

AN ANALYSIS OF IMPACT OF INFLATION ON EQUITY MARKETS IN INDIA

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INTRODUCTION

The way in which inflation and equity markets interplay with each other is not as straight forward as one would like it to be. In reality, the correlation between inflation and equity market returns is much more complex. If always having inflation is bad for equity market returns, how come the BSE Sensex had a dream run starting in 2003 running up to 2008 till the global financial crisis hit us? BSE Sensex jumped from ~3,300 in January 2003 to ~19,600 levels in January 2008 when the inflation increased rapidly to a much higher level from 3.81 per cent in 2003 to 8.35 per cent in 2008. We can see that the five years of consistent rising inflation saw stock prices almost multiplying in a similar period.

However, when inflation jumped from 8.35 per cent in 2008 to 11.99 per cent in 2010, there was a sharp dip and a consequent recovery in the equity prices. From the prospective of a successful long-term investor, inflation is good for the equity prices. It is very difficult to access as an equity investor as to what level of inflation is optimal for the equity markets. In other words, it is almost impossible to ascertain the exact level of inflation from investors' point of view as to what starts impacting the aggregate demand in the economy. Investors will always know about it a little late and by that time the stock prices could have already slipped from the top.

That is why it is important to track earnings and listen to the management commentary. The management commentary on the impact of rise in raw material prices on profit margins is the key to understanding the inflation on earnings and hence on stock prices, at least when it comes to the manufacturing sector. Honestly, even the companies are not in a position to forecast accurately where the raw material prices are headed to. However, good management is able to more often than not identify the underlying trends in raw material prices and design a risk management strategy to achieve the financial goals and metrics.

Hence, an inflationary environment cannot be said to be always bad while at the same time it can definitely increase the volatility in earnings for majority of the companies and hence one needs to be cautious and take a conservative approach when inflation rates are rapidly increasing the way they have done in the past one year. Indeed, it will be immature to always conclude that inflation is bad for the markets. That said, one still has to worry about steady inflation levels because beyond a certain level market dynamics inflation can kill economic growth and even worse it can push the economy into a deep recession. The potential hazards of inflation running out of control on economic growth are numerous and painful.

LINKAGE BETWEEN INFLATION & INTEREST RATE

The linkage between inflation and interest rates is well known. With rising inflation comes rising interest rates and that is a big dampener for the earnings' growth for corporates as we live in a world where the debt to GDP ratio is at an all-time high. With rising cost of debt and debt levels at record highs, the impact can only be negative on the cash flows of the corporates. This increases the default risk and that in turn increases the interest rate as the interest rates are finalized after discounting the default risk as well. It's a vicious circle that can potentially end in higher defaults in the financial

system, higher unemployment, lower economic growth and lower purchasing power amongst the consumers.

It is also perceived that the risk of inflation is greater when it comes to small-caps. And even though large-caps are also impacted by inflation, the impact is less severe when compared to the small-caps. The performance of FY23 highlights the underperformance of small-caps. The Nifty Small-Cap index was down by 28.6 per cent in FY23 while the BSE Sensex remained flat in the similar time period. This period was also marred by rise in inflation. As Arun Chulani, Co-Founder, First Water Capital Fund, puts it, "I believe that the impact of inflation on the small-cap companies will be dependent on the sector that they are in. In general, inflation will be a negative factor, especially for smaller companies for several reasons. To begin with, increase in costs is a major factor. Smaller companies may find it harder to absorb rising raw material costs.

"This will result in lower margins as well as making it harder for them to be competitive. Larger companies, given their larger demand requirements, will likely be better able to negotiate prices with their suppliers. Smaller companies with more generic products or services will also find it harder to pass on these costs to their customers as their pricing power is likely to be less. Of course, those with more niche products may have a better ability to hike their prices in line with costs. Inflation coupled with rising interest rates and compounded with recessionary fears across the world may make lenders hesitant to lend to smaller businesses and even if they lend, it would be at higher-than-normal rates to compensate for the risk premium. All in all, the impact of inflation on smaller companies is likely to be more pronounced than their larger peer set.

