

Study of Impacts of Global Recession on Investment Patterns of Households

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Abstract

This world is a global village now. Financial trends have become contagious in nature. Recession as well as recovery gets percolated in no time from developed nation to developing nations. As long as it is growth no issue props up as such. But by the time the recessionary trends which gets replicated at other places, global integration seems to be a curse than boon. This paper endorses this fact with the help of ANOVA models on Indian stock market when recent US economic meltdown played havoc in the financial markets all over the world including India.

Keywords: Dummy Variable, BSE SENSEX, FII, Volatility, Stock Market

1. Introduction

The Global financial and economic crisis has led to deceleration in world's economic growth. In order to understand the genesis of the problem, a relook over the issue is needed. In US, banks aggressively marketed loans to people, to buy houses. These buyers were less credit worthy, bought expensive houses without owning repaying capacities. Some of the borrowers failed to pay back the loans. The amount of loans advanced by banks could not be recovered even by selling the houses against which the loans were given. From the mortgage to the debt market, to the insurance and finally to interbank lending, all important sectors of the financial system became the victim of the Sub- Prime Crisis. To some it is transition of economy and to others completion of a business cycle showing distinct phases of boom, bust and recovery. US has been able to fight back the recessionary pressure which started mounting since 2001 by adopting aggressive monetary policies, fiscal support and micro economic factors, but how far these measures will provide rescue cannot be ascertained. India being a closed economy until early 1990's continues to be a small player in the area of international trade and investments, but with the opening up of the economy and rapid growth in the export, India has definitely gained strength, but despite this fact, global credit crunch will affect India adversely. Most of the IT firms are vulnerable to global

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recession. There can be a decline in investment through FDI and International debt. Present study is an attempt to weigh the impact of ongoing US financial crisis on Indian Stock Market. Stock ownership has grown tremendously in the last two decades in India.

The total value of households' stockholdings rose from 15% of households' total assets in 1983 to 35% in 1998. The median equity holding has also moved up from \$15,400 in 1995 to \$25,000 in 1998, a 62.3% increase (Kennickell, Starr-McCluer & Surette, 2000). However, securities investment is not for everyone. The probability of owning stocks is higher for certain groups, including more educated, married people with higher levels of income and assets (Bertaut, 1998; Bertaut & Starr-McCluer, 2000). Chiteji and Stafford (1999) also found that young families whose parents owned stock were more likely to hold equities. Bertaut (1998) found that households with lower levels of risk aversion had a higher conditional probability of entering the stock market than households with greater risk aversion. Individual investors can purchase and trade stocks, bonds, and other financial instruments through retail brokers. Traditionally, retail brokerage firms can be grouped into two categories: "full-service" (or "full commission") and "discount commission" (Gerlach, 1998). Full-service brokers, such as Merrill Lynch, charge steep commissions whenever customers buy stocks, bonds, or mutual funds. However, they provide expert advice and other services. On the other hand, discount brokers charge a fraction of what the full-service firms charge but do not provide investment advice to customers. Investors choose their discount or full-service brokers based on their interest in research on securities, the cost of commissions, other services available, or a combination of all of these (Gerlach, 1998). Some investors use more than one broker and/or switch brokers once they obtain expert advice (Bakos et al., 2000; Chen & Hitt, 2000). For example, some investors first choose a full-service firm that offers great research and services and then open another brokerage account at a discount broker where they can make more frequent trades with lower commissions.

Though the Indian financial sector had very limited exposure to the volatile assets at the face of the global financial crisis, it too has suffered a severe liquidity crisis especially after the Lehman bankruptcy. This liquidity crisis could have been averted with timely injection of liquidity into the system by the Reserve Bank of India. Apart from the liquidity crisis, India also had to deal with the collapse of global trade finance; deflation of an asset market bubble; demand contraction for exports; and corporate losses on currency derivatives. The paper argues that the crisis is a wake-up call for the Indian banks and financial system for better managing their liquidity and credit risks.

2. Impact on Indian Industries

Despite the various fiscal and monetary actions taken by the governments and central banks around the world, a gradual recovery is expected in late 2009 or early 2010. As a result, global growth is expected to revive to 4–4.5% from 2010.

