





Exploring the relationship between inflation and unemployment in South Africa: A historical, theoretical, and empirical review

 Chigozie Azunna ^{(a)*}  Lucius Botes ^(b)



^(a)PhD, Development Studies Department, University of South Africa, South Africa

^(b)Professor and Director: Research Development, Faculty of Economic and Management Sciences, North-West University, South Africa

ARTICLE INFO

Article history:

Received 20 December 2023

Received in rev. form 24 Feb. 2024

Accepted 12 April 2024

Keywords:

Inflation and Unemployment in South Africa, Phillips Curve, Monetarists, Neo Keynesian, New-Classical

JEL Classification:

G14; F43

ABSTRACT

The paper investigates the relationship between inflation and unemployment in the South African setting, encompassing a comprehensive analysis of historical, theoretical, and empirical evidence. Existing literature surveys demonstrate that several studies have been conducted in multiple countries to ascertain the correlation between inflation and unemployment. The review incorporated the postulations of many economic schools of thought as they are applied to South Africa. The Phillips Curve was examined in accordance with the research purpose. The process involves gathering secondary data from reputable sources such as Statistics South Africa, the South African Reserve Bank, and other reliable secondary sources to analyse this relationship. The findings are presented using linear regression, tables, and figures. The study utilised annual inflation and unemployment data in South Africa spanning from 2000 to 2022 to elucidate the correlation between inflation and unemployment. The study discovered that the link was nonlinear and did not exhibit any meaningful association or correlation.

© 2024 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Introduction

A plethora of literature, including articles, research papers, reviews, proposals, and books, has been dedicated to exploring the global correlation between inflation and unemployment. Economists, statisticians, and occasionally politicians engage in meticulous investigation, experimentation, and investment of resources to determine the existence of a correlation between the two variables, inflation and unemployment. The federal governments of multiple countries support extensive research initiatives aimed at investigating the correlation between inflation and unemployment in different nations. To attain Sustainable Development Goal 8, it is crucial to foster continuous, inclusive, and sustainable economic growth, as well as ensure full and productive employment and decent work opportunities for everyone. This goal also addresses socio-economic concerns such as inflation and unemployment. According to economic research, it has been found that increasing volatility in inflation can have a negative impact on economic growth, even when the rate of inflation is constant (IMF 2022).

This paper investigates the correlation between inflation and unemployment in the specific setting of South Africa, drawing on historical, theoretical, and empirical analyses. The paper presents a range of scholarly historical arguments and theoretical viewpoints, along with empirical evidence, to enhance the knowledge of the variables of inflation and unemployment and their relationship in South Africa.

In 1926, Irving Fisher conducted the initial statistical analysis examining the correlation between unemployment and inflation (Fisher, 1973). The relationship between inflation and unemployment, known as the Phillips curve, was established by A.W. Phillips in 1958. Phillips conducted a statistical analysis that examined the correlation between unemployment (U) and the rate of change in money wages (W) in the United Kingdom from 1861 to 1957. The analysis concluded that there is a non-linear and inverse link between

* Corresponding author. ORCID ID:0000-0003-0497-7057

unemployment (U) and the rate of change in money earnings (W). This paper examines the correlation between inflation and unemployment in the South African setting, drawing on historical, theoretical, and empirical analyses. The paper presents a range of scholarly historical arguments and theoretical viewpoints, along with empirical evidence, to enhance the knowledge of the variables of inflation and unemployment and their relationship in South Africa.

Phillips's (1958) original paper conducted an empirical study on the correlation between money wage, inflation, and unemployment. Phillips's groundbreaking research examines two components that were incorporated into the literature review approach, specifically connecting this research to the context of South Africa. Firstly, we have the empirical aspect. This paper contends that economists have shown interest in determining the existence of a consistent relationship between inflation and unemployment in real terms and in different market economies (Sanomero and Seater, 1978). Furthermore, we have the theoretical aspect. Several scientists and economists have proposed and developed beneficial policies in response to this matter, as outlined by Vermeulen (2017).

Based on the information presented, the literature assessment concluded that Lipsey (1960) established the initial strong theoretical basis for the Phillips curve.

Based on empirical evidence, there is no consensus regarding the correlation between unemployment and inflation. In Sub-Saharan and South Africa, researchers such as Al-zeaud and Al-hosban (2015), Hodge (2002), and Okafor, Ezeaku, and Ugwuegbe (2016), contend that there is a detrimental correlation between unemployment and inflation. Meanwhile, Bhattarai (2016) and Vermeulen (2017) discovered a direct correlation between unemployment and inflation, indicating that as jobless rates increase, so does inflation. There are other scholars who exhibit indifference for the link, such as Asif (2013) and Rocheteau, Guillaume, Peter, and Randall (2007).

