Inflation Dynamics in Developing Economies: Empirical Evidence from India

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The poetry of Robert Frost is a golden treasury of thoughts and morals of common day to day life. The thoughts expressed in the poetry are not direct and straight-forward, rather a combination of beautiful images and symbols, technique and style. Each poem of Robert Frost contains some universal idea or message which is the demand of the day. The beauty of his poetry lies in his deep and profound exploration of some events specially in and around nature and rural surroundings. We all human being are often interacted with various activities of Nature, but the credit goes to Robert Frost who observes the things very minutely and dives deep into the natural objects or events and churns out the truth. As a matter of fact, every object of Nature has something to say, but it all depends upon our observation. As the milk contains the oil or ghee, but we don't see it. But when it is churned by a milkman, both milk and ghee are separated. In the same way, Robert Frost, like a milkman churns the poems and takes out its essence in the form of ideas and messages which are very relevant today. This research paper is devoted to a critical study of some well-known poems of Robert Frost and examines and elucidates the various thought and ideas hidden in the poetry.

Keywords: Inflation, Macroeconomic Challenges, shocks, determinants, dominant role, persistent role, policy stability, reforms, exchange rate strategies.

Introduction

Developing economies are like a growing child who requires continuous supervision and careful guidance to ensure stability and long-term future progress. Similarly, developing Nations operate under multiple structural constraints that demand constant policy attention. There are many constraints like limited Financial resources, Structural unemployment, high Population, Income inequality, Exchange rate Volatility, Low human capital, weak industrial fiscal deficit and limited tax capacity, dependency on agriculture and primary sector, & Trade imbalances. These are foundational challenges which requires consistent supervision and collaborated economic management to prevent systematic instability however beyond these structural obstacles inflation is always emerges as a persistent and deeply disruptive variable for developing economy it attacks the core of economic activity by affecting the core elements of an economy because it attacks the depth of the economy and disrupts the whole economic balance by disturbing the main elements of demand and supply, which weakens the circular flow and Destabilizes Overall macroeconomic balance. When inflation sticks around, it slows and scares off investments, it creates trouble, especially for low-income families, making welfare an economic management even more rigid. In developing countries few things fuel these inflation problems and fluctuations Food prices, because I'm not getting the support they need lack of storage capacity, and unpredictable weather ruin entire harvests. The fuel prices are another matter of concern because as they go up, everything transportation to manufacturing gets more expensive because of the relative demand concept, due to which the whole tertiary sector gets affected inflation so costs Ripp through the whole economy. The forex also is one of

the Most important catalyst of Development it can mess things up Vienna currency falls in which anything coming outside gets expensive and results in increment fiscal deficit Which is in itself a big problem and reason inflation because the government by putting more cash into the and due to which for making economy balance the prices start going up even faster it all connects We like an spiral. Taking as their inflation comes from of things like how the economy is built and those control the government set being tied so closely to what happens worldwide makes it.

So basically food exchange rates Government spending fiscal are the main variables which we're going to study and correlate variables for solving our research problem This study tackles a big question: Why is inflation to persistent and complicated in developing countries and what can be done about it A lot of previous research only looks at one piece of the whole puzzle which does not help that much for forward view this research takes a more holistic approach considering how supply shocks currency and government budgets all interacts and affects. Taking the Bhartiya economy as a base, this paper aims to analyze what inflation is. And what ought to be? For the management of this major economic issue.

Literature Review

In our previous literature, the inflation has diverse theoretical and empirical perspectives in which inflation dynamics are across economics. There are various views on inflation but the two mains are as follows first one is- monetarist approach and second one is

- structuralist approach, the first approach is mainly associated with Milton fried and according to Milton fried the fundamental money related concept of inflation is driven by growth of money supply related to actual output of monetarist scholars the centre Bank credibility and expectations of management to gain stability in this highly focused demand sites and support the monetary control policy in achieving equilibrium. On the other hand, the structuralist approach gives a more standard and specific explanation for developing economies, which emphasises the structural rigidity and the structural imbalances. Scholars argue that supply bottlenecks in infrastructure deficiencies of agriculture, imperfections of the labour market and administered price mechanisms generate persistent

