Online at: https://researchtrendsjournal.com
Indexed Journal

ISSN No: 2584-282X
Peer Reviewed Journal

INTERNATIONAL JOURNAL OF TRENDS IN EMERGING RESEARCH AND DEVELOPMENT

Volume 3; Issue 2; 2025; Page No. 86-92

Received: 10-01-2025
Accepted: 21-02-2025

Revisiting the Phillips Curve in Bangladesh

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DOI: https://doi.org/10.5281/zenodo.16319088

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Abstract

The current discussion retests the Phillips Curve in the environment of Bangladesh, a fast-moving developing economy, to dish out the dynamic interdependence between inflation and unemployment between 1990 and 2024. This paper combines the classical and contemporary theoretical models, the expectations augmented and New Keynesian Phillips Curve (NKPC), and employ strong econometric estimation procedures, e.g. autoregressive distributed lag (ARDL), vector error correction model (VECM), and Granger causality test. Results show that in the long run there is a statistically significant long-run trade-off. Expectation-based models are more strongly supported compared to use of traditional Phillips Curve formulation. The dynamics in the short run is dampened, and structural imbalances are especially heightened when external shocks abound, such as the global financial crisis and the COVID-19. The findings highlight that inflation in Bangladesh is excessively affected by variations in output than unemployment and there is therefore a need to have a forward looking inflation targeting and structural labour market adjustment. The policy recommendations focus on flexible monetary structure, more labor market policies and labored contingency plans to exogenous shocks. The findings give a detailed description of inflation-unemployment interactions and empirically supports more responsive policymaking in the realm of macroeconomics within Bangladesh.

Keywords: Causality, Econometrics, Inflation, Output Gap, Phillips Curve, Unemployment

1. Introduction

The Phillips are the announced by A.W. Phillips in 1958, and it argues that the rate of inflation is negatively correlated to the rate of unemployment. This interrelationship has been a central notion of the macroeconomic theory and policy-making analysis, especially when considering the trade-offs that policy makers encounter in stabilizing the economy. The curve has since its origin been extensively refined on the theoretical and empirical level. The development of stagflation in the 1970s gave rise to the development of the expectation-based versions, most importantly expectations-augmented Phillips Curve and the Non-accelerating Inflation Rate of Unemployment (NAIRU). Most recently, microeconomic underpinnings have been included into the New Keynseian Phillis Curve (NKPC) via forward looking expectations and nominal rigidities in wages.

With the rate at which the economy of Bangladesh is changing, population dynamics, and further realisation of its interconnection with the world economies, a revisit to the Phillips Curve has become very relevant. Even though it managed to achieve moderate inflation and strong growth rates, the country still faces the structural unemployment rates and informality of labor and external shocks such as energy price volatility and pandemics. It is the changing of the relationship that makes it necessary to examine once again whether or not the inflation-unemployment trade-off still applies here, and, in the case that it does, how it appears in various economic regimes [1].

This paper is an empirical evaluation of the existence and character of the Phillips Curve of the Bangladesh economy using a very detailed span of data between the year 1990 and 2024. A classical and a modern econometric techniques coupled with each other, i.e., ARDL, VECM and Granger causality estimations, are applied to incorporate both short-terms and long-term adjustments and equilibrium situations. The purpose of the structural breaks and external shocks consideration is to strengthen the models.

2. Literature Review

2.1 Classical and Modern Phillips Curve Theories

The Phillips Curve apparatus was the subject of significant scholarly revisions since it was first formulated. This was empirically recorded by A.W. Phillips (1958) who postulated that an increased price growth can be obtained at the cost of stricter conditions in the labor market. It was the concept of this schema which prevailed as the macroeconomic institute until the 1970s when with the advent of stagflation; the simultaneous ramping of inflation rates and unemployment rates, there rang out the deathknell to its stability [2].

Friedman (1968) and Phelps (1967) in retaliation, came up with the expectations-augmented Phillips Curve. They used anticipation of inflation in labor bargaining and wage setting, resulting on a vertical long-run form that equates with the Non-Accelerating Inflation Rate of unemployment (NAIRU) and holds that any attempt that strives to bring the unemployment level below the natural level produces merely an escalating rise in prices.