LITERATURE ON INFLATION IN INDIA

Existing literature on inflation in India includes papers in a Phillips-curve framework, papers in a Lucas-supply-function framework, and papers that treat inflation as a variable in a larger system of equations or in a vector autoregressive (VAR) model. Papers in a Phillips-curve framework examine the relation between inflation and the output gap. Out of them, the only paper that explicitly attempts to estimate the Phillips curve for India is, Dholakia (1990). Studying a sample from 1950 to 1985, Dholakia asserts that the Indian economy does not seem to face any appreciable tradeoffs between unemployment and inflation even in the short run. He argues that the least-developed countries having underutilized potential would not experience inflationary pressures if the pace of growth is high. Referring to India, Dholakia concludes, an imaginary serious tradeoff between inflation and unemployment, in all probability, is not likely to exist. "Bhalla (1981) fails to find any evidence of a significantly positive relationship between inflation and excess demand in the Indian economy. Bhalla comments, "Aggregate changes in real output apparently have no effect on the inflation rate." Studying India's manufacturing sector over the period from 1961 to 1977, Rangarajan (1983) asserts a negative correlation coefficient between price change and real-output change. Based on Indian yearly data from 1950 to 1988, Bhattacharya and Lodh (1990) find a weak and negative relationship between inflation and output growth. They also refer to Bhattacharya (1984) who argues that the Keynesian Phillips curve does not work in developing countries like India. Ghani (1991) estimates a price equation for India on a sample from 1967 to 1982. The equation shows a negative sign on output. In another study on a sample from 1951 to 1990, Nachane and Laxmi (2002) find a negative relation between inflation and the output gap. Brahmananda and Nagaraj (2002) in their claims that the correlation between inflation and growth, if any, is often negative in Indian data from 1970 to 1999. Using the quarterly data from 1983Q1 to 2001Q4 on output series constructed by Virmani and Kapoor (2002) and Virmani (2004) finds a negative relation between the output gap and inflation. Papers in a Lucas-supply-function framework attempt to see the output gap in response to inflation in India. Following Lucas (1973), Arak (1977) and Makin (1982) one study by Samanta (1986) finds a negative relation between the price level and real output in India. Samanta (1986) attempts to estimate an expectations adjusted supply function (EASF) for India using yearly data from 1952 to 1983. The

EASIF hypothesis states that price change affects real output or supply only when such price change is purely unanticipated Lucas (1973). Samanta's estimation, which does not justify the EASIF for India finds a significantly negative relationship between price surprises and output. Papers in a VAR model examine the interrelationship of output growth, inflation, and money growth in India. Rangarajan and Arif (1990) using annual data over the period from 1961 to 1985 conclude that the price level has no response to the changes in real output. Das (2003) working with money, price, and output of India over the period from April 1992 to March 2000 shows a negative relationship between price and output. Overall most papers, especially papers that clearly focused on the Phillips curve, do not show that a Phillips curve exists for India. A few papers discuss supply shocks faced by India without adequately incorporating them in estimating inflation. Thus, 15 three lines of arguments in explaining inflation dynamics in India can be observed. First, supply shocks are held responsible as a vital factor in determining Indian inflation Balakrishnan 1991; Dholakia 1990; Goyal and Pujari 2004; Ramachandran 2004; Second, one group believes that countercyclical money wage is the answer to the negative relation between inflation and the output gap (Ahluwalia 1979; Balakrishnan 1991; Roy and Darbha 2002) Third, another group believes that real marginal cost is not positively correlated with output in India (Chatterji 1989). The first reasoning would imply that the Phillips-curve theory actually fits India, if supply shocks are properly accounted for. The second reasoning implies that firms in India generally do not set prices to maximize profit. The second and the third reasoning, if true, would imply that conventional macroeconomics, as applies to the US, cannot fit India. If the first reasoning is true, which means we can estimate the Phillips curve for India by controlling supply shocks, the second and the third reasoning become contradictory or redundant. To examine the first reasoning, it is imperative at this point to see the major supply shocks to the Indian economy. Some studies claim that India's economic reform brought a significant change in the nature of the Phillips curve Bhattacharya and Mitra 1997; Paul and Bhanumurthy 1999; Rao 2002) claims that the Phillips curve emerges only in the post-reform era. In the first group of models (Romer (1993) and Lane (1997)), increased openness to trade lowers inflation by making the Phillips curve steeper, i.e. the output-inflation tradeoff smaller; underlying this mechanism is the negative terms of trade effect of a real depreciation, which is triggered by a monetary expansion. Rooter's model applies mainly to countries that are large enough to affect international prices. Lane (1997) shows that this is not a necessary assumption; using a model with imperfectly competitive goods markets and sticky prices in the non-tradeable sector he shows that the output gains from unexpected inflation are smaller in more open economies. Again, one would expect openness to be associated with lower inflation and a smaller output inflation tradeoff. A further implication of Lane (1997) is that – for a given level of openness – the larger a country, the more reduces the terms of trade effect the benefits from surprise inflation. A negative effect of country size on inflation would point to the relevance of this effect.

GROWTH AND INFLATION IN THE INDIAN ECONOMY

The growth rate of GDP in India increased from 3.5 % in the 1970s to 5.5 % in the 1980s. This increase in growth has been attributed to both demand and supply-side factors. But it has been suggested that Keynesian expansion, or the increase in aggregate demand due to higher government spending and larger fiscal deficits, was primarily responsible for pushing up growth rates (Joshi and Little 1994). In the early 1980s public investment was growing rapidly, but in the second half of the decade it slowed down and government consumption expenditure grew at a much faster pace. The revenue deficit grew, indicating that government consumption was being financed by borrowing, which entailed interest and repayment commitments. The success of expansionary fiscal policies in raising output growth, at least in the short run, can partly be attributed to the underutilization of productive capacity in the preceding years. By the end of the 1980s, when output was above trend levels, fiscal policy continued to be expansionary creating excess demand in the system (Joshi and Little 1994). The reform of the financial sector consists primarily of a reduction in the statutory liquidity ratio and a rationalization of subsidized credit to priority sectors, relaxation of interest

