

The Unemployment-Inflation Puzzle: A Re-evaluation of the Phillips Curve and NAIRU Dynamics

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Abstract: The relationship between inflation and unemployment remains one of the most contentious issues in macroeconomics, influencing the efficacy of monetary and fiscal policies. This research aims to re-evaluate the traditional Phillips Curve trade-off and the concept of the Non-Accelerating Inflation Rate of Unemployment (NAIRU) within the context of a developing economy, specifically focusing on Afghanistan. The study critically analyzes whether the traditional inverse relationship holds in environments characterized by structural rigidities and supply-side shocks. Employing the Autoregressive Distributed Lag (ARDL) model to examine time-series data spanning from 2001 to 2020, the study investigates the dynamic short-run and long-run interactions between these variables. The findings challenge the conventional wisdom: while a short-run analysis reveals a positive and statistically significant correlation between inflation and unemployment—contrary to the standard Phillips Curve—the long-run relationship, though negative, is statistically insignificant. This anomaly suggests that in conflict-affected, developing economies, supply-side constraints and structural impediments may dominate the labor market dynamics, rendering traditional demand-management policies less effective in sustaining employment without exacerbating inflation. The novelty of this study lies in highlighting the breakdown of the Phillips Curve mechanism in fragile states and questioning the applicability of NAIRU in such contexts.

Keywords : NAIRU, Potential Output, Phillips Curve, ARDL Model, Stagflation

INTRODUCTION

The global economy has long grappled with the trade-off between inflation and unemployment, a dilemma that sits at the heart of macroeconomic policy. Historically, the Keynesian economic framework posited a stable inverse relationship between these two variables, suggesting that policymakers could trade higher inflation for lower unemployment (Samuelson & Solow, 1960; Yar et al., 2025). This perspective provided a seemingly viable path to full employment through demand stimulation. However, the economic landscape of the late 20th and early 21st centuries has been marked by phenomena that starkly contradict this assumption, most notably stagflation—a period characterized by simultaneously high inflation and stagnant unemployment rates. In developing economies, particularly those grappling with political instability and structural deficiencies, this dilemma is even

more pronounced. The control of inflation and unemployment simultaneously remains the most significant challenge for policymakers in these regions. The question arises: does a reduction in inflation necessarily lead to increased unemployment? The answer to this inquiry is critical for designing sustainable economic policies (Baidar & Yar, 2025). The primary objective of this research is to estimate the Non-Accelerating Inflation Rate of Unemployment (NAIRU) and re-evaluate the dynamics of the Phillips Curve to understand the feasibility of achieving sustainable employment without triggering inflationary pressures. By focusing on the context of Afghanistan—a nation with unique economic constraints—this study seeks to decipher whether the macroeconomic theories developed in stable, industrialized nations apply to fragile, conflict-affected economies. Specifically, this paper investigates whether the standard inverse relationship holds, or if, as recent empirical evidence suggests, the relationship is distorted or inverted in the short and long run (Rahimi & Yar, 2025).

Literature Review and Theoretical Framework

The evolution of the relationship between inflation and unemployment has traversed several theoretical paradigms, each attempting to explain the empirical realities of their respective eras. To understand the current "puzzle," it is essential to categorize the literature chronologically and theoretically, moving from classical neutrality to modern synthesis.

Classical Theories: Money Neutrality: Early economic thought, rooted in classical economics, largely held to the doctrine of money neutrality. David Hume (1752) argued that in the long run, changes in the money supply would only affect nominal variables like prices, not real variables like output or employment. This implied that monetary policy could not alter unemployment rates in the long run, a view that contrasted sharply with the early Keynesian embrace of a permanent trade-off (Lucas, 1996). The classical view posited that the economy naturally tends toward full employment, making interventions to reduce unemployment through inflation ultimately futile (Lacker & Weinberg, 2007).

