

# REVISITING THE PHILLIPS CURVE: UNDERSTANDING THE UPWARD CURVE IN THE BANGLADESH CONTEXT

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## ABSTRACT

*The Phillips curve reveals a negative association between inflation and unemployment. This research examines the relevance of the Phillips curve notion within Bangladesh's economy, utilizing yearly time series data spanning from 1991 to 2023. The findings show that the Phillips curve concept is not applicable to Bangladesh during the study periods, with an upward-sloping Phillips curve observed instead. The study utilizes a variety of statistical and econometric methodologies to perform its research. The Johansen co-integration analysis identifies a long-run relationship between unemployment and inflation, while Granger causality analysis demonstrates a one-way causal effect from unemployment to inflation. Additionally, the Fully Modified Ordinary Least Squares (FMOLS) approach indicates that unemployment exerts a strong and statistically significant positive effect on inflation. The study suggests that stagflation, filling budget deficits by borrowing, sharp rises in fuel prices, high interest rates, cost-push inflation, and the unequal burden of inflation and Covid-19 are the primary reasons for the upward-sloping Phillips curve in the observed periods. Based on the findings, the study suggests that implementing robust social safety programs alongside effective fiscal and monetary policies could serve as the most effective solutions to control inflation. Conversely, motivating educated youth to engage in self-employment, implementing a more adaptable bank loan system to support entrepreneurship, and enhancing both public and private investments will lead to a rise in employment opportunities in Bangladesh.*

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## INTRODUCTION

Alban William Housego Phillips, a New Zealand-born British economist, published a paper in *Economica* titled “The Relationship between Unemployment and the Rate of Change of Money Wages in the United Kingdom, 1861-1957” (Phillips, 1958). Phillips’ research revealed an inverse relationship between unemployment and inflation: years with low unemployment were associated with higher inflation, whereas periods with high unemployment tended to have low inflation. During the 1960s, the Phillips curve was crucial in macroeconomic modeling and policymaking because it was based on a strong theoretical framework and supported by empirical data. The evolution and persistence of the inflation-unemployment link, which serves as the macroeconomic basis for the Phillips curve hypothesis, is a noteworthy labor market trend in both developed and emerging nations. However, it failed to hold up in the 1970s, when global economies witnessed high inflation and rising unemployment, calling into question the claimed association between these two variables (Vermeulen, 2017). Certain economists theorized that the Phillips curve represented only a short-term phenomenon. According to Friedman (1968), no trade-off exists between inflation and unemployment in the long run. The inflation rate and unemployment rate are fundamental economic indicators, and many researchers continue to explore the relationship between them. But does this relationship truly exist? How these two do factors impact one another, and is there a trade-off between them (Alisa, 2015)? Bangladesh has experienced a persistent coexistence of elevated inflation and unemployment rates over time. For the last decade, unemployment and inflation have been major concerns in Bangladesh. From a Bangladeshi perspective, it is now crucial to revisit the trade-off relationship between inflation and unemployment, and determine whether to exit or not. One of the primary objectives of macroeconomics in both

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developed and emerging nations is to ensure stable levels of inflation and unemployment. According to Ekpo (2012) the simultaneous rise in unemployment and inflation reflects poor macroeconomic performance, a condition referred to as stagflation. According to some economists, achieving low levels of both inflation and unemployment as policy outcomes is unattainable. Therefore, policymakers must determine the level of inflation they are willing to forgo to maintain an acceptable unemployment rate.

