggest lenders in the country, primarily due to their size and penetration of networks. In fact, Industry estimates indicate that over 80% of commercial banks in India are in the public sector and of the 50-odd private banks, less than half are foreign banks. The Reserve Bank of India is the Indian equivalent of the Fed. The opportunities in this industry remain extremely promising due to its relatively low penetration of both basic as well as advanced financial products.

Though the Indian finance and banking industry did suffer significantly during the past 2 years, it was relatively sheltered from the triggers of the global melt-down, suffering instead due to monies from FII's drying up, falling interest rates, rapidly rising inflation and poor investor confidence. Annual reports suggest that most of the larger Banks have begun to pick up from where they left off, albeit with more caution, and most industry pundits are optimistic about the current fiscal year. The financial services sector contributed 15 per cent to India's GDP in FY09, and is the second-largest component after trade, hotels, transport and communication all combined together, as per the Banking & Finance Journal, released by an industry body in August 2010.Share of Financial services, banking, insurance and real estate sectors is expected to enhance by 9.7 per cent for the year 2009-10 to 17.2 per cent of GDP (at factor cost).

Data sourced from SEBI shows that the number of registered FIIs stood at 1,738 and number of registered sub-accounts rose to 5,592 as of November 10, 2010.Overseas funds infused into Indian capital market in 2010 stood at US$ 39 billion. According to data released by Securities and Exchange Board of India (SEBI), stocks and debt securities over worth US$ 17.28 billion were purchased by the foreign institutional investors (FIIs) from the Indian capital market in January 2011.According to data available with SEBI, FIIs have made investments worth US$ 4.11 billion in equities and invested US$ 667.71 million into the debt market. The average assets under management of the mutual fund industry stood at US$ 147.99 billion for the quarter ended December 2010, according to the data released by Association of Mutual Funds in India (AMFI).

As on January 21, 2011, India's foreign exchange reserves totaled US$ 299.39 billion, according to the Reserve Bank of India's (RBI) Weekly Statistical Supplement. According to Venture Intelligence, a research firm, private equity firms invested US$ 7,974 million over 325 deals in India during 2010, as against US$ 4,068 million (over 290 deals) in 2009. The largest investment reported during the year was the US$ 425 million raised by power generation firm Asian Genco from investors including General

Atlantic, Goldman Sachs, Morgan Stanley, Everstone and Norwest. According to a global consultancy firm Ernst & Young (E&Y), sectors such as power and transportation, consumer and branded products, infrastructure ancillaries, education and financial services, and healthcare are likely to witness increased PE activity in 2011.

1.1.1. Deals

India Inc announced merger and acquisition (M&A) deals worth a record US$ 55 billion in 2010, including a record number of billion-dollar transactions. The number of mergers and acquisitions (M&A), private equity (PE) transactions and Qualified Institutional Placements (QIP) increased close to 40 per cent to US$ 3.23 billion in November 2010. Besides, there have been US$ 9 billion plus deals in 2010, the highest seen in any year. Fund-raising activity gained pace by almost 65 per cent in 2010 as compared to 2009. In real terms, 27 funds were able to raise US$ 13 billion as PE as against US$ 8 billion by 22 funds in 2009. There has also been a more than 80 per cent growth in PE and VC investments in India: 2010 witnessed 348 deals worth $8 billion, against 317 deals worth $4.4 billion in 2009, according to VCCedge data.

TABLE 1.1: INVESTMENTS (TOP 10 DEALS, JAN – OCT 2010)

Deal	Date	Announced total value (US$ million)	Acquirer name	Target name
Outbound	22-Feb-10	200.00	Religare Enterprises Ltd	Northgate Capital Group LLC
Inbound	18-Feb-10	54.17	QInvest LLC	Ambit Corporate Finance PteLtd
Inbound	8-Jul-10	39.49	(Undisclosed Acquirer)	Vijay Associates(Wadhwa) Constructions PvtLtd
Domestic	8-Apr-10	38.76	Tube Investments of India Ltd	Cholamandalam DBS Finance Ltd
Inbound	29-Jul-10	33.74	Investor Group	Muthoot Finance Ltd
Outbound	15-Mar-10	32.98	Hindustan Construction Co Ltd	Karl Steiner AG
Domestic	30-Jun-10	30.47	Sundaram Finance Ltd	Sundaram BNP Paribas Trustee Co Ltd
Outbound	25-Oct-10	27.06	Farhat Developers Pvt Ltd	Red Fort Capital Management Co LLC
Domestic	5-Apr-10	26.58	Investor Group	BhartiyaSamruddhi Finance Ltd
Inbound	27-Mar-10	24.00	ARIA Investment Partners III LP	Equitas Micro Finance India Pvt Ltd

Source: Thomson One Banker accessed on 8 November 2010, IBEF

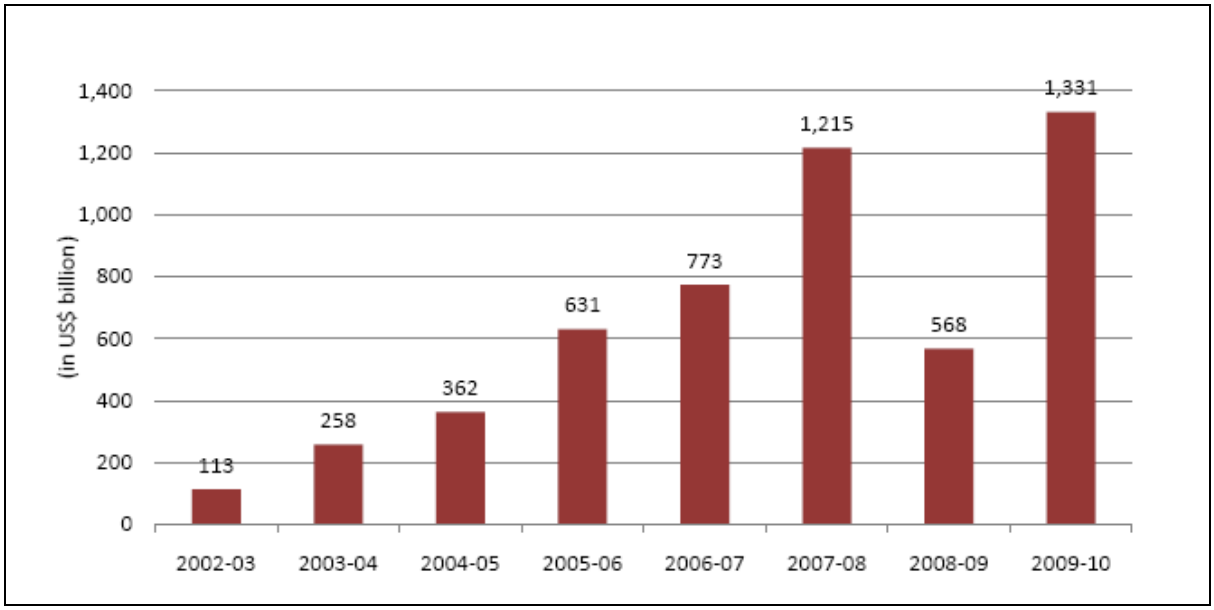
1.1.2. Stock Markets

Capital market is one of the most important segments of the Indian financial system. It is the market available to the companies for meeting their requirements of the long-term funds. It refers to all the facilities and the institutional arrangements for borrowing and lending funds. In other words, it is concerned with the raising of money capital for purposes of making long-term investments. The market consists of a number of individuals and institutions (including the Government) that canalize the supply and demand for long -term capital and claims on it. The demand for long term capital comes predominantly from private sector manufacturing industries, agriculture sector, trade and the Government agencies, while the supply of funds for the capital market comes largely from individual and corporate savings, banks, insurance companies, specialized financing agencies and the surplus of Governments.

Market capitalisation of India as a proportion of world market cap has risen to a record high. According to data sourced from Bloomberg, the country's market capitalisation as a proportion of the world market cap is currently 3.34 per cent. India's current market-cap is US$ 1.55 trillion as compared with world market-cap of US$ 46.5 trillion. This is higher than 3.12 per cent share India enjoyed at the market peak of January 2008.As analyzed by Venture Intelligence, private equity firms obtained exit

routes for their investments in a record 121 companies during 2010, including 24 via IPOs. (2009 had witnessed 66 liquidity events including 7 via IPOs). PE-backed companies raised about US$ 2.20 billion via IPOs during 2010.

FIGURE 1.1: GROWTH IN MARKET CAPITALIZATION OF INDIAN COMPANIES



Source: NSE Factbook 2010

According to ICICI Securities, Indian companies are likely to raise up to US$ 42.43 billion from the primary market over the next three years. According to MadhabiPuri-Buch, Managing Director and CEO, ICICI Securities' nearly US$ 20 billion will be raised from the initial public offer (IPO) market this fiscal (2010-11), of which around US$ 8.49 billion would be from the public sector and an equal amount from private companies. On the back of an increase in the participation of agriculture and other commodities, the 23 commodity exchanges posted 50 per cent year-on-year growth in turnover in the April-February period of 2009-10, to touch US$ 1.53 trillion, according to the commodity markets regulator, Forward Markets Commission (FMC).

1.1.3. Banking

Demand for banking services is growing significantly, albeit in a country where less than half of households have a bank account. It is in the retail sector that the surge in demand is most marked. Housing loans grew by more than 50% and loans to the retail commercial sector rose by more than 100%. According to the weekly statistical supplement (WSS) of the Reserve Bank of India (RBI), Indian bank loans represented a rise of 19.1 per cent as of June 4, 2010 while deposits were up 14.3 per cent from the previous year. Furthermore, outstanding loans showed an increase from US$ 12.39 billion to US$ 703.5 billion in the two weeks to June 4, 2010. The WSS reflected that bank deposits rose by US$ 3.24 billion to US$ 975 billion in the two weeks to June 4. In 2009, there were 21 IPOs that raised US$ 4.18 billion as compared to 36 IPOs in 2008 that raised US$ 3.62 billion.

As per the statistics of RBI, aggregate deposits grew by 3.3% on q-o-q basis in quarter ended June 10 as against 5.1% during the same period last year; reflecting the relatively lower rates in term deposits. However, bank credit picked up by 5% (on q-o-q basis) during Q1FY11 as against 0.8% a year ago mainly owing to 3G and BWA auctions. As a result the CD ratio has improved from 71.5% on April 9, 2010 to 73.44% on July 2, 2010. Base rate which was implemented from 1st July 2010 has not made much impact in the lending rates of the industry as RBI has signaled banks to increase the lending rates. Significantly, on a year-on-year basis, bank credit grew by 24.4 per cent in 2010 as against RBI's projections of 20 per cent for the entire fiscal 2010-11.

With the increase in the short term rates and recent policy hikes, a number of banks during mid August have increased the lending (PLR) and deposit rates. Many banks have started mobilizing the CASA deposits at higher rates. However, we expect margins to sustain as loans get reprised faster than

deposits. Thus sustainable margins with upward bias, healthy credit demand and containment in the slippages and provisions will make Indian banking system stronger going forward.

1.1.4. Insurance

India is the 5th largest market in Asia by premium following Japan, Korea, China and Taiwan. In life insurance segment, India stands at fifth position in the emerging insurance economies globally and the segment is growing at a healthy 32-34 per cent annually, according to the Life Insurance Council. According to the Insurance Regulatory and Development Authority (IRDA), total first year premium collected in 2009-10 was US$ 24.64 billion, an increase of 25.46 per cent over US$ 19.64 billion collected in 2008-09.Further, according to IRDA, in April 2010, life insurance companies collected first year premium worth US$ 1.29 billion, as compared to US$ 810.9 million in the corresponding period of 2009. The life insurance industry grew by around 60 per cent in new business in the first half of 2010-11 despite a slowdown in sales in September, according to data compiled by life insurance companies.