The study conducted by Umaru, Aminu, Manu, and Salihu (2013) examined the correlation between unemployment and inflation from 1986 to 2010. The findings revealed that inflation had a detrimental impact on unemployment. In their 2016 study, Okafor et al examined the relationship between unemployment and inflation in Nigeria from 1989 to 2014. They discovered that while there is a consistent connection between unemployment and inflation over the long term, there is a deviation during the equilibrium phase. This deviation is fixed at a 65% annual rate of adjustment, as determined by the Error Correction Model (ECM).

Bhattarai (2016) examined the trade-offs between inflation and unemployment in OECD countries from the first quarter of the 1990s to the fourth quarter of 2014 and discovered a positive correlation. Hodge (2002) conducted a study on the relationship between unemployment and inflation in South Africa from 1970 to 2000. The study indicated that a 1% increase in the unemployment rate led to a 3.61% decrease in inflation when Ordinary Least Squares (OLS) regression was used.

The South African government recognises and acknowledges unemployment as a significant macroeconomic burden, alongside other issues such as inequality and poverty (NDP, 2013; Chigozie *et al.*, 2023). From 2008 to 2022, South Africa has experienced an unemployment rate of 26.53% and an inflation rate of 5.59% (StatsSA, 2022).

The main objective of the study is to determine the presence of the relationship between inflation and unemployment in South Africa. After this section, the paper proceeds with a literature review, research and methodology, findings and implications, and conclusions.

Literature Review

Theoretical and Conceptual Background

Concept of inflation and unemployment

Inflation is defined as an increase in prices that is sustained over a period within the growth of the economy leading to a drop in currency purchasing power (Kelebogile and Ravinder, 2021; Mashele, 2012). Idalu (2015), states that when a central bank introduces and implements a specific rate of inflation as a monetary policy, the process is called inflation targeting. South Africa adopted inflation targeting monetary policy framework in 2000 to ensure the stimulation of economic growth and to ensure that the inflation target is at a low rate to create a conducive environment (Kelebogile and Ravinder, 2021). Mashele (2012), characterizes inflation targeting as a method whereby there is an uprising of prices with the increase of the price index percentage. Issing (2004), defines the subject matter as a monetary policy framework that influences the uprising of the price stability maintenance, which can be seen as the decrease and steady rate of consumer price inflation.

According to Chris (2020), empirical evidence shows that poor South Africans experience higher inflation than other households. Three key components of inflation are highlighted, that is, the direct impacts of inflation (referring to inflation tax); the distributive impacts; and finally, the indirect impacts (the Phillips curve).

In South Africa, there is the concerns of effects of higher inflation on the distribution of income through the relationship between inflation and economic growth or employment (the Phillips curve relationship). Hence, Stephanie (2015), argues that most pressing challenge South African policymakers face is the extremely high rate of unemployment, with more than a quarter of the adult population unable to provide for themselves and their families through work (Chigozie et al, 2023).

According to Tomáš, Veronika, and Dominik (2022), unemployment requires that a person not only wants to work but also looks for it actively. According to Chigozie (2018), unemployed person is the one who is without work and is currently available for work and

is seeking or wanting to work while unemployment rate is defined as the number of unemployed persons taken as a percentage of the economically active population, which includes both the employed and the unemployed (IMF, 2022; ILO, 2022; Tomáš, Veronika, and Dominik, 2022).

The unemployment rate has risen over the last twenty years in South Africa, Stephanie (2015). Population disparities in unemployment are also concerning element of unemployment problem in the country, with black South Africans more than four times as likely to be unemployed as compared to the white South Africans (StatsSA, 2022). Women's unemployment, higher than men's in South Africa, has additional negative macroeconomic effects.

The Keynesian inflation theory involves the aggregate supply and demand curves that indicate the connection between inflation and growth (Kelebogile and Ravinder, 2021). Within the Monetarist theory perspective, Mokgola (2015), enumerates that monetarists consider a positive relationship to exist between inflation and output growth in the short-run, while there is no effect aside from the general price increase in the long run. Mashele (2018), describes the quantity theory of money, emphasizing the long-run approaches of neutrality of money.

Adam Smith formulated the classical growth theory in 1789. It is determined by factors that include capital, labour, output and technology. The main variables influencing the classical growth model are productivity, land and population growth (Kelebogile and Ravinder, 2021). The model is linked to increases in investment that influence the economic growth rate based on the increase of capital labour. The marginal products are assumed to decrease, making the economy drawback to a long-term growth path (Mokgola, 2015). The real GDP increases at the same time as the growth of labour.