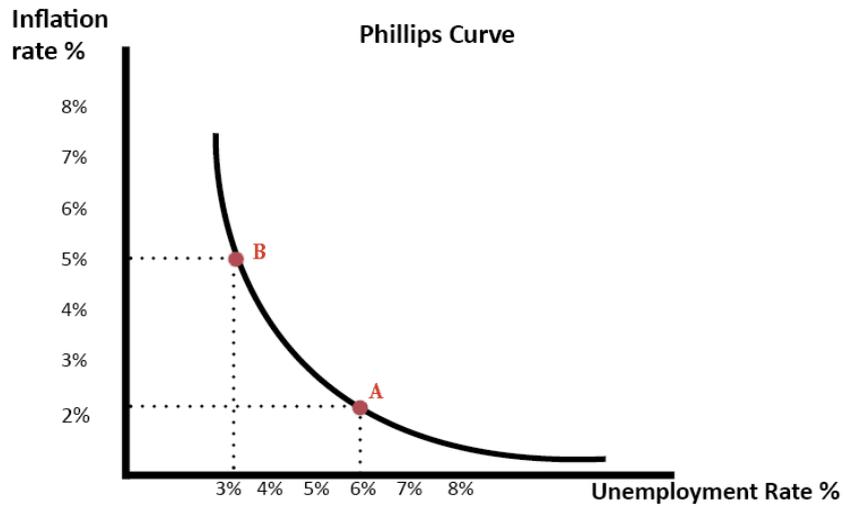


Figure 1. Phillips Curve

Over the past two years, inflation in Bangladesh has remained persistently high. During FY2022-23, the average inflation rate climbed to 9.0 percent, marking a substantial rise from 5.56 percent in FY2020-21. By March 2024, inflation on a point-to-point basis had escalated to 9.81 percent, compared to 5.47 percent in March 2021. Inflation rose to 9.7 percent in FY24 from 9 percent in FY23, driven primarily by elevated food and energy costs, along with increased import expenses caused by the depreciation of the Taka (The World Bank, 2024a). For context, the inflation rate before the pandemic was recorded at 5.48 percent in FY2018-19 (Bangladesh Bureau of Statistics, 2023). According to Noman et al. (2024), product costs, food price volatility, supply chain disruptions, depreciating currency, high oil prices, and increasing money are the main causes of inflation in Bangladesh. On the other hand, the Bangladesh Bureau of Statistics (2023) reported a harming increase in unemployment rates throughout Bangladesh. Their data shows that, from the fourth quarter of 2023 to the first quarter of 2024, the nation's unemployment rate increased by 3.51 percent. The World Bank (2024b) reports that Bangladesh's unemployment rate rose from 4.69 percent in 2019 to 5.06 percent in 2023. The rising unemployment rate in Bangladesh can be attributed to factors such as reduced investments in both public and private sectors, a gap between graduates' skills and job market requirements, and difficulties in obtaining bank financing (Islam, 2024).

This paper examines how inflation and unemployment are related in Bangladesh and demonstrates why the Phillips Curve concept is insufficient to describe the inverse inflation-unemployment relationship from a Bangladeshi perspective. This research will assist policymakers in developing more specialized and successful economic plans for Bangladesh, lowering unemployment and inflation, both of which are harmful to the country. To achieve its objectives, the study employs advanced econometric and statistical methods to analyze yearly time series data on inflation and unemployment covering the years 1991 to 2023.

### LITERATURE REVIEW

The Phillips curve hypothesis has been a central topic in economic studies, offering important perspectives on the relationship between inflation and unemployment in various economic contexts. DiNardo and Moore (1999) extended the Phillips curve to an open-market economy by analyzing quarterly data from nine OECD countries. Using panel data, they estimated the “expectations-augmented” Phillips curve, incorporating an observable, market-based indicator of inflation expectations. Their findings, derived from OLS and generalized least squares methods, revealed that while shifting expectations contributed to the empirical breakdown of the Phillips curve in the 1970s, supply shocks played an equally significant role. Islam et al. (2003) examined the Phillips hypothesis using data from the United States from 1950 to 1999, revealing a poor long-run co-integrating relationship between unemployment and inflation. The study observed unidirectional causality from unemployment to inflation, while lagged values exhibited short-run bidirectional feedback. Despite its weak form, the findings supported the existence of a long-run Phillips curve. Ogbokor (2005) applied both linear and logarithmic regression models to examine the short-run Phillips curve relationship in Namibia over the period 1991-2005. The findings revealed a positive association between inflation and unemployment, indicating the presence of stagflation in the Namibian economy. Onwioduokit (2006) analyzed the interaction between unemployment and inflation in Nigeria, identifying a negative correlation with a coefficient of -0.412, thereby supporting the Phillips hypothesis. However, causality tests revealed no evidence of a causal relationship between unemployment and inflation in the