Microeconomic foundations were later provided, especially in the New Keynesian tradition. The New Keynesian Phillips Curve (NKPC) is focused on forward-looking oversights and nominal inflexibility, that the current inflation is an estimation of the future expectation of inflation and the current rate of output dissipation. In turn, this model provides the predictions that are more in line with the empirical inflation persistence and time-lagged impact of economic slack [3].

2.2 Empirical Studies

The Phillips Curve has produced mixed results in empirical tests on it. In developed economies, the studies conducted since the 1990s tend to show that the relation has flattened out so that inflation no longer reacts as strongly to changes in unemployment. It has been observed and explained using analyses that this trend has been attributed to anchoring of inflation expectations and improvement in credibility of the central banks.

In comparison, studies of the developing economies are more diverse. The existence of pronounced informal sectors, a high rate of underemployment as well as a continued presence of supply-side bottlenecks add to the challenge of undertaking empirical estimation of the inflation-unemployment nexusing. Works done on India and Pakistan as an example show non-linear asymmetric dynamics which are often affected by oil price shock and exchange rate volatility.

The related research concerning Bangladesh is scarce and inconclusive. Initial research using the ordinary least-squares regression analysis often found weak or statistically non-significant relationships. Later studies which bring structural breaks and state of the art econometric methods suggests that there is a long-run relation, but it is weakened. The discrepancy in these studies shows that there is a need to thoroughly specify models, use high-quality data and explicitly include expectations formation and exogenous shocks [4].

The existing literature hence in a nutshell provides a good reason as to why the practice on the Phillips Curve in the Bangladesh context needs to be revisited with a modern theoretic approach and high order empirical techniques that would be able to capture complexity of a developing economy that is still in a structural transformation process.

2.3 Theoretical Framework

This paper makes a critical analysis of the Phillips Curve in a Bangladesh socio-economic environment and by so doing it combines both classical developments with modern events in New Keynesian economics. It continues with two models of analysis. The former, the classical Phillips Curve has a linear, simultaneous negative relationship existing between the inflation rate and the rate of unemployment. The second is the New Keynesian Phillips Curve (NKPC) which is a further generalization of the mathematics of the original Phillips Curve that incorporates forward-looking inflation expectations and an output gap.

2.4 Model Specification and Assumptions

Model Specification: In an attempt to examine the narrative of relationships between inflation and unemployment in Bangladesh empirically, the study will operationalize two alternative but complementary macroeconomic models, i.e., the Traditional Phillips Curve and the New Keynesian Phillips Curve (NKPC). These models are the alternative theoretical concepts of explaining the dynamics of inflation and allow the apparent comparison of the relevance of backward-looking and forward-looking inflation processes in Bangladesh context.

The original Phillips curve mathematically is designed as:

$\pi_t = \alpha - \beta u_t + \varepsilon_t$

In which we call π_t is the rate of inflation at time t, u_t is the rate of unemployment at time t, β is the coefficient of the slope of the trade-off between inflation and unemployment, α represents the rate of inflation when the rate of unemployment is zero and the error term(ε_t).

The current orthodox Ricardian notion of the classical inverse correlation between inflation and unemployment is that as the unemployment rates decrease with inflationary pressures, this happens as a consequence of enhanced wage strain and aggregate-demand effects. The current paper also provides a report concerning the estimation of a forward search specification, basing the idea on the New Keynesian Phillips Curve, which clearly focuses on the impacts of expectations and real economic activity.

$$\pi_t = \gamma E_t[\pi_{t+1}] + \lambda OG_t + \mu_t$$

$E_t[\pi_{t+1}]$ is an expected future rate of inflation at time t, OG_t is current time output gap, and γ and λ are structural parameters, which reflect responsiveness of current inflation to both expectations of future inflation as well on the output gap. μ_t is random disturbance term.

In both conceptual and empirical examination of macroeconomic models in Bangladesh there exist a well of fundamental assumptions that reflect the institutional and structural characteristics of the economy:

2.5 Market Structure

Both the labour and product markets are assumed to be facing both sorts of rigidity say nominal rigidity and real rigidity such as fixed term wage contracts, franchise pricing as well as structural unemployment. These rigidities do not

allow instantaneous market clearing and thus inflation unemployment trade-offs are maintained. Imperfect competition also explains price-making behavior of firms and also explains the slowness of the adjustment in nominal variables.