Phillips curve is the theoretical framework employed in analysing inflation dynamics over the short term (Buthelezi, 2023). The relationship spells that the inflation rate will be stable if the actual GDP equates to the potential GDP (Mashele, 2018). Phillips (1958), the British economist, related the wages growth to the unemployment rate and submitted that when labour is underutilized, there are fewer wage increases (Montoriol, 2015).

According to ILO (2022), the pandemic has cost sub-Saharan Africa 13.5 million jobs in working hour losses, leading to a two percentage points decline of the employment-to-population ratio (EPR). Ibrahima, Rasmane and Amadou (2023), argues that improving job opportunities in the region, especially for the youth, becomes crucial as the region is the world's youngest, with more than 60 percent of its population under the age of 25 years.

The Keynesian Approach to Phillips Curve

Reflecting on the Keynesian school of thought on unemployment, they argue that unemployment is cyclical traditionally. In their explanation, Keynesian explanation of unemployment explains the essence of insufficient expenditure because of demand deficiency (Nela, Muja and Metin, 2019). Applying this approach in the case of South Africa, literature suggests that this, causes the macroeconomic equilibrium to be below the full employment level (Harris and Irrshad, 2018).

Classical Approach

According to Suna and Muzhgan (2020), the classical economics approach ensures that every individual who wishes to work at the prevailing wage level can find jobs, as such unemployment is voluntary. This is totally different from the Keynes and monetarist approach which they define unemployment as the inability of individuals to find jobs at the prevailing wage level despite their wishes.

The Monetarist Approach

The Monetarist unemployment approach is concerned with short-run or cyclical unemployment (ILO, 2022). The Monetarist postulates that involuntary unemployment is not a long-run problem - the economy is inherently stable and self-stabilizing and would spontaneously return to a full employment equilibrium following any disturbances (IMF, 2022).

Research and Methodology

The theoretical framework that is adopted in this paper is that of the Phillips curve. The data for this research is secondary data. That means that the data is not directly collected from the population under-sample, rather, existing data were accessed from the South African Reserve Bank (SARB), Statistics South Africa (STATSSA), and other reliable secondary sources such as Inflation EU, the World Bank, etcetera. This paper uses quantitative analysis to explore the relationship between inflation and unemployment in the South African underscoring the importance of historical, theoretical, and empirical reviews. Various economic schools of thought such as the monetarists, neo-keynesian and new-classical economist thoughts are articulated in regression models. The theoretical framework of the Phillips curve is applied in this paper as well as the Markov-Switching Dynamic Regression Model (MSDRM) because it provides substantial characterization of a set of finite states (Hansen, 2000). Application of MSDRM is critical to the study because it ensures that the study explores a thorough analogy of unemployment and examine the impact of inflation in different states. Scholars such as Nasr, Adnen, Mehmet, Ahdi, Goodness, Rangan and René (2015), and Nobrega, Cássio, & Felipe (2020), have applied this model in their studies and found it relevant in the study of unemployment and inflation. The subject of inflation and unemployment has continued to attract various argument in the social sciences as a discipline. Example, in the economics profession, the statisticians, there has always been this relationship arguments. It is also worth noting that there are plethora of

research in an attempt to provide clarity as to whether there is a relationship between inflation and unemployment or not. Each argument is informed by the specific economic schools of thought. For example, each school of thought have their view of the subject matter, the Neo-classical, Keynesian and or the Monetarists schools of thought analysis and interpretate the subject matter from their own perspectives. In the literature review, while some of the arguments found the relationship between inflation and unemployment to be negative others say it is positive. By negative, it implies that there is no relationship between the two variables, suggesting that changes in inflation does not influence changes in unemployment and vice versa and by positive, it means that any potential variation in either variable would cause significant influence or reaction on the other. Each of these arguments have theories and explanations to support them.

For this review of the relationship, the study argues and incorporate various schools of thought to enable a broad and comprehensive review of the relationship in South Africa.

Monetarists, Neo-Keynesian and New-Classical Economist Thoughts

This paragraph discusses the theoretical framework upon which this study aims and objectives are addressed. There has been a wide range of disagreement among economists regarding the determination of inflation and unemployment. For example, inflation; the Neo-Keynesians, Modigliani and Papedemos (1976), believed that acceleration and deceleration of inflation are primarily related to the degree of resource utilization. Monetarists on the other hand, example Friedman (1976) and Stein (1978), argue that changes in inflation are the direct effect of similar movement in money growth as such it does not have anything to do with the state of the economy.

However, for unemployment example the Monetarists take issue with the relatively more recent school of thought, that is, the New Classical Economics. To them, the monetarists, like Stein (1974) and Carlson (1978), they assert that money growth has just a very short-run effect on unemployment. That notwithstanding, the New Classical Economists like Sargent (1976) and McCallum (1980), questions this proposition. They claim that irrespective of the short-run effect of monetary policy, if fully analysed and implemented, it will be neutral on unemployment even though in the short-run, on the hand, Peter and Douglas (1997) reported that most empirical work on the USA Phillips Curve has had a strong tendency to impose global linearity in medium and long runs.