Nigerian context. Tang and Lean (2007) utilized the bounds testing methodology for co-integration to investigate the Phillips curve hypothesis and its stability in Malaysia during the period from 1970 to 2005. Their findings indicated a co-integrated relationship between inflation, unemployment, and other factors influencing inflation. Additionally, the study confirmed the presence of a trade-off Phillips curve, as a negative correlation between inflation and unemployment was observed both in the short term and long term in the Malaysian context. Hasanov et al. (2010) applied the bivariate time-varying smooth transition regression model alongside generalized impulse response functions to analyze the nonlinear dynamics of the Phillips curve in Turkey during the 1980-2008 periods. Their linearity test results confirmed the presence of a nonlinear association between the inflation rate and the output gap. Ogujiuba and Abraham (2013) used a generalized error correction model to investigate Nigeria's Phillips curve hypothesis from 1970 to 2010. Their findings showed a negative short-run link between unemployment and inflation, although it was not statistically significant. Conversely, in the long run, the findings indicated a positive relationship between inflation and unemployment. Umoru and Anyiwe (2013) used the vector error correction model to examine the association between inflation and unemployment in Nigeria from 1986 to 2012. Their findings revealed the coexistence of elevated inflation and unemployment rates, indicative of stagflation, thereby challenging the validity of the short-run Phillips curve in the Nigerian context.

This study's main objective is to assess the Phillips curve model's relevance for the Bangladeshi economy. It investigates the Phillips curve hypothesis with present empirical findings derived from an econometric analysis and explores the factors contributing to the inapplicability of the Phillips curve in Bangladesh between 1991 and 2023.

## MATERIALS AND METHODS

### Data Collection

This research employs annual time series data spanning from 1991 to 2023, sourced from secondary sources. Data on the consumer price index (CPI) and unemployment rate is obtained from the World Bank (2024c; 2024b), with 2010 serving as the base year for the consumer price index. It is worth mentioning that the inflation rate is represented using the consumer price index as a proxy variable.

### Model Specification

In this research, a two-variable model is utilized. Applying the logarithmic transformation to both the independent and dependent variables is a crucial component of the log-log model employed in the analysis. This approach is beneficial for addressing nonlinearity, stabilizing heteroscedasticity, and simplifying complex relationships, improving interpretability, managing multiplicative effects, reducing data skewness, refining residual distributions in regression analysis, and facilitating the examination of percentage changes in variables across various disciplines. The study utilizes the following model:

$$\text{LNCPI}_t = \alpha_0 + \alpha_1 \text{LNUNEMPT}_t + U_t \dots\dots\dots (i)$$

Where, LNCPI = Log of consumer price index, LNUNEMPT = Log of unemployment rate, U=Error term.

### Econometric and Statistical Methods

We used the augmented Dickey-Fuller and Phillips-Perron tests, which are carried out using Eviews software, to determine the stationarity of the variables (Dickey & Fuller, 1979; Phillips & Perron, 1988). To investigate the long-run relationship between the unemployment rate and the consumer price index, the Johansen (1991) co-integration test is applied. The Granger (1969) causality test is applied to determine unidirectional or bidirectional causality between the consumer price index and the unemployment rate, and the Fully Modified OLS (FMOLS) model is utilized to illustrate the impact of unemployment on inflation in Bangladesh. Phillips and Hansen (1990) devised the Fully Modified Ordinary Least Squares (FMOLS) approach, which makes the assumption that there is only one co-integration vector. Their research indicates that the FMOLS estimator demonstrates super consistency and asymptotic efficiency. This technique offers several significant advantages, particularly its ability to produce reliable parameter estimates, even when sample sizes are small. The FMOLS method also addresses complex issues such as measurement errors, endogeneity, serial correlation, and omitted variable bias. Furthermore, it takes into account changes in long-term parameters, as shown in the research by Fereidouni et al. (2017) and Kalim and Shahbaz (2009). The upward-sloping Phillips curve is generated in this study using SPSS software.

