CHAPTER 1

INTRODUCTION

1.1 Background

According to the International Monetary Fund, inflation is an important economic statistic because it affects the value of money and indicates the overall stability of a country's economy.

India has been the cynosure over the last decade in the global economic arena owing to its changing inflation patterns. Worries grew as the inflation rate rose from 3.7% to 12.1% over 2001-2010. The inflation rate has since fallen to 5.2% in early 2015, leading to a debate about whether this moderation is likely to endure or inflation will rise again (Laurence Ball et. al. 2015).

Economists, policymakers, and journalists have proposed a variety of factors responsible for such movement in price indices. Many emphasized the effects of rise and fall in food price inflation, especially for certain staples such as milk, fruits, and vegetables. These price increases were in turn explained by factors including shifting dietary patterns, rising rural wages, and a myriad of government policies such as price supports and the rural unemployment guarantee scheme (Rajan, 2014). Some suggested that the monetary and fiscal stimulus following the crisis led to higher inflation, while others cited supply side constraints arising from policy bottlenecks (Economic Survey, 2013).
The maintenance of price stability is one of the macroeconomic challenges facing the Indian government. Inflation in fact, has become very complex and complicated phenomenon in a developing country like India (Deshpande and Sarkar, 1995). For, it has been determined by the multiplicity of factors that are inter-related in an intricate manner (Patra & Partha, 2010). The policy makers therefore face difficult situation while trying to control inflation of such manner. Money in circulation is increased, as a policy matter, to meet the growing need of the economy but it is most likely reflected in higher inflation due to disequilibrium with other macro-economic variables. Besides, this has been proved in the literature of monetary economics that money supply bears a direct and positive relationship with inflation (Fisher, 1911). High level of economic growth, as experienced by the Indian economy in recent years, enhanced purchasing power of people, hence, fueling inflation. However, economic growth increases the supply of goods and services with the price reducing effect. Indian economy is more exposed to the rest of the world, and price shifts in the world economy is instantaneously reflected in Indian economy (Janak et.al. 2008). In globalized era, domestic efforts, sometimes, do not fructify due to factors beyond the control of policy makers. High rate of inflation levels distort the investment and consumption decisions (Hellerstein, 1997) and lack of holistic approach towards control of inflation may lower output and consequently, augment the unemployment problem. Therefore, it is also very important to understand the determinants of inflation in Indian economy.
1.2 Multiplicity of Price Indices used in India

The price index is an indicator of the average price movement over time of a fixed basket of goods and services. There are different indictors used to measure inflation namely Wholesale Price Index (WPI), Consumer Price Index (CPI) and the GDP Deflator. Thus, a multiple number of indices are used in India. In this context therefore, the Former Reserve Bank of India (RBI) Governor, D Subbarao, in a 2010 speech at the Peterson Institute for International Economics in Washington DC, summed up the problem in these words: “In India, we have one wholesale price index and four consumer price indices. There are ongoing efforts at a technical level to reduce the number of consumer price indices, and I believe the technical issues are not insurmountable. But that still will not give us a single representative inflation rate for an emerging market economy with market imperfections, diverse geography and 1.2 billion people.”

But, at the same time it should not be forgotten that in a big country like India, where different sectors co-exist, a single index cannot be used to capture inflation, however broad that index may be. This is because, the indices should be able to cover adequately the different population groups, the commodity basket, base year and the weights assigned to commodities according to their relative importance.
1.3 The Historic Shift from WPI to CPI

When other developing economies were using Consumer Price Index as the main measure of inflation, India chose to use the Wholesale Price Index due to its national coverage and timeliness of release. It is only recently (April, 2014) that the government made a bold and well thought out decision to move to the CPI to measure the inflation rate in the Indian economy.

So far, RBI chose WPI over CPI, largely for two reasons. First, until 2011, there was no single CPI, representative of the whole country. There were three or four CPI measures, relevant for different segments of population. Now, we have one representative measure of retail inflation with further disaggregation to see how prices in rural and urban India are changing. Second, WPI was earlier available with a shorter lag, only a 2-week delay compared with CPI inflation which came with a 2-month lag. Now, CPI monthly inflation data is released couple of days prior to WPI inflation data for the same month.

The conceptual case for moving to CPI rests on two points. First, WPI excludes prices of services such as education, healthcare, and rents. However, services now account for nearly 60 per cent of GDP and a vast majority of these services are not traded with other countries. As a result, inflation in these services is largely determined by the domestic demand-supply situation. Conversely, the new CPI measure assigns nearly 36% weightage on services and includes price changes in housing, education, healthcare,
transport and communication, personal care and entertainment. CPI, therefore, is a better reflector of demand side pressures in the economy, than wholesale prices.