The Neo-Keynesian economists' path of inflation depends primarily on the state of the economy as measured by the prevailing rate of unemployment. To the school of thought, in as much as unemployment exceeds some critical level referred to as Non-Accelerating Inflationary Rate of Unemployment (NAIRU), then inflation can be expected to decline, Modigliani and Papademos (1976). This follows that the acceleration of inflation is made the function of lagged unemployment. This is defined as:

$$INF_t - INF_{t-1} = k^\delta - k^* Unemp_t$$

Where INF_t represents the inflation rate; INF_{t-1} represents the expected inflation rate; k^δ represents the actual unemployment rate; k^* is the constant; $Unemp_t$ represents the unemployment rate and t represents the error term.

According to Dornbusch and Fisher (1990), Lipsey, Courant, Purvis and Steiner (1993) the equation states that inflation INF_t will decline to the expected rate INF_{t-1} , if the actual unemployment rate k exceeds the non-accelerated inflation rate of unemployment, U_{nairu} . In other words, price level falls at $INF < 0$ while unemployment grows to exceed the non-accelerated inflation of $k^\delta > U_{nairu}$. Therefore, if $INF > 0$ it follows that, unemployment rate is less than accelerated inflation rate of unemployment $k^\delta < U_{nairu}$ which is stable at $INF = 0$, as such unemployment rate will be equal to non-accelerating inflation rate of unemployment at $k^\delta = U_{nairu}$.

Modifying equ: 1 into expectation augmented and change-in-unemployment, the model is extended as such:

$$INFACCL_t = c - k^* Unemp_t - \lambda(Unemp_t - Unemp_{t-1})$$

where λ is the parameter that measures the extent to which changes in unemployment affect the level of inflation. Suggesting that when unemployment gap is negative and increasing in absolute terms, if the actual unemployment is decreasing, as such, $U_t - U_{t-1} < 0$. Another application is where, the unemployment gap ($U_t - U_{nairu}$) is negative showing a decrease in absolute terms, if unemployment is increasing, as such $U_t - U_{t-1} > 0$.

Comparing the Monetarists, Neo-Keynesian and New-Classical Methods

From equations (1) and (2) above, the study compares these arguments of the Monetarist, Neo-Keynesian and New-Classical economists on the method of estimation in economics, as such: the Neo-Keynesian argue that the effect of unemployment on inflation could be analyse as follows;

$$INF_t - INF_{t-1} = a_0 + a_1 Unemp_{t-1} + e_t$$

Where,

INF_t : represents the inflation rate

INF_{t-1} : represents expected inflation rate

t : represents time

$Unemp_{t-1}$: represents the state of unemployment

e_t represents the error term, and;
 $a_1 < 0$ is the statistical significance.

While Monetarists like Stein (1974) rejected the equation above. He argues that the equation a_1 in equation (3) above is insignificantly different from zero. In the argument, Stein asserts that the equation should explain the accelerated inflation with regards to money growth over the on-going inflation rate as the primary dependent variable. To Stein the equation should be;

$$INF_t - INF_{t-1} = b_0 + b_1 (MC_{t-1} - INF_{t-1}) + e_t$$

Where, MC_{t-1} is the percentage change in money stock, $b_1 > 0$ is statistically significant.

To the Neo-Classical economists, the Monetarists lagged growth of real balances ($MC_{t-1} - INF_{t-1}$) is the major determinant of the rate of unemployment as shown in equation (4) above. They argue that the equation should rather be;

$$Unemp_t = c_0 + c_1 (MC_{t-1} - INF_{t-1}) + e_t$$

Where $c_1 < 0$ is statistically significant

The Neo-Classical economists rejected this equation, they argue that unemployment is best described as a function of its own lagged values and the independence of any past changes in the monetary variable.

Therefore, Neo-Classical economists argue that, in the addition to the Monetarist variable, a further analysis into an autoregressive unemployment equation will prove statistically insignificant. Hence:

$$Unemp_t = d_0 + d_1 Unemp_{t-1} + d_2 Unemp_{t-2} + d_3 Unemp_{t-3} + d_4 (MC_{t-1} - INF_{t-1}) + e_t$$

Where d_4 is significantly different from zero, the other d 's are statistically significant.