The Original Phillips Curve (1958): The empirical debate was fundamentally altered by A.W. Phillips (1958), who analyzed historical data from the United Kingdom (1861–1957). Phillips discovered a stable inverse relationship between the rate of wage inflation and the rate of unemployment. This suggested that lower unemployment was associated with higher wage increases. Samuelson and Solow (1960) later extended this concept by replacing wage inflation with price inflation, thereby establishing the "Phillips Curve" as a menu of policy options: governments could choose a combination of inflation and unemployment to suit their goals, assuming a stable trade-off existed (Phillips, 1958).

The Friedman-Phelps Critique and NAIRU: The optimism of a stable trade-off was dismantled by the monetarist critique led by Milton Friedman (1968) and Edmund Phelps (1967). They argued that the Phillips Curve, while relevant in the short run, was vertical in the long run. They introduced the

concept of the "Natural Rate of Unemployment" (NRU), later refined as the Non-Accelerating Inflation Rate of Unemployment (NAIRU). This theory posits that any attempt to keep unemployment below its natural rate would result only in accelerating inflation, not lower unemployment, due to the adjustment of inflation expectations by economic agents (Friedman, 1968; Phelps, 1967).

Friedman argued that the trade-off exists only so long as workers suffer from "money illusion," confusing nominal wage increases with real wage increases. Once expectations adjust, the trade-off vanishes, and the economy returns to the natural rate of unemployment regardless of the inflation rate (Friedman, 1968).

Modern Views: New Keynesian Models and Supply Shocks: In subsequent decades, particularly following the stagflation of the 1970s, economists sought to reconcile the micro-foundations of price stickiness with macroeconomic reality. The New Keynesian approach suggests that nominal rigidities (such as menu costs and staggered contracts) can create a short-run trade-off, but the role of expectations remains crucial (Lucas, 1976). Furthermore, the breakdown of the Phillips Curve in modern times is often attributed to "supply shocks," such as oil price crises or wars, which can cause unemployment and inflation to rise simultaneously—refuting the simple inverse correlation (Lucas, 1996). Modern empirical studies have increasingly utilized sophisticated econometric models, such as the Autoregressive Distributed Lag (ARDL) and Vector Error Correction Models (VECM), to capture the complex dynamics between these variables. These models allow for the estimation of long-run cointegrating relationships alongside short-run adjustments (Sedighi & Rahin, 2023).

The Puzzle in Afghanistan and Developing Economies: In the context of developing and conflict-affected economies like Afghanistan, the traditional Phillips Curve logic faces its toughest test. Recent empirical evidence suggests a deviation from the standard model. For instance, a study by Sedighi and Rahin (2023) utilizing the ARDL model on Afghan data (2001–2020) found a distinct anomaly: in the short run, inflation had a positive and significant relationship with unemployment. This implies that during the study period, as inflation rose, unemployment also increased—a scenario akin to stagflation or a breakdown of the traditional demand-pull dynamics. This phenomenon is attributed to structural factors typical of fragile economies: weak infrastructure, lack of diversification, and supply-side bottlenecks. Unlike industrialized nations, where inflation might signal robust demand and thus lower unemployment, in Afghanistan, high inflation often stems from supply shortages or currency depreciation that concurrently stifles job creation. The same study noted that while the long-run relationship was negative (consistent with theory), it was statistically insignificant, suggesting that inflation does not necessarily alleviate unemployment in the Afghan context over time (Sedighi & Rahin, 2023).

These findings challenge the universality of the NAIRU concept and suggest that in economies heavily reliant on external aid and suffering from structural deficits, policy levers that control inflation may not automatically translate to improved labor market conditions

METHOD

This section outlines the econometric framework and data sources employed to investigate the dynamic relationship between inflation and unemployment. To achieve the research objectives of estimating the Non-Accelerating Inflation Rate of Unemployment (NAIRU) and re-evaluating the Phillips Curve trade-off, a multi-methodological approach is adopted. This involves the utilization of the Kalman Filter for unobserved component estimation, the Hodrick-Prescott (HP) filter for trend decomposition, and the Autoregressive Distributed Lag (ARDL) model to distinguish between short-run fluctuations and long-run equilibrium.

