



IMPACT OF INTERNAL FACTORS ON STOCK PRICE VOLATILITY IN BANKING SECTOR: AN EMPIRICAL ANALYSIS OF SELECTED INDIAN BANKS

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ABSTRACT

The stock (share) market plays a vital role in any free market economy. Study is examined with various tools and techniques. Six banks were taken to examine the impact of internal factors on stock price of these banks. Descriptive statistics, correlation analysis and regression analysis were applied. 10 years time series data was used to analyze the impact. Different banks log stock returns are being affected by different internal factors.

INTRODUCTION

The stock (share) market plays a vital role in any free market economy. It helps companies to get funds in lieu of shares. A person holding a share (shareholder) has a claim to a part of the corporation's assets and earnings. In other words, a shareholder is an owner of a company. Ownership is determined by the number of shares a person owns relative to the number of outstanding shares.

Stock market is divided into primary market (fresh issue) and secondary market. Primary market deals with fresh issue of shares like IPOs (initial public offer), rights issue, preferential issue, etc. In primary market shares are sold for the first time in the market. Secondary market deals with the shares already existing in the market. In secondary market with the help of stock exchange shares are bought and sold. Shares once sold in primary market then they are dealt in secondary market only.

The stock market is one of the most important sources for companies to raise funds for setting up a new business venture or for further expansion of the existing company. If a company wishes to raise capital for the business, it can issue fresh shares of the company that is basically part of ownership of the company. To issue shares for the investor to invest in the stocks of a company needs to get listed to a stock

exchange and through the primary market of the stock exchange they can issue fresh shares and get the funds for business requirements. This allows businesses to trade publicly, or raise additional capital for expansion by selling shares of ownership of the company in the market. The liquidity that an exchange provides affords investors ability to quickly and easily sell securities. There are certain rules and regulations for company to get listed on the stock exchange and that needed to be fulfilled before getting listed.

The price of a stock is quoted on an exchange. A basic quote for a specific stock provides information, such as its bid and asks price, last-traded price and volume traded.

The share price movement is analysed broadly with two approaches, namely, fundamental approach and the technical approach. Fundamental approach analysis the share prices on the basis of economic, industry and company statistics whereas technical approach uses past trends and charts for analysis.

If the price of the share is lower than its intrinsic value, investor buys it. But, if he finds the price of the share higher than the intrinsic value he sells and gets profit. The technical analyst mainly studies the stock price movement of the security market. If there is an uptrend in the price movement

the investor purchases the scrip. With the onset of fall in price he sells it and move from the scrip.

The stock market index such as BSE SENSEX (Bombay stock exchange index which represents top 30 listed companies in terms valuation) and nifty (National stock exchange index which represents top 50 listed companies in terms of valuation) helps investor to know where market is going and accordingly one can buy and sell. Bombay Stock Exchange (BSE) is one of the oldest exchanges across the world, while the National Stock Exchange (NSE) is among the best in terms of sophistication and advancement of technology.

Stock prices and stock returns are correlated means that a rise in the stock price will result in a rise in return and vice-versa. But the price rise should be genuine. There are unhealthy practices in the market which were created by the brokers and the dealers to create a fake bubble in the market. The stock prices were deliberately raised through unfair trade practices like in Harshad Mehta's stock scam was such a practice adopted to artificially support the price and create artificial boom in the share price. Stock prices most often were deceptive that they told a different tale contrary to what generally believed to be.

Various internal factors taken for this study are:-

- EPS (earning per share)

Earnings per share (EPS) are the portion of a company's profit allocated to each outstanding stock (share) of common stock. Earnings per share give an indicator of a company's profitability.

Earnings per share are generally considered to be the single most important variable in determining a share's price. It is also a major component used to calculate the price-to earnings valuation ratio.

An important aspect of EPS that is often ignored is the capital that is needed to generate the earnings (net income of the company) in the calculation. Two companies could generate the same EPS number, but one could do so with less equity (investment) - that company would be more efficient at using its capital to generate income and, all other things being equal, would be considered "better" company. Investors also need to be aware of earnings manipulation that will be going to affect the quality of the earnings number. It is important for investor not to rely only on any one financial measure, but to use it in conjunction with other measures.