In September, the industry grew by 20 per cent on a year-on-year basis collecting US$ 2.14 billion in new business premium. However, the new business in September was almost 48 per cent lower than the previous month's collection. The life insurance industry is expected to cross the US$ 66.8 billion total premium income mark in 2010-11. "This year, we are expecting a growth of 18 per cent in total premium income. If achieved, it is expected to cross the US$ 64.4 billion mark," said SB Mathur, Secretary General, Life Insurance Council. Total premium income, at US$ 56.04 billion, rose 18 per cent during 2009-10, against US$ 47.6 billion in the previous year. In the fiscal year ending March 31, 2010, total premiums in India amounted to US$ 64.7 billion. This included non-life premiums of US$ 7.77 billion and life premiums of US$ 56.9 billion. In the fiscal year ending March 31, 2015, the corresponding figures should be US$ 105.4 billion, US$ 14.6 billion and US$ 90.8 billion. In terms of the key drivers that underpin our forecasts, we are looking for non-life penetration to rise from 0.59% of GDP in the fiscal year ending March 31, 2010 to 0.61% in the March 2015 fiscal year. We expect that life density will rise from US$ 47 per capita to US$ 85 per capita. Taking the recent infrastructure related developments in consideration and the booming automobile industry in India as a parameter; we foresee the potential of the insurance sector in India.

1.1.5. Industry Growth Potential

The financial system of a country is of immense importance as it portrays the stability as well as sustainability of the country. The volume and growth of the capital in the country depends greatly upon the efficiency and intensity of the operations and activities in its financial markets.

Demand for financial services in India is taking off rapidly. International financial institutions are playing an increasing role in the expansion of India's large corporations. A vast SME market remains largely untapped. As per the Securities and Exchange Board of India (SEBI), number of registered Foreign Institutional Investors (FIIs) as on May 31, 2010 was 1710 and the cumulative investments in equity since November 1992 to May 31, 2010, was US$ 77.2 billion, while the cumulative investments in debt during the same period were US$ 13.4 billion. The total FII inflow in equity during January to May 2010 was US$ 4.6 billion while it was US$ 5.9 billion in debt. Net investment made by FIIs in equity between June 1, 2010 and June 14, 2010 was US$ 530.05 million while it was US$ 875.73 million in debt, as per the latest data released by SEBI.As on June 4, 2010, India's foreign exchange reserves totaled US$ 271 billion, an increase of US$ 9.87 billion over the same period last year, according to the Reserve Bank of India's Weekly Statistical Supplement.

Private equity (PE) firms invested about US$ 2 billion across 56 deals during the quarter ended March 2010, according to a study by Venture Intelligence, a research service focused on M&A transaction activity in India. The amount invested during the January-March 2010 quarter was the highest in the last six quarters. The figure was significantly higher than that during the same period last year (January-March 2009) which witnessed US$ 620 million being invested across 58 deals and also the immediate previous quarter (October-December 2009) where investments worth US$ 1,681 million were made across 102 deals. Also, a study by Project Finance International (PFI), a source of global project finance intelligence and a Thomson Reuters publication has ranked India on top in the global project finance (PF) market in 2009, ahead of Australia, Spain and the US. The study said the main market for

PF in 2009 was the domestic Indian market, which raised US$ 30 billion, accounting for 21.5 per cent of the global PF market. This was up from US$ 19 billion in 2008.

2. LITERATURE REVIEW

A firm can achieve growth both internally and externally. Internal growth may be achieved if a firm expands its operations or up scales its capacities by establishing new units or by entering new markets. But internal growth may be faced by several challenges such as limited size of the existing market or obsolete product category or various government restrictions. Again firm may not have specialized knowledge to enter in to new product/ market and above all it takes a longer period to establish own units and yield positive return. In such cases, external mechanism of growth namely M&As, Takeovers or Joint Ventures may be utilized. *Tambi (2005)* attempts to evaluate the impact of such mergers on the performance of a corporation. Though the theoretical assumption says that mergers improve the overall performance of the company due to increased market power and synergy impacts, Tambi uses his paper to evaluate the same in the scenario of Indian economy. He has tested three parameters – PBITDA, PAT and ROCE - for any change in their before and after values by comparison of means using t-test. The results of his study indicate that mergers have failed to contribute positively to the set of companies chosen by him.

Coming down to one of the most important but undermined reasons for merger and looking the after effects of a merger, *Lev and Mandelker (1972)* evaluate the reduction is risk of the acquiring firm. It is argued that unless returns of the parties involved in the merger are perfectly co-related, the variances of the combined firms' returns will be smaller than the weighted average of the variances of the returns of the individual firms – Diversification principle of portfolio theory. This may not be true for perfect capital markets, but as studies have shown that no market is fully efficient to reflect the true picture. They use five year pre and post-merger data to separately model the relationship between return on the stock price and return on the market to estimate β (a measure of systematic risk). The β value measures the sensitivity (responsiveness) of the stocks returns to economy wide fluctuations. The β so estimated is tested for change by comparison of means. They conclude by saying that mergers had no clear directional effect on the riskiness of the acquiring firms but also that β is based entirely on market data and maybe financial leverage may be a better indicator of financial risk of stockholders.

Under the financial services sector in India, the banking sector specifically has seen a lot of M&A right from the early years. Historically, mergers and acquisitions activity started way back in 1920 when the Imperial Bank of India was born when three presidency banks (Bank of Bengal, Bank of Bombay and Bank of Madras) were reorganized to form a single banking entity, which was subsequently known as State Bank of India. *Ravichandran, Nor & Said (2010)*, in their paper, have tried to evaluate the efficiency and performance for selected public and private banks before and after the merger, as a result of market forces. After doing a factor analysis, they narrow down the variables for their study to Profit Margin, Current Ratio, Ratio of Advances to Total Assets, Cost Efficiency (ratio of cost to total assets) and Interest Cover and thereafter a regression is run to identify the relationship between these factors and return on shareholders' funds. The results indicate that cost efficiency, advances to total assets and interest cover are significant during both the pre and post-merger phases. Also the returns on shareholders' funds is negatively related to cost efficiency and interest cover but is positively related to ratio of advances to total assets.

Just to look at the effects of M&A in another Indian industry, we consider the paper by *Rani, Yadav and Jain (2008)* where they examine the short run abnormal returns to India based mergers by using event study methodology. The short term effects are of interest because of the immediate trading opportunities that they create. They start by discussing the present state of the Indian Pharmaceutical Industry and go on to explore some specific cases of acquisitions of foreign companies by Indian pharma majors. The calculate the abnormal returns and cumulative abnormal returns for foreign based acquisitions, mergers and Indian based acquisitions separately and conclude that abnormal returns are highest in case of foreign based acquisitions and lowest(negative) for India based mergers.

While going for mergers and acquisitions (M&A) management think of financial synergy and/or operating synergy in different ways. But are they actually able to generate any such potential synergy or not, is the important issue. *Kumar &Bansal (2008),* in their study, try to find out whether the claims made by the corporate sector while going for M&As to generate synergy, are being achieved or not in Indian context. They do so by studying the impact of M&As on the financial performance of the outcomes in the long run and compare and contrast the results of merger deals with acquisition deals. This empirical study is based on secondary financial data and tabulation. Ratio analysis and correlation are used for analysis. The results indicate that in many cases of M&As, the acquiring firms were able to generate synergy in long run, that may be in the form of higher cash flow, more business, diversification, cost cuttings etc. A limitation of their research is that it shows that management cannot take it for granted that synergy can be generated and profits can be increased simply by going for mergers and acquisitions. A case study based research parallel to this study could be initiated to get nearer to reality show.

Anand& Singh (2008) study the effect of five specific mergers in the Indian banking sector on the shareholders wealth. These are mergers of the Times Bank with the HDFC Bank, the Bank of Madura with the ICICI Bank, the ICICI Ltd. with the ICICI Bank, the Global Trust Bank with the Oriental Bank of Commerce, and the Bank of Punjab with the Centurion Bank. The merger announcements in the have positive and significant shareholder wealth effect both for bidder and target banks. The market value weighted CAR of the combined bank portfolio as a result of merger announcement is 4.29 per cent in a three day period (-1, 1) window and 9.71 per cent in a 11-day period (-5, 5) event window. The findings of the study are in agreement with the European and the US bank mergers and acquisitions except for the fact that the value to the shareholders of bidder banks has been destroyed in the US context.

Horizontal merger, another possible avenue of inorganic growth has also been a popular option of expansion amongst many companies in the financial services sector. It basically means a merger occurring between companies producing similar goods or offering similar services. *Eckbo (1983)* tests the hypothesis that horizontal mergers generate positive abnormal returns to stockholders of the bidder and target firms because they increase the probability of successful collusion among rival producers. Under this hypothesis, rivals of the merging firms benefit from the merger since successful collusion limits the output and raises product prices and/or lower factor prices. He found that the antitrust law enforcement agencies systematically select relatively profitable mergers for prosecution and there is little evidence indicating that the mergers would have had collusive, anticompetitive effects.

Deregulation of the European financial services market during the 1990s led to an unprecedented wave of mergers and acquisitions (M&As) in the insurance industry. From 1990-2002 there were about 2,595 M&As involving European insurers of which 1,669 resulted in a change in control. *Cummins and Weiss (2004)* in their paper investigate whether M&As in the European insurance market create value for shareholders by studying the stock price impact of M&A transactions on target and acquiring firms. The stock price effect of M&As is measured by looking at abnormal returns on the transaction event day and surrounding days, i.e., by measuring the stock price impact on target and acquiring firms beyond what is predicted using a market model of stock returns. They also examine cumulative average abnormal returns (CAARs) which accumulate the abnormal returns over event windows surrounding the M&A transaction dates. Their analysis shows that European M&As created small negative cumulative average abnormal returns CAARs) for acquirers (generally less than 1%) and substantial positive CAARs for targets (in the range of 12% to 15%). Cross-border transactions were value-neutral for acquirers, whereas within-border transactions led to significant value loss (approximately 2%) for acquirers. For targets, both cross-border and within-border transactions led to substantial value-creation.

Bhaumik and Selarka (2008) discuss the impact of concentration of ownership on firm performance. On the one hand, concentration of ownership that, in turn, concentrates management control in the hands of a strategic investor, eliminates agency problems associated with dispersed ownership. On the other hand, it may lead to entrenchment of upper management which may be inconsistent with the objective of profit (or value) maximization. Their paper examines the impact of M&A on profitability of firms in India, where the corporate landscape is dominated by family-owned and group-affiliated businesses, such that alignment of management and ownership coexists with management entrenchment, and draws conclusions about the impact of concentrated ownership and entrenchment of owner managers on firm performance. Their results indicate that, during the 1995-2002 period, M&A in India led to

deterioration in firm performance. They also found that neither the investors in the equity market nor the debt holders can be relied upon to discipline errant (and entrenched) management. In other words, on balance, negative effects of entrenchment of owner manager strumps the positive effects of reduction in owner-vs.-manager agency problems. Their findings are consistent with bulk of the existing literature on family-owned and group affiliated firms in India.

In today's globalized economy, mergers and acquisitions (M&A) are being increasingly used the world over, for improving competitiveness of companies through gaining greater market share, broadening the portfolio to reduce business risk, for entering new markets and geographies, and capitalizing on economies of scale etc. *Mantravadi and Reddy (2008)* have studied the impact of mergers on the operating performance of acquiring corporates in different industries, by examining some pre-merger and post-merger financial ratios, with the sample of firms chosen as all mergers involving public limited and traded companies in India between 1991 and 2003. Their results suggest that there are minor variations in terms of impact on operating performance following mergers, in different industries in India. In particular, mergers seem to have had a slightly positive impact on profitability of firms in the banking and finance industry, the pharmaceuticals, textiles and electrical equipment sectors saw a marginal negative impact on operating performance (in terms of profitability and returns on investment). For the Chemicals and Agri-products sectors, mergers had caused a significant decline, both in terms of profitability margins and returns on investment and assets.