## RESULTS AND DISCUSSIONS

### Descriptive Statistics

Table 1 depicts the descriptive statistics of the consumer price index (LNCPI) and unemployment rate (LNUNEMPT) from 1991 to 2023. The table displays the variables' mean, median, maximum, minimum, and standard deviations.

Table 1. Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Deviation	Obs.
LNCPI	4.43	4.38	5.46	3.53	0.60	33
LNUNEMPT	0.57	0.61	0.77	0.34	0.12	33

Source: E-views software on the basis of annual time series data (1991-2023).

### Unit Root Test

Macroeconomic time series data is typically non-stationary at the original level. Therefore, it is crucial to perform unit root tests to determine the stationarity of variables before proceeding with econometric analysis. Stationary variables can be used in their levels, while non-stationary variables require the application of co-integration techniques to identify long-run relationships among them (Akcaay & Demirhan, 2005). Two popular techniques to evaluate the stationarity of variables are the Phillips-Perron (PP) test (Phillips & Perron, 1988) and the augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1979). The outcomes of both tests, which are performed with a constant and with a constant plus trend, are shown in Tables 2 and 3. Since neither test currently rules out the existence of a unit root, the results show that all variables are non-stationary at original levels. The variables become stationary with a constant and a constant plus trend when the first difference is applied, suggesting the existence of a unit root and an integrated order of one I (1). Between the two tests, the Phillips-Perron (PP) test is often considered more robust than the augmented Dickey-Fuller (ADF) test, as it accounts for heteroskedasticity in the error terms (Agbola & Damoense, 2005). Additionally, the ADF test tends to be more sensitive to small sample sizes compared to the PP test (Hamilton, 1994).

Table 2. Augmented Dickey-Fuller (ADF) Unit Root Test

Variables	Level		First Difference	
	Constant	Constant and Trend	Constant	Constant and Trend
<b>LNCPI</b>	0.99	0.67	0.00***	0.02**
<b>LNUNEMPT</b>	0.41	0.35	0.00***	0.00***

Source: E-views software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

Table 3. Phillips-Perron (PP) Unit Root Test

Variables	Level		First Difference	
	Constant	Constant and Trend	Constant	Constant and Trend
<b>LNCPI</b>	0.99	0.59	0.01***	0.02**
<b>LNUNEMPT</b>	0.27	0.57	0.00***	0.00***

Source: E-views software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

### Johansen Co-integration Test

To perform a co-integration test, all variables have to be non-stationary at their original levels and then become stationary after the first difference. Prior to conducting the co-integration analysis, determining the optimal lag length is crucial, as it significantly influences the outcomes. Based on the Schwarz (1978) Information Criterion (SIC) and Akaike (1973) Information Criterion (AIC), a lag length of 1 is chosen for the co-integration test. Further co-integration test was conducted with a lag length of 1. Engle and Granger (1987) emphasize that ordinary least squares (OLS) results can be misleading if the variables are not co-integrated. Thus, verifying co-integration is a necessary step before proceeding with the FMOLS method. Among the widely used approaches for co-integration testing, the Engle-Granger method and Johansen procedure are particularly popular. In this study, the Johansen co-integration test is employed to assess whether the variables exhibit long-run co-integration. The Johansen co-integration test offers several advantages over the Engle-Granger approach. Notably, it does not assume the presence of only one co-integrating vector (Agbola & Damoense, 2005). Additionally, the Johansen method treats all variables as endogenous, whereas the Engle-Granger technique is sensitive to the selection of the dependent variable (Johansen & Juselius, 1990). Table 4 presents the results of the Johansen co-integration analysis. Both the Max-Eigen statistic and trace statistic reveal one co-integrating equation at the 1 percent significance level, confirming a long-term co-integrated relationship between inflation and unemployment (Dritsaki & Dritsaki, 2013; Orji et al., 2015).