In light of the worsening economic conditions in the advanced economies, the domestic economic growth in India, is expected to decelerate in the next 4–5 quarters. In the current tight liquidity scenario, while Industrial sector growth has slowed

down considerably as compared to the last year, the slowdown is expected to gradually spread to the Services sector, thereby resulting in the moderation of GDP growth to 7–7.5% for FY09 and around 6–6.5% for FY10. Some important industrial sector which we have taken for our present study, are as follows.

1. Power
2. Information Technology
3. Banking
4. Real Estate
5. Others

Outlook towards the Indian Power sector (the generation and transmission companies) remains buoyant, and the sector is well positioned to grow significantly. The ability to pass on the cost to the end user and generate fixed returns makes the Indian Power sector a safe investment opportunity. Infrastructure spending has been the focal area of the Government of India in the past few years. With the Indian economy slowing down, the Government is looking at stimulating demand with increased infrastructure spending to achieve a GDP growth rate of 6–6.5% over the next few years. Correspondingly, the Indian power sector is expected to grow at 12–13% annually during the 11th five-year plan.

The global financial meltdown following the collapse of the US investment banks will have limited impact on the Indian IT sector in the short and medium run but poses a challenge in the long term. The current scenario provides an excellent opportunity for the Indian IT companies to move away from the "cost arbitrage" model to the "value creation" model. Large players such as Infosys, Wipro, and TCS have huge cash balances, companies can utilize this cash to push their inorganic growth plans as many small/mid-size IT companies across the world are available at attractive valuations. The Indian IT players' delivery capability and the focus on high-end services will ensure their long term growth. IT-enabled services such as business process comprising voice and data may get affected. India's outsourcing industry may face lower revenue and poor salary hikes.

According to one estimate, global majors like Citibank, Merrill Lynch and Deutsche bank has lost over US\$180 billion due to this crisis. India's largest private sector bank is faced with a loss of Rs10.56 billion till Jan 2008. Problem is due to rise in global interest rates, which in turn caused a decline in the value of securities. Among other Indian Banks with exposure to credit derivatives includes the country's largest bank, the State Bank of India-Rs 40 billion, Bank of India – Rs 12 billion and Bank of Baroda – Rs 6 billion. Applying the same rate of 7.6% to the exposure of these government banks SBI carries a loss of Rs7.04 billion, Bank of India 2.11 billion and Bank of Baroda Rs.1.08 billion. The banks are facing pressure to provide credit to the affected sectors, such as extension of the period of pre-shipment and post-shipment credit for exports, which may adversely affect the banks NPA's. Also, demand for funds from few companies is slackening due to the delay in the expansion of projects. However, it is believed that any negative impact of the above will be more than offset by an increase in the earning.

Funds to Real Estate are getting constrained primarily because of increase in interest rates to contain inflation and secondly RBI has put restrictions on Indian banks to finance real estate

companies in the country. These companies are now dependent on foreign funds through FDI route to meet their fund requirements. American companies like Ford and GM are not entirely dependent on their American counterparts for funds and their operations in the BRIC nations are profitable enough to overcome this crisis.

The current credit crisis in the United States and the European Union has led to a liquidity crunch, as a result of which industries will not be able to expand as planned. It is likely to have only a moderate impact on India's export growth rate in 2008-09. This is because lower export of traditional products like handicrafts, textiles and leather will be compensated by higher overseas sales of engineering goods and resource intensive items like metals and petroleum in 2008-09.

3. Research Objective

The paper discusses the impact of financial crises on the Indian stock market. To serve the aforesaid objective following hypothesis has been made.

H0: There is no impact of the financial turmoil in USA in the beginning of 2008 on the Indian stock market

H1: There is an impact of the financial turmoil in USA in the beginning of 2008 on the Indian stock market

4. Research Methodology

The impact of US recession on the Indian Stock market has been studied by two methods. In the first approach the four major indices namely BSE 30, Nifty, S&P CNX 500 and BSE 200 have been taken and their variations in the returns are further interpreted with the help of analysis of variance (one way ANOVA). For the study in this first approach the four time period have been taken from 2005 to 2008. In the second approach, qualitative regression analysis or ANOVA Model has been used with the help of dummy variable. The monthly return of BSE SENSEX have been taken from Jan 2007 to Dec 2009. CMIE's PROWESS has been used to collect all the data. ANOVA model has been run and significance of the parameter of dummy variable has been checked.