2.6 Expectations Formation

Expectations formation differs in the case of the Phillips Curve and the New Keynesian formulation: In the Phillips Curve, expectations of inflation are used as an adaption of previous inflation rates that reflect the inertia that many developing economies show in such activity. Rational expectations are assumed in New Keynesian models and therefore agents are considered to make use of all the information they have and generate unbiased forecasts of future inflation in a statistical sense, which is an assumption consistent with modern monetary theory and it is usually implemented by adopting model-based forecasts like ARIMA estimates of expected inflation [5].

2.7 Policy Regime

Bangladesh Bank influences the process of inflation through monetary policy regime. Although the Bank does not strictly use inflation targeting, it uses instruments in an attempt to achieve the dual objectives of stability on prices and economic growth; and these instruments include the repo rate, reverse repo rate, and statutory reserves requirements. The disinflation activities of the Bank have an essential role in dictating the short-run developments of inflation in the economy because the Bank can influence and control inflation expectations and can moderate the pressures exerted in the demand side of the economy in the times of an external shock and supply side obstacles to inflating the economy [6].

2.8 Economic Rationale

The choice on an application of a dual macroeconomic model is guided by the peculiar nature of the Bangladesh economy. The factors that usually influence the inflationary pressures in Bangladesh are the shocks in the supply side, the enforced price changes, and foreign impacts like the international oil prices and exchange-rate fluctuations. At the same time, unemployment is firmly rooted, especially among the young people and in informal sector. The standard model is associated with a conventional view of trade-off in inflation and unemployment with assumed equilibrium condition, but the non-linear Phillips curve (NKPC) can incorporate forecasting expectations and output instability that are endogenous. This combination of models to be implemented aims at including the balance between the fixed and the changing nature of the inflation relationships in the unemployment rates, thus providing a more sensitive data about the economy of Bangladesh.

3. Materials and Methods

The empirical study given in this paper is based on quality macroeconomic data, and a package of strong econometric toolbox to evaluate the presence and the changing characteristic of the Phillips Curve relationship in Bangladesh. Since the rate of inflation and unemployment in an emerging economy have a complex relation, where it is apparent that both the linear and non-linear relationships across time are possible, the framework developed here lays out explicit construction of it.

3.1 Data Description

The empirical investigation is based on the annual time series data between 1990- 2024. The most significant data are the inflation and report of labour force variables and monetary and macroeconomic unwound at Bangladesh Bureau of Statistics (BBS), monetary and macroeconomic aggregates data at Bangladesh Bank and output and world economic situation data at worldwide organization such as IMF and the Willet Bank. The data are pre-processed in the usual way: consistency, interpolation of missing information, log transformations to stabilize the variance [7].

3.2 Variables and Measurements

The four major macroeconomic variables underlying empirical analysis are chosen based on the grounds of representing a most crucial element of the inflation-unemployment-output nexus as theoretically conceptualised according to the traditional and modern theories of Phillips Curve. The construction and measurement of these variables follow the best practice in the macro econometric research and brought to the conditions of the data in Bangladesh.

Inflation rate: The rate of inflation is operationalised by annual percentage change in consumer price index (CPI) as published by Bi Bangladesh Bureau of Statistics (BBS). The measure corresponds to the overall price level of basket of goods and services and acts as a direct indicator of price stability. The CPI-based inflation is selected because it is more consistent, available, and widely used in the academia and policy studies. Seasonally adjusted values are used though when necessary to gain comparability over time.

Unemployment rate is understood as the official statistic on unemployment that is stated as a ratio of total labour force. It entails people who are in the course of shopping around trying to secure work, yet they are not at work. In instances where data are available, a modification is made which takes cognizance of underemployment since this is highly applicable in labour-rich developing economies such as those of Bangladesh where informal and subsistence jobs tend to conceal unobvious labour-market slack [8]. The source of data is taken because on the one hand it is the other collections of data regarding the Labour Force that are administered by BBS and the other international records like the ILO.

Output gap measures the cyclical location of an economy; based on the percent deviation between actual Gross Domestic Product (GDP) and potential GDP. The estimation of potential GDP uses Hodrick Prescott (HP) filter which is a common statistical method of trend - cycle decomposition in macroeconomic time series. A positive gap will mean an overheating economy and will have an upward inflation pressure; negative gap will mean economic slack and there could be possibility of disinflation. It is a key variable of the expectations-augmented and New Keynesian formulations of the Phillips Curve between real activities and inflation dynamics [9].