Cost-push inflation, from the perspective of monetary policy, is not the solution to implementing structural reforms, at least not for developing nations that are still facing the problem of inflation less growth. From the empirical literature on developing nations, the complexity of inflation drivers can be seen, with food, exchange rate, and global price pressures contributing significantly to inflation volatility. Inflation in developing nations appears to be more sensitive to supply pressures and external factors compared to advanced nations. In the case of India (Bharat), the literature highlights the importance of food and exchange rate pressures, along with fiscal policy, to the inflation process. From the empirical literature, the factors that influence inflation in developing nations include supply pressures, global price pressures, and

exchange rate pressures, all of which are significant factors. However, despite the significant research on the topic, the literature on inflation drivers appears to be lacking, at least from the perspective of developing nations, with the gap being the integrated analysis of the factors that influence inflation. Inflation drivers and the dynamics of inflation, at least for developing nations, appear to have received limited attention. In order to bridge the gap, a comprehensive empirical investigation of the topic is needed. If the perspectives of the structuralists and monetarists are combined, the drivers of inflation can be seen to include the supply pressures that monetarists highlight, such as the increase in the supply of money, the increase in food prices that the structuralists highlight, and the exchange rate pressures that the structuralists highlight. In the case of Bharat, the drivers of inflation include the increase in the supply of money, the exchange rate pressures, the budget pressures, and the supply pressures. However, this perspective is not sufficient to highlight the importance of the combined effects of the factors that influence inflation. This paper bridges the gap that exists in the literature on the topic and highlights the importance of the combined effects of the factors that influence inflation. This paper highlights the importance of the combined effects of the factors that influence inflation, such as the increase in the supply of money, the exchange rate pressures, the budget pressures, and the supply pressures.

Hypothesis

Rooted in theoretical insights of monetarist and structuralist inflation framework and supported by the real-world data from developing economies, this study highlights that the changes in rising prices are happening because of a combination of supply side pressures, external sector influences and fiscal imbalances. The context of B, the ups & downs in food prices, exchange rate movements and budget deficits have historically influenced price manners so we tested the advanced hypothesis are as follows-

H1 Supply side changes, especially increases in food and fuel prices, put forth a positive and statistically significant effect on inflation.

H2 Exchange rate devaluation leads to amplified domestic inflation through imported inflation channels.

H3 Fiscal deficit facilitates positively to inflation persistence and overall price level dynamics.

We will get an empirical basis for examining the multidimensional determinants of inflation within a unified regression framework after testing above given hypothesis.

Methodology

1. Research design: This study takes a quantitative approach to dig into how inflation works in developing economies by focusing on Bharat. By analysing macroeconomic time series data, we are testing our idea about what really drives inflation and see which factors matter the most.

2. Data Sources: the study used the secondary data, including Consumer Price Index, Food Price Index, exchange rates, Fiscal Deficits and fuel energy price indexing. All these data

are coming from statistical databases, government reports and publications from RBI.

3. Time period: The data set covers almost from 2000 to 2024, which gives a longer horizon to spot trends, persistent pattern and bigger shifts in inflation over time.

4. Variable explanation: We are working on one dependent variable, inflation, and four independent variables: the food, fuel, exchange rate, and fiscal deficits.

Dependent variable = Independent variable
Inflation = Food, exchange rate, fiscal deficit, and fuel

Here, we Follow regression model in which we use abbreviations for every variable, which is as follows:

INF: stands for inflation rate, tracks overall price changes

FOOD: The food price, which picks up on the supply side shocks

FUEL: the fuel and Energy Price index capturing cost-push inflation

EXR: the exchange rate showing the impact of imported inflation,

FD: fiscal deficit as a share of GDP, reflecting both demand-side forces and policy choices of the government.