- DPS (dividend per share)

Dividend per share (DPS) is the sum of declared dividends issued by a company for every ordinary share outstanding. It is a return given by company on every ordinary share. Dividend per share (DPS) is the total dividends paid out by a company, including interim dividends, divided by the number of outstanding ordinary shares issued by the company. A company's dividend per share is usually derived using the dividend paid in the most recent quarter, which is also used to calculate the dividend yield.

Dividend per share is important because one of the goals of a company is to return value to its shareholders. Shareholders receive value through dividend payments and the price of the stock itself, which is equal to a company's total expected future dividend payments. Therefore, a company profits and the amount it pays out in dividends, drives shareholder value.

Dividend per share, in its simplest form, can be calculated by the following. Net income per share is derived as (net income) / (outstanding shares). Once that number is found, its Dividend per share is derived as: (net income per share) x (payout ratio). The payout ratio is equal to the amount of income paid in dividends divided by the total net income. Increasing DPS is a great way for a company to signal strong performance to its shareholders.

A stock dividend is a distribution of shares to existing shareholders in lieu of a cash dividend. A stock dividend is a dividend payment made in the form of additional shares rather than a cash payout to shareholder, also known as a "scrip dividend." Company may decide to distribute this type of dividend to shareholders of record if the company's availability of liquid cash is in short supply. Such distributions are generally acknowledged in the form of fractions paid per existing share. Stock dividends also have a tax advantage where they aren't taxed until the shares are sold by an investor. This makes them advantageous for shareholders who do not need immediate capital.

The board of a public company, for example, can approve a 10% stock dividend, which gives existing investors an additional share of company stock for every 10 shares they already own. However, this means that the pool of available equities increases by 10%, diluting the value of existing shares. So, even though an investor who owns 100 shares in a company may receive 10 additional shares, the total market value of those shares remains the same.

- Book value

Book value means the value of the business according to its "books" or financial statements of the business. Book value is calculated from the balance sheet, and it is the difference between a company's total assets and total liabilities. For example, if Company XYZ has total assets of Rs.100 lacs and total liabilities of Rs.80 lacs, the book value of the company is Rs.20 lacs. In a very broad sense, this means that if the company sold off its assets and paid down its liabilities, the equity value or net worth of the business would be Rs.20 lacs. Book value simply implies the value of the company on its books, often referred to as accounting value. It's the accounting value once assets and liabilities have been accounted for by a company's auditors.

Market value is the value of a company according to the stock market. Market value is calculated by multiplying a company's shares outstanding by its current market price...

Understanding, the difference between book value and market value is a simple yet fundamentally critical component of any attempt to analyze a company for investment purpose. After all, when you invest in any share or stock of an entire business, you want to know whether you are paying a sensible price or not.

There are three basic generalizations about the relationships between book value (B.V.) and market value (M.V.):

1. Book Value Greater Than Market

Value: The financial market values the company for less than its book value or net worth. In this case, it's usually because the market has lost confidence in the ability of the company's assets to generate future profits and cash flows or it can be stated that market doesn't believe that the company is worth the value as it is in books. Value investors often like to seek out companies in this category in hopes that the market perception turns out to be incorrect because the market is giving you the opportunity to buy a business for less than its stated net worth.

2. Book Value Equals Market Value: The market sees no compelling reason to believe the company's assets are better or worse than what is stated on the balance sheet.

3. Market Value Greater Than Book Value: The market assigns a higher value to the company due to the earnings power of the company's assets and trust of the investor over company. Nearly all consistently profitable companies will have market values greater than book values.

- Profit of the company

Profit is a financial benefit that is realized when the amount of revenue received from a business activity exceeds the expenses, costs and taxes required to sustain the activity. Any profit that is gained goes to the business owners.

Profit is one of the most important goals of any organization. To sustain in any business profit is required at least in the long run. More company earns more confidence of investors would be build up. Profit is used to expand business or to distribute among owners of the company.