Second, WPI assigns nearly 15% and 10.7% weightage for the fuel group and metal and metal products group, respectively. Any sharp movements in international prices of fuels and metals, therefore, lead to sharp changes in WPI. This was visible in calendar year 2009 when WPI inflation fell below 2%, in 8 out of 12 months. A sharp decline in WPI resulted in a swift and sharp lowering of the repo rate to 4.75% by April 2009 from 9% in July 2008. During the same year, CPI (industrial workers) inflation averaged nearly 11%.

Thus, the RBI has made the wise decision to move to the CPI (both urban and rural) and update the base from 2010 to 2012. CPI is a much broader measure than WPI and tracks the prices of the basket of goods and services that have an impact on the common people as well as the high flying corporate class. The WPI becomes an ineffective measure also because it is strongly influenced by the fluctuation in global prices of tradable goods and the ever prevalent currency fluctuations.

1.4 Objectives for the Study

Background 1 - The issue of comparability of inflation indicators across countries has gained importance in recent years. Most countries in the developed as well as developing world make use of Consumer Price Index (CPI) as the inflation indicator, along with some other price indices viz., Producer Price Index (PPI), Wholesale Price Index (WPI) and
Gross Domestic Product (GDP) deflator. The major reasons why CPI is used by most countries are that CPIs directly represent the consumption basket of the public at large and usually CPIs are also used in many countries as the measure for indexing public sector wages and pensions and as the standard benchmark for wage negotiations in the private sector. Therefore, the first objective is:

1. To make an assessment of the most commonly used inflation indicator Consumer Price Index (CPI) of a few South Asian Nations along with a special reference to the developed economies of China, U.K. & U.S.A. (By comparing the Base year, Weights, Commodity basket and Trends in inflation rates).

Background 2 – In the Indian context, two most important indices that measure inflation are Consumer Price Index (CPI) and Wholesale Price Index (WPI). WPI index reflects average price changes of goods that are bought and sold in the wholesale market, whereas CPI is a reflection of changes in the retail prices of specified goods and services over a time period which is traded by particular consumer group.

While earlier the Reserve Bank of India used WPI inflation to manage monetary policy expectations, it is now the CPI inflation which is largely taken into account. Though many analysts for long had suggested the RBI to shift from WPI to CPI, but this could happen only recently, i.e. in 2014. Since then, the RBI highlights its inflation expectations based on the CPI inflation data.
Therefore, in view of the recent change in India’s inflation indices, i.e. the switch over from WPI to CPI, some of the issues relating to the choice of base year, selection of commodities, creation of weighting diagram, methodology adopted and other aspects demands proper understanding. Besides, a comparison between the WPI and the New CPI might help us to find out the intricacies associated with the calculation inflation indicators. Therefore, the second objective is:

2. To understand India’s WPI and CPI in detail, as well as to identify the gap in the basket of all commodities between these two indices.

*Background 3* – Inflation, which a phenomenon of continual increase in general price level of goods and services in an economy over a period of time, is caused by many factors. Although a number of research works in the past had made attempts to identify determinants of inflation and to investigate the impact of identified variables on inflation of different economies of the world, yet in the context of India, not many studies could be traced in the literature. Now, whether the Indian inflation is due to increased money supply, or increasing fuel prices, or any other cause, it is needless to emphasize, that the causes of today's inflation are complicated. Thus, a set of independent macroeconomic variables that include Gross Domestic Product (GDP), Index of Industrial Production (IIP), Broad Money (M3), Narrow Money (M1), Exports (EXP), Imports (IMP), Oil Exports (Oil EXP), Oil Imports (Oil IMP), Gross Fiscal Deficit (GFD), and Foreign Exchange Reserves (Forex) have been analyzed to find out the empirical relationship between them and inflation in India. Thus, the third objective of this study is –
3. To investigate the causality and cointegrating relationship among inflation rates measured by CPI and WPI with ten macro-economic variables, namely Gross Domestic Product (GDP), Index of Industrial production (IIP), Broad Money (M3), Narrow Money (M1), Exports (EXP), Imports (IMP), Oil Exports (Oil EXP), Oil Imports (Oil IMP), Gross Fiscal Deficit (GFD), and Foreign Exchange Reserves (Forex).

