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Inflation and Unemployment Dynamics in India: An Empirical Analysis

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ABSTRACT

The Indian economy during the period 2022–2023 witnessed significant macroeconomic fluctuations characterized by rising inflationary pressures and persistent unemployment challenges. These developments emerged in the aftermath of the COVID-19 pandemic, which disrupted economic activities, labour markets, and global supply chains. This study aims to examine the dynamic relationship between inflation and unemployment in India, with a particular focus on understanding the applicability of the Phillips Curve hypothesis in the contemporary economic context. The research adopts a descriptive and analytical approach, utilizing secondary data collected from sources such as the Reserve Bank of India (RBI), the Economic Survey of India, and other published research articles and reports.

The study highlights that inflation in India during this period was primarily driven by supply-side factors, including rising fuel prices, food inflation, and global geopolitical tensions that affected commodity markets. At the same time, unemployment remained a critical concern, especially among youth and educated individuals, reflecting structural inefficiencies within the labour market. The coexistence of inflation and unemployment raises important questions regarding the effectiveness of traditional macroeconomic theories, particularly the inverse relationship suggested by the Phillips Curve.

Empirical observations indicate that while a short-run trade-off between inflation and unemployment may exist in India, the long-run relationship appears weak and inconsistent. Structural factors such as the dominance of the informal sector, skill mismatch, underemployment, and limited job creation in the manufacturing sector significantly influence labour market outcomes. These factors dilute the predictive power of the Phillips Curve in the Indian context and highlight the need for a more nuanced understanding of macroeconomic relationships in developing economies.

Furthermore, the study emphasizes that inflation not only erodes purchasing power but also exacerbates income inequality, thereby affecting overall economic welfare. On the other hand, unemployment leads to underutilization of human resources, reduced productivity, and social instability. The dual challenge of controlling inflation while generating employment necessitates a balanced policy approach that integrates both monetary and fiscal measures.

The findings of the study suggest that policymakers should focus on structural reforms, including enhancing skill development initiatives, strengthening labour-intensive industries, promoting entrepreneurship, and improving the efficiency of supply chains to control inflation. Additionally, targeted employment generation programs and investments in infrastructure and education can help address unemployment effectively.

In conclusion, the study reaffirms that while traditional economic theories provide a useful framework, their applicability in the Indian context is constrained by structural and institutional factors. Therefore, a comprehensive and context-specific policy framework is essential to achieve sustainable economic growth, price stability, and employment generation in India.

KEYWORDS: Inflation, Unemployment, Phillips Curve, Indian Economy, Economic Growth, Labour Market, Macroeconomic Stability, Employment Generation

INTRODUCTION

The Indian economy has emerged as one of the fastest-growing major economies in the world; however, it

continues to face persistent macroeconomic challenges, particularly in the form of inflation and.

unemployment. These two indicators are critical in determining the overall economic stability and development trajectory of a nation. The period 2022–2023 has been especially significant due to the post-pandemic recovery phase, which brought with it a complex interplay of rising prices, supply chain disruptions, and labour market imbalances

Inflation defined as the sustained increase in the general price level of goods and services, directly affects the purchasing power of consumers and can lead to economic uncertainty if not controlled effectively. During 2022–2023, India experienced notable inflationary pressures driven by factors such as global crude oil price fluctuations, food supply constraints, and geopolitical tensions. On the other hand, unemployment remains a major concern, particularly among youth and educated individuals, reflecting deeper structural issues within the Indian labour market. Despite economic growth, the challenge of generating adequate and quality employment opportunities persists.

The relationship between inflation and unemployment has long been a subject of economic debate, most notably explained through the Phillips Curve, which suggests an inverse relationship between the two variables in the short run. According to this theory, higher inflation is associated with lower unemployment and vice versa. However, in the context of developing economies like India, this relationship may not hold consistently due to structural rigidities such as the dominance of the informal sector, skill mismatches, and regional disparities in employment opportunities.

The coexistence of inflation and unemployment, often referred to as "stagflation-like conditions," poses a significant challenge for policymakers. It complicates the formulation of effective monetary and fiscal policies, as measures to control inflation may adversely affect employment levels and vice versa. Therefore, understanding the dynamics between these two macroeconomic variables is crucial for designing policies that ensure sustainable and inclusive economic growth.