Profit= Total Revenue – Total Expenses

There are different kinds of profits such as gross profit, operating profit and net profit.

Gross Profit= sales – cost of goods sold (COGS)

Operating profit= gross profit – operating expenses

Net profit= operating profit – taxes – interest

- Revenue

Revenue is the amount of money that is brought into a company through its business activities. Revenue is also known as sales, as in the price-to-sales ratio, an alternative to the price-to-earnings ratio that uses revenue in the denominator.

Revenue is calculated by multiplying the price at which goods or services are sold by the number of units or amount sold.

Revenue is known as the "top line" because it is displayed first on a company's income statement. Expenses are then deducted from revenue in order to obtain net profit or income – the "bottom line."

A company's revenue may be subdivided according to the divisions that generate it. Investors will often consider a company's revenue and net income separately to determine the health of a business.

In the case of government, revenue is the money received in the form of taxation, fees, fines, inter-governmental grants or transfers, securities sales, mineral rights and resource rights, as well as any sales that are made.

For non-profits or non-governmental organizations, revenue is often referred to as "gross receipts." Its components include donations from individuals, foundations and companies; grants from government entities; investments; fundraising activities; and membership fees.

REVIEW OF LITERATURE

Inyama (2015) tried to examine relationship between financial performance indicators and share price in Nigeria between 2004 and 2013. For his study, he used 4 banks financial performance and market price of their share. Dependent variable (MPS) and the independent variables Bank Age, Earnings per Share (EPS) and Return on Assets (ROA) were considered. Multiple regression, Granger causality and Johansen Cointegration test were used to analyze data. He found strong relationship between market prices of share and earnings per share. He found unidirectional granger causality running from market price to earnings per share and a bidirectional granger causality running from return on assets to earnings per share and from earnings per share to return on assets. He concluded that to increase market price of a share, earnings must be increased.

Majanga (2015) examined the relationship between firm's dividend and stock prices with particular emphasis on the Malawi Stock Exchange (MSE). The study uses secondary data of 13 companies listed on MSE. Study uses the annual secondary data from 2008 to 2014. Study considers market stock price as dependent variable while keeping dividends, profit after tax, retention ratio and earnings per share as independent variable. He used correlation analysis and analyzed there is significant positive relationship between firm's dividend and stock price.

Ordu, Enekwe and Anyanwaokoro (2014) examined the effect of dividend payment on market prices in Nigeria. Their study uses time series on dividend per share, dividend yield and dividend payout ratio of 17 quoted firms. Annual Secondary Data from 2003 to 2011 is taken for the study. Ordinary least squares (OLS) techniques are used to find the relationship between variables. Results revealed that there exists a positive relationship between dividend payout ratio and stock prices whereas dividend yield does not have significant positive effect on market stock prices. They concluded that earnings remained

the most significant determinant of dividend payment averagely and hence it has significant influence market value on public owned firms in Nigeria.

Masum (2014) investigated the relationship between dividend policy and stock market returns of private commercial banks in Bangladesh. He uses data of 30 banks listed on Dhaka Stock Exchange. Period of study is 2007 to 2011. Market price of shares is considered as dependent variable and average price is taken whereas independent variables for this study were dividend yield, earnings per share, retained ratio, and profit after tax and return on equity. Descriptive statistics and correlation analysis were performed. The empirical estimation based on the fixed effect and random effect model shows significant negative relation between dividend yield and stock prices while retention ratio has a negative but statistically insignificant relation with stock prices. ROE and EPS have positive impact on market stock prices whereas profit after tax significant negative impact on market stock prices.

Menike and Prabath (2014) examined relationship between accounting variables and share prices. This study undertakes 3 independent variables as earnings per share, dividend per share and book value per share and share market price as dependent variable. To understand the relationship, they took secondary data of 100 listed companies on Colombo stock exchange, Sri Lanka. They took 4 years data from 2008 to 2012. Using a regression analysis, they concluded that there is a significant positive relationship between share price and all the three accounting variables.