Implications

Review of inflation and unemployment data 2000 – 2022

Following from the various arguments from the schools of thought, this paper examines the data reflecting the relationship between inflation and unemployment between 2000 – 2022. The paper then applies the trends as observed to the arguments postulated by the schools of thought. Firstly, the data on the variables are populated in tabular form and then graphically expressed. This is done to show a virtually trend and also to relate to the reality of the relationship of the variables understudy.

Table 1: Inflation rates vs unemployment data in South Africa 2000 – 2022

Year	Inflation %	Annual % Change	Unemployment %	Annual % Change
2022	7.04%	2.43%	29.806	1.04%
2021	4.61	1.40%	33.56	4.34%
2020	3.21	-0.91%	29.22	0.75%
2019	4.12	-0.40%	28.47	1.56%
2018	4.52	-0.67%	26.91	-0.13%
2017	5.18	-1.39%	27.04	0.50%
2016	6.57	2.03%	26.54	1.39%
2015	4.54	-1.59%	25.15	0.26%
2014	6.13	0.35%	24.89	0.33%
2013	5.78	0.06%	24.56	-0.17%
2012	5.72	0.73%	24.73	0.09%
2011	5	0.91%	24.64	-0.04%
2010	4.09	-3.13%	24.68	1.16%
2009	7.22	-2.86%	23.52	1.11%
2008	10.07	3.90%	22.41	-4.13%
2007	6.18	2.93%	26.54	-1.80%
2006	3.24	1.18%	28.34	-0.78%
2005	2.06	2.75%	29.12	-0.33%
2004	-0.69	-6.37%	29.45	-2.86%
2003	5.68	-3.82%	32.31	-0.98%
2002	9.49	3.79%	33.29	2.60%
2001	5.70	0.36%	30.69	0.81%
2000	5.34	0.16%	29.88	-0.03%

Sources: Data basis: International Monetary Fund, World Bank and OECD Inflation CPI indicator (2022); Inflation.eu (2023) and Macrotrends (2023)

In Table 1 above, the data set of inflation and unemployment was presented. The Table further examined the percentage changes of each variable. The data-set was from 2000 – 2022. It shows that the peak of inflation in South Africa was in 2008 when inflation rose to 10.07%. In the same year, unemployment was 22.41%. The lowest inflation rate year was in 2004, the year witnessed a drastic decline in inflation rate at -0.69%. Compare to unemployment, the 2004 rate was 29.45%. In these two examples, as shown in Table 1, an increase in inflation rate did not show any complementary or correlational reflection on unemployment. This also manifested similar tendency of inflation and unemployment in 2000 and 2022 with the rates at 5.34(29.88) and 7.04(29.806) respectively.

Again, at the peak of unemployment in 2021, which was 33.59%, inflation was 4.61%. At the lowest unemployment rate of 22.41% of 2008, inflation rate was 10.07%. In the investigation of the trends, the study did not find any direct relationship between the two variables.

Therefore, the application of the Philips curve in South Africa is not positive. In the years under study, the available data does not show that there is a positive relationship between inflation and unemployment in South Africa. It is possible that, in the previous years, there could have been a time when inflation rises, directly increases unemployment and vice versa.

From the data-set, the study further examined the relationship graphically as presented below.

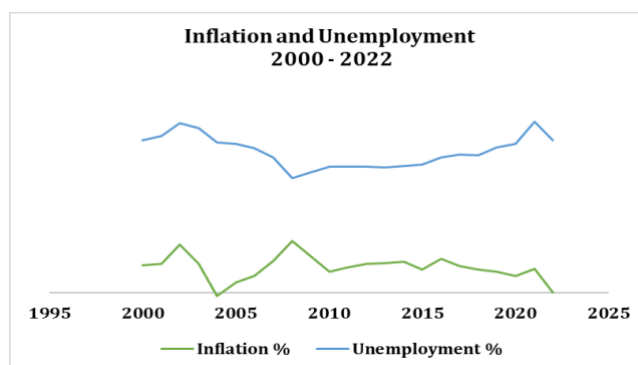


Figure 1: Graphical presentation of the relationship between inflation and unemployment 2000 – 2022

Graphically presented, when inflation was dropping, unemployment was rising to a point of reflexion where inflation was 4.54% as compared to unemployment rate of 25.15 in the same year of 2015. Similarly, when inflation rose to 9.49%, unemployment subsequently increased to 33.29% in 2019. Since then, there seem to be a corresponding movement in inflation and unemployment as shown in the graph between 2019 – 2022 as shown in the figure 2, below. Researchers might argue that this corresponding movement between the two variables justifies the Philips curve.

