

Influence of Inflation on the Economic Growth of Saudi Arabia

Dr Rachida Ben Jazia^{1*}, Dr Nahed Khabbouchi¹

¹Jazan University, Al Maarefah Rd, Jazan Saudi Arabia

DOI: [10.36348/sjbms.2024.v09i04.002](https://doi.org/10.36348/sjbms.2024.v09i04.002)

| Received: 11.03.2024 | Accepted: 19.04.2024 | Published: 23.04.2024

*Corresponding author: Dr Rachida Ben Jazia
Jazan University, Al Maarefah Rd, Jazan Saudi Arabia

Abstract

Primary factors considered that influence inflation movement can experience significant changes due to the COVID-19 pandemic. This research focuses on examining macroeconomic factors which influence the inflation rate in Saudi Arabia which is critical for development and adjusting a suitable policy response. Saudi Arabia's changing inflation trends are also affected by its internal and external factors including domestic demands, net spending of Government, and liquidity along with exchange rate movements and imported inflation. This research paper focuses on providing insights regarding previous studies conducted on this topic by adopting different approaches. The approach utilized in this study reflects mainly non-oil revenues like value-added tax along with levies related to expatriates on inflation. ARDL (Autoregressive Distribution Lag Model) has been applied instead of the Vector Error Correction model considering its robustness for 40 quarter sample sized integrated in this study. From the results, it has been confirmed that the inflation Movement in Saudi Arabia is more inclined to external factors than domestic factors.

Keywords: Net government spending, imported inflation, autoregressive distribution lag model, Saudi Arabia, inflation determinants.

Copyright © 2024 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution **4.0 International License (CC BY-NC 4.0)** which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Comprehending the interconnectedness between inflation and economic growth occupies a distinct position within the intricate network of economic elements that influence the success of a nation. Saudi Arabia is frequently associated with being one of the dominant economies in the Middle East that has undergone an economic transformation in the last 10 years because of several external influences. This study seeks to provide a comprehensive understanding of the interplay between inflation and its influence on the economic growth of Saudi Arabia. It accomplishes this by analyzing a decade-long investigation of the economic state of the kingdom conducted by Mahmood & Zamil, 2019 [1]. The Saudi Arabian economy relies predominantly on the oil industry, which is susceptible to several internal and foreign factors that impact its overall economic performance. The nation has experienced substantial changes because of global movements, alterations in local policies, and fluctuations in oil prices, all of which have been influenced by the volatility of its oil business. Comprehending the

correlation between inflation and economic growth is essential, as it has a substantial impact on consumer behavior, investment choices, and the overall economic stability of a nation (Almalki & Batayneh, 2015) [2].

Conducting a study on this topic is crucial for comprehending the correlation between inflation and economic growth, which is essential for economists, investors, and policymakers. Inflation, when it occurs at a modest rate, is generally seen as a normal consequence of economic expansion. However, if inflation becomes excessive and unpredictable, it can have negative impacts on investment choices, the buying power of consumers, and the overall stability of the economy (Alsabban *et al.*, 2023) [3]. Hence, it is crucial to undertake a thorough examination of the impact of inflation on the economic development of Saudi Arabia, as this can provide detailed insights into policy-making and strategic economic planning for the nation. The analysis of the worldwide inflation rate and its enduring presence in a high economic climate is a very intricate topic now under discussion in the business world. This

subject has garnered substantial acknowledgment as a result of escalating inflation rates in recent decades throughout the majority of developed and developing economies.