Table 4. Johansen Co-integration Test

#### Unrestricted Co-integration Rank Test (Trace)

Hypothesizes No. of CE(s)	Eigen-value	Trace statistic	0.05 critical value	Prob.**
None*	0.5493	30.55	25.8721	0.01
At most 1	0.1717	5.8426	12.5179	0.48

Source: E-views software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

#### Unrestricted Co-integration Rank Test (Maximum Eigen-value)

Hypothesizes No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 critical value	Prob.**
None*	0.5493	24.7091	19.3870	0.00
At most 1	0.1717	5.8426	12.5179	0.48

Source: E-views software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

### Pairwise Granger Causality Test

Table 5 demonstrates a unidirectional causal relationship that is statistically significant at the 5 percent level between unemployment (LNUNEMPT) and inflation (LNCPI), with unemployment driving inflation (Bhattacharai, 2016; Islam et al., 2003). Cost-push inflation theories (Totonchi, 2011) may be supported by the causal direction, which indicates that changes in unemployment have a direct impact on inflation in Bangladesh. Reduced productivity, wage pressures, or shifts in aggregate supply may all be associated with higher unemployment, which could raise prices.

Table 5. Pairwise Granger Causality Test

Null Hypothesis (H <sub>0</sub> )	Alternative Hypothesis (H <sub>1</sub> )	Lags	Prob.	Remarks
LNUNEMPT does not Granger Cause LNCPI	LNUNEMPT Granger causes LNCPI	2	0.02	LNUNEMPT→LNCPI
LNCPI does not Granger cause LNUNEMPT	LNCPI Granger causes LNUNEMPT	2	0.31	Don't reject H <sub>0</sub>

Source: Eviews software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

### Fully Modified OLS (FMOLS)

The variables must exhibit co-integration at the first difference before FMOLS can be applied. The outcomes of the Fully Modified Ordinary Least Squares (FMOLS) approach are shown in Table 6. This approach offers an advantage over the traditional OLS estimator by effectively addressing endogeneity issues. According to the FMOLS analysis, unemployment has a substantial impact on inflation, and the two variables have a positive and significant association. Specifically, a 1 percent rise in unemployment corresponds to a 4.63 percent increase in inflation. These findings align with the conclusions drawn by Orji et al. (2015) and Haider and Dutta (2012). For the studied periods, this outcome disrupts the usual trade-off relationship between inflation and unemployment in the Bangladeshi context. For the FMOLS estimates, the R-squared and adjusted R-squared goodness-of-fit are 0.73 and 0.72, respectively. These clearly show that the model is a good fit. Moreover, appendix A demonstrates that the residuals are normally distributed.

Table 6. Results of Fully Modified Least Squares (FMOLS)

### Dependent Variable: LNCPI

Regressors	FMOLS			
	Coefficient	Std. error	t-statistics	Prob.
C	1.8128	0.4573	3.9637	0.00***
LNUNEMPT	4.6287	0.7729	5.9882	0.00***
<b>R<sup>2</sup> &amp; Adjusted R<sup>2</sup></b>	<b>0.73 &amp; 0.72</b>			

Source: Eviews software on the basis of annual time series data (1991-2023).  
Notes: \*\*\* P<0.01, \*\*P<0.05, \*P<0.10.

### Upward Sloping Phillips Curve

The findings of this study reveal that inflation and unemployment are not inversely related. Figure 2 depicts the upward sloping Phillips curve in Bangladesh from 1991 to 2023. This suggests that efforts to stabilize prices will not lead to higher unemployment, nor will attempts to reduce unemployment trigger an increase in inflation. Based on the specified period and analysis, this study concludes that the Phillips curve does not hold true for Bangladesh. These results align with the findings of Rasna (2010) for Bangladesh, Haq et al. (2012) for Pakistan, and Sinha (2017) for India. According to the World Bank (2024c), high inflation has also become the driving force behind the alarming trend of rising unemployment. There are several relevant causes for the upward sloping Phillips curve in Bangladesh.

