CURRENT STATE OF EQUITY MARKETS IN INDIA

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Abstract: The objective of this commentary is to provide a bird's eye view of virtually all the major aspects of returns in the Indian equity markets and their implications. The findings are the result of a study which is perhaps the first (in India) having the largest sample size consisting of the National Stock Exchange's (NSE) 500 index companies (representing almost 97 per cent of the market capitalisation). Hence, the chosen sample virtually presents a census on equity market returns in India. The period of the study is spread over two decades (1994-2014) tracking returns right from the inception of the index till March 31, 2014. The period of the study has been sub-divided into two phases to study the impact (if any) of recession.

Key words: Indian equity markets, price multiples, returns, risk, efficiency

Equity markets constitute the most important segment of stock exchanges; in fact, status of equity returns is, by and large, reckoned as a barometer of the state of the economy of a country. Returns earned by equity investors on their funds invested in equity markets would be a decisive factor in the growth of such markets. What has been the experience of Indian equity markets constitutes the subject matter of the present commentary.

It would be useful for equity investors to know the expected returns (on a rational basis) and actual returns earned on their equity investments; equally important would be to have insight related to the risk-return trade-off involved in equity investment and the parameters that may affect the same. There are four major aspects of Indian equity markets which have been the primary focus in the present research work, namely, returns on equity, price multiples, risk and the level of market efficiency.

In brief, the study focuses on the following:
- Rates of return on equity funds, from the corporates' perspective
- Expected ratesof return on equity
- Market rates of return on equities from the investors' perspective
- Rates of return: dis-aggregative analysis
- Analysis of price multiples
- Risk/volatility in stock returns
- Level of market efficiency using the 'rational bubbles' approach

For better exposition, this commentary is divided into five sections. Section I presents the observations on the different variants of the returns on equity. Section II summarizes the

findings related to price multiples. Observations regarding risk/volatility in returns form the subject matter of Section III. Section IV assesses the level of market efficiency of the Indian equity market. Section V provides (in nutshell) the findings of this research work,its limitations and the scope of future work.

SECTION I
RETURNS ON EQUITY

This is perhaps the first study in India that links the three aspects of returns in detail (viz., the returns that the companies actually earn, the returns the investors expect and the returns the markets provide). It is heartening to observe empirically that these three aspects are closely aligned in the Indian equity markets, making it an attractive investment destination.

It appears safe to postulate that the Indian equity markets provides, prima-facie, adequate returns to the technical (short-term) investors and also allow returns over the long-run to the fundamental (long-term) investors. However, in the presence of volatility in the short-run which increases the risk, it would perhaps be wiser to invest in the long-run in the Indian stock market. Such a strategy should result in relatively less risky and stable returns vis-à-vis the short-run returns.

The major findings related to all significant variants of rates of return on equity have been presented in this section.

(i) **Returns Earned on Equity Funds (ROEF) from the Corporates' Perspective -** The sample companies appear to be providing adequate returns to their owners adhering to the primary objective of maximizing the wealth of shareholders. Nearly seven-tenths of the sample companies report a ROEF of greater than 10 per cent, for the entire period of the study. Given the current interest rates prevailing in the capital market and social responsibilities the companies are to perform mandatorily, the average return on equity funds (ROEF) of 19.10 per cent, *prima-facie,* can be considered satisfactory. It would perhaps be useful to note here that, even though there was a drop in the ROEF, post-recession, the sample companies were still able to record the return of 16.86 per cent. The statistic of adequate returns can be construed as good news/signal for further growth of equity markets in years to come; in other words, the companies are in a comfortable position to meet cost of equity.

(ii) **Expected Returns -** Expected returns are a reflection of cost of equity and are conditional on the fundamental strength and financial performance of the underlying company whose shares the investors purchase. Further, they are also dependent on the company's relative performance vis-à-vis the underlying market. Two measures have been used to determine expected returns which consider both the aforementioned aspects, (i) Return for the risk undertaken ($k_e = r_f + b + f$)and (ii) the capital asset pricing model (CAPM).

With regard to the aspect of being compensated for the risk undertaken, would an investor in India, be satisfied with 8-10 per cent return on equity investment? The answer is likely to be in the negative; this rate of return can be easily earned by investing in debt instruments like the public provident fund (PPF), the Indira VikasPatra (IVP), long-term deposit with commercial banks and so on (with

virtually full safety of investments). Obviously, the investors would like to be compensated for the extra risk they are assuming by investing in the equity shares of a corporate enterprise.