A conglomerate merger generally leads, through the diversification effect, to reduced risk for the combined entity. As is well known, in perfect capital markets such risk reduction will not be beneficial to stockholders, since they can achieve on their own the preferred degree of risk in their "homemade" portfolios. What, then, is the motive for the widespread and persisting phenomenon of conglomerate mergers? *Amihud and Bev (1981)*, study a "managerial" motive for conglomerate merger is advanced and tested. Specifically, managers, as opposed to investors, are hypothesized to engage in conglomerate mergers to decrease their largely undiversifiable "employment risk" (i.e., risk of losing job, professional reputation, etc.). Such risk-reduction activities are considered here as managerial perquisites in the context of the agency cost model. This hypothesis about conglomerate merger motivation is empirically examined in two different tests and found to be consistent with the data.

The beginning of an M&A process increases the odds for an individual bank to become an acquisition target. The wave of M&A is rising without there being any reasons of economic performance to justify such action. Most bank employees regard M&A as a threat to their jobs, since shareholders often demand limitations in the number of employed staff. The scope of the study by *Mylonakis (2006)* is to examine the impact of this phenomenon on employment and on the efficiency of human resources. For the banks selected in this study, all strategies followed within the Hellenic banking sector are included: development through consecutive M&A (Eurobank, Piraeus Bank) development through selective acquisitions (Alpha Credit Bank), decreasing company size by selling of bank institutions (Emporiki Bank) and self-sustainable growth (National Bank of Greece). For the above five banks, data taken from published balance sheets for the 1998-2003 accounting periods have been used. Based on these data, indicators evaluating personnel efficiency have been calculated. M&A results in the Hellenic bank market have been negative in terms of employment, since 3,627 jobs have been cancelled during the 1998-2003 period. These jobs belonged to banks that were either merged or acquired. Regarding a more efficient distribution of staff in the merged banks, data confirm that the large Greek banks that chose to grow through mergers have so far been justified in their choice.

Merging or acquiring has been a tactical practice for companies in order to penetrate markets. As a means of foreign direct investment, it provides plenty of comparative advantages against competitors. The 'early movers' phenomenon, as a special financial case of M&As is examined thoroughly in the paper by *Kalimeris (2010)*. Specifically, it focuses on the stock prices' volatility of 109 merger-and-acquisition cases of Greek companies in the period 1999-2006 that took place in the SE European region, as a part of the new merger wave. The methodology used in this paper is the Event Studies method, as used by Brown and Warner (1984). The model used in this research in order to calculate the abnormal returns is the Market Model, as noted above. A combination of the Market Model and the E-GARCH model is used to capture new information effects. For the majority of stock prices, there is a negative relationship between current return and future volatility. The fact that volatility tends to fall when returns

rise is in consonance with the leverage effect, The results show that in the majority of the sample there is appositive relationship between new information and conditional volatility, while in 37 cases the opposite holds.

Ottaviani(2007) is his paper analyses competition and mergers among risk averse banks. He shows that the correlation between the shocks to the demand for loans and the shocks to the supply of deposits induces a strategic interdependence between the two sides of the market. We characterize the role of diversification as a motive for bank mergers and analyze the consequences of mergers on loan and deposit rates. When the value of diversification is sufficiently strong, bank mergers generate an increase in the welfare of borrowers and depositors. If depositors have more correlated shocks than borrowers, bank mergers are relatively worse for depositors than for borrowers.

Examining the operating performance around commercial bank mergers, Cornett, McNutt and *Tehranian (2006)* conduct a study to evaluate the same. They find that industry-adjusted operating performance of merged banks increases significantly after the merger, large bank mergers produce greater performance gains than small bank mergers, activity focusing mergers produce greater performance gains than activity diversifying mergers, geographically focusing mergers produce greater performance gains than geographically diversifying mergers, and performance gains are larger after the implementation of nationwide banking in 1997. Further, they find improved performance is the result of both revenue enhancements and cost reduction activities. However, revenue enhancements are most significant in those mergers that also experience reduced costs.

In more than 3,844 mergers and acquisitions between 1989 and 1999, acquiring institutions purchased more than $3 trillion in assets globally. A number of reasons have been advanced for such a surge in acquisitions, including the need to consolidate to achieve cost savings and operational efficiencies, to be better able to compete in the global marketplace, or to provide for the controlled exit of inefficient firms from the financial services industry. *Kwan and Eisenbeis (1999)* explore the question of whether the various expected performance and earning benefits of mergers are in fact realized. It adds to the limited existing research on the effects of bank mergers by analyzing consolidations between 1989 and 1996, a period of almost unprecedented banking consolidation. Specifically, examining recent data allows considering evidence of efficiency or other gains from the wave of acquisitions flowing from the erosion and final elimination of the McFadden Act. Consistent with the findings of earlier studies, the results point to mixed efficiency and performance effects. Evidence suggests that even though the better-performing institutions tended to target the higher-performing targets, the resulting mergers did not significantly improve profit performance or efficiency. In addition, the authors find only weak evidence that the market viewed acquisitions with favor. The overall conclusion is that the widely touted earnings, efficiency, and other performance and earning benefits of mergers of large banks still remain in doubt.

3. DATA & METHODOLOGY

A data set consisting of all mergers and acquisitions in the financial services sector, from 1993 to 2010 has been chosen to perform the study. Financial services sector was chosen specifically as this sector has grown strongly over the past couple of decades and with license regime being abolished in 1991, it has been a hotbed for M&A activity in the country. Data for 160 companies (that is 80 cases of M&A) has been collected for all the 18 years for the following parameters –

- Profit Margin
- Total Costs
- Total Assets
- Advances
- Profit before Interest, Tax, Depreciation & Amortization (PBDITA)
- Net Profit (PAT)
- Current Ratio
- Interest Cover (times)
- Return on Capital Employed
- Profit Margin

Firstly all the 80 companies that had undergone a merger or acquisition were listed and their acquirers companies were determined along with the year of merger/acquisition. Then the data for above parameters were collected for all the 160 companies for the entire period of 1993-2010. Few of these parameters were combined to form composite ratios also. All the data was collected using CMIE Prowess. The list of companies is provided in Table III in the Appendix.

3.1. Model I

The 3 year pre and post-merger data points were taken for all the parameters across the 80 cases. For pre-merger series, a simple average of the parameters' value for three years of both the target and the acquirer company is taken. For post-merger series, the average of the parameters' value for only the acquirer company is taken.

1. Both the Pre and Post Merger Data Series were tested for normality using the Jarque Bera statistic.
2. For those series where JB statistic was significant with a very high value, it was concluded that the series was not following a normal distribution. Therefore Wilcoxon Rank sum/Mann Whitney U Test was used to compare the means.
3. For those cases where a normal distribution was being followed, Student t test for comparison of means from a single sample was used.

3.2. Model II

The following models have been estimated for the Pre and Post merger data –

$$ROSF_{BM} = \alpha + \beta_1 PM + \beta_2 CR + \beta_3 CE + \beta_4 IER + \epsilon$$
$$ROSF_{AM} = \delta + \gamma_1 PM + \gamma_2 CR + \gamma_3 CE + \gamma_4 IER + \epsilon$$

where:

$ROSF_{BM}$ = Return on Shareholder's funds before merger (proxied by ROCE)
$ROSF_{AM}$ = Return on Shareholder's funds after merger (proxied by ROCE)
PM= Profit Margin
CR = Current Ratio
CE = Cost Efficiency (Cost/Total Assets)
IER = Interest Earning Ratio (Interest coverage times)

The steps involved were –

1. Each of the data series were tested for stationarity using the Augmented Dickey Fuller Test and made stationary (if not found)
2. Above Model (regression) was estimated for the parameters using OLS Regression
3. Significant parameters and their relationship with the dependent variable were determined.

3.3. Model III

Also the change in systematic risk will be measured as a change in the product of stocks $\beta^2$with variance in market risk premium before and after the merger and will be regressed using the following model:

$$R_{i,t} = \alpha + \beta M_t + \epsilon$$

where:

$R_{i,t}$ = Return on security i on day t
M_t = Return on market on day t

The daily returns for 90days pre and post-merger will be taken to calculate two values of β_{BM}(before merger) and β_{AM}(after merger).Then we measure the systematic risk in all the cases and then see for any significant change in systematic risk by a simple comparison of the pre and post merger cases.

Systematic Risk (BM) = $\beta_{BM}^2 \times Var(Mkt\ Premium)$

Systematic Risk (AM) = $\beta_{AM}^2 \times Var(Mkt\ Premium)$

A major outcome and reason for the M&A activity are the diversification benefits which allow for reduction in a company overall risk. To account for the same we estimate the proportion of systematic and non-systematic risk both before and after the merger for the acquiring firm and thereby use an F-Test to check whether the change is significant or not. The risk associated with any stock's return is directly related to the variance of returns on the stock.

This model is estimated for a few selected cases–Merger of State Bank of Saurashtra with State Bank of India, merger of ICICI Bank with Bank of Madura and Merger of Athena Financial Services with Kinetic Capital Finance Limited. The reduction in systematic risk is measured for the acquiring entity (the entity remaining after the merger).

4. RESULTS AND ANALYSIS

The following are the results of the various test and models developed for the various cases of merger and their effects measured using different parameters.

4.1. Effect of Mergers

The following table depicts whether there is an improvement in the listed parameters for the various companies based on the comparison of three year pre and post-merger data in each of the cases.

CR – Current Ratio IC – Interest Coverage CE – Cost Efficiency (Cost/Total Assets)

PM – Profit Margin ROCE – Return on Capital Employed

TABLE 4.1: IMPROVEMENTS IN PARAMETERS

COMPANY	CR	IC	CE	PAT	ROCE	PM	PBDITA
Chandrika Traders Ltd	Y	Y	Y	N	Y	-	Y
Joonktollee Tea &Inds. Ltd.	N	Y	N	Y	N	Y	Y
Asman Investments Ltd.	Y	N	Y	N	N	-	N
AdorTechnopak Ltd	N	N	Y	N	N	-	N
Alfa Laval (India) Ltd	N	Y	Y	Y	Y	-	Y
NiccoUco Alliance Credit Ltd	Y	N	Y	Y	N	-	Y
I C I C I Ltd	N	N	N	Y	N	-	Y
Apcotex Industries	Y	N	Y	Y	N	Y	N
Shaw Wallace & Co. Ltd	N	N	Y	N	N	-	N
Shaw Wallace & Co. Ltd	Y	N	Y	N	Y	-	N
I C I C I Bank Ltd.	-	N	N	Y	N	-	Y
Bank Of Nova Scotia	N	Y	N	Y	N	-	Y
B F Utilities Ltd	N	N	N	N	-	-	-
T C S E-Serve Ltd	N	Y	N	Y	Y	-	Y
Godrej & Boyce Mfg. Co. Ltd.	N	N	Y	Y	N	-	Y
I C I C I Bank Ltd.	N	N	N	Y	N	-	Y
IC I C I Bank Ltd	N	N	N	Y	N	-	Y
H S B C Investdirect (India) Ltd.	Y	Y	Y	Y	Y	-	Y
I C I C I Ltd.	N	Y	N	Y	Y	-	Y
B F Utilities Ltd	N	N	N	N	-	-	-
BhartiAirtel Ltd.	-	N	Y	N	N	-	Y
Athena Financial Services Ltd	N	N	Y	Y	-	-	-
Mahindra & Mahindra Ltd.	N	N	Y	Y	N	-	Y
Saraswat Co-Operative Bank Ltd.	N	Y	N	Y	N	-	Y
Merrygold Investments Ltd	Y	N	Y	-	-	-	-
Monnet Ispat& Energy Ltd	N	N	N	-	-	Y	-
B F Utilities Ltd.	N	N	N	-	-	-	-