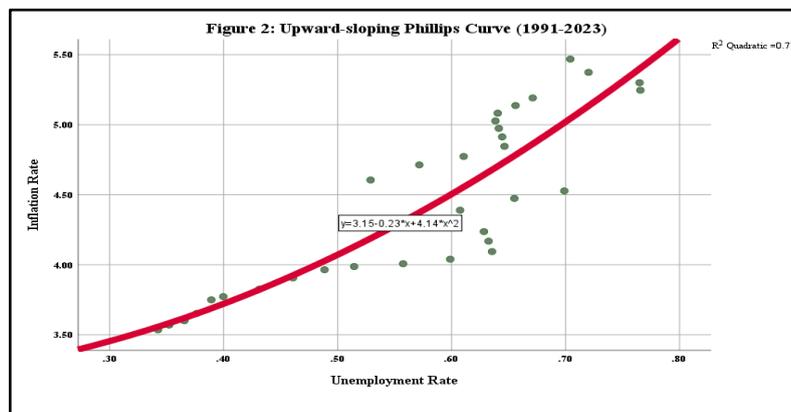


Figure 2. Upward-sloping Phillips Curve (1991-2023)

A weak pace of economic development combined with significant unemployment (economic stagnation) and rising prices (inflation) is known as stagflation. A government can cause inflation by rising interest rates, devaluing the domestic currency, or increasing aggregate demand when it borrows money to cover a budget deficit. In 2007 the budget deficit was \$1,778 million, which increased dramatically to \$20,670 million in 2023. In the fiscal year 2022-23, the budget deficit stands at approximately 5.5 percent of gross domestic product (Bangladesh Economic Review, 2023), which was filled up by borrowing from the World Bank and IMF (International Monetary Fund). Additionally, the central bank depreciated the Bangladeshi Taka (BDT) against the US Dollar by nearly 10.37 percent (Bangladesh Economic Review, 2023). In Bangladesh, rising fuel prices are also a major contributor to inflation. A couple of years ago, to mitigate the power crisis, the government implemented daily two-hour power outages. This shortage arises from reduced electricity production, driven by the soaring cost of fuel in the global market. The government permitted an increase in fuel prices, which could have resulted in a further rise in inflation, adversely affecting employment and overall economic growth. Elevated inflation signaled higher unemployment, leading to stagflation. Dramatic changes of fuel prices took place from 2021 to 2022. In 2021, the prices of diesel, petrol, and octane stood at 80, 86, and 89 Taka per liter, respectively. By 2022, these rates surged to 114, 130, and 135 Taka per liter, as reported by the Bangladesh Power Development Board (2024). The 1970s oil crises led to stagflation in many countries. The lack of a consistent relationship between inflation and unemployment in Bangladesh challenges the Phillips Curve theory, despite its intuitive appeal. While higher interest rates, a common tool to curb inflation, may intuitively lead to increased unemployment, the data from Bangladesh often fail to support this link. Inflation introduces market confusion by causing uneven and unpredictable price and wage changes, complicating decisions for businesses and individuals. Companies in Bangladesh struggle with production, hiring, and investment decisions, while individuals face difficulties in wage negotiations, spending, and saving. This confusion disrupts the supposed trade-off between inflation and unemployment. Therefore, the Phillips Curve's validity is undermined, and inflationary policies fail to reliably lower unemployment (Simon, 2024). The conventional inverse link between inflation and unemployment can be upset by cost-push inflation, which is caused by growing production expenses like labor, raw materials, and energy. This can result in an upward-sloping Phillips curve. As manufacturing costs grow, firms frequently pass these expenses on to customers via increased pricing, leading inflation to rise. To manage profitability, firms may also reduce hiring or lay off workers, resulting in higher unemployment despite the inflationary pressures (Cruel.org, 2024; McLeay & Tenreyro, 2020). For instance, rising wages without corresponding productivity gains can elevate production costs, compelling businesses to both increase prices and scale back on employment. This simultaneous rise in inflation and unemployment reflects the upward slope of the Phillips curve, challenging the conventional trade-off. This phenomenon is particularly evident during periods of stagflation, where high inflation coexists with stagnant growth and elevated unemployment levels. The surge in inflation impacts socio-economic groups unequally, with poor and low-income households bearing the brunt. They face immense challenges managing soaring food and fuel costs as their stagnant incomes erode purchasing power. During the Covid-19 pandemic, widespread job losses hit these groups hard, and even after returning to work, many accepted lower wages as businesses recovered from economic shocks. The real income of micro and small enterprises as well as salaried individuals has decreased due to rising pricing. Furthermore, people's disposable income has decreased due to high inflation (Khatun, 2024). In Bangladesh, low-income, lower-middle-class, and poor families face high inflationary pressures that worsen inequality over the medium term. This is concerning because the pandemic recently produced new impoverished people who are still struggling to escape their financial difficulties. Rising prices are pushing them further into distress. If left unaddressed, this situation risks escalating existing social tensions in Bangladesh, fueled by limited and unequal opportunities and rising youth unemployment (Khatun, 2024).

