

Abstract of Doctoral Dissertation

Fiscal Deficit and Inflation in India and China: A Comparative Analysis[#]

Gurleen Kaur

Assistant Professor, Department of Economics, Sri Guru Gobind Singh College of Commerce, University of Delhi,
New Delhi - 110034, India; gurleenkaur@sggsc.ac.in

1. Introduction

It is a well-recognised view that macroeconomic stability serves as a necessary condition for the sustenance of growth and stability of the external sector. Short-term spurts in economic growth can occur on account of a policy shock such as a fiscal impetus or monetary expansion, but such phases of growth are generally temporary; whereas there is sufficient empirical backing that the growth coupled with macroeconomic stability sustains longer. Fallout of the macroeconomic management of the economy is often accompanied by one or more of the following conditions: high inflation, large fiscal deficit, external imbalances and monetary authority losing its credibility among other things.

The episode of Global Financial Crisis, which marked its tenth anniversary in 2017, flags the issue of containing inflation and fiscal deficit as a prerequisite for reviving growth in Emerging Market Economies (EMEs). Fiscal policy which is permanently expansionary is not only highly unsustainable, but, is often blamed for high and persistent inflation. The line of argument that growth stimulation and its sustenance are different enterprises has brought the macroeconomic issue of fiscal deficit and inflation into sharp focus, especially in the context of EMEs.

Understanding inflation dynamics is particularly important today due to the very low inflation levels prevailing in certain economies. The effect of fiscal deficit and inflation on each other and on related macroeconomic variables remains a highly discussed, debated and an unsettled issue. The problem is more intense and severe in the emerging market economies such as India since it has to deal with the supply constraints, structural rigidities

and manage external shocks. Much of the prevailing literature is full of the unfriendly results of inflation irregularities but has not explored its major sources and deficit-inflation nexus in the two fastest growing economies, India and China who happen to be crucial affiliates of the global growth generator (3G) countries apart from their association in BRICS.

2. Objectives, Data Sets and Methodology

Asia continues to be the main growth engine of the world, with India and China contributing 45 per cent to global growth as per IMF in its Asia Pacific Regional Economic Outlook, 2018. India's growth pattern as well as the genesis of its high growth since 1994 has been very different from that of China's. By the mid-1990s, India, for long wedded to a mediocre 3% GDP growth rate (Hindu rate of growth) - began surging ahead. On the contrary, the growth rate in China did show a marked improvement, especially in terms of steadiness, from the early 1980s. Although, India adopted a Flexible Inflation Targeting (FIT) regime no sooner than 2016, Peoples' Bank of China does not explicitly target inflation till date. Nevertheless, the issues surrounding the causes of inflation and whether such pressures stem from the fiscal side of the policy-making are pertinent considering the fundamental role that these economies play in driving the growth story of Asia.

The present study, therefore, analyses the economies of India and China to develop an understanding of the dynamics of their fiscal deficit and inflation; thereby identifying major macroeconomic determinants of

[#]Abstract of the doctoral thesis, submitted to the Discipline of Economics-School of Social Sciences, Indira Gandhi National Open University, New Delhi, under the supervision of Prof. Kaustuva Barik.

inflation and examining the inflationary aspects of fiscal deficit, if any. In order to do this, we throw light on three important issues. First, what are the major drivers of inflation in India and China? Second, are fiscal deficits inflationary in these economies? And finally, how can we compare these two economies with regard to the dynamics of fiscal deficit and inflation?

In order to do this, the present study which is based on secondary data addresses the aforementioned issues by analysing quarterly and annual data on macroeconomic variables in India; and annual data on macroeconomic variables in China. The study follows an assorted approach, including the role of supply and demand factors to illuminate the empirical data and the volatility of inflation experiences of India and China. The inflation function adopted in this study combines the prominent factors affecting inflation as per various schools of thought to gauge the relationship of inflation with the gross fiscal deficit, money supply, exchange rate, crude oil prices and the output gap. The variables taken for the study include Consumer Price Index (CPI) representing average inflation, gross fiscal deficit of the central government indicating the debt scenario of the economy, M3 representing the money supply aggregate, domestic exchange rate vis-a-vis the US Dollar encompassing external influence on the economy, crude oil prices as one of the supply side factor and output gap reflecting the impact of economic activity from the demand side. The data pertaining to these variables are subjected to various econometric exercises with the aid of econometric software. The main source of data has been the Monthly Monetary and Financial Statistics (MEI) from Organisation of Economic Co-operation and Development (OECD) Monetary Statistics (2017), except for gross fiscal deficit (as a percentage of GDP) for which the data has been obtained from the Handbook of Statistics for the Indian Economy (2017). For China, the data pertaining to 1985-1999 has been compiled from Liu, Y., Fung, H. G., & Wang, Z. (2005); then for the period 2000-2016 from Asian Development Bank's (ADB) statistical Database system (2017).