The risk undertaken was measured through the ratios of degree of operating leverage (DOL) and the degree of financial leverage (DFL). The average cost of equity over the period of the study (2001-2014) for the sample companies, computed via this measure, has been nearly 14 per cent, assuming the average risk free rate to be 7.75 per cent. Obviously, the individual company's cost of equity would be dependent on its relative risk complexion, vis-à-vis the other securities available in the market.The same is also substantiated by the average expected returns computed via the CAPM.

The expected returns and the actual market index returns,by and large, appear to follow the same pattern. The average expected returns for the period are 13.47 per cent compared to average market index returns of 16.46 per cent. The standard deviations, coefficient of variation and variance figures are also similar, indicating that expected returns mirror the volatility present in the market. Further, the Pearson correlation coefficient between expected and actual market index returns was 0.98. Hence, the CAPM model emerges to be an appropriate model to estimate expected returns in the Indian stock market. However, expectedly, the market index presents a volatility that is substantially higher than the expectations.

(iii) Market Returns or Actual Returns (rates of return earned by equity shareholders) - Market returns on equityperforce substantially surpass the other relatively less risky investment avenues (debt) available in India. The best annual interest rates available on 15-years, 10-years and 5-years fixed deposits (to compare with the 15-years, 10-years and 5-years equity holding periods) have been 10 per cent on an average over the study period. The average returns for the equity portfolios of these durations were 18.41 per cent, 19.62 per cent and 17.33 per cent respectively.

(iv)

It is to be noted that interest earned on deposits is taxed in the hands of the investor in India, and so are the capital gains. At the time of writing this commentary, the interest income (taxed at the personal income tax slab of the individual) could attract a maximum tax rate of 30 per cent, whereas the long-term capital gains tax was 20 per cent. It is evident from the tax rates that the after-tax computation of equity returns would be greater than the after-tax computation of interest income (assuming the highest tax slab rate of 30 per cent). The other advantage that accrues to equity investment is the liquidity (in terms of transaction and the entry/exit into/from the market). On both the counts of taxes and liquidity, equity investment appears a better alternative than debt. However, it is important to consider the volatility present in equity investment. For the risk-averse investor, debt instruments provide attractive return with low risk. Assuming debt instruments to be nearly risk-free, the 'risk premium' on equity appears to be approximately 8 per cent in India. Overall, it appears that India continues to be an attractive investment destination for both equity and debt instruments as it caters to the requirements of both the risk-assuming and risk-averse investors.

(v) Rates of Return: Dis-aggregative Analysis - Overall, the returns vary along with the various segregates (age, size, ownership structure and underlying sector/industry affiliation), thus providing the investors diversification opportunities, based on the same.

There appears to be a negative correlation between age and returns. The 'young' companies with mean returns of 43.33 per cent fare far better than their 'middle-aged' and 'old' counterparts with mean returns of 33.72 and 31.09 per cent respectively. This is perhaps to be expected, as the companies in the 'young' segment have been observed to be affiliated with emerging and important sectors for India, like power and infrastructure. Additionally, being new, these companies are equipped with new technologies, new production processes and perhaps also with skilled labour force. On the other hand, the old companies seem to be saddled with 'old' technologies, old machines, more labour force (and that too relatively less skilled) and so on. Nevertheless, the equity returns for all 3 segments are commendable, though, with high degree of volatility.

In terms of size, the small and medium capitalization (cap) companies lead the returns compared to large cap companies. This could be attributed to the aspect that they are growth companies with increasing market share, whilst the large companies are mature companies with low further growth or expansion opportunities.The 'small' and 'medium' size companies fare better (at robust returns of 40 per cent) than their 'large' counterparts by 10 percentage points. Volatility remains evident in these segments as well.

The findings are similar to the findings of Banz (1981), Wong et al. (1990), Lau et al. (2002) and Manjunatha and Mallikarjunappa (2012). These apparent 'age' and 'size' anomalies are also indicative of the weak-form of market efficiency.