Analysis of the primary causes of inflation and its associated patterns reveals that events such as the COVID-19 pandemic and the subsequent economic decline have significantly contributed to the substantial increase in inflation rates since the beginning of 2020. This study re-examines the primary macroeconomic factors that contribute to the increase in fashion in Saudi Arabia, as they play a crucial role in formulating appropriate policy measures to address economic volatility resulting from inflation. To gain a comprehensive understanding of how inflation affects the economic growth of Saudi Arabia, it is crucial to analyze the worldwide implications of inflation (Oxford Business Group, 2023) [4]. According to statistics, the inflation rate surpassed the target set by central banks in most countries worldwide. The abrupt deviation of inflation from its initial trajectory has presented a substantial peril, particularly in relation to the economy including enterprises, government, and people. Continuous inflationary growth has likely elevated long-term inflation expectations, hence influencing present patterns and leading to sustained higher levels of inflation (Agarwal & Kimball, 2022) [5]. Based on the aforementioned analysis, it has been seen that high inflation rates have become a prevailing trend that can only be managed by the deployment of highly assertive and arduous policies.

LITERATURE REVIEW

Given the ongoing fluctuation in inflation rates, an increasing number of studies have been undertaken to examine the factors influencing inflation in both developing and developed nations. Nevertheless, there is a scarcity of comprehensive research that specifically addresses inflation and its ramifications in Saudi Arabia. An example is the examination of the internal and external factors that impact inflation rates in Saudi Arabia (Aladangady *et al.*, 2022) [6]. The results of this research suggest that inflation in this country is mostly driven by external factors, such as global inflation rates and variations in the value of the US dollar. This is in line with the significant level of economic openness in Saudi Arabia. Reports indicate that economists worldwide successfully identified the causes of the significant inflationary impact in 2022, attributing it to a combination of overlapping influences. Regarding the limitations of the supply chain network, the pandemic had two distinct effects on the global supply chain, as discussed by Alnefae (2018) [7]. The implementation of mobility restrictions and lockdowns in 2020 and 2021 during the early stage of the pandemic has significantly disrupted the global supply chain, resulting in temporary shortages of supplies.

The study examines the factors that influence inflation in Saudi Arabia over both the long and short term. It utilizes methodologies such as the cointegration approach, which incorporates variables such as money supply, exchange rate, output gaps, and global independent variables. According to the findings of the studies, external variables play a significant role in causing inflation over a long period, whilst internal factors within the country have a stronger influence on inflation in the near term (Bokhari, 2020) [8]. Research on the impact of internal and external factors on inflation in Saudi Arabia suggests that global prices and currency rates have a greater influence on inflation than domestic factors such as money supply and non-oil GDP. Based on extensive research on the impact of inflation on the economic growth of Saudi Arabia, several significant factors have been identified as major contributors. These include world oil prices, exchange rates, trade openness, capital account openness, output gap, and government spending.

The study on inflation in Saudi Arabia also investigates the correlation between inflation and unemployment in the country by employing the calculation of the Phillips curve. The study's updated findings reveal a lasting correlation between inflation and unemployment. However, the vector error results suggest that there is no immediate influence of unemployment on inflation in the short term (Bonatti *et al.*, 2022) [9]. Researchers have examined the factors that influence inflation in Saudi Arabia using a basic regression model. The model includes variables such as the currency rate, oil prices, money supply, export values, and unemployment as explanatory factors. Examination of this has uncovered the statistical importance of all these explanatory factors, except for unemployment. Although Saudi Arabia faces inflationary pressures as a result of uncertainty in global economic conditions, its robust economy is well-positioned to achieve substantial growth (Cutler & Summers, 2020) [10]. By 2030, the government aims to achieve economic growth through the implementation of its diversification program. The nation seeks to revolutionize its sectors and foster ingenuity in its enterprises to consolidate its global standing. Moreover, the country's dedication to modernizing its energy industry, aiming to reach a capacity of 650 GW of renewable energy by 2060, demonstrates a commitment to a prosperous future and the expansion of its economy.

METHODOLOGY - DATA COLLECTION – ANALYSIS

The Kingdom of Saudi Arabia's economic journey from 2018 to 2022 is a narrative of resilience and recovery amid global challenges. This period encapsulates a significant economic event—the COVID-19 pandemic—that led to a global economic slowdown. Saudi Arabia's economy, being no exception, faced its ramifications, reflected in the GDP growth rates during these years. The following analysis and accompanying

graph provide an overview of the country's GDP performance, underscoring the impacts of domestic policies and international economic trends.