Background 4 – Core Inflation is a measure of inflation which excludes items that face volatile price movement, notably food and energy. In other words, Core Inflation is Headline Inflation minus inflation that is contributed by food and energy commodities. In order to understand the concept in a better way we can say that food and fuel prices may go up in the short run due to some disturbances in the agriculture sector or oil economy. However, over the long term they tend to revert back to their normal trend growth. On the other hand, prices of other commodities do not fluctuate as regularly as food and fuel – as such increase in their prices could be taken relatively to be much more of a permanent nature. If this is so, then it follows logically for Central Banks to target only core inflation, as it reflects the demand side pressure in the economy. In practice too, the Reserve Bank of India (RBI) and Central Banks around the World always keep an eye on the core inflation. Whenever core inflation rises, Central Banks increase their key policy rates to suck excess liquidity from the market and vice versa. It is, therefore, a preferred tool for framing long-term policy.

Unlike core inflation, headline inflation takes into account changes in the price of food and energy. Since food and energy prices are highly volatile, headline inflation may not
give an accurate picture of how an economy is behaving. Therefore, it might be helpful if we distinguish between temporary (like seasonal variation in fruits and vegetable prices) and permanent changes in prices. Besides, research has shown that headline inflation tends to revert strongly towards core inflation once the temporary fluctuation in food and energy sector stabilizes. Therefore, the fourth objective of the study is:

4. To understand the dynamics of Core Inflation in India in terms of the following:

   i. To identify measures of core inflation that can help in predicting headline inflation CPI and WPI.

   ii. To examine the volatility of measures of core inflation with the headline inflation CPI and WPI.

   iii. To examine the direction of causality between core inflation measures and headline inflation CPI and WPI.

*Background 5* - It has been observed that recently in India there has been a switch over from the traditional WPI as an inflation indicator to the New CPI. Many new changes have been introduced to make the New CPI more representative. But, whether that list of commodities is a comprehensive list that truly reflects the regular consumption habits of the masses is another area that deserves proper examination. Therefore, the fifth objective is motivated by the following –

5. To find the extent to which the commodity basket of the New CPI/WPI reflects the consumption pattern of common masses, and to develop a hypothetical index
(consisting of food component only) and comparing its efficiency with that of the existing WPI/CPI (Food component) indices.

1.5 Relevance for Industry and Academia

Inflation statistics are important indicators about how an economy is performing. They are used in many ways by individuals, government, businesses and academics. In fact, inflation statistics impact on everyone in some way as they affect interest rates, tax allowances, benefits, pensions, savings rates, maintenance contracts and many other payments. The study of inflation trend is informative because current inflation rates are often influenced by past inflation rates i.e. if inflation trends have been high in the past it encourages people to demand higher wages and in turn shift the impact of price rise to ultimate consumers. Therefore, Inflation expectations become self-fulfilling. Besides, countries with persistently low inflation make an attractive place for investment because they offer economic stability which encourages firms and investors. On the other hand, high rates of inflation increase costs and make a country's exports less competitive in the global marketplace. Fluctuations in inflation, such as a large increase in prices followed by a decrease, can cause decreases in economic growth, reduce spending, decrease investments and increase interest rates. Any inflation over 10 percent per year is potentially problematic for the country's economy.

In a developing economy like India, inflation is determined by a multiplicity of factors that are inter-related in an intricate manner (Patra & Partha, 2010). There are innumerable macroeconomic variables that affect inflation in a country like India. Besides, there has
always been a controversy regarding the headline inflation and core inflation measures. Thus inflation has become a complicated and complex phenomenon in India. This research work therefore, attempts to empirically understand the issues related to inflation dynamics in India, with particular focus on its determinants.

Thus, the proposed research attempts to add to the growing body of literature on inflation through an empirical analysis of the inflation dynamics in India, with special focus on the gap between the indicators i.e. CPI and WPI, the macroeconomic determinants and the link between them and the inflation rate in India, and the importance of core inflation measures in predicting the headline inflation in the long-run.

1.6 Thesis Outline and Chapterisation

The thesis has been divided into five broad divisions, the details of which are given below:

**Part I: Introductory Perspectives**

Chapter 1 - The first chapter entitled as “Introduction” comprises of a brief introduction of the selected topic, research objectives, and its contribution in the relevant field of industry and academics.

**Part II: Literature Review**

Chapter 2 - The second chapter named as “Review of Related Literature” consists of the reviews of important studies related to the topic of the study.
Part III: Conceptual Framework

Chapter 3 - The third chapter entitled as “Research Methodology” includes the research methodologies that have been used to study and analyze the different objectives of the study.

Part IV: Research Findings

Chapter 4–The chapter 4 answers Objective 1.
Chapter 5- The chapter 5 answers Objective 2.
Chapter 6 –The chapter 6 answers Objective 3.
Chapter 7 –The chapter 7 answers Objective 4.
Chapter 8 –The chapter 8 answers Objective 5.

Part V: Concluding Perspectives

Chapter 9 –The chapter 9 entitled as “Conclusion” presents the summary of conclusion from the findings. It also provides the areas on which further research work can be carried out.