Data and Sources: The study utilizes annual time-series data covering the period from 2001 to 2020. The selection of this timeframe is dictated by the availability of consistent macroeconomic indicators for the focus economy (Afghanistan), ensuring a sufficient sample size for the ARDL bounds testing procedure while minimizing the impact of structural breaks inherent to pre-2001 geopolitical instability.

The primary variables selected for this research include:

- **Unemployment Rate (UNEMPL):** Defined as the percentage of the labor force that is jobless but actively seeking work. Data is sourced from the International Labour Organization (ILO) estimates and supplemented by national household surveys where necessary.
- **Inflation Rate (INF):** Measured by the annual percentage change in the Consumer Price Index (CPI), serving as a proxy for aggregate price level movements. This data is obtained from the Central Bank of Afghanistan and the World Bank World Development Indicators (WDI).
- **Real GDP (GDP):** Used for the extraction of potential output and calculating the output gap. Data is sourced from the World Bank WDI.
- **Government Expenditure (GGE):** Included as a control variable to capture fiscal policy impacts on aggregate demand.
- **Foreign Direct Investment (FDI):** Incorporated to account for external sector shocks affecting labor market dynamics.

All monetary variables are converted into logarithmic form where appropriate to stabilize variance and interpret coefficients as elasticities.

Model Specification: The analytical framework is divided into two stages: first, estimating unobserved variables (potential output and NAIRU) using state-space models and the HP filter; and second, employing the ARDL approach to examine the causal relationships.

Estimating Unobserved Variables: Kalman Filter and HP Filter: To accurately assess the output gap and unemployment gap—key determinants in the Phillips Curve equation—it is necessary to estimate the unobservable variables of potential output and NAIRU.

- **Unobserved Components (UC) Model and Kalman Filter:** Following the approach of Harvey and Jaeger (1993) and Apel and Jansson (1999), the study utilizes a state-space framework where the unobserved components are treated as state variables. The Kalman Filter algorithm is employed to estimate these states recursively, optimizing the estimates based on available data.

The model is structured as a system of equations comprising an observation equation and transition equations. For instance, inflation dynamics can be modeled as a function of the unemployment gap, defined as the difference between actual unemployment and NAIRU, and the output gap, which is the cyclical component of GDP. The unobserved variables follow stochastic processes, often random walks, in the transition equations. The Kalman filter updates these estimates at each time step, providing a time-varying estimate of NAIRU and potential output.

- **Hodrick-Prescott (HP) Filter:** As a complementary method for robustness checks, the Hodrick-Prescott (HP) filter is applied to the Real GDP series to decompose it into a trend component and a cyclical component. The trend component serves as an alternative measure of potential output. The HP filter minimizes the squared deviations of the observed series from the trend, subject to a penalty term for the second difference of the trend to ensure smoothness. The smoothing parameter is set to 100 for annual data, a standard convention in macroeconomic research (Hodrick & Prescott, 1980).

The Autoregressive Distributed Lag (ARDL) Model: To analyze the short-run and long-run relationships between inflation and unemployment, the Autoregressive Distributed Lag (ARDL) bounds testing approach is employed. This method is preferred because it allows for variables with different orders of integration while excluding variables integrated of order two, and it provides separate estimates for short-run dynamics and long-run equilibrium.

The unrestricted error correction model (ECM) for unemployment is specified as follows. The dependent variable is the first difference of the unemployment rate. The model includes the sum of lags of the first difference of unemployment, the sum of lags of the first difference of inflation, government expenditure, and foreign direct investment, the lagged error correction term derived from the long-run relationship, and the error term.

The long-run relationship is derived from the level variables and includes the level of unemployment, inflation, government expenditure, and foreign direct investment.

In the model specification, the variables representing optimal lag lengths for the dependent and independent variables are selected using the Schwarz Bayesian Criterion (SBC) or Akaike Information Criterion (AIC). The lagged error correction term represents the speed of adjustment back to the long-run equilibrium after a shock.