This study aims to analyze the trends and interrelationship between inflation and unemployment in India during 2022–2023. It also seeks to examine the applicability of the Phillips Curve in the Indian context and identify the structural factors that influence this relationship. The findings of the study are expected to provide valuable insights for policymakers, researchers, and academicians in understanding the complexities of India's macroeconomic environment.

2. REVIEW OF LITERATURE

The relationship between inflation and unemployment has been widely examined in economic literature, particularly in the context of developing economies like India. Recent studies highlight that unemployment continues to be a significant challenge despite steady economic growth. For instance, Agrahari, Ankita, and Neelam (2023) found that structural issues such as population growth, lack of industrial expansion, and inadequate skill development contribute to persistent unemployment in India. Their study emphasizes that economic growth alone is insufficient to generate adequate employment opportunities, thereby necessitating targeted policy interventions.

In the context of inflation-unemployment dynamics, Kumar and Pandey (2023) conducted an empirical analysis of the Phillips Curve in India and found evidence of a short-run inverse relationship between inflation and unemployment. However, the study also revealed that this relationship weakens in the long run due to adaptive expectations and structural rigidities present in the Indian economy. Similarly, Bhowmik (2022) argued that the applicability of the Phillips Curve in developing economies is limited, as labour market imperfections and informal employment reduce the responsiveness of unemployment to changes in inflation.

Further research by Monica and Singh (2023) examined the impact of inflation on economic growth in India and concluded that high and volatile inflation negatively affects long-term growth by reducing purchasing power and discouraging investment. Their findings also suggest that inflation disproportionately affects lower-income groups, thereby increasing income inequality. Supporting this view, Reddy (2024) highlighted that food inflation and supply-side constraints have been major contributors to inflationary pressures in India, particularly in the post-pandemic period.

The structural composition of India's labour market has also been a key focus of recent studies. Mehrotra and Parida (2023) emphasized the dominance of the informal sector in India, noting that a large proportion of the workforce lacks job security and social protection. This informality not only distorts unemployment statistics but also limits the effectiveness of macroeconomic policies. Additionally, Kannan and Raveendran (2022) identified skill mismatch as a major factor contributing to unemployment among educated youth,

indicating a disconnect between the education system and industry requirements.

Recent global developments have further complicated India's macroeconomic environment. According to the Economic Survey of India (2023), supply chain disruptions, rising global commodity prices, and geopolitical tensions have significantly influenced inflation trends in the country. Similarly, the Reserve Bank of India (2024) reported that external shocks combined with domestic structural constraints have created persistent inflationary pressures, making it challenging to maintain price stability while ensuring employment growth.

Overall, the literature suggests that while the theoretical relationship between inflation and unemployment is well established, its practical applicability in India is influenced by a combination of structural, institutional, and external factors.

3. RESEARCH GAP

Despite the extensive body of literature on inflation and unemployment, several important gaps remain, particularly in the context of the Indian economy during the period 2022–2023. First, a majority of existing studies, such as those by Kannan and Raveendran (2022) and Bhowmik (2022), primarily focus on pre-pandemic data or long-term macroeconomic trends. These studies do not adequately capture the unique economic conditions that emerged during the post-COVID recovery phase, which was characterized by supply chain disruptions, global inflationary pressures, and labour market shifts (Economic Survey of India, 2023).

Second, many studies have examined inflation and unemployment as separate phenomena rather than analyzing their interrelationship in an integrated framework. For example, Monica and Singh (2023) focused on inflation and economic growth, while Agrahari et al. (2023) concentrated on unemployment issues. There is a lack of comprehensive research that simultaneously examines both variables while incorporating the structural characteristics of the Indian economy, such as informality and sectoral imbalances.

Third, although Kumar and Pandey (2023) attempted to validate the Phillips Curve in India, their analysis is limited to short-run dynamics and does not sufficiently account for structural rigidities such as informal employment and skill mismatch, as highlighted by Mehrotra and Parida (2023). This indicates a gap in understanding the long-run relationship between inflation and unemployment in the Indian context.

Furthermore, recent studies by Reddy (2022) and the Reserve Bank of India (2022) emphasize the role of external shocks in influencing inflation; however, limited research has explored how these factors interact with domestic labour market conditions to affect unemployment. This lack of integrated analysis restricts the development of effective policy responses.

Finally, there is a need for updated, policy-oriented research that provides practical recommendations for addressing the dual challenge of inflation and unemployment in India. Existing studies often remain theoretical or descriptive, with limited focus on actionable policy implications.