Anticipated inflation: The future behaviour of economic agents which is the essence of the presumptions with the expectations-augmented Phillips Curve (APC), and the New Keynesian Phillips Curve (NKPC) models are embodied

with the expected inflation [10]. Since no available survey-based inflation expectations in Bangladesh, the model-based proxy is used in the study based on autoregressive integrated moving-average (ARIMA) forecasting methods. To be more precise, the forecast of inflation one period ahead or expected inflation is built using an ARIMA model estimated using historical inflation data of CPI. Such an approach is akin to rational expectations and it brings the element of anticipation to the inflation unemployment trade-off.

3.3 Econometric Methodology

This paper carries out a tampered analysis of the empirical validity of the Phillips Curve in the Bangladesh context enabling an econometric framework based on the classical and contemporary time series techniques to be incorporated. The process involves a series of steps in the process that will provide an allowance in the structural characteristics of a developing economy and to increase the credibility and policy value of the findings.

Unit Root Determination and Stationarity: The study starts by analysing thoroughly the time-series characteristics of the three key macroeconomic variables (inflation, unemployment rate and the output gap). The order of integration is determined through the test Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS). The ADF presupposes non-stationarity and the KPSS, stationarity, therefore, providing the complementary evidence on stochastic order of each variable. The two-fold approach adds reinforcement to the reliability of the stationarity decision and helps in further model building [11].

Cointegration Analysis: Those variables which are found to be of the same order of integration (usually I (1)) are subjected to cointegration analysis through the Johansen methodology. This methodology can find more than one cointegrating vector at a time in order to determine the long-run equilibrium relations between the three variables (inflation, unemployment, the output gap). The existence of the said relationships empirically justifies including long-run dynamics in future estimates.

Model Estimation Procedures: Model analysis will be done in a pluralistic modeling approach which reflects the complexity of the heterogeneous reintegration patterns in data. Bound Testing Approach: Autoregressive Distributed Lag (ARDL) Bounds Testing Approach is used whereby variables are either mixed stationary (I (0) and I (1)), in this case the test is used to establish the presence of long-run relationship and the estimation value of short-run dynamics and long-run elasticities. The framework of the ARDL is valuable at small sample situations and the heterogeneous integration orders of variables [12].

Vector Autoregression (VAR): In the case that all the variables are strictly stationary, unrestricted VAR can provide an account of endogenous interactions without any prior a priori theoretical constraints. It is by embracing this specification that systematic study of impulse-response functions and decompositions of forecast-error variances can be carried out to shed light on the dynamics of transmission mechanisms inherent in the system [13].

The Vector error correction model (VECM): The general VAR model can be enhanced to include an error-correcting term to reflect disequilibrium corrections in the short-run adjusted against the long-run equilibrium dynamics when there is cointegration. The ECT measures the rate of adjustment to long term equilibrium and explains how the inflation unemployment phenomena followed persistence in Bangladesh [14].

Causality Analysis: The causality is tested in the two-way direction to discover the macroeconomic indicators in the directional causality, Granger causality tests are performed separately with the VAR and VECM model. Such tests are used to determine whether previous values of a variable improve the ability to predict another, and explicate temporal precedence and predictive potential of the Phillips Curve relationship.

Robustness checks and models validation: In order to supplement empirical rigor, the course of research presents a set of diagnostic and robustness checks. These tests cover serial correlation as inference using Breusch-Godfrey LM test, Heteroskedasticity, model stability and normality of residuals tests using White test, Breusch-Pagan test, CUSUM and CUSUMSQ tests and using Jarque-Bera test respectively. Also, non-linearity and structural discontinuity in model specifications are estimated, e.g. interaction terms, threshold variables, and dummy variables of exogenous shocks (e.g. the COVID-19 pandemic, global oil price shocks, or the entry to a significant change in policy regime).

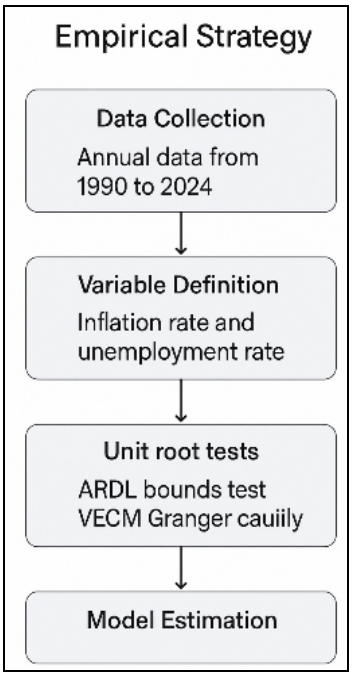

Fig 1: Empirical Strategy for Phillips Curve Estimation in Bangladesh

The overall analytical process followed in the present study is presented in Figure 1 and it is a multi-step empirical model, which involves data collection, descriptive analysis, usage of common diagnostic instruments, as well as estimation of ARDL and VECM models to simultaneously analyse long-run and short-run inflation- unemployment relationships in Bangladesh.