Discussion of results

Hypothetically, as shown in the figure (1) above, between 2019 - 2022, the authors argue that assumed that when unemployment is less than the percent of the work force in South Africa, by natural implication, the country would face the dangers of inflation. It is argued that the Phillips' formulation captured the attention of the economics profession however, the applicability of the Philip's Curve in various economies might show variations in results as seen in the case of South Africa. Therefore, one must ask why is this? Can such argument of the dangers of inflation be explained by the novelty of Phillips curve or its empirical derivation? In the study interpretations, Phillips curve postulation was simply referring to the law of supply and the unemployment combination with the use of policy and demand according to which the price of any instruments is attained.

As shown in Figure 1, the line relating unemployment to inflation is strictly hypothetical, but it suggests that the tighter the employment situation the greater the hazard of inflation especially between 2000 – 2002 and 2020 - 2022. In other words, assuming that there is a fairly defined functional relationship existing between inflation and the level of employment, then it is possible to determine the "safe" degree of full employment in South Africa.

Recent debate as a result of the past decades of inflation brings the argument that, there is a steadily growing number of economists who are convinced that the long-run Phillips curve is vertical. However, their number has not yet reached agreement, as such, sharp differences do remain over the theoretical foundations of the observed relationship between inflation and unemployment. For example, some economists (Eckstein and Girola, 1978; Tobin, 1972) view the long-run Phillips curve as possibly having a negative slope. Others, such as (Meltzer, 1977; Stein, 1978) doubt that a Phillips-type relation exists at all and argue instead that monetary models best describe the past inflation. Even those who accept the validity of the vertical Phillips curve disagree on whether policy can be used to lower unemployment temporarily with a higher inflation rate (Santomero and Seater, 1978).

It is understandable that policy makers in the early 1960s adopted the Samuelson–Solow (1960) views. Samuelson argued that very low unemployment was attainable in the long–run goal and concluded that there was a permanent trade-off between inflation and unemployment. In the case of South Africa, Vermeulen (2017) disagrees sharply to this conclusion and its applicability.

Lipsey (1960) concluded that if the Phillips curve is non-linear, then the position of the observed Phillips curve will vary with the dispersion of unemployment. His argument is summarized as follows. Suppose that there is more than one labour market, each market having its own identical convex Phillips curve. If unemployment is not the same in each market, then the fitted aggregate curve will lie above the individual market curves. An increase in the dispersion of unemployment will raise the aggregate curve and a decrease will lower it. In the case of South Africa, we observe the trend of big informal sector where people are formally unemployed but have employment in the less formal economy. There seem to be more people working informally than in the entire mining sector. This then suggests possible reasons why there is no linear relationships between inflation and unemployment in South Africa.

Tobin (1972) concludes that Phillips curve doctrine is a very important sense of the post-war analogue of the Keynesian wage and employment theory, while natural rate doctrine is the contemporary version of the classical position Keynes was opposing. Phillips curve doctrine implies that lower unemployment can be purchased at the cost of faster inflation.

Friedman (1976) concluded that the long-run relationship between inflation and unemployment was still under debate. During the 1960s, most economists believed that a lower average unemployment rate could be sustained if one were just willing to accept a permanently higher (but stable) rate of inflation.

Conclusions

Given the aforementioned research in relation to various economies and circumstances, it is evident that the South African economy diverges significantly from the aforementioned. Hence, after analysing the data and conclusions, and considering additional factors like exchange rate and money stock, the study concluded that the correlation between inflation and unemployment in South Africa is both non-linear and inconsequential. The current state of the economy is characterised by a significant increase in both unemployment and inflation rates, as depicted in the graph, particularly from 2019 to the present. Furthermore, the discovery is still a subject of disagreement among economists in South Africa. Various ideological factions in South Africa hold divergent beliefs and methodologies regarding the correlation between inflation and unemployment. One example is the study conducted by Jeke and Wanjuu (2021), which suggests that addressing unemployment in South Africa can be achieved by increasing the supply of and improving the quality of physical capital, which in turn enhances labour productivity. Additionally, investing in human capital and increasing real GDP can lead to more employment opportunities.

Despite discovering that the correlation between inflation and unemployment in South Africa is negligible, under the condition that all other factors remain constant, it remains a topic of discussion. In contrast to the belief that there is a significant dispute among economists about the factors that determine inflation and unemployment, the monetarist perspective suggests that changes in inflation rates in South Africa are closely linked to excessive growth in the money supply. This contradicts the Neo-Keynesian position, which asserts that variations in inflation are not influenced by the level of resource utilisation. However, the idea that there is a major immediate effect of past increases in the money supply on unemployment in South Africa is not supported. Therefore, additional study is required in this subject to provide more clarity on the correlation between inflation and unemployment in South Africa.