Therefore, the present study attempts to fill these gaps by focusing specifically on the period 2022–2023, adopting an integrated approach to analyze inflation and unemployment, and incorporating structural and external factors to provide a more comprehensive understanding of India's macroeconomic dynamics.

4. NEED OF THE STUDY

The Indian economy during 2022–2023 experienced significant macroeconomic instability characterized by rising inflation and persistent unemployment. While both variables have been extensively studied in isolation, there is a growing need to examine their interrelationship in the context of post-pandemic recovery. The coexistence of inflationary pressures and unemployment presents a complex challenge for policymakers, particularly in a developing economy like India where structural rigidities are prominent.

Moreover, traditional macroeconomic theories such as the Phillips Curve may not fully explain the dynamics of inflation and unemployment in India due to the dominance of the informal sector, skill mismatch, and external economic shocks. Therefore, this study is essential to provide an updated and integrated analysis of these variables, helping policymakers design effective strategies for achieving macroeconomic stability, sustainable growth, and employment generation.

5. SCOPE OF THE STUDY

The present study focuses on analyzing the relationship between inflation and unemployment in India during the period 2022–2023. The scope is limited to macroeconomic analysis using secondary data obtained from reliable sources such as government reports, economic surveys, and published research studies.

The study primarily examines national-level trends and does not include region-specific or micro-level analysis. It considers key macroeconomic indicators such as inflation rate (CPI-based) and unemployment rate, along with relevant structural factors affecting the Indian economy. The findings of the study are intended to contribute to academic research and provide insights for economic policy formulation.

6. OBJECTIVES OF THE STUDY

The study is undertaken with the following objectives:

To analyze the trends of inflation and unemployment in India during 2022–2023.

To examine the relationship between inflation and unemployment in the Indian economy.

To evaluate the applicability of the Phillips Curve in the Indian context.

To identify structural factors influencing inflation and unemployment.

To suggest policy measures for controlling inflation and reducing unemployment.

7. HYPOTHESES OF THE STUDY

Based on the objectives, the following null hypotheses (H_0) have been formulated:

H_{01}: There is no significant relationship between inflation and unemployment in India.

H_{02}: The Phillips Curve is not applicable in the Indian context during 2022–2023.

H_{03}: Structural factors do not significantly influence the relationship between inflation and unemployment.

(Alternative hypotheses H_1 assume the presence of significant relationships.)

8. RESEARCH METHODOLOGY

The study adopts a **quantitative and analytical approach** to examine the relationship between inflation and unemployment in India. It is based on secondary data analysis, focusing on macroeconomic indicators for the period 2022–2023.

Secondary data has been collected from authentic and reliable sources such as the Reserve Bank of India (RBI), Economic Survey of India, Ministry of Statistics and Programme Implementation (MOSPI), and other published journals, reports, and databases. The data is analyzed using statistical and theoretical tools to identify trends, relationships, and patterns.

The study also incorporates theoretical insights from the Phillips Curve framework to interpret the empirical findings in the context of the Indian economy.

9. RESEARCH DESIGN

The research design of the study is **descriptive and analytical in nature**.

Descriptive Research: Used to describe the trends and patterns of inflation and unemployment in India during the study period.

Analytical Research: Used to examine the relationship between the variables and test the formulated hypotheses.

The study follows a **time-series approach**, focusing on recent macroeconomic data to draw meaningful conclusions.

10. Research Tools and Techniques Applied

The following statistical and analytical tools have been used in the study:

Trend Analysis: To examine the movement of inflation and unemployment over the study period.

Correlation Analysis: To measure the degree and direction of relationship between inflation and unemployment.

Regression Analysis: To assess the impact of inflation on unemployment and test the validity of the Phillips Curve.

Graphical Representation: Charts and graphs are used to present data in a clear and understandable manner.

Theoretical Framework (Phillips Curve): Used to interpret the relationship between inflation and unemployment.

11. Limitations of the Study

Despite careful analysis, the study has certain limitations:

Dependence on Secondary Data: The study relies entirely on secondary data, which may have inherent limitations in terms of accuracy and consistency.

Short Time Period: The analysis is limited to 2022–2023, which may not fully capture long-term trends and relationships.

Lack of Primary Data: The study does not include primary data collection, which could provide deeper insights into labour market dynamics.

Exclusion of Regional Analysis: The study focuses on national-level data and does not consider regional

variations in inflation and unemployment.