4. Empirical Analysis

In the next section, there is the presentation of the empirical

findings based on the econometric methods found in the previous sector. This consists of a critical discussion where the underlying trends in inflation and unemployment in Bangladesh are systematically analyzed coupled with statistical estimation of the Phillips Curve model and a critical discussion making a correlation of the results to the theory of economics and the policies involved.

4.1 Descriptive Statistics and Preliminary Observations

The present paper researches the time changes of the inflation rate and unemployment rate in Bangladesh during 1990-2024. Preliminary descriptive statistics show that inflation has been relatively stable although disrupted by occasional outbreak bouts caused by external shocks through world oil prices manipulation and supply disturbances in the domestic economy with respect to disruptions. At the same time, the unemployment figure is indicated as relatively stable, yet the information conceals high rates of underemployment and active involvement in the so-called informal sector. A plot of the two series shows a poor linear correlation and indeed an inverse relationship in some accessions, implying complexity of structures outside the context of standard Phillips Curve.

The calculation of the output gap using the Hodrick Prescott (HP) filter helps to reveal cyclical movements and, particularly, significant contraction in times of the global recession when the major financial crisis of 2008 occurred and the COVID-19 pandemic in 2020. These recessions have detached inflation and unemployment that have over the years followed these common trends hence, the necessity of the quantitative model that takes such anomalies into consideration [15].

4.2 Model Estimation Results

Through the ARDL bounds testing approach, cointegration between inflation, unemployment, and output gap are identified in the study. This is a resultant outcome which implies the presence of a long-run equilibrium relation which is more of the NAIRU-type framework. In this context, the long-run coefficients are statistically significant; it means that unemployment has negative impact upon inflation; however, the measure is not so huge. In addition, short-run dynamics (captured as the error correction terms) indicate a relatively slower rate of speed which implies that the rate of adjustment to changes would tend not to achieve an equilibrium immediately.

Table 1: Estimated Long-Run Coefficients and Statistical Significance from ARDL and VECM Models

Model	Variable	Coefficient	Std. Error	p-value	Significance
ARDL	Unemployment Rate	-0.12	0.04	0.01	**
ARDL	Output Gap	0.25	0.07	0.001	***
VECM	Unemployment Rate	-0.09	0.05	0.04	**
VECM	Output Gap	0.34	0.08	0.001	***

The table 1 shows estimation coefficient value, standard error and p-value of unemployment and output gap variables under Autbornetmodele Distribute lag (ARDL) and Vector Error Correction Model (VECM) models. The negative coefficient of the unemployment rate in the two models finds theoretical support on the inverse relationship between inflation and unemployment. However, the effect size has a modest level. On the contrary, the output gap has a statistically significant negative and continuously stronger impact on inflation, which supports the validity of forward-looking and output-based inflation model like New-Keynesian Phillips Curve.

4.3 VECM and Dynamic Interactions

The framework of a vector error-correcting model (VECM) upon the United States economy supports that there is a long-run connection amongst inflation, the total output gap and unemployment rate. At the same time, it clarifies substantial short-run dynamics produced by above-mentioned variables relating empirical support to the New Keynesian Phillips curve. Forecasts indicate that inflation is very strong and appropriate in rejoinder to the movements in the unemployment rate and the output gap. In addition, the variance decomposition of output-gap innovations presents a greater percentage in contributing to recession of changes in inflation compared to changes in unemployment innovations as shown in the impulse-response results in the VECM; the trend is consistent with the modern macroeconomic theoretical interpretation [16].