Economists suggest that achieving minimal levels of both inflation and unemployment is impossible, requiring policymakers to balance the trade-off by determining an acceptable level of inflation to maintain manageable unemployment. Inflation has emerged as a pressing challenge for Bangladesh's economy, necessitating urgent action from policymakers. To shield impoverished and low-income families from the adverse effects of escalating prices, robust social safety net programs can be implemented. Effective interventions include direct cash transfers and ensuring access to essential goods at affordable rates for underprivileged people, providing an immediate basis. For these measures to succeed, they must be adequately funded, precisely targeted, and managed efficiently to eliminate inefficiency and corruption, ensuring support reaches those truly in need. Additionally, disciplined fiscal policies and efficient monetary policies are vital to mitigating inflationary pressures and safeguarding the purchasing power of low-and lower-middle-income households (Khatun, 2024). A high labor underutilization rate reflects a gap where the number of people eager and capable of working exceeds the availability of suitable job opportunities, signaling a misalignment between labor supply and demand (The World Bank, 2024a). To prevent the mismatch between job market demand and supply, opportunities should be created that encourage educated youth to pursue self-employment initiatives. Supporting entrepreneurship is vital in Bangladesh, where self-employment accounts for over two-thirds of jobs, and can be advanced through initiatives like online freelancing, gig work, tailoring, and home-based food processing, backed by expanded training programs, seed capital, and successful models integrating training with microfinance (The World Bank, 2024a). To promote entrepreneurship, a more flexible bank loan system should be established (Islam, 2024). Additionally, increasing public and private sector investments will help boost employment levels. Strengthening the investment climate through better regulations, governance, competition, and trade policies can boost private sector growth, attract foreign investment, and generate quality jobs (The World Bank, 2024a).

## CONCLUSIONS

The purpose of this study was to revisit the relevance of the Phillips curve concept in the context of Bangladesh's economy. The analysis utilized annual time series data spanning from 1991 to 2023. The results indicated that the Phillips curve notion did not hold true for Bangladesh during the studied periods, revealing an upward-sloping Phillips curve instead. This outcome was in alignment with the econometric results. A long-term association between the unemployment rate and inflation has been established by the co-integration test. A unidirectional causality was identified, running from unemployment to inflation. Furthermore, the Fully Modified Ordinary Least Squares (FMOLS) method indicated that unemployment had a significant and positive effect on inflation. The study concludes that stagflation, borrowing to cover budget deficits, dramatic increases in fuel prices, high interest rates, cost-push inflation, and the unequal burden of inflation and Covid-19 were the primary drivers of the upward-sloping Phillips curve observed during the study period. The study recommends that comprehensive social safety programs, coupled with well-designed fiscal and monetary policies, offer the most promising approach to addressing inflation. Alternatively, by inspiring educated youth to take up self-employment ventures, providing a flexible loan system to encourage entrepreneurship, and boosting investments in public and private sectors, employment opportunities will increase in Bangladesh. The limitation of this study is the unavailability of data. Specifically, unemployment rate data prior to 1991 could not be obtained. If data spanning 1971 to 2023 for both variables were accessible, the analysis could potentially yield more robust and insightful results.

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**Conflicts of Interest:** The authors declare no conflict of interest.

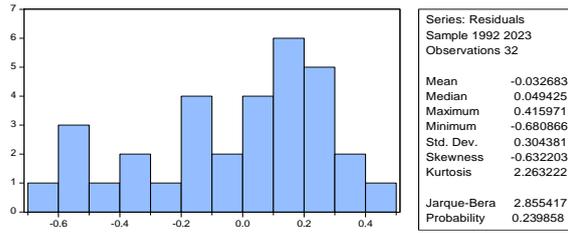
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### APPENDICES

#### Appendix A: Normality Test



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