Impact of Price to Earnings, Price to Book Value and Dividend Yield on CNX Bank Index

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Abstract. Price to earnings ratio, Price to book value ratio and dividend yield are the most commonly used investing tools. These measures are used to identify and value investments. This paper seeks to assess the reliability of these three key indicators. The study is limited to banking stocks as banking stocks constitute about a fourth of the stocks constituting the NIFTY. For the purposes of the study the CNX Bank index has been taken as a proxy for the banking industry. The CNX constitutes about 12 banking stocks and includes both private and public sector banks though the weightings differ from time to time. The objective of this paper is to test the impact of Price to earnings ratio /Price to book value ratio and dividend yield on the price movement. The data relates to the period 2004 to 2013 and a multiple regression analysis has been done keeping Price as the dependent variable.

Keywords: CNX Bank index Price to earnings ratio, CNX Bank index Price to book value ratio CNX Bank index dividend yield ratio, CNX Bank index

1 Introduction

CNX bank index is an index comprised of most liquid and highly capitalized Indian banking stocks. It provides investors and market intermediaries with a benchmark that captures the capital market performance of the Indian Banks. The index currently has 12 stocks from the banking sectors which trade on the National Stock Exchange. CNX Bank Index is computed using free float market capitalization method, wherein the level of the index reflects the total free float. With a beta of about one the index mimics the NIFTY.

Investors have always been on the lookout for a screener which would help them to sort out the most eligible stocks. Several criteria could be used to detect value investments. Benjamin Graham popularized ten criteria that could be used to find cheap stocks:

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i. An earnings to price yield > Twice the AAA bond rate (At the AAA bond rate of about 3.6% today, that would work out to an earnings to price ratio > 7.2% or a PE< 14).

ii. PE ratio today < 40% of the highest PE ratio for the stock over the previous 5 years

iii. Dividend yield > 2/3 or the AAA bond yield (At today's AAA rate, yield >2.4%)

iv. Stock price < 2/3 (Tangible book value of equity per share), where tangible book value of equity = Total book value of equity - Book value of intangible assets

v. Stock price < 2/3 (Net Current Asset Value), where Net Current Asset Value = Current Assets - (Total Liabilities + Preferred Stock)

vi. Total debt < Book Value of equity

vii. Current ratio > 2, where current ratio = Current Assets/ Current liabilities

viii. Total Debt < 2 (Net Current Asset Value)

ix. Earnings growth in prior 10 years > 7%

x. No more that two years in the prior ten, where earnings declined more than 5%.

Among the ten criteria, Benjamin had three screeners related to pricing viz, Price to Earnings ratio, Price to Book Value ratio and Dividend Yield. Let us examine each of these and their relationship with the equity value.

Price to Earnings Multiple: PE multiple is the market price divided by the earning per share and is one of the most important tools used by investors. It is a reflection of market confidence on the equity being considered. Higher the P/E, the more the market is willing to pay for the company's earnings. However a very high PE ratio indicates that the stock is overvalued.

Price to Book value ratio: Price to book value is another price based screener used to identify value investments. This ratio indicates whether the current market price of the investment is cheap or expensive compared to its book value. The company's book value is derived from its balance sheet, whereas in this study the price to book value is calculated on CNX Bank index

which includes 12 stocks with the sum of market capitalization of 12 stocks divided by the book value of 12 banks.

Dividend Yield ratio: Dividend yield is the return on investment on the stock and is the ratio of the dividend per share to the price per share. It measures what an investor is earning from his investment**.** It tells an investor whether the money invested yields a good return. In this study the dividend yield is calculated on CNX Bank index. The formula is dividend per share of 12 banks divided by price per share of 12 companies. As a measure of the amount of income received in proportion to the share price it is used to judge whether the company is earning enough profits.

2. Objective of the study

Decision making in the market requires that investors take quick decisions and capitalize on the trend. Price Earnings, Price to book value and Dividend Yield are in the nature of thumb rules which guide investment decisions. Though this decision may vary from investor to investor these are three price related variables which are generally relied upon by most investors. These indicate whether the market is undervalued or overvalued. This study examines the relationship between the Price to Earnings, Price to Book value and Dividend Yield on the market price of the stock (as at the close of trading hours)

3. Literature Review

The cornerstone of much of security analysis is that it is possible to predict market movements based on the stock fundamentals as also technical indices. However based on his empirical studies relating to information processing in the market, Eugene Fama concluded that markets are efficient and that at any point in time the market reflects all available information. However Eugene Fama's paper also points to the existence of serial dependencies in a smaller measure. Robert Shiller gave a contrary view on the same and demonstrated in his paper 'from efficient markets theory to behavioral finance' that price changes do not necessarily reflect complete information. The first significant empirical documentation that stocks with low Price to earnings ratio outperform stocks with high Price to earnings ratio (see Nicholsan S., 1960).