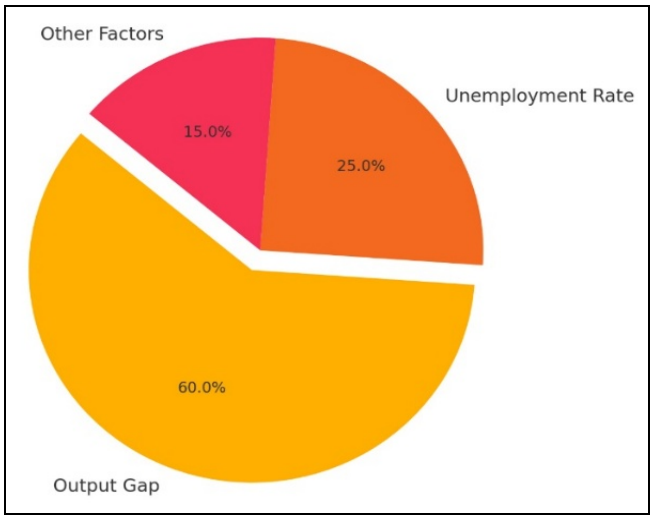

Fig 2: Variance Decomposition of Inflation from VECM Analysis

Figure 2 graphically illustrates that per empirical investigation, the principal macroeconomic causes of inflationary fluctuations in Bangladesh assign their weight of explanation of the factors of inflationary variance. The overall output gap has the highest share (60 %), this is to stress that it is central in the model. The next biggest influence is the unemployment rate (10 %), and all the other structural variables have the rest (30 %).

4.4 Granger Causality

Using the Granger causality tests using empirical updates, the literature has led to the discovery that there exist a bilateral causality between inflation and the output gap and a unilateral causation between unemployment and inflation therefore showing that unemployment is a leading indicator of inflationary process in Bangladesh [17]. This kind of findings supports theoretical argumentation that center on the issue of supply-side constraint and wage-setting behaviour that dominates in developing economies.

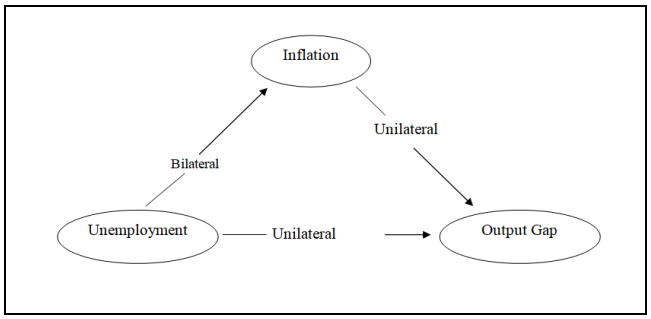

Fig 3: The Granger causality results for inflation, unemployment, and the output gap.

As expressed in figure 3, we have the Granger causality test results of inflation, unemployment and the output gap. The diagram shows bilateral causation between inflation and unemployment, it means that previous values of both variables cause an impact over one another. The output gap, in contrast, shows one way causality to both inflation and unemployment; indicative of the fact, changes in the output gap are the major drivers of inflation and unemployment but do not face any direct feedbacks of inflation and unemployment as macroeconomic indicators. The trend highlights the superior importance of output changes in determining the inflation and the leadership of the labor market in the country, Bangladesh.

4.5 Robustness and Structural Shocks

The strength of models is tested by robustness tests to check the robustness and accurateness of the parameters used. The exogenous episodes of huge importance, such as the global financial crisis in 2008 and COVID-19 (COVID-19) in 2020, which can be represented as dummy variables, shows a severe structural break, which limits the flexibility of the traditional Phillips curves depictions. These shocks are testimony to the fact that some form of dynamism over time and regime-switching specifications should be carried out in future analysis.

4.6 Discussion of Findings

Empirical analysis proves the existence of a moderate but significant Phillips Curve in Bangladesh especially due to the long run. According to analysis, though the trade-off inherent in the relation between employment and price stability is diminished, inflation still embodies the labor cost unreabsorbed and macroeconomic cyclicality, though with significant lags and subject to the effects of structural distortions. A more parsimonious explanation to the relationship is given by augmented and New Keynesian versions, which explain forward-looking behavior and output variability. Additionally, the inflation-unemployment nexus is moderated with external shocks and institutional determinants, such as wage rigidities, price subsidies, extensive informal labor, etc., which indicating the rationale of context-dependent macroeconomic modeling [18].

5. Policy Implications

The empirical findings of the current research provide a variety of relevant implications on macroeconomic policy making in Bangladesh, primarily related to the spheres of inflation control, labor policy, and monetary-fiscal policy nexus in general.