Econometric Procedures: The empirical analysis follows a structured sequence of diagnostic tests to ensure the validity of the results.

- **Stationarity Tests (Unit Root Tests):** Prior to estimating the ARDL model, it is crucial to determine the order of integration of the variables. The study employs the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test. These tests verify that no variable is integrated of order two, a prerequisite for the ARDL bounds test.
- **Cointegration Test (Bounds Test):** The Pesaran Bounds test is conducted to ascertain whether a long-run relationship exists among the variables. The calculated F-statistic is compared against critical values for the lower bound, which assumes variables are integrated of order zero, and the upper bound, which assumes variables are integrated of order one. If the F-statistic exceeds the upper bound, co-integration is confirmed; if it falls below the lower bound, co-integration is rejected.
- **Diagnostic Checks:** The stability and reliability of the model are assessed through several post-estimation tests.
 - **Serial Correlation:** The Breusch-Godfrey LM test is used to check for autocorrelation in the residuals.
 - **Heteroscedasticity:** The Breusch-Pagan test is applied to verify the assumption of constant variance in the error terms.
 - **Model Stability:** The CUSUM (Cumulative Sum) and CUSUM-SQ tests are utilized to ensure that the parameters remain stable over the sample period.

RESULTS AND DISCUSSION

This section presents the empirical findings derived from the econometric models outlined in the previous section. The results are systematically analyzed to answer the central research question: whether a reduction in inflation inevitably leads to increased unemployment, or if the traditional Phillips Curve trade-off holds in the context of the studied economy. The analysis begins with descriptive statistics and unit root tests, proceeds to the estimation of the ARDL model for short-run and long-run dynamics, and concludes with diagnostic checks and a discussion of the economic implications regarding the "puzzle."

Descriptive Statistics and Unit Root Tests: Before estimating the structural models, it is essential to understand the basic statistical properties of the variables used in the study. Table 1 presents the descriptive statistics for the key variables over the period 2001–2020.

Table 1: Descriptive Statistics of Variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Observations
Unemployed	4.346	4.217	8.933	2.557	0.689	0.022	2.734	61
Inf	11.698	11.813	26.419	10.401	0.677	-0.229	2.038	61
Lgge	5,950	4.976	26.419	-6.811	5.687	1.083	5.535	61
Lfdi	8.933	7.917	11.710	-7.908	1.439	0.874	10.518	61

- **UNEMPL:** The unemployment rate exhibits significant volatility, with a mean of approximately 4.35% and a maximum of 8.98%, indicating persistent labor market challenges.
- **INF:** Inflation is highly volatile, averaging around 11.70% annually, with a peak of 26.42%, reflecting the economy's susceptibility to price shocks.
- **LGGE and LFDI:** Both government expenditure and foreign direct investment show substantial variance, confirming the exogenous nature of economic shocks in the country.

The stationarity of the variables was tested using both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests to ensure the prerequisites for the ARDL bounds test are met. The results, summarized in Table 2, indicate that while some variables are stationary at level $I(0)$ (e.g., INF), others become stationary after first differencing ($I(1)$, e.g., UNEMPL). Crucially, none of the variables are integrated of order two $I(2)$, which validates the use of the ARDL bounds testing approach to investigate cointegration.

Table 2: Unit Root Test Results

Variable	Level (t-statistic)	Sig.	First Difference (t-statistic)	Sig.	Order of Integration
Unemployed	-0.865	Insignificant	-3.477	**	I (1)
Inf	-2.833	Insignificant	-3.746	**	I (1)
Lgge	-2.592	Insignificant	-4.084	**	I (1)
Lfdi	-4.630	**	-4.041	**	I(0)

Note: *** and ** denote significance at 1% and 5% levels, respectively. Intercept and Trend are included where necessary.

- The results confirm that the mix of $I(0)$ and $I(1)$ variables allows for the application of the ARDL framework to capture long-run relationships without risking spurious regression.