controls and restrictions on firms' access to capital markets, and more autonomy for public sector banks. The major reform in the case of public sector enterprises consisted of eliminating privileges such as protection from external and domestic competition and preferential access to budget and bank resources. Though the condition relating to an effective exit policy for the closure or restructuring of money-losing firms in the private and public sector has not been fulfilled, the reforms made have largely been in line with the program's objectives. Monetary policy and growth: A noteworthy feature of Indian growth process over the last one and a half decades has been its stability. This is evident from the substantially lower coefficient of variation of real GDP growth during the post-reform period as compared to that during the pre-reform period, that is, before the nineties. It is also important to note that India's growth is driven by domestic consumption, contributing on an average to almost two-thirds of the overall demand, while investment and export demand are also accelerating. As consumption is less volatile component of demand, this has also contributed to reducing the volatility of GDP. The inflation rate accelerated steadily from an annual average of 1.7% during the 1950s to 6.4% during the 1960s and further to 9.0% in the 1970s before easing marginally to 8.0% in the 1980s. India had generally not experienced runaway inflation. On the other hand, the volatility in the inflation rate, as measured by the coefficient of variation, which was fairly high in the 1950s at 4.4, moved in a narrow band of 0.4-1.0 in the subsequent decades, thus reducing the inflation-risk premium. The pickup in inflation rate from 1970s onwards reflected the impact of a sharp rise in money supply growth and also partly supply shocks from crude oil prices and crop failures. Demand pressures, emanating partly from the widening fiscal imbalances, also contributed to inflationary pressures in the 1980s. The second half of the 1990s was marked by a significant turnaround in the inflation outcome reflecting the improved monetary-fiscal interface.

FINDING FOCUS IN AN INFLATIONARY ENVIRONMENT

If we go by the historical performance in the US markets, after inflation peaks and begins to normalize a double-digit gain in S and P 500 is what we have seen. Empirical evidence suggests on an average S and P 500 has posted a total return of 13 per cent during the 12 months that followed at least 13 major inflation peaks. Optimistic investors are betting that the interest rates have peaked, meaning that the inflation has peaked in the US while some of the short-sellers believe more rate hikes are on the card, meaning inflation is here to stay much longer than previously expected.

Without speculating on the direction of price rise, it can help investors to understand which sector has in the past tended to outperform during an inflationary environment. It is perceived that energy stocks do well during rising inflation. Also, defensive sectors such as utilities, consumer staples and healthcare tend to outperform during a high inflationary environment. Banking and financials also have historically performed better with rising inflation.

In the US' markets we find that Bank of America, when screened for S and P 500, stocks showed the highest positive correlations to inflation going back to 1975. The other stocks that showed the highest positive correlation with inflation belonged to the metals and mining sector, oil and gas sector and the chemical sector.

In the Indian markets, if we consider the period from 2017 to 2021 wherein inflation increased from 3.3 per cent to 5.13 per cent, we find that the banking sector stocks and the healthcare sector stocks performed in line with the BSE Sensex while the commodities and IT stocks outperformed the key benchmark index in the similar timeframe. During the period when the inflation peaked and normalized to 4.91 in 2015 from 10.02 in 2013, the automotive stocks and banking stocks along with healthcare stocks outperformed the BSE Sensex while the commodity stocks and the oil and gas stocks underperformed the key benchmark index along with the IT stocks.

CONCLUSION

To draw any conclusion on correlation between inflation and equity returns can be a tricky task. There is no doubt that consistent inflation creates volatility in the earnings and the negative sentiment can trigger a broad-based sell-off as a risk-off mood can prevail during an inflationary environment. However, reading too much into inflation can lead to poor risk-taking ability and may impact portfolio returns in the long run. If one were to assume that high inflation levels is not good for the equity markets, it will almost be impossible for an investor to participate in the markets when the equity prices are actually cheap and ripe for investments, assuming the market falls owing to steep rise in inflation.

Every situation is unique and the variables are almost always different. No two peaking of inflation scenarios can be a carbon copy of each other and hence as an investor one has to analyze the situation discounting the current variables rather than looking at the historical correlation between equity returns and the inflation levels. In the current situation which is quite extraordinary in the sense that there is a rapid historic increase in the interest rates in the US, the banking system has become vulnerable and the anxiety amongst the depositors (small banks) is more than the equity investors. Investors must look at inflation and equity markets from a totally fresh perspective given the unique nature of the current market triggers.

While the global markets will keep guessing about recession and how deep the recession can be, the external slowdown can be expected to have an impact on the Indian economy and markets, albeit the impact is not expected to be severe. The optimistic domestic growth outlook, improving corporate profitability, expansionary government policies and domestic market flows are all expected to support the equity prices in India. FPIs have turned net buyers in April even as the valuations have become less expensive after the current consolidation in the markets. The key risks remain poor monsoon, persistent inflationary pressure leading to higher interest rates, poor economic growth numbers and risk-off sentiment in the markets, negative FPI flows, earnings disappointment viz. Infosys and delay in recovery in the rural sector.