5. Results

Data Analysis for the first approach has been enumerated in the following tables (Table 1 to 4). The Variation among all the four important indices are found to be insignificant for 2005, 2006 and 2007 whereas it is significant (marginally significant at 5% level of significant) for the year 2008. This proves the hypothesis that turmoil in the US has significantly impacted Indian stock market. The calculated value of F-test is .023929, 0.00952 and .02641 for the years 2005, 2006 and 2007 respectively which are less than the tabulated value at 3 degree of freedom at numerator and 12 degree of freedom at denominator which is 3.49. The calculated value of F-test is less than the critical value therefore the null of no difference is accepted (Table 1 to 3). But for the year 2008 the same calculated value of F-test is 3.8354 which is more than the critical value of 3.49. Therefore the F-test is significant for year 2008 which has rejected the null hypothesis of no difference in that year (Table-4).

ANOVA Table 1 : for the Year 2005

Source of Variation	Sum of Squares SS	Degrees of Freedom df	Mean Square MS	Variance Ratio F
Between Indices	SSB = 5.9004	4-1 = 3	MSB = 1.9668	F Ratio = 0.023949
Within Indices	SSW = 985.5072	16-4 = 12	MSW = 82.1256	

Since tabulated value of F Ratio (3.49) is more than the calculated value, it can be concluded that the variation of the returns among the four indices over the period of 1 year are insignificant

ANOVA Table 2 : for the Year 2006

Source of Variation	Sum of Squares SS	Degrees of Freedom df	Mean Square MS	Variance Ratio F
Between Indices	SSB = 5.3106	4-1 = 3	MSB = 1.7702	F Ratio = 0.00952
Within Indices	SSW = 2231.5025	16-4 = 12	MSW = 185.9585	

Since tabulated value of F Ratio (3.49) is more than the calculated value, it can be concluded that the variation of the returns among the four indices over the period of 1 year are insignificant

ANOVA Table 3 : for the Year 2007

Source of Variation	Sum of Squares SS	Degrees of Freedom df	Mean Square MS	Variance Ratio F
Between Indices	SSB = 11.4456	4-1 = 3	MSB = 3.8152	F Ratio = 0.02641
Within Indices	SSW = 1733.5185	16-4 = 12	MSW = 144.4599	

Since tabulated value of F Ratio (3.49) is more than the calculated value, it can be concluded that the variation of the returns among the four indices over the period of 1 year are insignificant

ANOVA Table 4 : for the Year 2008

Source of Variation	Sum of Squares SS	Degrees of Freedom df	Mean Square MS	Variance Ratio F
Between Indices	SSB = 560.2230	4-1 = 3	MSB = 186.7410	F Ratio = 3.8354
Within Indices	SSW = 548.2656	16-4 = 12	MSW = 48.6888	

Since the tabulated value of F Ratio (3.49) is less than the tabular value therefore the variation is significant. In this year the sub-prime crisis showed its peak which is evident by the returns.

The result of the second approach, the ANOVA model is as follows. The coefficient of dummy variable has been significant in the return series of BSE SENSEX for the same period. The t-value is 1.802 and p-value is .056 which proves the null of zero value of the coefficient of dummy variable, rejected (marginally) (Table -5). This analysis of the results proves the hypothesis that the impact of financial turmoil in USA has significantly impacted Indian stock market.

Table 5 : Coefficient Estimates of Dummy Variable

Particular	t-value	p-value
Coefficient of dummy variable (Regression run on Return series)	1.802	.056

6. Conclusion

The impact of the financial turmoil in USA in the early 2008 has been proved to be significant on the Indian Stock market. The variability among important indices taken for study found to be insignificant before the disturbance period and it is significant during the disturbance period. The same result has also been found by the ANOVA Model using dummy variable and it is doubly endorsed that the impact of financial turmoil of USA during the said period on India is significant.

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