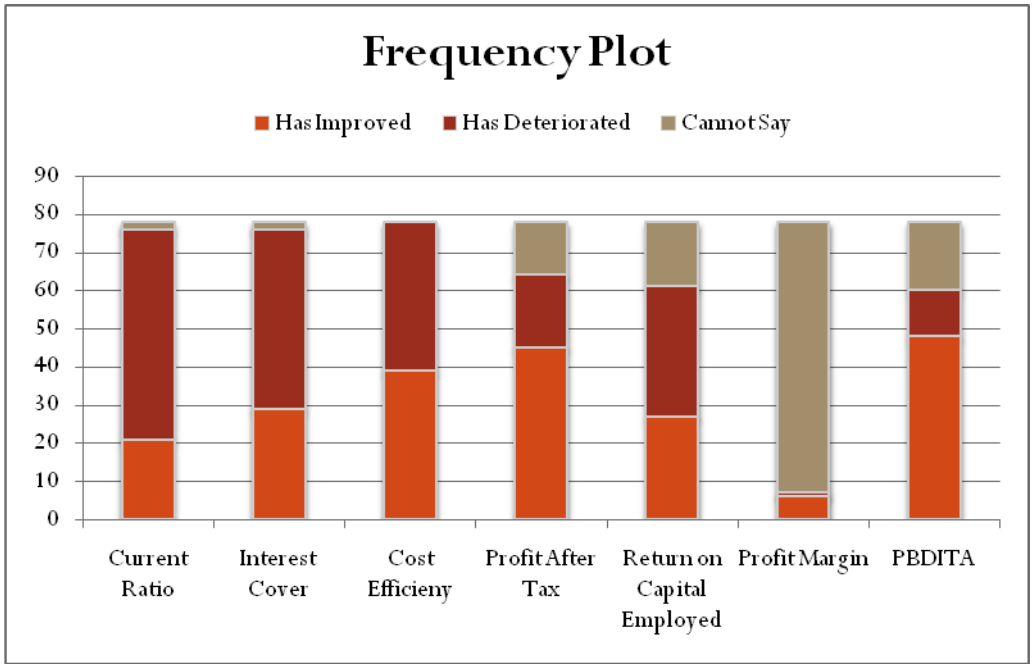
Punjab National Bank	N	Y	N	Y	Y	-	Y
Summit Securities Ltd	N	Y	N	-	-	-	-
Aura Securities Pvt. Ltd	N	N	N	-	-	N	-
Aditya Birla Money Ltd.	N	Y	Y	Y	N	-	Y
Asman Investments Ltd.	N	N	N	-	-	-	-
NiccoUco Alliance Credit Ltd.	Y	N	N	-	-	N	-
Punjab National Bank	Y	Y	N	Y	Y	-	Y
Surabhi Chemicals & Investment Ltd	N	N	N	Y	Y	-	Y
Bengal & Assam Co. Ltd	N	Y	N	Y	Y	Y	Y
Pidilite Industries Ltd.	Y	Y	Y	Y	Y	-	Y
Asman Investments Ltd	N	N	Y	N	N	-	N
Pioneer Investcorp Ltd.	N	Y	Y	Y	Y	Y	Y
Duncans Industries Ltd.	Y	N	Y	N	-	-	-
Titan Industries	N	N	Y	Y	Y	-	Y
Bengal & Assam Co. Ltd	N	Y	N	Y	Y	-	Y
Bank Of Rajasthan Ltd.	Y	N	N	Y	Y	-	Y
Shree Capital Services Ltd.	Y	Y	Y	-	-	Y	-
Reliance Capital Ltd.	N	Y	Y	Y	Y	-	Y
Shaw Wallace Distilleries Ltd.	N	Y	Y	Y	N	-	Y
Indokem Ltd.	N	-	N	-	-	-	-
I C I C I Ltd.	N	N	Y	Y	N	-	Y
Tata Chemicals Ltd.	Y	Y	Y	Y	N	-	Y
Russell Credit Ltd.	Y	N	N	Y	N	-	Y
Asman Investments Ltd.	N	N	Y	N	N	-	N
Stanrose Mafatlal Lubechem Ltd	N	N	N	N	N	-	N
Shaw Wallace & Co. Ltd	Y	N	Y	N	Y	-	N
United Western Bank Ltd.	N	N	Y	N	N	-	Y
Idea Cellular Ltd.	N	Y	Y	Y	Y	-	Y
Magma Fincorp Ltd.	N	N	Y	Y	N	-	Y
Mayuka Investment Ltd.	Y	N	N	Y	N	-	Y
Bengal & Assam Co. Ltd	N	Y	N	Y	Y	-	Y
Shaw Wallace & Co. Ltd.	N	N	Y	N	N	-	N
State Bank Of India	N	Y	N	Y	Y	-	Y
Kalyani Investment Co. Ltd	N	N	N	-	-	-	-
Lakshmi Trade Credits Ltd.	Y	N	Y	N	N	-	Y
Tata Finance Ltd.	Y	N	Y	Y	N	-	Y
Apex Enterprises (India) Ltd.	N	N	N	Y	N	-	Y
Bengal & Assam Co. Ltd	N	Y	N	Y	Y	-	Y
H D F C Bank Ltd.	N	Y	N	Y	Y	-	Y
Indokem Ltd.	N	-	N	-	-	-	-
Vertex Securities Ltd.	N	N	Y	N	N	-	Y
Usha Martin Inds. Ltd.	N	N	N	-	-	-	-
I D B I Bank Ltd.	N	N	N	N	N	-	N
Vadilal Industries Ltd.	N	N	Y	N	N	-	N
Tata Investment Corpn. Ltd.	Y	Y	N	Y	Y	-	Y
Shaw Wallace Distilleries Ltd.	N	Y	Y	Y	N	-	Y
Rujuvalika Investments Ltd.	N	N	N	-	-	-	-
Voltas Ltd.	N	N	Y	Y	Y	-	Y
Idea Cellular Ltd.	N	Y	Y	Y	Y	-	Y
Bengal & Assam Co. Ltd.	N	Y	N	Y	Y	-	Y
Merrygold Investments Ltd.	Y	N	Y	-	-	-	-

Y: Yes, there has been an improvement

N: No, there has not been an improvement (rather a decline)

-: Cannot be determined (data insufficient)

FIGURE 4.1: FREQUENCY PLOT FOR VARIOUS PARAMETERS FOR ACQUIRING COMPANIES



From the above graph we can see that PBDITA and PAT have shown improvement in maximum number of cases whereas Current Ratio seems to have deteriorated post merger for the acquiring companies. Cost Efficiency has improved in nearly half the cases and deteriorated in the remaining half.

4.2. Model I

The following are the results for various parameters –

TABLE 4.2: RESULTS FOR PRE-POST MERGER COMPARISON

Parameter	Pre/Post Series	JB Statistic	Wilcoxon/Mann Whitney
PAT	Pre-Merger	5982.70	1.8765
	Post-Merger	5082.70	
PBDITA	Pre-Merger	6002.56	2.0123*
	Post-Merger	5681.45	
ROCE	Pre-Merger	1796.68	0.6247
	Post-Merger	9.27	
IC	Pre-Merger	1130.91	0.1722
	Post-Merger	7361.45	
CE	Pre-Merger	18.86	0.3922
	Post-Merger	19.17	
ADV/TA	Pre-Merger	0.765	1.0061
	Post-Merger	2.19	
CR	Pre-Merger	609.11	4.5899*
	Post-Merger	8131.51	

* Significant at 95% level of confidence

Note: For Profit Margin (PM) the numbers of data points were insufficient to give any conclusive results.

From the results above, we can conclude that only *Current Ratio (CR)* and *Profit before Interest, Tax, Depreciation& Amortization (PBDITA)* have had a significant change from their pre-merger values while remaining parameters have not shown a significant change for the acquiring company.A comparison of

means indicates that on one side where PBDITA has improved post merger, Current Ratio on the other hand has deteriorated. (Refer Appendix Model I Results)

4.3. Model II

4.3.1. Pre-Merger

All the dependent variables and the independent variable series were found to be stationary at Level using the ADF test.

TABLE 4.3: PRE MERGER MODEL

Explanatory Variables	Coefficient	t-statistic	p-value
Constant	-0.182358	-0.048757	0.9613
Interest Coverage	0.156388	1.893913	0.0427*
Current Ratio	-0.025916	-0.274015	0.785
Cost Efficiency	-2.137706	-0.232981	0.8165

* Significant at 95% level of confidence

Note: For Profit Margin (PM) the numbers of data points were insufficient to be used in this regression model.

Therefore we see that Interest Coverage is a significant variable affecting the return on shareholders' funds (ROSF) before the merger and is positively associated to the same indicating that an increase in interest coverage will allow for an increase in Return earned on shareholders' funds.

4.3.2. Post-Merger

All the dependent variables and the independent variable series were found to be stationary at Level using the ADF test.

TABLE 4.4: POST MERGER MODEL

Explanatory Variables	Coefficient	t-statistic	p-value
Constant	-0.982382	-0.263645	0.7936
Profit Margin	0.022824	2.546185	0.0136*
Interest Coverage	0.040164	2.340353	0.0253*
Current Ratio	0.326509	0.260242	0.7962
Cost Efficiency	4.669587	1.272021	0.212

* Significant at 95% level of confidence

Hence we see that Interest Coverage continues to be a significant variable affecting the return on shareholders' funds (ROSF) even after the merger and is positively associated to the same indicating that there is no change in the relationship between ROSF and IC even after the merger. But we see that Profit Margin is also significant post the merger.

4.4. Model III

4.4.1. State Bank of India

The date of merger of SBI with SBS is taken as the reference point. 90 days pre and post merger announcement data is taken to estimate the change in systematic risk. The results for the pre and post-merger estimation of β are –

TABLE 4.5: SBI PRE-POST MERGER BETA ESTIMATION

Explanatory Variables	Coefficient	t-statistic	p-value
PRE MERGER PERIOD			
Constant	0.000792	0.556514	0.5793
Market Premium	(β_{BM})0.972368	6.789262	0*
Var (X) = 0.99355%^{2} Systematic Risk (BM) = 0.9394%^{2}			
POST MERGER PERIOD			
Constant	0.002219	1.836094	0.0697
Market Premium	(β_{AM})1.217363	11.5422	0*
Var (X) = 1.3272%^{2} Systematic Risk (AM) = 1.9670%^{2}			

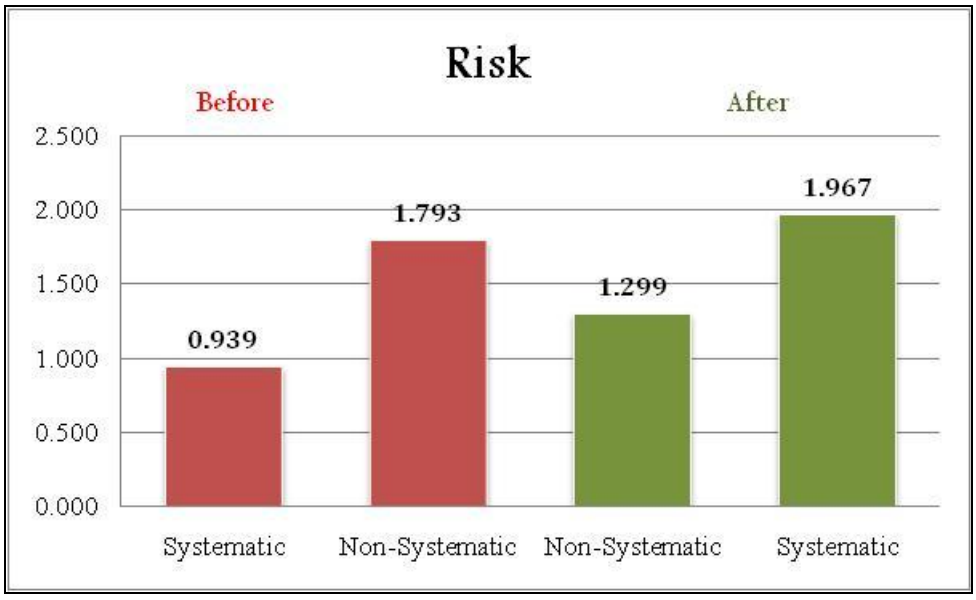
* Significant at 95% level of confidence

From above table it can be seen that there has been an increase in the systematic risk for State Bank of India post its merger with State Bank of Saurashtra. Now we evaluate whether this increase is significant or not.