The ownership structure of the Indian corporates is dominated by 'family owned' businesses and their mean returns at more than 35 per cent (36.92) are also the highest amongst the three segments. The volatility is the highest for the 'non-PSU/non-family' segment and at the same time, their returns are also the lowest, amongst them. Therefore, an investment choice, they appear unattractive. The 'family-owned' and 'PSU' segments thus, not surprisingly, continue to be popular choices for equity investors.

Amongst the underlying sectors, the 'transport' and 'infrastructure' sectors recorded high returns of more than 40 per cent. There is evidence of high volatility amongst the sectors.

SECTION II
ANALYSIS OF PRICE MULTIPLES

The price-earnings (P/E) ratio signifies the price being paid by the buyer of equities for each rupee of annual earnings whether distributed as dividends or retained in the company. Despite their imperfect nature, the practical usefulness of P/E ratios is widely recognised in the world of investments in stock markets. It is a useful indicator of the investors' (market's) mood and measures the overall reasonableness or otherwise, of the market's valuation.

The Indian economy appears to be led by more than six-tenths (300) of the sample companies, in terms of aggressive (high) P/E ratios of more than 10. These are the *growth* stocks amongst the sample companies. Hence, empirical evidence indicates that in cases where the portfolio was acquired at relatively low P/E ratios, the returns were commendable. The opportunity for this was provided by a prolonged rise in P/E ratios so that the earlier period purchases benefitted immensely.

Nearly 15 per cent of the sample companies have a P/E ratio of less than 5 as in 2014. This number has, however, come down substantially from more than 50 per cent in 2001. Notwithstanding the significant decrease, nearly one-sixth of the sample companies have very low P/E ratio, suggesting the presence of still a large number of under-valued companies in the Indian equity market. In marked contrast, the Indian stock market (represented by the sample companies) also appears to be over-valued (at the same time) and could be in the state of a bubble (in 2014).

In spite of the substantial drop in EPS (-144.58 per cent) in 2009, due to the impact of the recession originating out of the financial crisis in USA, the EPS has grown at an impressive rate of 27.01 per cent over the period of the study for the sample companies, indicating the robust and growing earnings capability of Indian companies.As a result, the P/E ratio increased (albeit gradually, from 12.43 in phase 1 (2001-2008) to 13.50 in phase 2 (2009-2014)).

In continuation of the analysis of price multiples, whereas the P/E ratios indicate growth stocks, it is the price/book (P/B) ratios that provide a further insight into value stocks. In pre-recession years of 2005-2008, one-third of the sample companies were having P/B ratio of about 3, reflecting that the market price per share (MPS) is three times the book value (BV)/net worth of their shares; there has been a considerable decline in the P/B ratio in subsequent years. For instance, except in 2010, when the P/B ratio was 2.93, in the other years, the value ranged from 1.86 to 2.70. Hence, the Indian stock market presents positive investment potential in such companies where the P/B ratio is on the lower side, provided of course, they are fundamentally strong.

SECTION III
RISK/VOLATILITY IN RETURNS

Although volatility in returns on equity stocks/shares is inherent, the presence of excessive volatility may not be preferred by a large number of equity investors (in particular, genuine long-term investors). Given the fact that there are an increasing number of investors willing to cross borders to diversify their portfolios, it becomes important for them to know the level/magnitude of volatility present/associated with Indian equity markets. The profile of volatility is summarized as follows:

- Whenever, volatility is observed, it appears in a cluster, indicating that the market goes through a volatile 'phase'. Technical investors may use this 'phase' to book returns; likewise, fundamental investors may need to wait out this volatile cluster;at the near 'peak' state of equity prices, they may exit the market.

- There is evidence of 'stationarity' (referring to a sort of lag in the volatility cluster) indicating that the volatility cluster provides a window for aggressive trading to be able to book returns especially for technical investors.

- There is presence of the 'leverage effect' which indicates that investors react more strongly to negative information or news; their behaviour is pessimistic; being so, they bring (sometimes) prices down to a larger extent than expected. On the other hand, the optimism reflected in increasing prices, due to positive or good news, is of a lesser degree. In other words, prices of shares do not increase to the desired extent. Good news (by and large) does not yield as much salutary impact in terms of increase in equity prices, as is expected of good news.