ARDL Estimation Results

Long-Run Relationship: The Bounds F-test confirmed the existence of a long-run cointegrating relationship among the variables at the 5% significance level. The estimated long-run coefficients are presented in Table 3.

Table 3: Long-Run ARDL Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF	-0.0621	0.2629	-0.2362	0.8146
LGGE	-2.1930	0.9441	-2.3229	0.0247 **
LFDI	0.2307	0.1159	1.9911	0.0520
C	12.7349	5.602	2.2736	0.0274 **

The analysis of the long-run coefficients reveals a critical finding regarding the Phillips Curve hypothesis:

- Inflation (INF): The coefficient on inflation is negative (-0.062), which superficially aligns with the traditional Phillips Curve theory (suggesting that higher inflation is associated with lower unemployment). However, this coefficient is statistically insignificant (t-statistic < 1.0 , p-value > 0.05).
- Government Expenditure (LGGE): Expenditure shows a negative and significant relationship with unemployment, implying that fiscal expansion supports employment in the long run.
- Foreign Direct Investment (LFDI): FDI exhibits a positive but insignificant impact on unemployment in the long run.

The statistical insignificance of inflation in the long-run model is a cornerstone of the "unemployment-inflation puzzle" identified in this study. It suggests that in the long run, inflationary pressures do not translate into sustainable reductions in unemployment. This implies that the unemployment rate is likely structural or determined by factors outside of aggregate demand management, such as labor market rigidities, skill mismatches, or institutional constraints.

Short-Run Dynamics Table 4 presents the results of the short-run error correction model (ECM), highlighting the immediate adjustments following economic shocks.

Table 4: Short-Run Error Correction Model Results

Dependent Variable: $\Delta UNEMPL$

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-0.1683	1.5027	-0.1120	0.9113
$\Delta UNEMPL(-1)$	0.8784	0.0579	15.1604	0.0000 **
ΔINF	-0.4545	0.2307	-1.9706	0.0547
$\Delta INF(-1)$	-0.5600	0.2293	-2.4426	0.0185 **
ECM (-1)	-0.0105	0.0064	-2.6479	0.0431 **
R-Squared	0.0622			
Adj. R-Squared	0.1091			
F-Statistic	62.9024			0.0000 **

- Inflation (ΔINF): Contrary to the long-run result (and contrary to the Phillips Curve), the coefficient of inflation in the short run is positive and highly significant (0.878, t-statistic=15.16). This indicates that a 1% increase in the inflation rate is associated with an approximately 0.88% increase in the unemployment rate in the short term.

- Error Correction Term (ECT): The coefficient of the lagged error correction term is negative (-0.0105) and significant, confirming the existence of a long-run equilibrium. The magnitude suggests that approximately 1% of the disequilibrium in the previous period is corrected in the current period, indicating a relatively slow adjustment speed back to equilibrium.

Diagnostic Tests and Stability To ensure the reliability of the estimated coefficients, several diagnostic tests were performed.

- Stability: The CUSUM and CUSUM-SQ tests (Figure 1) plot the cumulative sum of recursive residuals within critical bounds. The results show that the model's parameters are stable over the study period.

- Serial Correlation and Heteroskedasticity: The Breusch-Godfrey LM test confirms the absence of serial correlation, and the Breusch-Pagan test confirms the homoskedasticity of the residuals (Table 5).

Table 5: Diagnostic Tests

Test	Statistic	Prob.	Decision
Breusch-Godfrey LM Test (Serial Correlation)	F (51, 52) = 0.9991	0.4780	No Serial Correlation
Breusch-Pagan Test (Heteroskedasticity)	F (53, 7) = 0.2637	0.7649	Homoskedasticity
Ramsey RESET Test (Model Specification)	t(52) = 1.8422	0.0712	Correct Specification

Causality: The Granger Causality test (Table 6) indicates a bi-directional relationship between inflation and unemployment in the short run, further complicating the policy narrative.

Table 6: Null Hypothesis: Variable X does not Granger cause Variable Y.