Effect of Diversification

Below is a figure representing the composition of total risk as systematic and non-systematic components for both before and after the merger periods. We see that both the systematic and non-systematic components have increased post the merger.

FIGURE 4.2: SBI PRE-POST MERGER RISK COMPOSITION



* Risk is measured as variance of returns

To measure whether the above changes in Systematic and Non-Systematic Risk are significant, we conduct an F-test for total risk and the systematic risk components, the results for which are as tabulated in the table below –

TABLE 4.6: EFFECT OF DIVERSIFICATION ON RISK

Explanatory Variables	Value	p-value
Total Risk		
F–Test	1.19517	0.402
Systematic Risk		
F–Test	1.335867	0.1739

* Significant at 95% level of confidence

Thereby we see that the change in neither the Total Risk nor the Systematic Risk component is significant for State Bank of India. Hence this case of merger did not reap any benefits for State Bank of India which could be attributable to diversification effects of merger.

4.4.2. ICICI Bank

The date of merger of ICICI Bank Ltd with Bank of Madura is taken as the reference point. 90 days pre and post-merger announcement data is taken to estimate the change in systematic risk. The results for the pre and post-merger estimation of β are –

TABLE 4.7:ICICI PRE-POST MERGER BETA ESTIMATION

Explanatory Variables	Coefficient	t-statistic	p-value
PRE MERGER PERIOD			
Constant	1.007208	1.619621	0.1123
Market Premium	(β_{BM})1.816053	4.628941	0*
Var (X) = $2.5263\%^2$			
Systematic Risk (BM) = $8.3321\%^2$			
POST MERGER PERIOD			
Constant	-0.1591	-0.42526	0.6719
Market Premium	(β_{AM})0.730419	3.837213	0.0003*
Var (X) = $3.7608\%^2$			
Systematic Risk (AM) = $2.0065\%^2$			

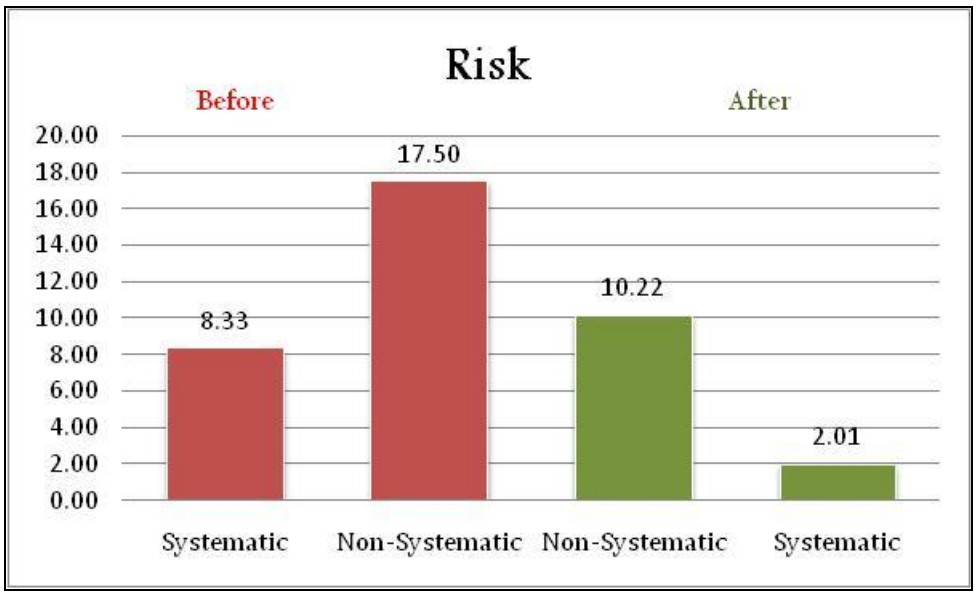
* Significant at 95% level of confidence

From above table it can be seen that there has been a decrease in the systematic risk for ICICI Bank post its merger with Bank of Madura. Now we evaluate whether this decrease is significant or not.

Effect of Diversification

Below is a figure representing the composition of total risk as systematic and non-systematic components for both before and after the merger periods. We see that both the systematic and non-systematic components have decreased post the merger.

FIGURE 2.3: ICICI PRE-POST MERGER RISK COMPOSITION



* Risk is measured as variance of returns

To measure whether the above changes in Systematic and Non-Systematic Risk are significant, we conduct an F-test for total risk and the systematic risk components, the results for which are as tabulated in the table below –

TABLE 4.8: EFFECT OF DIVERSIFICATION ON RISK

Explanatory Variables	Value	p-value
Total Risk		
F–Test	1.432692	0.2265
Systematic Risk		
F–Test	2.091126	0.0139*

* Significant at 95% level of confidence

Thereby we see that the change in only the Systematic Risk component is significant for ICICI Bank whereas though there is a change in absolute value of Total Risk also, but the change is not significant. Also a comparison of variances shows that the Systematic Risk component has actually decreased after the merger, supporting the evidence for diversification effects of merger.

4.4.3. Athena Financial Services

The date of merger of Athena Financial Services with Kinetic Capital Finance Ltd is taken as the reference point. 90 days pre and post-merger announcement data is taken to estimate the change in systematic risk. The results for the pre and post-merger estimation of β are –

TABLE 4.9: ATHENA FINANCIAL SERVICES PRE-POST MERGER BETA ESTIMATION

Explanatory Variables	Coefficient	t-statistic	p-value
PRE MERGER PERIOD			
Constant	-0.238214	-0.085449	0.9325
Market Premium	(β_{BM})1.847578	2.248608295	0.0272*
Var (X) = 2.9172%^{2} Systematic Risk (BM) = 9.9580%^{2}			
POST MERGER PERIOD			
Constant	1.209026	0.81325	0.4186
Market Premium	(β_{AM})1.217896	2.5902375	0.0205*
Var (X) = 4.4820%^{2} Systematic Risk (AM) = 6.6482%^{2}			

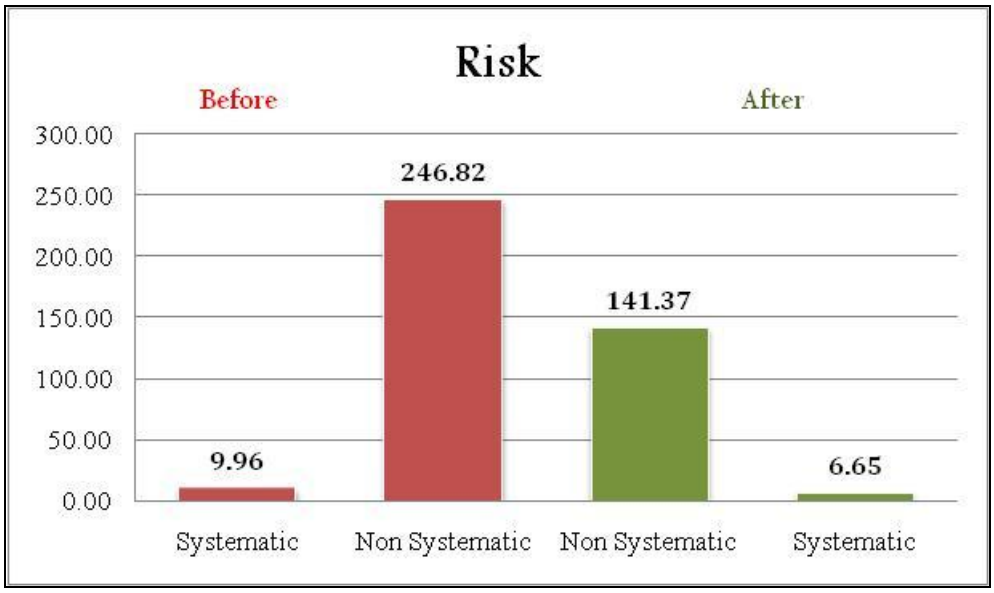
* Significant at 95% level of confidence

From above table it can be seen that there has been a decrease in the systematic risk for Athena Financial Services post its merger with Kinetic Capital Finance Ltd. Now we evaluate whether this decrease is significant or not.

Effect of Diversification

Below is a figure representing the composition of total risk as systematic and non-systematic components for both before and after the merger periods. We see that both the systematic and non-systematic components have decreased post the merger.

FIGURE 4.4: ATHENA PRE-POST MERGER RISK COMPOSITION



* Risk is measured as variance of returns

To measure whether the above changes in Systematic and Non-Systematic Risk are significant, we conduct an F-test for total risk and the systematic risk components, the results for which are as tabulated in the table below –

TABLE 4.10: EFFECT OF DIVERSIFICATION ON RISK

Explanatory Variables	Value	p-value
Total Risk		
F–Test	2.027728	0.0495*
Systematic Risk		
F–Test	2.638788	0.0075*

* Significant at 95% level of confidence

Thereby we see that the change in both Total Risk and the Systematic Risk component is significant for Athena Financial Services. Also a comparison of variances shows that Total Risk and the Systematic Risk components have actually decreased after the merger, supporting the evidence for diversification effects of merger.

5. CONCLUSION

From the study conducted above we can conclude that the M&A activity in the Indian Financial Services Sector over a period of March 1993- Feb 2010 has had positive effects on the profitability in majority cases but the liquidity position has deteriorated in a period of three years after the merger. This points to the fact that though companies may have been able to leverage the synergies arising out of the merger or acquisition, but they haven't been able to manage their capital structure to improve their liquidity.

A comparison of the pre and post-merger performance of these companies indicates that though Interest Cover (EBIT/Interest) has remained a significant factor contributing to the return on shareholder's funds both before and after the merger, Profit Margin has a significant positive effect on the return only after the merger. Thus the ability of a company to service its debt obligations is an important factor affecting the companies' return irrespective of whether it is involved in a merger or not but it becomes important to generate higher profits after the merger in order to justify the decision of merger undertaken by the management to the shareholders.

Finally looking at the three specific cases, we are able to highlight the importance of M&A as a means towards reduction of risk by diversification. We see that diversification not only helps reduce the non-systematic risk as part of the total risk, but also has an impact on the systematic risk component, thereby helping reduce the overall risk of the firm.

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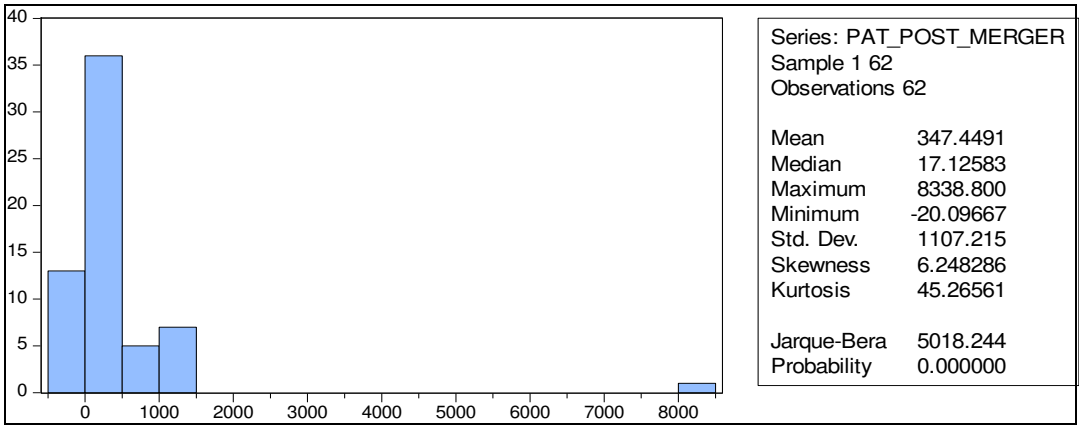
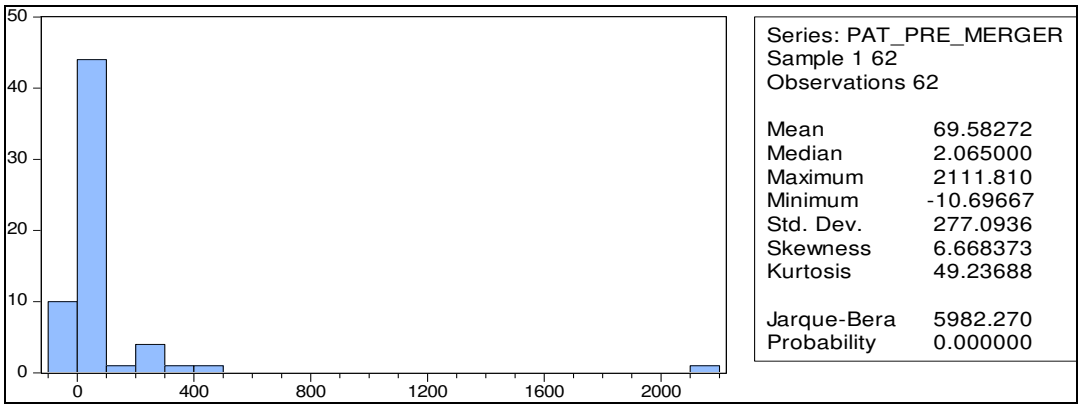
APPENDIX