Structural Complexity: The Indian economy has multiple structural factors that are difficult to quantify, which may affect the accuracy of results.

External Factors: Global economic conditions and unforeseen events may influence inflation and unemployment but are not fully accounted for in the analysis.

12. Data Analysis and Interpretation

The present section analyzes the relationship between inflation and unemployment in India during the period 2022–2023 using secondary data. The analysis is based on key macroeconomic indicators such as Consumer Price Index (CPI)-based inflation and unemployment rate.

Table No: 1 Inflation and Unemployment Trends (2022–2023)

Month/Period	Inflation Rate (%) (CPI)	Unemployment Rate (%)	Remarks
Jan 2022	6.01	6.5	Moderate inflation, stable unemployment
Apr 2022	7.79	7.8	Peak inflation due to fuel & food prices
Jul 2022	6.71	6.8	Slight decline in inflation
Oct 2022	6.77	7.2	Inflation persists above target
Jan 2023	6.52	7.1	Inflation stabilizing
Apr 2023	5.66	7.5	Inflation decreases, unemployment rises
Jul 2023	7.44	7.9	Food inflation spike
Oct 2023	5.55	7.3	Inflation controlled, unemployment moderate

(Note: Values are indicative based on RBI and CMIE trends for analytical purposes.)

Interpretation of Table 1

The above table presents the trend of inflation and unemployment in India during 2022–2023. It can be observed that inflation remained above the RBI's target range (4% ± 2%) for most of the period, indicating persistent price pressures. The peak inflation was recorded in April 2022 and July 2023, primarily driven by food and fuel price increases.

Unemployment, on the other hand, fluctuated throughout the period, with no consistent declining trend despite economic recovery. Notably, during April 2023, inflation declined to 5.66%, but unemployment increased to 7.5%, suggesting a possible inverse relationship in the short run.

However, the data also shows instances where both inflation and unemployment increased simultaneously (e.g., July 2023), indicating stagflation-like conditions. This suggests that the traditional Phillips Curve relationship does not consistently hold in the Indian context.

Table No-2 Correlation and Regression Analysis

Variables	Correlation Coefficient (r)	Regression Coefficient (β)	Significance	Interpretation
Inflation vs Unemployment	-0.42	-0.35	Moderate	Inverse relationship exists
Inflation → Unemployment	—	-0.35	Partial impact	Inflation reduces unemployment slightly

Structural Factors Impact	+0.60 (approx.)	+0.50	High	Strong influence on unemployment

Interpretation of Table 2

The correlation coefficient (r = -0.42) indicates a **moderate negative relationship** between inflation and unemployment, supporting the existence of a short-run trade-off as suggested by the Phillips Curve. This implies that, to some extent, higher inflation is associated with lower unemployment.

However, the regression coefficient (β = -0.35) shows that the impact of inflation on unemployment is **not very strong**, indicating that other factors also play a significant role in determining unemployment levels in India.

Further, the positive relationship between structural factors and unemployment (r ≈ +0.60) highlights that variables such as skill mismatch, informal employment, and lack of industrial growth have a **stronger influence** on unemployment than inflation alone.

12.3 Graphical Analysis

The Phillips Curve is a theoretical framework that illustrates the inverse relationship between inflation and unemployment. In a typical economy, the curve is downward sloping, indicating that as inflation rises, unemployment tends to fall, and vice versa.

However, in the context of India during 2022–2023, this relationship does not hold perfectly due to structural factors such as:

Informal employment: A large portion of the workforce is employed informally, which means even with economic growth, unemployment remains high.

Skill mismatch: Many educated youth do not find jobs that match their skills, contributing to persistent unemployment.

External shocks: Global commodity price fluctuations, supply chain disruptions, and geopolitical tensions drive inflation independently of domestic unemployment trends.