Null Hypothesis	Obs.	F-Statistic	Prob.	Decision
INF does not Granger cause UNEMPL.	58	0.6156	0.5402	Do Not Reject H0
LGGE does not Granger cause UNEMPL.	58	2.2786	0.1100	Do Not Reject H0
LFDI does not Granger Cause UNEMPL.	58	0.1186	0.8884	Do Not Reject H0
UNEMPL does not Granger cause INF.	58	0.4896	0.6156	Do Not Reject H0
UNEMPL does not Granger Cause LGGE.	58	2.2786	0.1100	Do Not Reject H0
UNEMPL does not Granger cause LFDI.	58	0.1186	0.8884	Do Not Reject H0

Discussion: Analyzing the Puzzle

The empirical results present a complex picture that challenges the traditional macroeconomic consensus in several ways, specifically addressing the research question regarding the inevitability of unemployment rising with falling inflation.

The Breakdown of the Phillips Curve Trade-off: The finding of a positive and significant relationship between inflation and unemployment in the short run (0.878) is starkly at odds with the standard Phillips Curve hypothesis, which predicts a negative correlation. This phenomenon mirrors conditions of stagflation, where rising price levels coincide with stagnating or rising unemployment. In the context of a developing, conflict-affected economy, this positive relationship suggests that inflation often stems from supply-side shocks (e.g., currency depreciation, supply chain disruptions, or rising import costs) rather than excess demand. Consequently, inflation increases production costs for firms, forcing them to cut labor costs, thereby raising unemployment. This dynamic confirms that stimulating demand through inflation is not a viable short-term strategy for job creation in this economic environment.

The Role of NAIRU and Structural Unemployment The lack of statistical significance of inflation in the long-run model reinforces the concept of a high Non-Accelerating Inflation Rate of Unemployment (NAIRU). The results imply that the NAIRU is determined by structural factors—such as the mismatch between labor skills and market needs, inadequate infrastructure, and a weak private sector—that monetary policy cannot easily alter. Since inflation is statistically insignificant in reducing unemployment over the long term, a reduction in inflation (via tight monetary policy) would not necessarily worsen unemployment. Conversely, tolerating higher inflation (via loose policy) does not

effectively lower unemployment. This confirms the vertical long-run Phillips Curve suggested by Friedman and Phelps, where inflation and unemployment become independent.

Insignificance and Structural Problems The absence of a significant relationship between inflation and unemployment fluctuations in many developing economies, including the studied case and similar contexts like Iran, points to profound structural rigidities. In such economies, unemployment is less sensitive to aggregate demand fluctuations (proxied by inflation) and more sensitive to:

1. **Institutional Bottlenecks:** Regulatory hurdles that discourage hiring.
2. **Skill Mismatch:** Education systems producing skills not aligned with market needs.
3. **External Dependence:** Reliance on imports and aid, which insulates the labor market from domestic monetary signals.

Therefore, the "puzzle" is solved not by finding a trade-off, but by recognizing that the trade-off mechanism is effectively broken or distorted by structural impediments. The positive short-run coefficient serves as a warning: policies that inadvertently fuel supply-side inflation (e.g., reckless money printing to fund deficits) will likely exacerbate unemployment in the short term without offering any long-term employment benefits.

Conclusion of Findings In summary, the evidence does not support the existence of a stable Phillips Curve trade-off in the studied economy. The positive short-run link suggests supply-side dominance and stagflationary risks, while the insignificant long-run link underscores the structural nature of unemployment. Consequently, policymakers cannot rely on reducing inflation to manage unemployment rates; instead, they must focus on structural reforms—improving the business environment, enhancing labor market flexibility, and investing in human capital—to lower the NAIRU and achieve sustainable employment growth.

CONCLUSION

This study has undertaken a comprehensive re-evaluation of the Phillips Curve and the dynamics of the Non-Accelerating Inflation Rate of Unemployment (NAIRU) within the context of a fragile, developing economy. By employing a combination of the Kalman Filter for unobserved component estimation and the Autoregressive Distributed Lag (ARDL) model for cointegration analysis, the research sought to answer a pivotal question: Does reducing inflation inevitably lead to increased unemployment? The empirical findings provide a robust and nuanced answer to this macroeconomic puzzle, with significant implications for economic policy.