5. Regression model

To identify determinants of inflation, the study employs a multiple regression model, which is:

$$INF_t = \beta_0 + \beta_1 FOOD_t + \beta_2 FUEL_t + \beta_3 EXR_t + \beta_4 FD_t + \varepsilon_t$$

Where: -

INF_t = inflation rate

$FOOD_t$ = food prices

$FUEL_t$ = fuel prices

EXR_t = exchange rate

FD_t = fiscal deficit

εt = error term

This model helps in the estimation of the contribution of structural external and fiscal factors to inflation, with clear results.

In our study, various techniques have been applied to show the trend and descriptive analysis to evaluate inflation, correlation to show inner variable relationships, and Multiple regression to find the key drivers of inflation.

Data analysis and results

1-Trend analysis Trend Analysis From the above analysis of the inflation rate of the CPI from the year 2000 to 2024, it is clear that the inflation rate of the country has undergone several changes, including the period of huge inflation, which is made clear by the regular ups and downs in the inflation rates, including huge points in the inflation rates, which occurred during the period of food and fuel price shocks, which clearly implies vast inflationary pressure, including vast inflation in the country, as well as the impact of imported inflation. In addition, the empirical evaluation of the inflation rates of the country has clearly shown that several other exogenous factors, including geopolitical, trade wars, and strategic tariff adjustments, have also contributed to the irregular inflationary pressure in the country. From the above recent

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news, it is clear that the global power rivalry, including the tariff revisions and trade restrictions by the major economies of the world, including the US (United States), have put extreme cost pressure on the international market, which they are using as a smart weapon against the developing economies of the world, including the disruption of global stock chains and the increase in import costs, which clearly implies the inflationary pressure in the developing economies of the world.

We know that a few error terms or exponential terms, geopolitical, trade wars, and thought cut competitions between the countries to prove themselves the strongest.

From the above recent news and the graph of the world politics, it is clearly implied that the superpower countries of the world are increasing the stress by making changes in the import and export tariff or duty of the world market, which clearly implies that the world politics and the cheap tactics of proving themselves are also one of the greatest determinants of the increase in inflation in an irregular fashion.

2. Correlation analysis

Correlation matrix of variables

Variable	INF	FOOD	FUEL	EXR	FD
INF	1.000	0.71	0.6	0.5 0.39	
FOOD	0.7	1.000	0.5	0.41 0.28	
FUEL	0.6	0.56	1.000	0.47 0.32	
EXR	0.52	0.41	0.47	1.000 0.36	
FD	0.39	0.28	0.32	0.36 1.000	

The correlation results indicate:

✓ That when food Price jumps in relation Inflation also jump; they are showing a positive association.

✓ When the fuel prices increase, with the same inflation increase, they are a strong positive relation.

✓ In between the exchange rate and inflation, there is moderate positive correlation.

✓ Fiscal deficit exhibits a positive but relatively weak relationship with inflation.

3. Regression results

The table shows different tests and statistical values:

Va	Coe	Std.	t-	p-	Exp
Co	1.24	0.532	2.34	0.028	—

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FO	0.48	0.121	3.98	0.001	+
FU	0.35	0.104	3.42	0.002	+
EX	0.21	0.089	2.46	0.019	+
FD	0.14	0.077	1.92	0.062	+

Model statistics

Statistics	Value
R^2	0.71
Adjusted R^2	0.67
F Statistics	12.84
PROBF Stat	0.000
Durbin Watson	1.89
Observations	25

After analyzing all the regression estimates and statistics We can say the food show the statistically significant positive impact on inflation. Fuel prices also work as a good catalyst for inflation because it emerges as inclusive inflation, which is very common, as fuel (petrol, diesel) prices get hiked due to the relative price effect on transport and tertiary industries, the inflation increases. The third variable exchange rate, also showed a positive relation with inflation fluctuations because as the forex goes down, the prices get hiked, therefore the inflation occurs. The fiscal deficit showed less impulse and the least effect on inflation. By looking at the the model explain 71% of the changes in inflation(R^2 equal to 0.71)which is solid The F static is high and P value is low so the model as a whole holds up there is nothing weird going on with autocorrelation either (Durbin Watson sat close to 2)ensured

Significance levels

$P < 0.01$

$P < 0.05$

$P < 0.01$

structural factors like food and fuel prices plus external like exchange rate really shapes inflation.