In 2018 and 2019, the Saudi economy exhibited modest growth, indicative of a stable pre-pandemic environment. However, in 2020, the nation's GDP contracted sharply, a direct consequence of the pandemic's disruptive effects on oil prices and economic activity. The subsequent years witnessed a remarkable turnaround, as strategic economic reforms and a global

recovery in oil demand fostered a robust rebound. The graph tracking GDP growth from 2018 to 2022 tells the story of an economy that has navigated through a period of unprecedented volatility, emerging with a trajectory that suggests growth and stability.

This introduction sets the stage for a deeper dive into the specifics of the Saudi economy's performance, with a focus on the interplay between external shocks, policy responses, and the inherent strengths of the country's economic structure.

Table 1: GDP growth rate of Saudi Arabia from 2018 to 2022

Year	GDP Growth Rate (%)
2018	2.76
2019	0.83
2020	-4.34
2021	3.92
2022	8.74

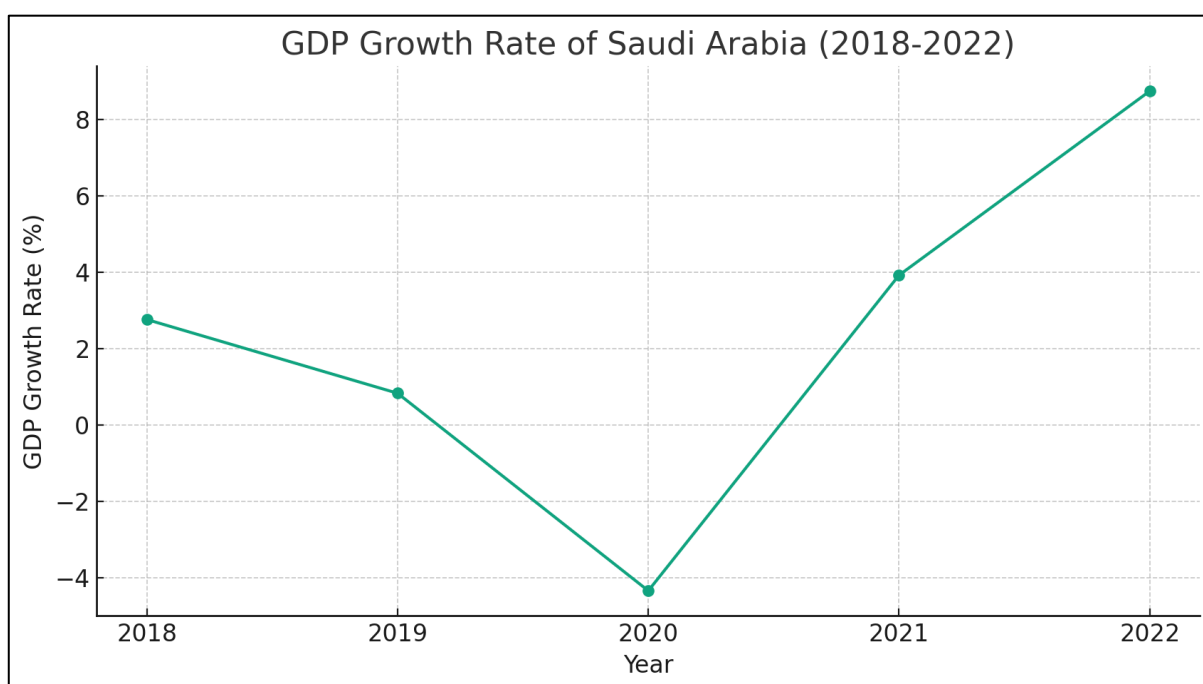


Figure 1: GDP Growth Rate of Saudi Arabia from 2018 to 2022

The line graph (Figure 1) illustrates the GDP growth rate of Saudi Arabia from 2018 to 2022. The graph depicts Saudi Arabia's economic performance from 2018 to 2022, highlighting the volatility in GDP growth rates during this period. The economy experienced a significant contraction of -4.34% in 2020,

which aligns with the global economic downturn due to the COVID-19 pandemic. This was followed by a notable recovery, with 2021 showing a growth rate of 3.92%, and 2022 marking a substantial increase with a growth rate of 8.74%, indicating a strong rebound in the nation's economic activity.