Acknowledgement

Author Contributions: Conceptualization, Methodology, Data Collection, Formal Analysis, Writing—Original Draft Preparation, Writing—Review And Editing by authors with equal participation. All authors have read and agreed to the published the final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

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

References

- Al-zeaud, H., & Al-hosban, S. (2015). Does Phillips curve truly exist? Empirical evidence from Jordan. *European Scientific Journal*, 11, 253–275.
- Asif, K. (2013). Factors affecting unemployment: A cross-country analysis. *International Journal of Academic Research in Business and Social Sciences*, 3, 219–236.
- Bhattacharai, K. (2016). Unemployment–inflation trade-offs in OECD countries. *Economic Modelling*, 58, 93–103.
- Buthelezi, E. M. (2023). Impact of Inflation in Different States of Unemployment: Evidence with the Phillips Curve in South Africa from 2008 to 2022. *Economies*, 11, 29. <https://doi.org/10.3390/economies11010029>
- Carlson, K. M. (1978). Inflation, Unemployment and Money: Comparing the Evidence from Two Simple Models. *Federal Reserve Bank of St. Louis Review*, 60.
- Chigozie, A. (2018). Youth Policies, Participation and Community Engagements. *International Research Journal of Social Sciences*, 7(3), 1-8.

- Chigozie, A., Lucius, B., Botchway, S., & Nwogwugwu, N. (2023). Volunteerism: A New Perspective for the Post-Covid-19 Reality in South Africa. *Africa Insight*, 52(2).
- Chris, L. (2020). South African Reserve Bank Occasional Bulletin of Economic Notes. South African Reserve Bank. OBEN/20/01, June 2020, Pretoria.
- Dornbusch, R., & Fisher, S. (1990). *Macroeconomics* (5th ed.). New York: McGraw Hill.
- Eckstein, O., & Girola, J. A. (1978). Long-term Properties of the Price-Wage Mechanism in the United States, 1891-1977. *Federal Reserve Bank of St. Louis Review*, 60, 323-333.
- Fisher, I. (1973). A Statistical Relation between Unemployment and Price Changes. *International Labor Review*, 13(6), 185-192.
- Friedman, M. (1977). Nobel Lecture: Inflation and Unemployment. *Journal of Political Economy*, 85, 451-472.
- Hansen, B. E. (2000). Sample splitting and threshold estimation. *Econometrica*, 68, 575-603.
- Harris, M., & Irrshad, K. (2018). Inflation Targeting Monetary Policy and Unemployment in South Africa. *Journal of Economics and Behavioral Studies*, 10(4), 88-96.
- Hodge, D. (2002). Inflation versus unemployment in South Africa: Is there a trade-off? *South African Journal of Economics*, 70, 417-433.
- Ibrahima, C., Rasmane, O., & Amadou N. R. Sy. (2023). Unbearable Costs: When is inflation impeding job creation? Evidence from Sub-Saharan Africa. *International Monetary Fund Working Paper*, WP/23/46.
- Idalu, R. (2015). Impact of Inflation on Economic Growth. North Cyprus: Eastern Mediterranean University. Dissertation-MSc.
- IMF, WB & OECD. (2023). Data basis: International Monetary Fund, World Bank and OECD Inflation CPI indicator. Retrieved from <https://www.worlddata.info/africa/southafrica/inflationrates.php> on January 10, 2023.
- IMF. (2022). Regional Economic Outlook: Sub-Saharan Africa: Living on The Edge. October 2022. International Monetary Fund, Washington, DC.
- Inflation EU. (2023). South Africa historic inflation. Retrieved from <https://www.inflation.eu/en/inflation-rates/south-africa/historic-inflation/cpi-inflation-south-africa.aspx> on January 12, 2023.
- International Labour Organization (ILO). (2022). World Employment and Social Outlook, Trends 2022. International Labour Office, Geneva.
- Issing, O. (2004). Inflation targeting: A view from the ECB. *Federal Reserve Bank of St. Louis Review*. *Journal of Economics*, 86(4), 169-179.
- Jeke, L., & Wanjuu, L. Z. (2021). The economic impact of unemployment and inflation on output growth in South Africa. *Journal of Economics and International Finance*, 13(3), 117-126. <https://doi.org/10.5897/JEIF2021.1124>.
- Kelebogile K., & Ravinder, R. (2021). Inflation Targeting and Economic Growth in South Africa – An Econometric Analysis. *Oeconomica*, 17(3), 161-180. *Acta Universitatis Danubius*.
- Lipsey, R. G. (1960). The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1862-1957: A Further Analysis. *Economica*, 27, 1-32.
- Lipsey, R. G., Courant, P. N., Purvis, D. D., & Steiner, P. O. (1993). *Economics* (10th ed.). New York: Harper Collins College Publishers.
- Macrotrends. (2023). South Africa unemployment rate. Retrieved from <https://www.macrotrends.net/countries/ZAF/south-africa/unemployment-rate> on January 11, 2023.
- McCallum, B. T. (1980). Rational expectations and Macroeconomic Stabilization Policy. *Journal of Money Credit and Banking*, 12(2), 716-746.
- Meltzer, A. H. (1977). Anticipated Inflation and Unanticipated Price Change: A Test of the Price-Specie Flow Theory and the Phillips Curve. *Journal of Money, Credit, and Banking*, 9, 182-205.
- Modigliani, F., & Papademos, L. (1976). Monetary Policy for the Coming Quarters: The Conflicting Views. *New England Economic Review*, 2(35), March/April 1976.
- Mokgola, A. (2015). The effects of inflation targeting on economic growth in South Africa. University of Limpopo. Master of Commerce.
- Montoriol, G. J. (2015). Growth without inflation: what does the Phillips curve tell us? *Macroeconomics Unit, Strategic Planning and Research Department*.
- Nasr, A. B., Mehmet, B., Ahdi, N. A., Goodness, C. A., Rangan, G., & Reneé, V. E. (2015). Causality between inflation and inflation uncertainty in South Africa: Evidence from a Markov-switching vector autoregressive model. *Emerging Markets Review*, 24, 46-68.
- National Development Plan (NDP). (2013). National Development Plan 2030. National Treasury Republic of South Africa. Communications Directorate, National Treasury. Pretoria.
- Nela, D., Muja, A., & Metin, H. (2019). Assessing Macroeconomic Stability and Labour Market Efficiency in Kosovo: A Competitiveness Approach. *IFAC-Papers OnLine*, 52(25), 142-147.
- Nobrega, W. C. L., Besaria, C. N., & Felipe, A. O. (2020). Unemployment rate and wage growth in Brazil: Evidence from a Markov-switching model. *Economia Aplicada*, 24, 171-194.
- Okafor, I. G., Ezeaku, H. C., & Ugwuegbe, S. U. (2016). Responsiveness of unemployment to inflation: Empirical evidence from Nigeria. *International Journal of Scientific Research in Science and Technology*, 2, 173-179.