The earnings-price ratio is believed to capture the market's assessment of the equity's risk and earnings growth prospects. Zarowin in 1960 has found that neither risk nor growth can explain persisting cross-sectional differences in earnings-price ratios. This paper shows that

persisting cross-sectional differences in forecasted long-term earnings growth are the dominant source of variation in earnings-price ratios, and that the conclusions of prior research were due to the use of realized growth as a proxy for forecasted growth, since the two measures are not highly correlated. Other factors, such as risk (beta), forecasted short-term growth, and accounting method seem to be relatively less important in determining earnings-price ratios.

Lower ex ante earnings volatility leads to higher Post–Earnings Announcement Drift (PEAD). PEAD is a function of both the magnitude of an earnings surprise and its persistence. CAO S. and Moorthy N. (2012) showed that the persistence of the earnings surprise is equally important. A unique feature of the anomalous PEAD returns documented here concerns the association between abnormal returns and trading frictions. The findings imply that higher abnormal returns are associated with lower trading frictions. We exploit this implication to empirically demonstrate that PEAD returns due to earnings volatility are not concentrated in the firms with the largest trading frictions, which is in contrast to the findings in prior research

Penman S. interpreted the price-earnings ratio (PE) and the market- to-book ratio (PB) and describes how they articulate. It also describes the role of book rate-of-return on equity (the ratio of their denominators) in the determination of the ratios and the relation between them. Although both are reported regularly, there is not a common under- standing of these issues. He provided descriptions of P/.E and P/B ratios and their relationship to each other.

Yadav S. (2013) reveals that there is significant relationship between NIFTY Price to Earnings, NIFTY Price to Book Value, NIFTY Dividend Yield and NIFTY prices. NIFTY Price to Earnings, NIFTY Price to Book Value and NIFTY Dividend Yield all 3 financial ratios have strong impact on NIFTY returns. He tested hypotheses with the help of inferential statistics. With the help of correlation, it has been proved that NIFTY Prices has positive correlation with NIFTY Price to Earnings and NIFTY Book Value both and NIFTY Prices has negative correlation with Dividend Yield. With the help of multiple regression models, it is revealed that NIFTY Price to Earnings, NIFTY Price to Book Value and NIFTY Dividend Yield has an impact on NIFTY returns. Price to Earnings and Price to Book Value have positive impact on NIFTY returns whereas Dividend Yield has negative impact on NIFTY returns. Apart from these 3 ratios, NIFTY prices get impacted by various other factors such as Volatility, Government Policies, investor's psychology and economic indicators.

McMillan, D. G. (2013) investigates dividend yield predictability for stock returns and dividend growth for eight countries over the period 1973-2010. He used panel methods and report evidence of such predictive power over the full sample. An examination by decade reveals that the predictive ability for stock returns and dividend growth varies with time. Indeed, the strength of this predictability switches between returns and dividend growth.

Garett, I. (2012) derived cash flow betas derived from this predictability are central to explaining the size effect in the cross section of returns. However, they do not explain the value effect; this is explained by noise betas. The literature on dividend growth and return predictability has emphasized two major findings: *First*, dividend growth is unpredictable and, because returns are predictable, almost all variation in asset prices is driven by discount rate as opposed to cash flow news. Second, cash flow betas can explain the value premium puzzle.

Macit Z and Fati H examined the market value to book value ratios for publicly traded banks in Turkish banking sector and investigate whether the bank fundamentals could explain the observed differences among the banks. We find that bank fundamentals play a significant role in explaining the differences in market value to book value ratios. The results reveal that banks with higher profitability and a higher ratio of non- interest revenue to total interest revenue tend to have higher market value to book value ratios. Banks with higher net loans to total assets ratio, a larger asset size, and a higher equity to total assets ratio are expected to have lower market value to book value ratios. We also find that public banks and foreign banks tend to have higher market value to book value ratio whereas participation banks and investment banks tend to have lower valuations.