Garba (2014) investigated the relationship between dividend per share and common stock returns. Study uses the data of 10 manufacturing firms listed on Nigerian Stock Exchange. 13 years data ranging from 1991 to 2013 is taken. Study period were calculated on weekly basis and annualised using geometric means. He employed Pearson moment correlation analysis technique and quadratic polynomial models. He concluded that there is highly significant relationship between variables.

Muthukumaran and Somasundaram (2014) in their research focused on the relationship between interest rates and stock market return. Both factors were related to Indian economy. They considered monthly data from April 1997 to March 2014 in their research. 91 days Treasury bill (91-TB) is considered as proxy variable of interest rate and BSE sensex is considered for stock return. They performed unit root test to check whether variables are stationary or not and for that Augmented Dickey Fuller (ADF) test, Phillips-Perron (PP) test and Kwiatkowski, Phillips,

Schmidt. And Shin (KPSS) test were performed. Granger causality is performed to check the causality between variables. They concluded there is no causality between Interest rate and stock returns. The study implies that the Interest rate neither affects Stock returns nor a Stock return affects the interest rate. Thus, their study empirically proved, stock market has no relation with the growth of interest rate in India and vice versa.

OBJECTIVES OF THE STUDY

- I. To assess the volatility of stock return of different banks of India.

To examine the impact of various internal (microeconomic) factors on stock return volatility of different banks

HYPOTHESES OF THE STUDY

To accomplish the objectives of the study, the following null hypotheses have been developed:-

- I. There is no significant impact of earnings per share on market stock returns.
- II. There is no significant impact of dividend per share on market stock returns.
- III. There is no significant impact of book value per share on market stock returns.
- IV. There is no significant impact of net profit per share on market stock returns.
- V. There is no significant impact of revenue per share on market stock returns.

SCOPE OF THE STUDY

In this study 8 years secondary data is used to examine the impact of various internal and external factors on stock price volatility. Yearly data from 2009 to 2018 is taken for impact of internal factors on stock returns.

Data Series

Log returns series have been derived from the series given below:

$$Lhdfc = \log(hdfc/hdfc(-1)),$$

$$Lsbi = \log(sbi/sbi(-1)),$$

$$Licici = \log(icici/icici(-1)),$$

$$Laxis = \log(axis/axis(-1)),$$

$$Lkotak = \log(kotak/kotak(-1)),$$

$$LIndusInd = \log(IndusInd/IndusInd(-1)),$$

$$LEPS = \log(EPS/EPS(-1)),$$

$$LDPS = \log(DPS/DPS(-1)),$$

$$LNPPS = \log(NPPS/NPPS(-1)),$$

$$LBV = \log(BV/BV(-1)),$$

$$LRPS = \log(RPS/RPS(-1)),$$

Tools and techniques

To find out the relationship between various variables and stock returns, different tests will be employed using excel and SPSS. Techniques used are correlation analysis and regression analysis.