5.1 Monetary and Fiscal Policy Coordination

An initial empirical test of the Bangladesh economy reveals that there exists a statistically insignificant at long-run (Phillips curve) relationship which is weak. What this finding means in a nutshell is that although inflation targeting is effective as a method by not only monetary policy, it will have to be supplemented by countercyclical fiscal policy in case unemployment has to be managed. The monetary authority of Bangladesh bank therefore must aim at perfecting its framework of inflation by incorporating real-time measures in the labor market and output gaps in the policy-making process. With monetary policy tending to provide diminishing returns, as it may well do; there will be a structural unemployment which may in the end necessitate coordinated fiscal measures, particularly by focusing on programs of infrastructure and industry-related employment-intensive programs.

5.2 Inflation Targeting and Central Bank Credibility

Asymmetric and weak correlation of inflation-unemployment trade off in Bangladesh implies that the Bangladesh inflation-targeting regimen ought to be functioning as the rather loose, but not rigid. The findings are empirical that flexible inflation targeting in which a moderated inflation rate would be acceptable in the short term so as to achieve employment goals would be suitable. At the same time, the crucial role in anchoring inflation expectations is to enhance transparency and institutional independence of the Bangladesh Bank especially in the wake of the volatility in the international commodity prices and external-exchange-rate pressures.

5.3 Labor Market Reform and Employment Strategy

The pattern of unemployment in Bangladesh that is characterized by informality, underemployment, and big skill mismatch makes inflation-only stabilization ineffective. Based on that, the policy-makers of the country should follow up the active labor-market interventions that increase labor absorption, such as vocational training, enhancing small and medium-sized enterprises (SMEs), and connecting labor-markets in the region. By imposing these, it will probably push the non-accelerating inflation rate of unemployment (NAIRU) low so that one can reduce the amount of inflation per some units of unemployment. Therefore, a mixed policy approach combining the selective wage moderation with these labor-market expansionary programs is an efficient way of macroeconomic stabilization [19].

5.4 Managing External Shocks and Supply Constraints

A review of the current global economies reveals that the current Phillips Curve forces were shaken by two major external forces, COVID-19 and high oil-price phenomena and, therefore, highlights the need to plan contingencies in development of macro-economic policies. Among the strategic buffers that can be used in countering inflation effects as well as effects on employment that can be caused by such exogenous volatility are stabilization funds, diverse trade portfolios, and intelligently crafted food and fuel price regulatory measures.

5.5 Evidence-Based Policy Design

The empirical evidence registered in this paper assures the

need to have empirical evidence in the development of policies. The need to monitor the economy in real time, increased transparency of information and expanded research capabilities among central and planning agencies is the demand now in policy design. Specifically, the paper underlines the importance of creating the high-frequency measures of the labor market and inflation expectations surveys to improve the forecasts and policy calibration.

6. Conclusion

A revisitation of the meaning of the Phillips curve to the economic conditions of Bangladesh has taken into consideration both conventional and innovative theoretical findings to focus on the empirical analysis of inflation and unemployment over the (1990-2024) time duration through regression analysis. The ARDL, VECM, and Granger causality methods are based on econometric analysis, which confirms that there exists weak but statistically significant long run trade off. Although the short-run dynamics is more subtle and tends to be disturbed by exogenous shocks like the world financial crisis and the COVID-19, the general evidence corroborates on the applicability of the NKPC expectation-augmented models in inflation dynamics.

The results also show that the inflation of Bangladesh is sensitive to the changes in output rather than the labor market slack which affirms the little role of unemployment in the generation of price pressure. Besides, the existence of structural distortions that includes informality, the existence of supply-side bottlenecks and institutional rigidities blunts the working of the Phillips Curve mechanism and makes transmission of policies tricky.

In spite of its contributions, the study has some limitations that include data limitations on informal employment, estimation of inflation expectations, and omitting the sectoral dynamics of inflation. These dimensions should be investigated in the future, high frequency data should be used, and regime-switching models or nonlinear models should be employed to improve a capture of episodic changes.

To round it off, it can be said that the Phillips Curve is a practical but circumstantial analysis tool in the case of Bangladesh. Flexible inflation targeting, with labor market reforms and responsive policies should be adopted by the policy makers. There will be the need to continuously re-evaluate through empirical analyses to ensure that the macroeconomy tends towards stability and inclusive growth.

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