As the capital market staggers between upturn and setback, good earnings and payouts by banks could be the tonic for recovery (See Kumaraswamy U. (2012)). The importance of banking stocks in the overall direction of the stock market, and national capital formation process far outweighs the number of listed banks are major areas need to be concentrated more and more. He concentrated on major informational efficiency and found with the help from many statistical tools that “Indian Banking Stocks doesn't follows random walk or not weak form efficient.”

4. Research Methodology

The present study is an attempt to identify the relationship between Price to Earnings

ratio, Price to Book Value ratio Dividend Yield ratio of Banks comprising the CNX Bank index have an impact on the market price of the stocks (based on the closing price of the index as at the close of trading hours).

For the purpose we have collected the actual values of PE/PB/Dividend ratios from NSE and also the actual values from CNX bank index-closing prices from Jan 2004 to 31st Dec 2013. The data was sourced from the NSE website – www.nseindia.com. For the analysis, we used SPSS and Ms-Excel software

To meet the objectives we have analysed the data using correlation and multiple regression statistical tools.

5. Research Hypothesis

For the purpose of the research the empirical validity was sought to be tested based on 10 year data of the CNX Bank index. The objective was to find if there was any significant relationship and for this purpose we have formulated the null and alternate hypothesis as follows:

H_0: *There is no significant relationship between Price to earnings, Price to book value and Dividend yield on the movement of the CNX bank index.*

H_1 *There is a significant relationship between Price to earnings, Price to book value and Dividend Yield on the movement of the CNX Bank index*

6. Results and Interpretation

Table 1: Correlation Matrix

	P/E	***P/B***	***Div Yield***	***closing price***
P/E	1			
P/B	0.890782	1		
Div Yield	-0.89851	-0.7715	1	
closing price	0.697247	0.478671	-0.76508	1

Table 1 indicates that a strong positive correlation between Price to Book value and Price to Earnings ratio. This is on expected lines as earnings per share would normally be in keeping

with the book value of the firm. A high price-to-book value generally indicates that the earnings expectations from a company are already priced into the stock value.

Further, we can observe a strong negative correlation between dividend yield and price to earnings ratio. The lower the PE ratio is the higher is the dividend yield. The graph of price to earnings and dividend yield for the period indicates the inverse relationship clearly. We also observe the following from the correlation matrix:

a. There is negative correlation between price to book value and dividend yield
b. There is moderate correlation between Price to earning ratio and closing price
c. There is very little correlation between Price to book value and closing price
d. There is moderate correlation between dividend yield and closing price

Price to earnings and Price to book value have strong positive correlation. Dividend yield has strong negative correlation with Price to earnings and Price to book value. The high correlation indicates that the data can be subjected to a regression analysis.

Table 2: Multiple Regression Coefficients

	Coefficients	***Standard Error***	***t Stat***	***P-value***
Intercept	7009.510	256.176	27.362	0.000
P/E	251.573	14.206	17.709	0.000
P/B	-1507.926	65.218	-23.121	0.000
Div Yield	-1926.615	82.504	-23.352	0.000

We have conducted regression analysis with dependent variable as CNX Bank Index and P/E, Price to Book value and Div yield as independent variable. The value of R-square obtained was 0.659 indicating the percent variation in the dependent due to these independent variables. We also observed a p-value <0.01 through ANOVA, which concludes the fit of the model

Further, the coefficients were also found to be significant and reject the null hypothesis that the Price to earning multiple, Price to Book value and Dividend Yield do not affect the price of CNX Bank index

7. Conclusion

The data covers about 2494 observations and is based on ten years of data based on daily closing prices. The residuals may point to the other factors such as Nonperforming assets, current account position, inflation and other financial and economic variables both intrinsic and extrinsic to the firm. The study also evidences strong negative correlation between Price to earnings and dividend Yield. The residuals clearly are a pointer to the areas for further research and one such area is the impact of Nonperforming assets on the performance of bank stocks. A comprehensive study of the ten screeners along with the other important variable may increase the accuracy and representative power of the model.

Investors can benefit from the knowledge that these three factors should form part of their 'fundamental analysis' repertoire. However the research has considered only three factors and is limited to that extent. Price earnings and dividend yield generally indicate earning potential but investors have to take into consideration numerous other factors. Mispricing can occur if investors value firms based on information restricted to past earnings alone. Further research could take into consideration a broader set of indicators that impact bank stocks. Monetary policy, macroeconomic factors and Nonperforming assets are some indicators. However the researcher should never lose sight of the fact that markets at times are no more than the sum total of its investors and historical evidence shows that at times the markets are driven by irrational exuberance.

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