RESULTS

	LAXIS	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.099140	0.161785	0.142712	-0.173876	-0.172210	0.131679
Median	0.015634	0.152393	0.125657	0.156386	0.169036	0.101541
Maximum	0.825215	0.330656	0.510826	0.453737	0.524163	0.438213
Minimum	-0.508898	0.042599	0.000000	-2.612150	-2.664108	-0.041779
Std. Dev.	0.391936	0.082828	0.142817	0.920207	0.941394	0.156280
Skewness	0.527536	0.555922	1.763280	-2.131606	-2.115554	0.964778
Kurtosis	2.633861	3.092558	5.700376	6.161356	6.143506	2.773622
Jarque-Bera Probability	0.519681 0.771174	0.518652 0.771571	8.220272 0.016406	11.73715 0.002827	11.57662 0.003063	1.572679 0.455509
Sum	0.991403	1.617847	1.427116	-1.738757	-1.722099	1.316793
Sum Sq. Dev.	1.382523	0.061744	0.183570	7.621029	7.975999	0.219811
Observations	10	10	10	10	10	10
	LHDFC	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.185187	0.184267	0.203432	0.199200	0.201624	0.175190
Median	0.198645	0.167168	0.177086	0.171158	0.188053	0.179958
Maximum	0.592992	0.311217	0.318454	1.872255	0.270454	0.366535
Minimum	-0.319370	0.059973	0.146603	-1.379803	0.142686	-0.065461
Std. Dev.	0.230462	0.075837	0.056825	0.767977	0.047643	0.133881
Skewness	-0.567488	0.549972	0.881072	0.192888	0.325102	-0.368680
Kurtosis	4.081773	2.843968	2.535049	4.987013	1.572258	2.253629
Jarque-Bera Probability	1.024334 0.599196	0.514259 0.773268	1.383888 0.500602	1.707102 0.425900	1.025505 0.598845	0.458655 0.795068
Sum	1.851875	1.842672	2.034321	1.991997	2.016240	1.751898
Sum Sq. Dev.	0.478016	0.051762	0.029061	5.308099	0.020428	0.161318
Observations	10	10	10	10	10	10
	LICICI	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.039816	0.052150	-0.038299	0.049486	0.034375	0.018773
Median	0.082383	0.082595	0.085196	0.098084	0.096677	0.046763
Maximum	0.687901	0.106513	0.192372	0.252126	0.252245	0.254900
Minimum	-0.610152	-0.058321	-0.693147	-0.466684	-0.467391	-0.224012
Std. Dev.	0.364470	0.060104	0.307056	0.217051	0.222331	0.156491
Skewness	-0.111734	-0.997346	-1.412230	-1.425977	-1.153168	-0.291410
Kurtosis	2.711987	2.476054	3.348574	4.224408	3.521651	2.117518
Jarque-Bera Probability	0.055371 0.972694	1.772214 0.412258	3.374615 0.185017	4.013674 0.134413	2.329709 0.311968	0.466023 0.792145
Sum	0.398161	0.521497	-0.382992	0.494855	0.343747	0.187726
Sum Sq. Dev.	1.195548	0.032512	0.848549	0.423999	0.444880	0.220405
Observations	10	10	10	10	10	10

	LINDUSIND	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.299225	0.222770	0.252573	0.324736	0.324126	0.151508
Median	0.271460	0.160213	0.188647	0.237088	0.256102	0.153316
Maximum	1.563775	0.399043	0.693147	0.751416	0.713278	0.397166
Minimum	-0.803918	0.105052	0.095310	0.154781	0.126014	0.013302
Std. Dev.	0.573571	0.115884	0.185988	0.196643	0.185985	0.107058
Skewness	0.417710	0.706182	1.404145	1.333040	1.102748	1.011391
Kurtosis	4.616594	1.736385	4.121064	3.318981	3.030071	3.948945
Jarque-Bera Probability	1.379709 0.501649	1.496456 0.473204	3.809699 0.148845	3.004056 0.222678	2.027131 0.362923	2.080059 0.353444
Sum	2.992249	2.227696	2.525729	3.247355	3.241262	1.515079
Sum Sq. Dev.	2.960849	0.120861	0.311325	0.348014	0.311314	0.103153
Observations	10	10	10	10	10	10
	LKOTAK	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.171578	0.202109	0.131730	0.228373	0.230750	0.160924
Median	0.195939	0.156287	0.143841	0.215042	0.216200	0.100221
Maximum	0.649002	0.355320	0.182322	0.704334	0.704967	0.383536
Minimum	-0.716539	0.080323	0.000000	-0.093035	-0.065399	0.054995
Std. Dev.	0.359542	0.095567	0.053084	0.241161	0.237062	0.121942
Skewness	-1.392189	0.617822	-1.563196	0.543760	0.606071	0.993807
Kurtosis	5.076877	2.009942	4.915273	2.699246	2.751928	2.293325
Jarque-Bera Probability	5.027573 0.080961	1.044596 0.593156	5.601081 0.060777	0.530481 0.767022	0.637844 0.726932	1.854165 0.395707
Sum	1.715784	2.021086	1.317301	2.283730	2.307497	1.609245
Sum Sq. Dev.	1.163436	0.082197	0.025361	0.523426	0.505788	0.133830
Observations	10	10	10	10	10	10
	LSBI	LBV	LDPS	LEPS	LNPPS	LRPS
Mean	0.032682	0.103089	-0.306805	-0.305020	-0.286723	0.101142
Median	-0.013992	0.096950	0.016951	0.012368	0.010168	0.104187
Maximum	0.586956	0.200853	0.299243	0.347855	0.407502	0.265646
Minimum	-0.357125	-0.014897	-3.258097	-3.095578	-3.067588	-0.023737
Std. Dev.	0.330969	0.060348	1.055925	1.000391	1.009510	0.086469
Skewness	0.351068	-0.293427	-2.495135	-2.473476	-2.358663	0.584251
Kurtosis	1.812140	2.847971	7.564712	7.512405	7.163114	2.610131
Jarque-Bera Probability	0.793336 0.672557	0.153129 0.926293	19.05808 0.000073	18.68089 0.000088	16.49362 0.000262	0.632247 0.728969
Sum	0.326819	1.030886	-3.068053	-3.050201	-2.867229	1.011419
Sum Sq. Dev.	0.985863	0.032777	10.03479	9.007045	9.171988	0.067291
Observations	10	10	10	10	10	10