Model I Results

Profit afterTax





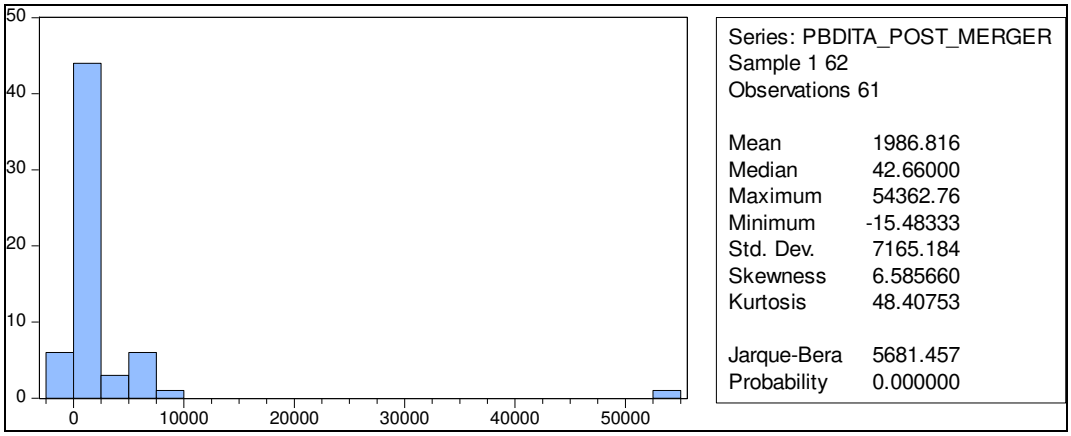
Test for Equality of Medians Between Series
Date: 02/03/11 Time: 00:00
Sample: 1 62
Included observations: 62

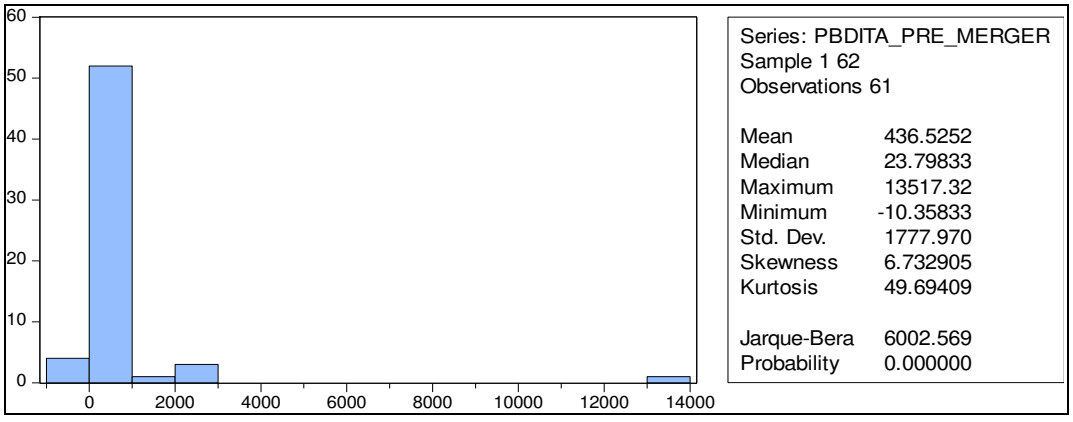
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		1.876523	0.0606
Wilcoxon/Mann-Whitney (tie-adj.)		1.876591	0.0606
Med. Chi-square	1	3.225806	0.0725
Adj. Med. Chi-square	1	2.612903	0.106
Kruskal-Wallis	1	3.530722	0.0602
Kruskal-Wallis (tie-adj.)	1	3.530978	0.0602
van der Waerden	1	2.477791	0.1155

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
PAT_POST_MERGER	62	17.12583	36	68.56452	0.137825
PAT_PRE_MERGER	62	2.065	26	56.43548	-0.135772
All	124	4.535	62	62.5	0.001026

Profit before Interest, Tax, Depreciation & Amortization





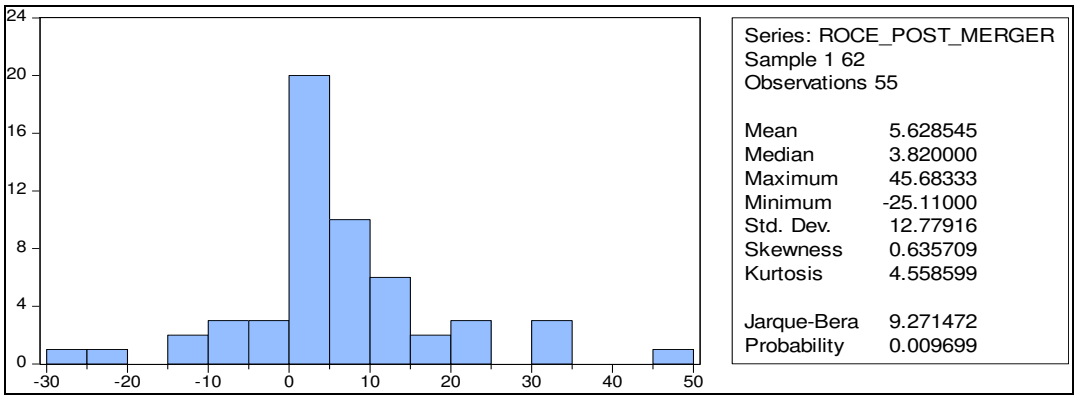
Test for Equality of Medians Between Series
Date: 02/03/11 Time: 00:01
Sample: 1 62
Included observations: 62

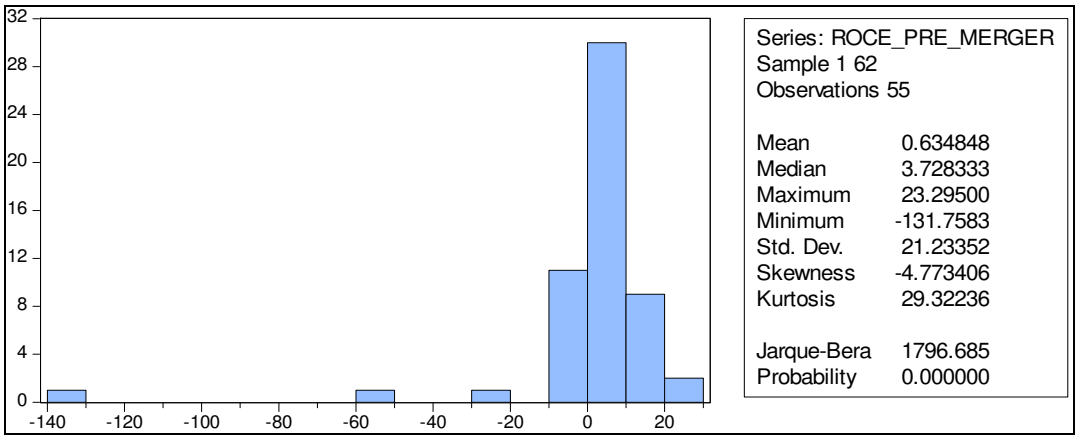
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		2.012337	0.0442
Wilcoxon/Mann-Whitney (tie-adj.)		2.012384	0.0442
Med. Chi-square	1	1.180645	0.2772
Adj. Med. Chi-square	1	0.819892	0.3652
Kruskal-Wallis	1	4.059812	0.0439
Kruskal-Wallis (tie-adj.)	1	4.06	0.0439
van der Waerden	1	3.785379	0.0517

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
PBDITA_POST_MERGER	61	42.66	33	67.95082	0.171277
PBDITA_PRE_MERGER	61	23.79833	27	55.04918	-0.169741
All	122	30.9	60	61.5	0.000768

Return on Capital Employed





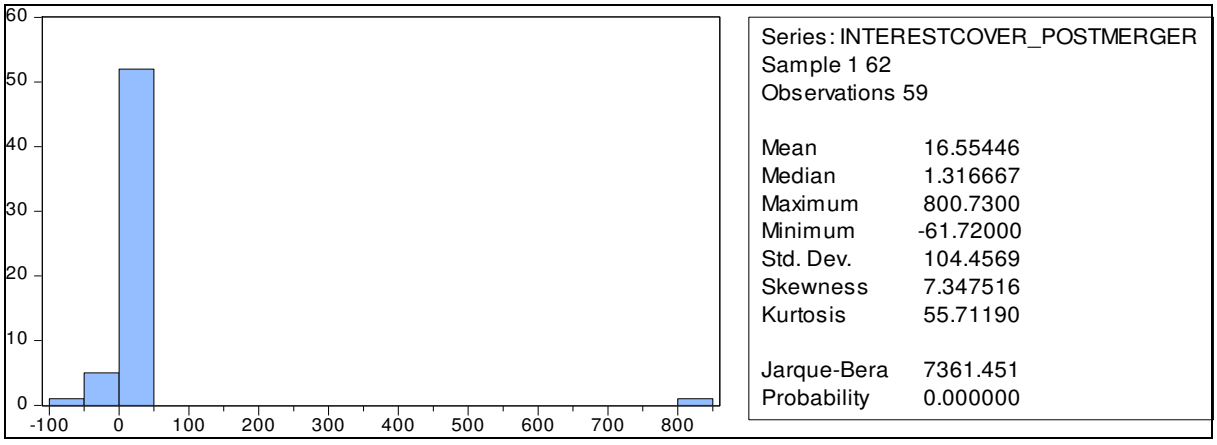
Test for Equality of Medians Between Series
Date: 02/03/11 Time: 00:02
Sample: 1 62
Included observations: 62

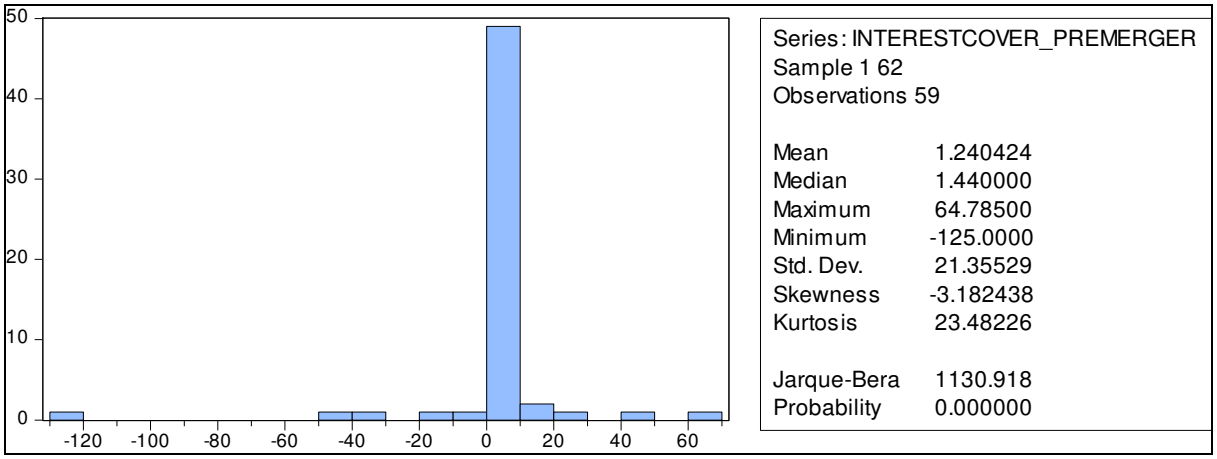
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		0.624716	0.5322
Wilcoxon/Mann-Whitney (tie-adj.)		0.62475	0.5321
Med. Chi-square	1	0.036364	0.8488
Adj. Med. Chi-square	1	0	1
Kruskal-Wallis	1	0.394014	0.5302
Kruskal-Wallis (tie-adj.)	1	0.394056	0.5302
van der Waerden	1	0.8223	0.3645