Table 2: GDP % over the years

Years	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
GDP%	2.76	0.83	-4.34	3.92	8.74	0.76	3.96	4.24	3.28	3.3	3.09

Table 2 displays the annual percentage change in GDP from 2018 to 2028. It provides a visual representation of the economy's performance over the

years, with a notable dip in 2020 followed by a period of recovery and stabilization.

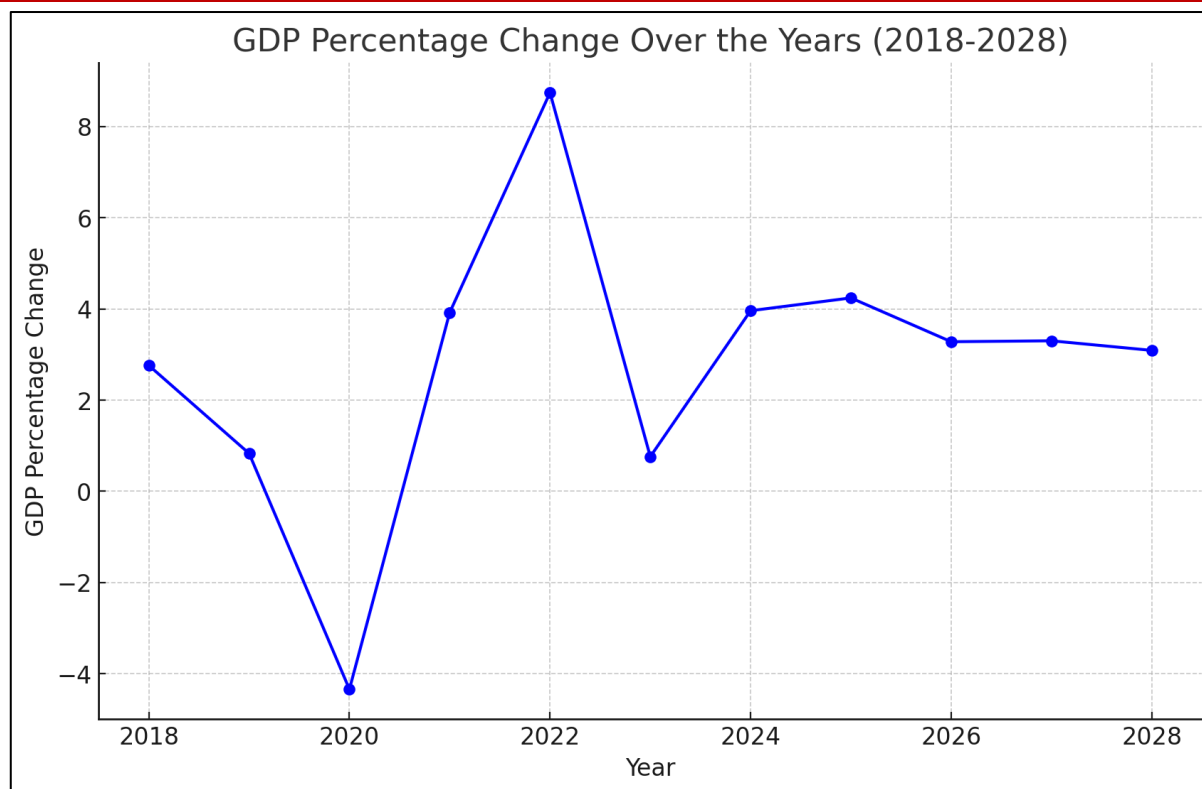


Figure 2: Annual GDP Percentage Change from 2018 to 2028

The graph (Figure 2) traces the fluctuations in the GDP growth rate over a decade, highlighting the volatility experienced in 2020 with a sharp decline, followed by a significant rebound in 2022. The subsequent years display a more consistent pattern of growth, with rates stabilizing between 3% to 4%. This trend analysis is vital for economic forecasting and policy planning, offering insights into the health and trajectory of the economy.