- Peter, B. C., & Douglas, L. (1997). Phillips curves, Phillips lines and the unemployment costs of overheating. IMF working paper of the International Monetary Fund. Research Department International Monetary Fund.
- Phillips, A. W. (1958). The Relation between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957. *Economica, New Series*, 25(100), 283-299.
- Rocheteau, G., Peter, R., & Randall, W. (2007). Inflation and unemployment in general equilibrium. *The Scandinavian Journal of Economics*, 109, 837–855.
- Samuelson, P. A., & Solow, R. M. (1960). Analytical Aspects of Anti-inflation Policy. *American Economic Review*, 50, 177-194.
- Sanomero, A. M., & Seater, J. J. (1978). The Inflation-Unemployment Trade-Off: A Critique of the Literature. *Journal of Economic Literature*, 16(2), 499-544.
- Sargent, T. J. (1976). A classical Macro-econometric Model for the United States. *Journal of Political Economy*, 84, 207–237.
- Stein, J. L. (1974). Unemployment, Inflation and Monetarism. *American Economic Review*, 64.
- Stein, J. L. (1978). Inflation, Unemployment, and Stagflation. *Journal of Monetary Economics*, 4, 193–228.
- Stephanie, S. (2015). Macroeconomic policy in times of slow growth and crisis. Policy Brief: 6/2015. Trade & Industrial Policy Strategies (TIPS). September 2015.
- Suna, K., & Muzhgan, A. (2020). The Causal Relationship between Unemployment and Inflation in G6 Countries. *Advances in Economics and Business*, 8(5), 303-309. DOI: 10.13189/aeb.2020.080505.
- Tobin, J. (1972). Inflation and Unemployment. *American Economic Review*, 52, 18.
- Tomáš, K., Veronika, Š., & Dominik, D. (2022). Evaluation of inflation and unemployment and plotting the Philips curve of the Czech Republic. *SHS Web of Conferences*, 132, 01007. <https://doi.org/10.1051/shsconf/202213201007>
- Umaru, A., Manu, D., & Salihu, M. (2013). An empirical investigation into the effect of unemployment and inflation on economic growth in Nigeria. *Interdisciplinary Journal of Research in Business ISSN*, 2046, 7141.
- Vermeulen, J. C. (2017). Inflation and unemployment in South Africa: Is the Phillips curve still dead? *Southern African Business Review*, 21, 20–54.

Publisher's Note: SSBFNET stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



© 2024 by the authors. Licensee SSBFNET, Istanbul, Turkey. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

International Journal of Research in Business and Social Science (2147-4478) by SSBFNET is licensed under a Creative Commons Attribution 4.0 International License.