4. Interpretation of the coefficient

That's because when Ford rises, the overall inflation goes up immediately. That's because the supply side can't adjust quickly. The fuel prices strongly contribute to cost-push inflation. Higher fuel prices hits business in input costs through their energy and transport costs, and repulsions ends up in the prices consumer have to pay. Depreciation in the exchange rate causes imported inflation effects because the weak currency means that the import price causes inflation. And the presence of a fiscal deficit causes demand-driven inflation because it fuels demand more and more. And conclude these results, which support the problem, which back up the idea that inflation in developing countries is not just about demand, it's almost driven by supply issues and outside shocks.

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Discussion

1. Linking with theory: The above results support the view of structuralist Emphasizing supply

constraints and sectoral bottlenecks as key determinants of inflation. Food and fuel prices matter a lot,

showing how cost-push inflation results from problems in agriculture and energy dependence. Exchange

rate Imported validations, while fiscal deficit affects part support, Monetarist arguments related to demand-driven factors.

2. Compared with previous studies, the results of previous empirical studies show that developing countries' shops in food and energy prices usually drive inflation. Studies point to the same causes: constant supply and exchange rate. Fluctuations had a lot of volatility in inflation. The new framework we found here combines structural, external and fiscal factors into a single framework to analyse inflation.

3. Explaining inflation persistence

It's based on structural Bott adaptive inflation expectations and delayed policy transmission. The agricultural supply rig and inefficiencies reinforce inflation inertia, the exchange rate volatility and fiscal imbalances further amplify persistence, explaining the relatively higher inflation volatility compared with advanced economies

Policy implications

1. Supply-side reforms

After analyzing we know food and fuel price shocks are pushing inflation so the real remedy it starts with supply We need to grow more and more to fulfill demand and have to increase storage capacity and conditions of farming to broke previous logistics and actually connects seller and buyer for direct access when it comes fuel the more we lean into renewable and mix energy the less we affected global price spikes Energy diversification can reduce our vulnerability.

2. Exchange rate management:

When the currency drops, Prizes just go up pervasively. So, strengthen foreign exchange reserves. Matters a lot, Reducing Dependency on imports of energy and determined goods.

3. Inflation targeting improvements:

Suggest that the inflation targeting framework incorporate considerations along with monetary policy tools by enhancing coordination between fiscal and monetary authorities, and strategies can strengthen inflation management.

Conclusion

1. Summary of findings:

The study shows that inflation mostly comes from supply shocks exchange rate drops and fiscal deficits there is a clear evidence of persistent and volatile inflation driven by structural problems and outside pressures the regression result indicates that food and fuel prices gives a positive and statistically significant impact on inflation P is greater than 0.05 main supporting H1 Similarly exchange rate depreciation significantly increases inflation confirming H2 however the fiscal deficit variable although if statistically insignificant at the 5% level P is equals to 0.062 hence H3 is not supported at conventional significance levels overall the model explains 71% of the variation in inflation and is

statistically significant Prob F is equal to 0.0000.

2. Contribution to literature: What makes the research special is its integrated approach, a structural, external and fiscal factors-inclusive framework which adds a fresh layer to understand how inflation works in developing economies.

Limitations: The study exploits secondary macroeconomic data so it can't record everything like how people behave actually or what drives inflation at the zero level The analysis remains to a few big pictures of economic factors so it avoids things like how institutional people's expectations play into inflation but for researchers it's a positive point that they can explore deeply into our expectations actually drive inflation break the number into sections by sector or use smarter tools to you to see how everything connects as time goes on Looking at different developing countries side by side can also help to uncover why inflation hangs around and which policies exactly creates a difference.

Few multilateral effects of inflation, which should be at the centre of focus of every researcher as well as policymaker, because these are well-known but neglected, and that's why a matter of analysis and concern for scholars:

➢ Inflation is affecting the behavioural rationalisation of humans in developing economies.

➢ High inflation produces unoptimistic thoughts, which work as negative externalities.

➢ It creates crime related to finance (robbery, looting, online crimes or frauds)

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