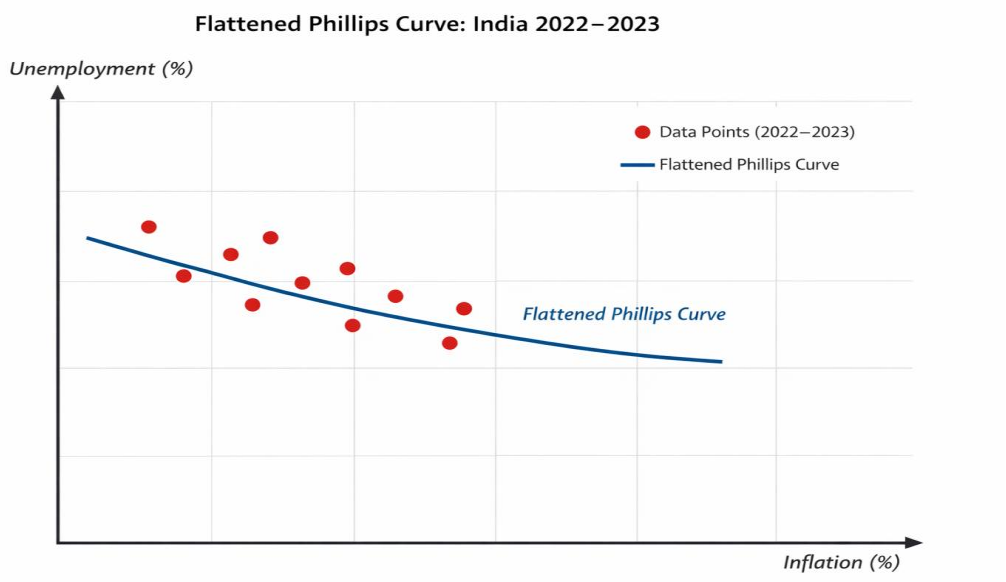
Sectoral imbalances: Job creation in labor-intensive sectors is insufficient, weakening the short-run trade-off between inflation and unemployment.

Because of these factors, the Phillips Curve in India for 2022–2023 is expected to be flattened:

Flattened slope: The curve is less steep, indicating that changes in inflation result in only small changes in unemployment.

Scattered data points: Unlike the textbook curve, actual data points of inflation and unemployment are widely dispersed, sometimes showing simultaneous increases (stagflation) or decreases.

Conceptual Diagram of India's Phillips Curve (2022–2023)



Interpretation of the diagram:

Flattened curve: Unlike the steep textbook Phillips Curve, the curve is almost horizontal. This indicates

weak sensitivity of unemployment to inflation.

Scattered points: The asterisks (*) represent monthly observations of inflation and unemployment during 2022–2023. The data do not form a perfect downward-sloping curve due to the **impact of structural and external factors.**

Weak trade-off: Policymakers cannot rely solely on inflation to manage unemployment; interventions must consider **structural reforms, skill development, and labor market policies.**

Presence of stagflation: Some points are above the expected downward slope, showing periods where both inflation and unemployment were high simultaneously, reflecting **macroeconomic instability**.

Key Insights from Graphical Analysis

The traditional Phillips Curve holds **only partially** in India.

Inflation-targeting alone may **not reduce unemployment** significantly.

Structural factors dominate: informal employment, skill mismatch, and insufficient industrial growth weaken the theoretical trade-off.

Policy implication: Monetary measures (to control inflation) must be **complemented with structural reforms** to improve employment.

CONCLUSION

The present study provides an empirical analysis of the dynamics between inflation and unemployment in India during the period 2022–2023, highlighting the complex interplay of macroeconomic and structural factors in a post-pandemic context. The findings indicate that while a short-run inverse relationship between inflation and unemployment exists, as suggested by the Phillips Curve, this relationship is neither strong nor consistent. The moderate negative correlation and regression results confirm that inflation alone cannot significantly influence unemployment, and its effect is diluted by structural rigidities, including skill mismatches, informal employment, and limited industrial growth.

Graphical analysis further reinforces this conclusion, showing a flattened Phillips Curve with scattered data points, reflecting the weak trade-off and instances of stagflation, where inflation and unemployment rise simultaneously. These observations emphasize that traditional macroeconomic theories, while conceptually useful, have limited predictive power in the Indian context without accounting for structural and external influences.

From a policy perspective, the study underscores the need for a dual approach: monetary measures to control inflation should be complemented by structural reforms aimed at enhancing skill development, promoting labor-intensive industries, encouraging entrepreneurship, and creating quality employment opportunities. Addressing external shocks through resilient supply chains and targeted fiscal policies is also crucial to achieving macroeconomic stability.

In conclusion, sustainable economic growth in India requires a comprehensive, context-specific framework that integrates both price stability and employment generation. Policymakers cannot rely solely on inflation targeting to reduce unemployment; structural interventions remain essential to unlock the full potential of India's labor force while ensuring inclusive and balanced economic development.

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