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
ROCE_POST_MERGER	55	3.82	28	57.40909	0.083745
ROCE_PRE_MERGER	55	3.728333	27	53.59091	-0.083583
All	110	3.7425	55	55.5	8.11E-05

Interest Coverage





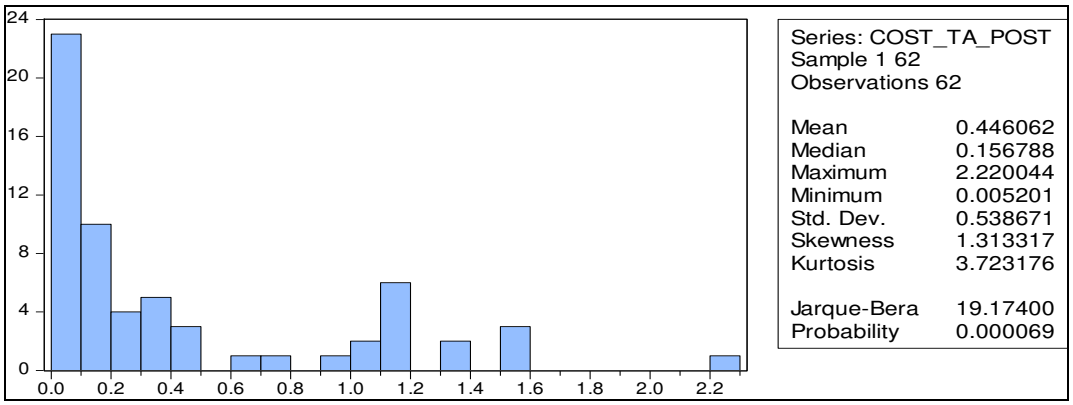
Test for Equality of Medians Between Series
Date: 02/28/11 Time: 23:21
Sample: 1 62
Included observations: 62

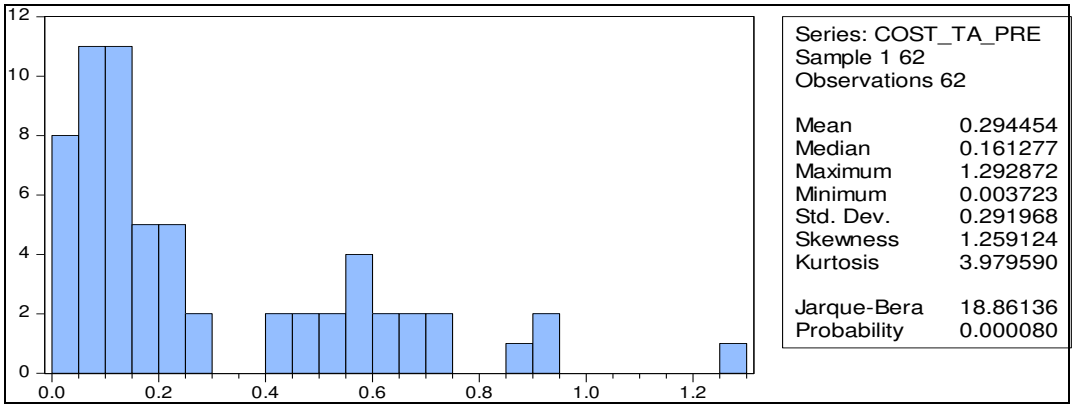
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		0.172233	0.8633
Wilcoxon/Mann-Whitney (tie-adj.)		0.172248	0.8632
Med. Chi-square	1	0.033898	0.8539
Adj. Med. Chi-square	1	0	1
Kruskal-Wallis	1	0.030598	0.8611
Kruskal-Wallis (tie-adj.)	1	0.030604	0.8611
van der Waerden	1	0.108419	0.742

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
INTERESTCOVER_POSTMERGER	59	1.316667	29	60.05085	0.029454
INTERESTCOVER_PREMERGER	59	1.44	30	58.94915	-0.029302
All	118	1.33	59	59.5	7.59E-05

Cost Efficiency





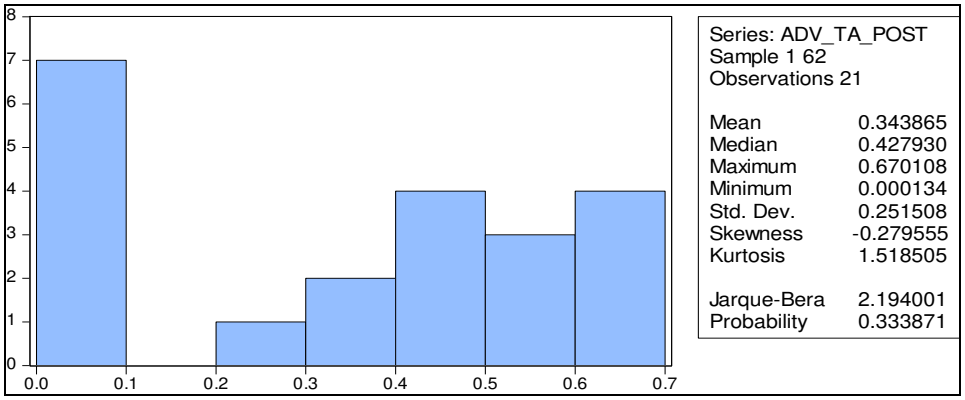
Test for Equality of Medians Between Series
Date: 02/28/11 Time: 23:28
Sample: 1 62
Included observations: 62

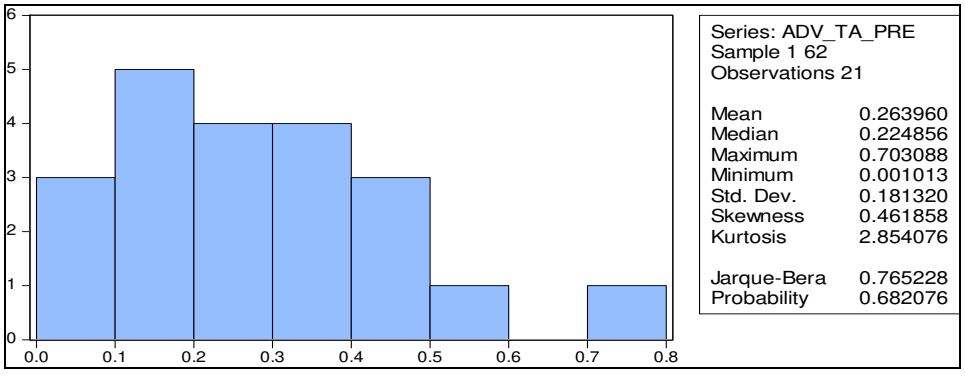
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		0.392296	0.6948
Wilcoxon/Mann-Whitney (tie-adj.)		0.392309	0.6948
Med. Chi-square	1	0.129032	0.7194
Adj. Med. Chi-square	1	0.032258	0.8575
Kruskal-Wallis	1	0.155863	0.693
Kruskal-Wallis (tie-adj.)	1	0.155873	0.693
van der Waerden	1	0.513438	0.4737

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
COST_TA_POST	62	0.156788	30	63.77419	0.062279
COST_TA_PRE	62	0.161277	32	61.22581	-0.062565
All	124	0.158297	62	62.5	-0.000143

Advances/Total Assets





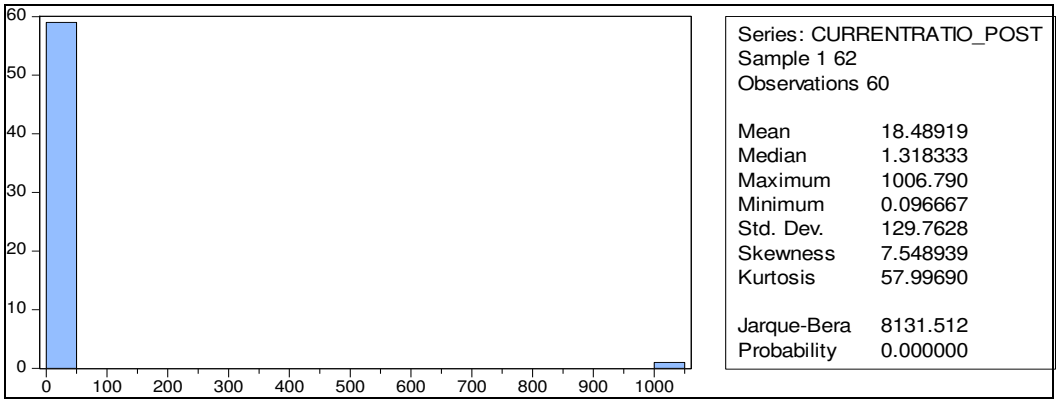
Test for Equality of Medians Between Series
Date: 02/28/11 Time: 23:30
Sample: 1 62
Included observations: 62

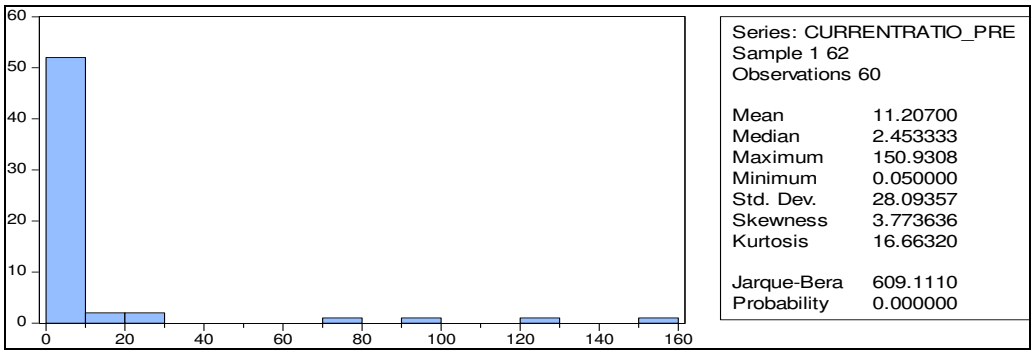
Method	df	Value	Probability
Wilcoxon/Mann-Whitney		1.00623	0.3143
Wilcoxon/Mann-Whitney (tie-adj.)		1.00623	0.3143
Med. Chi-square	1	0.857143	0.3545
Adj. Med. Chi-square	1	0.380952	0.5371
Kruskal-Wallis	1	1.037969	0.3083
Kruskal-Wallis (tie-adj.)	1	1.037969	0.3083
van der Waerden	1	0.555807	0.456

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
ADV_TA_POST	21	0.42793	12	23.42857	0.107524
ADV_TA_PRE	21	0.224856	9	19.57143	-0.107524
All	42	0.323804	21	21.5	-6.34E-17

Current Ratio





Test for Equality of Medians Between Series
Date: 02/28/11 Time: 23:35
Sample: 1 62
Included observations: 62

Method	df	Value	Probability
Wilcoxon/Mann-Whitney		4.589935	0
Wilcoxon/Mann-Whitney (tie-adj.)		4.590118	0
Med. Chi-square	1	26.13333	0
Adj. Med. Chi-square	1	24.3	0
Kruskal-Wallis	1	21.0916	0
Kruskal-Wallis (tie-adj.)	1	21.09328	0
van der Waerden	1	17.03157	0