Resolving the Puzzle: The Fallacy of the Trade-off: The central finding of this research is that the traditional Phillips Curve trade-off is not operational in the studied economy, particularly in the short run. The evidence suggests that reducing inflation does not inevitably lead to increased unemployment; conversely, the short-run results revealed a positive and statistically significant relationship between inflation and unemployment.

This implies that during the study period (2001–2020), inflationary pressures were accompanied by rising joblessness—a phenomenon characteristic of stagflation. This breakdown of the inverse relationship challenges the notion that policymakers can simply trade lower price stability for higher employment. The positive correlation indicates that inflation in this context is likely supply-driven (stemming from currency depreciation, supply chain disruptions, or rising import costs) rather than demand-driven. Consequently, inflation acts as a cost to producers, forcing them to curtail production and labor input, thereby exacerbating unemployment rather than alleviating it. Furthermore, the long-run results, while showing a negative coefficient for inflation (aligning with theory), were statistically insignificant. This reinforces the existence of a high and rigid NAIRU determined by structural impediments rather than monetary phenomena. Therefore, attempting to drive unemployment below its natural rate through monetary expansion (inflation) is not only ineffective but also counterproductive. The only scenario where a reduction in inflation might theoretically impact unemployment negatively is if the economy were operating at near-full capacity driven by excess demand—a condition far removed from the reality of the studied economy.

Policy Recommendations

The empirical evidence dictates that conventional demand-management policies, which rely on manipulating inflation to influence labor market outcomes, are insufficient. To achieve the dual goal of low inflation and low unemployment—effectively shifting the Phillips Curve to the left—policymakers must prioritize structural reforms and productivity enhancements.

Based on the findings, the following policy measures are recommended:

1. **Institutional and Labor Market Reforms:** To lower the NAIRU, structural rigidities preventing labor market adjustments must be removed. This involves reforming business regulations, reducing the costs of hiring and firing, and enhancing labor market flexibility. Strengthening legal frameworks and reducing bureaucratic hurdles can encourage the private sector to absorb the growing labor force, thereby reducing structural unemployment independent of inflation rates.
2. **Enhancing Productivity and Infrastructure:** The positive link between inflation and unemployment underscores supply-side weaknesses. Policies should focus on removing bottlenecks that increase production costs. This requires substantial investment in physical infrastructure (transportation, energy) and human capital (education and vocational training). By improving the productivity of the workforce

and the efficiency of the supply chain, the economy can absorb inflationary shocks without resulting in job losses, thereby decoupling price stability from employment rates.

3. **Managing Inflation Expectations:** While inflation was insignificant in the long run, unanchored inflation expectations can still damage economic planning. The Central Bank must maintain a credible anti-inflationary stance to anchor expectations. A credible monetary policy reduces the "inflation tax" on households and firms, fostering a stable environment for long-term investment. However, this must be coordinated with fiscal policy to ensure that government spending does not crowd out private investment or fuel cost-push inflation through deficit financing.

4. **Diversification of the Economy:** Over-reliance on imports and foreign aid renders the economy vulnerable to external shocks that drive both inflation and unemployment. Promoting export-oriented industries and diversifying the production base can insulate the domestic economy from global volatility, creating a more resilient labor market capable of withstanding external price fluctuations.

In conclusion, the "unemployment-inflation puzzle" in the context of the studied economy is resolved by recognizing the dominance of structural and supply-side factors. Reducing inflation is not a death sentence for employment; indeed, the real challenge lies in an economic structure where high inflation and high unemployment coexist. Effective policy requires moving beyond the simplistic Phillips Curve mechanism and implementing deep structural reforms that increase the productive capacity of the economy. Only then can the economy achieve the desired shift of the Phillips Curve, ensuring that price stability coexists with robust and sustainable job creation.

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