Our empirical analysis is carried out in three empirical sections. The first empirical sections seeks to examine the macroeconomic determinants of inflation in India and investigates whether the proposition of a positive effect of fiscal deficits on inflation can be verified in the particular case of the Indian economy using quarterly data from Q1: 1996-1997 to Q1: 2016-2017, (Model I). The Auto

Regressive Distributed Lag (ARDL) approach, developed by Pesaran et.al (2001), is used to empirically analyse the relationship between fiscal deficit and inflation along with other major variables in this study. The advantage of this method is that it can be applied to all kinds of series regardless of their levels of integration and the model takes sufficient numbers of lags to capture the data generating process in a general-to-specific modeling framework (Laurenceson and Chai, 2003).

The second section adopts a different methodology as against the previous section to examine the sources of Indian inflation in our next model (Model II). It uses the prism of Vector Auto Regression (VAR) for the annual data spanning from 1985-86 to 2016-17 to analyse the deficit-inflation relationship in the Indian economy. However, the type of VAR employed depends on the Cointegration results obtained. Therefore, the estimation framework includes five main concepts- VAR, Cointegration, Vector Error Correction Model (VECM), Causality and Impulse Response Functions.

The third empirical section focuses on highlighting the possible explanations for the recent change in inflation dynamics in China (Model III). Based on annual data for China from 1985-86 to 2016-17, we examined the inflation-deficit relationship using the Johansen cointegration- VECM approach, as well as the VEC-Granger causality tests and impulse response functions. Against the backdrop of Model II and III, the final section of the study contrasts the inflation dynamics of India and China during our period of investigation before spelling out the relevant policy suggestions.

The study also comprises of a theoretical unit apropos to the inflation developments, fiscal policy making and monetary authority stance with special reference to the current scenario in both India and China. It documents the stylised facts, highlighting the dynamics of inflation and fiscal deficit during the period of the study. Furthermore, a review of some of the principal economic rationalisations for inflation is also undertaken along with empirical evidence on the interrelationship between the aforesaid macroeconomic variables with typical emphasis on the Indian and Chinese economy.

3. Results and Policy Implications

The subsequent discussion systematically presents the findings of the study followed by its policy implications starting from the first empirical section. The results

pertaining to Model I indicate a positive and significant relationship between fiscal deficit of the central government and inflation. Thus, fiscal deficits prove to be inflationary in India, in the long-run. The findings also suggest that in the long-run, money supply, exchange rate, and oil prices have a non-negligible impact on inflation. For policymakers in India, inflation is therefore not a phenomenon that can be broadly linked to a single factor. In the absence of a stronger output-inflation relationship, the support for flexible inflation targeting framework does get encumbered; therefore taking cues from Mishkin (2011), we must revisit the details of how flexible inflation targeting is conducted and what this flexibility means for the Indian economy.

Johansen Co-integration Test applied in our next empirical analysis- Model II, reveals that inflation and other explanatory variables under consideration move together in the long- run considering annual data for India. The view of neoclassical economists that budget deficits exert a detrimental impact on the economy is reinforced through our analysis. Evidence that money supply, oil prices, and exchange rate are short-term tiers to address inflationary pressures in India cannot be denied. An overwhelming finding of the model is the coefficient of the output gap which is negative but significant. Clearly, the evidence for the existence of the Phillips curve does exist amidst a counter-intuitive negative relationship between inflation and output. The findings also suggest that the inflation persistence as indicated by the lagged CPI coefficients is not significant in determining future fluctuations in inflation. Such a result could be attributed to the observance of inflation targeting norms in India.

Overall, both the ARDL and VEC model for the Indian economy suggest that there is still irrepressible analytical backing for a central bank to intensely and credibly stabilise inflation in the long-run, but at the same time re-visiting flexibility in favour of output stabilisation policies around its natural rate, is what is necessary in the short-run.

Model III estimation using VAR shows a statistically insignificant coefficient of both gross fiscal deficit as well as money supply indicating a feeble role played by monetary and fiscal authorities in determining inflation in China in the long-run. No causality between fiscal deficit and inflation, as per Granger Causality results makes a stronger case for the prevalence of Ricardian equivalence in the context of China. The results presented in the thesis are a little agnostic about whether New Keynesian Phillips Curve (NKPC) explains the inflation dynamics in India given that both inflation inertia and Non-Accelerating Inflation rate of Unemployment (NAIRU- as given by the output gap) are not robust. However, for the Chinese economy, NKPC along with structural theory is instrumental in describing trends pertaining to Inflation during 1985-86 to 2016-17.

In general, the results seem to suggest that a healthy monetary-fiscal interface is essential in India and China to achieve macroeconomic stability and prevent any future growth impairment. Finally, the study supports the importance of addressing structural bottlenecks in order to deal with supply-side factors that would facilitate in achieving non-inflationary growth keeping in mind the structural views on inflation.