Category Statistics

Variable	Count	Median	> Overall Median	Mean Rank	Mean Score
CURRENTRATIO_PRE	60	2.453333	44	75.08333	0.365413
CURRENTRATIO_POST	60	1.318333	16	45.91667	-0.365275
All	120	1.711667	60	60.5	6.94E-05

Model II Results

Pre Merger

Dependent Variable: PRE_ROCE
Method: Least Squares
Date: 03/01/11 Time: 00:43
Sample: 1 66
Included observations: 66

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.182358	3.740139	-0.048757	0.9613
PRE_INTERESTCOVER	**0.156388**	**0.082574**	**1.893913**	**0.0427**
PRE_CURRENTRATIO	-0.025916	0.09458	-0.274015	0.785
PRE_COSTTA	-2.137706	9.17544	-0.232981	0.8165

R-squared	0.027065	Mean dependent var	-0.550694
Adjusted R-squared	-0.020012	S.D. dependent var	20.29206
S.E. of regression	20.4941	Akaike info criterion	8.936843
Sum squared resid	26040.51	Schwarz criterion	9.069549
Log likelihood	-290.9158	Hannan-Quinn criter	8.989282
F-statistic	0.574911	Durbin-Watson stat	1.486111
Prob(F-statistic)	0.633654		

Post Merger

Dependent Variable: POST_ROCE
Method: Least Squares
Date: 03/01/11 Time: 00:15
Sample: 1 39
Included observations: 39

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.982382	3.726149	-0.263645	0.7936
POST_PROFITMARGIN	**0.022824**	**0.008964**	**2.546185**	**0.01365**
POST_INTERESTCOVER	**0.040164**	**0.017162**	**2.340353**	**0.0253**
POST_CURRENTRATIO	0.326509	1.254638	0.260242	0.7962
POST_COSTTA	4.669587	3.670999	1.272021	0.212

R-squared	0.252214	Mean dependent var	3.387179
Adjusted R-squared	0.164239	S.D. dependent var	14.61419
S.E. of regression	13.36028	Akaike info criterion	8.141659
Sum squared resid	6068.905	Schwarz criterion	8.354936
Log likelihood	-153.7624	Hannan-Quinn criter.	8.218181
F-statistic	2.86689	Durbin-Watson stat	1.945843
Prob(F-statistic)	0.037799		

Model III Results

State Bank of India

Stationarity

Null Hypothesis: SBI_PRE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.14041	0
Test critical values:	1% level	-3.5056	
	5% level	-2.89433	
	10% level	-2.58433	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: SBI_POST has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.28424	0
Test critical values:	1% level	-3.5056	
	5% level	-2.89433	
	10% level	-2.58433	

*MacKinnon (1996) one-sided p-values.

Pre merger

Dependent Variable: SBI_PRE
Method: Least Squares
Date: 03/10/11 Time: 22:03
Sample: 1 90
Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000792	0.001424	0.556514	0.5793
MKT_PRE	**0.972368**	0.143221	6.789262	0

R-squared	0.343744	Mean dependent var	5.31E-05
Adjusted R-squared	0.336287	S.D. dependent var	0.016531
S.E. of regression	0.013468	Akaike info criterion	-5.755048
Sum squared resid	0.015962	Schwarz criterion	-5.699497
Log likelihood	260.9772	Hannan-Quinn criter.	-5.732647
F-statistic	46.09409	Durbin-Watson stat	2.145322
Prob(F-statistic)	0		

Post merger

Dependent Variable: SBI_POST
Method: Least Squares
Date: 03/10/11 Time: 22:04
Sample: 1 90
Included observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002219	0.001208	1.836094	0.0697
MKT_POST	**1.217363**	0.105471	11.5422	0

R-squared	0.60221	Mean dependent var	0.002042
Adjusted R-squared	0.59769	S.D. dependent var	0.018073
S.E. of regression	0.011463	Akaike info criterion	-6.077386
Sum squared resid	0.011564	Schwarz criterion	-6.021835
Log likelihood	275.4824	Hannan-Quinn criter.	-6.054985
F-statistic	133.2224	Durbin-Watson stat	1.926282
Prob(F-statistic)	0		

Diversification Effect of Merger

Test for Equality of Variances Between Series
Date: 03/13/11 Time: 12:23
Sample: 1 90
Included observations: 90

Method	df	Value	Probability
F-test	(89, 89)	1.19517	0.402
Siegel-Tukey		1.414735	0.1571
Bartlett	1	0.702377	0.402
Levene	(1, 178)	1.076282	0.3009
Brown-Forsythe	(1, 178)	1.13919	0.2873

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Diff.	Mean Tuke Siegel Rank
SBI_POST	90	0.018073	0.014439	0.014418	85
SBI_PRE	90	0.016531	0.012805	0.012707	96
All	180	0.0173	0.013622	0.013563	90.5

Bartlett weighted standard deviation: 0.017319

Test for Equality of Variances Between Series
Date: 03/13/11 Time: 12:24
Sample: 1 90
Included observations: 90

Method	df	Value	Probability
F-test	(89, 89)	1.335867	0.1739
Siegel-Tukey		0.962706	0.3357
Bartlett	1	1.848944	0.1739
Levene	(1, 178)	1.191603	0.2765
Brown-Forsythe	(1, 178)	1.071878	0.3019

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Diff.	Mean Tuke Siegel Rank
MKT_POST	90	0.011521	0.008942	0.008861	86.75556
MKT_PRE	90	0.009968	0.007858	0.007804	94.24444
All	180	0.010747	0.0084	0.008332	90.5

Bartlett weighted standard deviation: 0.010772

ICICI Bank Ltd.

Stationarity

Null Hypothesis: ICICI_PRE has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=9)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.12641	0
Test critical values:	1% level	-3.58115	
	5% level	-2.92662	
	10% level	-2.60142	
*MacKinnon (1996) one-sided p-values.			

Null Hypothesis: ICICI_POST has a unit root			
Exogenous: Constant			
Lag Length: 0 (Automatic - based on SIC, maxlag=11)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.11595	0
Test critical values:	1% level	-3.51905	
	5% level	-2.90014	
	10% level	-2.58741	
*MacKinnon (1996) one-sided p-values.			

Pre merger

Dependent Variable: ICICI_PRE
Method: Least Squares
Date: 03/11/11 Time: 13:39
Sample: 1 47
Included observations: 47

Variable	Coefficier	Std. Error	t-Statistic	Prob.
C	1.007208	0.621879	1.619621	0.1123
MKT_PRE	1.816053	0.392326	4.628941	0

R-squared	0.322566	Mean dependent var	0.644255
Adjusted R-squared	0.307511	S.D. dependent var	5.082399
S.E. of regression	4.229364	Akaike info criterion	5.763601
Sum squared resid	804.9382	Schwarz criterion	5.842331
Log likelihood	-133.445	Hannan-Quinn criter.	5.793228
F-statistic	21.4271	Durbin-Watson stat	1.85726
Prob(F-statistic)	0.000031		

Post merger

Dependent Variable: ICICI_POST
Method: Least Squares
Date: 03/11/11 Time: 13:40
Sample: 1 77
Included observations: 77

Variable	Coefficier	Std. Error	t-Statistic	Prob.
C	-0.1591	0.374125	-0.42526	0.6719
MKT_POST	0.730419	0.190352	3.837213	0.0003

R-squared	0.164105	Mean dependent var	-0.442857
Adjusted R-squared	0.15296	S.D. dependent var	3.496683
S.E. of regression	3.218165	Akaike info criterion	5.20113
Sum squared resid	776.7438	Schwarz criterion	5.262008
Log likelihood	-198.244	Hannan-Quinn criter.	5.225481
F-statistic	14.7242	Durbin-Watson stat	2.100719
Prob(F-statistic)	0.000258		

Diversification Effect of Merger

Test for Equality of Variances Between Series
Date: 03/13/11 Time: 11:11
Sample (adjusted): 1 47
Included observations: 47 after adjustments

Method	df	Value	Probability
F-test	(46, 46)	1.432692	0.2265
Siegel-Tukey		0.737296	0.4609
Bartlett	1	1.462879	0.2265
Levene	(1, 92)	0.658652	0.4191
Brown-Forsythe	(1, 92)	0.56191	0.4554

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Dif	Mean Tuke Siegel Ranl
ICICI_POST	47	4.24612	3.046908	3.044681	49.58511
ICICI_PRE	47	5.082399	3.591879	3.555319	45.41489
All	94	4.691558	3.319393	3.3	47.5

Bartlett weighted standard deviation: 4.682965

Test for Equality of Variances Between Series
Date: 03/13/11 Time: 11:12
Sample (adjusted): 1 47
Included observations: 47 after adjustments

Method	df	Value	Probability
F-test	(46, 46)	2.091126	0.0139
Siegel-Tukey		1.491014	0.136
Bartlett	1	6.055571	0.0139
Levene	(1, 92)	4.355918	0.0396
Brown-Forsythe	(1, 92)	4.183113	0.0437

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Dif	Mean Tuke Siegel Rank
MKT_POST	47	2.298472	1.732947	1.715106	43.29433
MKT_PRE	47	1.589459	1.177981	1.155745	51.70567
All	94	1.966988	1.455464	1.435426	47.5

Bartlett weighted standard deviation: 1.976026

Athena Financial Services

Stationarity

Null Hypothesis: ATHENA_PRE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.91103	0
Test critical values:	1% level	-3.65373	
	5% level	-2.95711	
	10% level	-2.61743	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: ATHENA_POST has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-13.9008	0.0001
Test critical values:	1% level	-3.5056	
	5% level	-2.89433	
	10% level	-2.58433	

*MacKinnon (1996) one-sided p-values.

Pre merger

Dependent Variable: ATHENA_PRE
Method: Least Squares
Date: 03/11/11 Time: 14:11
Sample: 1 33
Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.238214	2.787788	-0.085449	0.9325
MKT_PRE	1.847578	0.821654	2.2486083	0.0272

R-squared	0.038781	Mean dependent var	0.014848
Adjusted R-squared	0.007774	S.D. dependent var	16.02419
S.E. of regression	15.96178	Akaike info criterion	8.436963
Sum squared resid	7898.129	Schwarz criterion	8.52766
Log likelihood	-137.2099	Hannan-Quinn criter.	8.46748
F-statistic	1.250719	Durbin-Watson stat	2.524884
Prob(F-statistic)	0.272007		

Post merger

Dependent Variable: ATHENA_POST
Method: Least Squares
Date: 03/11/11 Time: 14:11
Sample: 1 77
Included observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.209026	1.48666	0.81325	0.4186
MKT_POST	1.217896	0.470187	2.5902375	0.0205

R-squared	0.005157	Mean dependent var	1.250779
Adjusted R-squared	-0.008107	S.D. dependent var	12.97964
S.E. of regression	13.03215	Akaike info criterion	7.998346
Sum squared resid	12737.77	Schwarz criterion	8.059224
Log likelihood	-305.9363	Hannan-Quinn criter.	8.022697
F-statistic	0.388817	Durbin-Watson stat	2.774491
Prob(F-statistic)	0.534814		

Diversification Effect of Merger

Test for Equality of Variances Between Series
Date: 03/12/11 Time: 22:49
Sample (adjusted): 1 33
Included observations: 33 after adjustments

Method	df	Value	Probability
F-test	(32, 32)	2.027728	0.0495
Siegel-Tukey		1.617261	0.1058
Bartlett	1	3.857006	0.0495
Levene	(1, 64)	3.659378	0.0602
Brown-Forsythe	(1, 64)	3.376688	0.0708

Category Statistics

Variable	Count	Std. Dev.	Mean Abs. Mean Diff.	Mean Abs. Median Diff.	Mean Tukey-Siegel Rank
ATHENA_POST	33	11.25307	8.335813	8.322121	37.33535
ATHENA_PRE	33	16.02419	12.44259	12.33182	29.66465
All	66	13.74053	10.3892	10.32697	33.5

Bartlett weighted standard deviation: 13.84569