   The findings are in conformity with the findings of Campbell and Hentschel (1992) and Engle and Ng (1993) with regard to the presence of 'volatility clustering' and to the findings of Black (1976), Christie (1982) and Rabemananjara and Zakoian (1993) pertaining to the 'leverage effect'.

SECTION IV
LEVEL OF MARKET EFFICIENCY

The last two decades (1994-2014) have seen a paradigm shift in the attitude of investors towards investing in emerging equity markets. Emerging markets like India provide a plethora of new opportunities to the investors vis-a-vis developed markets. Given this attitudinal shift, it was important to assess the level of market efficiency in the emerging markets (like India).

There exist two groups of investors in the market. While the first set of investors is interested in future payoffs (dividends), the other category is interested in profit-making by continuously buying and selling of shares (capital gains). If the first group dominates the market, the stock prices are by and large, driven by fundamentals. In case, the second group dominates, the stock prices diverge from their fundamental values; these are driven, by and large, by non-fundamental speculative factors. It is these non-fundamental speculative factors that lead to a 'bubble'. In the context of this study, market efficiency was analysed using 'rational bubbles' which are defined on the lines of Blanchard and Watson (1982)as 'self-fulfilling expectations that push stock prices towards a level, which is unrelated to the change in the market fundamentals'. It is usually characterized by a rapid increase in prices followed by a drastic fall, after which the prices return back to their mean level. The presence of 'rational bubbles' is an indication of market inefficiency.

There are two notable findings that emerge as a result of the analysis. First, 'rational bubbles' do not exist in the Indian stock market. Second, a cointegrating relationship between the prices and the dividends, with an asymmetric adjustment characterized by sharp movements, is established.

The first finding can be traced to the assumption made by Topol (1991) for bubble formation,being a weak-financial policy and excessive monetary liquidity in the financial system, implying low interest rates and excessive leverage. There is, however, a prevalence of high interest rates in the Indian capital markets. In other words, assumptions requiring bubble formation do not exist in Indian equity markets. Further, excessive leverage is not present in Indian companies (Jain et al., 2013).

Second, the market returns evince non-linear adjustment patterns with sharp movements. Further, the results indicate that the negative deviations from the fundamental value are

adjusted faster vis-a-vis positive deviations and the price (and not the dividend) is responsible for most of the adjustments (evidence of the 'leverage effect').

The above discussion could make the case for a semi-strong form of efficiency, considering the price-adjusting nature of the stock market. However, the findings on price multiples indicates that most stocks in the market are either over-valued or under-valued; this indicates inefficiency in pricing. The findings of the dis-aggregative analysisalso contain indications of 'age' and 'size' anomalies existing in the Indian stock market returns. Finally, the substantial volatility (present in the Indian stock market) weakens the case for 'semi-strong' level of efficiency. Hence, to conclude, the status of market efficiency for the Indian stock market, based on the findings, not only from the deployment of the 'rational bubbles' methodology but also from the other aspects studied (as a part of this research effort) appears to be of the 'weak' form.

SECTION V
SUMMARY

This section summarizes the major findings of this study.
Summary - In summary, the main conclusions emanating from the research undertaken are:
1. Close alignment has been observed amongst actual, expected and market equity returns.
2. Companies, on an average, have been noted to have earned higher returns on equity funds deployed than the expected ROE.
3. Equity risk premium in India is around 8 per cent.
4. Buy-and-hold strategy for longer terms yields higher and safer returns vis-à-vis returns earned on shorter-span periods.
5. Equity investment yields higher returns (both in terms of after-tax returns and liquidity) compared to debt securities, *albeit* with significantly higher risk (particularly, in the short-term).
6. The capital asset pricing model (CAPM) has emerged as an appropriate tool to forecast market returns in India.
7. Factors like age, size, ownership structure and underlying sector affect returns.
8. Indian economy is dominated by large business entities which are typically either large family-owned businesses or subsidiaries of multinational companies or public sector undertakings.
9. There is a presence of both over-valued (measured through the price/earnings (P/E) ratios) and under-valued companies (measured through price/book value (P/B) ratios) in the market.
10. High share prices in the market are supported by growth in the underlying earnings per share (EPS).
11. Volatility is present in the returns. Further, it exhibits behaviour like 'stationarity', 'volatility clustering' and 'leverage effect'.
12. Overall, the status of market efficiency is that of the 'weak' form.

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