There is significant negative correlation between Axis bank return and revenue. Correlation matrix of Log HDFC bank return and internal factors is depicting that there is no significant relationship between log HDFC bank return and log dividend per share, log earning per share, log net profit per share and log revenue per share as significant value is more than 5% and null hypothesis is accepted but there is a strong positive correlation between log HDFC bank

stock return and log book value per share as significant value is 0.001 i.e. less than 5% and null hypothesis is rejected for correlation between log HDFC bank stock return and log book value per share. Correlation matrix of Log ICICI bank return and internal factors is depicting that there is no significant relationship between log ICICI bank return and all internal factors as significant value is more than 5% and null hypothesis is accepted. Correlation matrix of Log

INDUSIND bank return and internal factors is depicting that there is no significant relationship between log INDUSIND bank return and all internal factors as significant value is more than 5% and null hypothesis is accepted. Correlation matrix of Log Kotak Mahindra bank stock return and internal factors is depicting that there is no significant relationship between log Kotak Mahindra bank return and log book value and log revenue per share as significant value is more than 5% and null hypothesis is accepted. Whereas, Null hypothesis between log Kotak Mahindra bank return and other three internal factors is being rejected at 5% significant value. There is a strong positive correlation between log Kotak Mahindra bank return and log dividend per share, log earning per share and log net profit per share. Correlation matrix of Log SBI return and internal factors is depicting that there is no significant relationship between log SBI return and all internal factors as significant value is more than 5% and null hypothesis is accepted.

Regression model is found to be fit for all banks and internal variables. There is significant impact of constant, log book value and log earning per share on log axis bank stock return as significance value is less than 5% and null hypothesis is being rejected for these variables. There is significant impact of log book value and log net profit per share on log HDFC bank stock return as significance value is less than 5% and null hypothesis is being rejected for these variables. There is significant impact of log net profit per share and log revenue per share on log ICICI bank stock return as significance value is less than 5% and null hypothesis is being rejected for these variables. There is significant impact of log dividend per share, log earning per share and log net profit per share on log IndusInd bank stock return as significance value is less than 5% and null hypothesis is being rejected for these variables. There is significant impact of constant, log book value and log net profit per share on log Kotak Mahindra bank stock return as significance value is less than 5% and null hypothesis is being rejected for these variables. There is significant impact of log book value, log earning per share and log net profit per share on log SBI stock return as significance value is less than 5% and null hypothesis is being rejected for these variables.

CONCLUSION

The primary aim of the present work is to answer the following research questions: Do the key internal variables included in this study have impact on stock returns? From results it is clear different stock prices are being affected by different internal factors. It is evident to note that study of multiple factors is important to analyze return behaviour of the stock.

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