Statistics shown above indicate that the rate of inflation in Saudi amounts to an average of 2.47% in 2022 in comparison to its previous year. The economy of Saudi Arabia depends majorly on the manufacturing and exportation of oil and petroleum. Looking at the distribution of global oil reserves by country it has been estimated that only Venezuela acquires a higher share in global oil reserves as compared to Arab States (Liadze *et al.*, 2022) [11]. The time series analysis provided above indicates that the overall economic condition of Saudi Arabia is quite good due to the increased number of oil reserves in the country over the last two decades which has led to improved gross domestic products (Hemrit, 2020) [12]. Results also indicate a stable unemployment rate along with an effective trade balance which has shown a steady upward trend with a vital jump in 2011. Moreover, the national debt in relation to “Gross Domestic Product (GDP)” in Saudi Arabia has also decreased dramatically over the last few decades (Liu *et al.*, 2022) [13]. Saudi Arabia is considered to be one of the countries with the highest oil consumption trends worldwide with a ranking of share of major consuming

countries in global oil consumption which is led by the United States.

Time series indication from 1960-2016 using a vector error correction model considering various variables like money supply, government spending, and others indicates different results. For instance, the nominal exchange rate is indicated to be significant in the long run while trading partner inflation is also significant in the long run (Naseem, 2018) [14]. Money supply is significant in the short run while government spending on its capital is significant in the long run. Demand considering real GDP is also significant in the long run of economic growth in Saudi Arabia. The table indicating the GDP growth rate in Saudi Arabia suggests a long jump between the annual GDP rate of 2021 and 2022. A positive GDP indicates an effective overall economic output of the country over this period (Tien, 2021) [15]. Positive GDP also signifies effective economic expansion and reflects a significant increase in the production and consumption of goods and services in the country (Nersisyan & Wray, 2022) [16]. This economic growth also leads to improved employment opportunities as businesses can expand to meet the rising demands for goods and services. This can also contribute to improved living standards of people in Saudi Arabia. The study implements an empirical model that is used by considering both external and internal forces that can have potential impacts on inflation rates in Saudi Arabia (Niermann & Pitterle, 2021) [17]. Variables used in these studies are the consumer price index of Saudi Arabia as the dependent variable while external forces

including imported inflation (P) nominal effective exchange rate (NEER).

On the other hand, domestic factors include money supply (M3), net government spending (G), and economic activities (PMI). Variables used in the study are based on a quarterly frequency which have been transformed into natural algorithms (Rees & Rungcharoenkitkul, 2021) [18]. Therefore the long term in flash and rate is assumed to be dependent on the set of independent variables. The following equation 1 indicates the same:

$$P = f(P^*, NEER, G, M3, PMI)$$

From equation 1 it can be stated that this equation can be rearranged in a natural logarithm in which X represents the vector of external forces, M showcases the vector of domestic forces and D indicates dummies of 2018 and 2020.

$$\ln Pt = \alpha + \ln \sum \beta t X_t + \ln \sum \beta t M_t + \sum \beta t D_t + \epsilon t k t = 1 \text{ (Equation 2)}$$

More specifically, the equation 2 can also be demonstrated as:

$$\ln Pt = \alpha + \ln \sum (\beta t P^* t \beta t NEER t) + \ln \sum (\beta t M3 t \beta t G t \beta t PMI t) + \sum (\beta t D(Q1,2018) \beta t D(Q2,2020)) \text{ (Equation 3)}$$

Additionally, in order to evaluate the ARDL following specifications are created as given in Equation 4:

$$\begin{aligned} d \ln Pt &= a0 + d \ln \beta i Pt - 1 \\ &+ d \ln \sum (\beta i P^* t - j \beta i NEER t - j) + d \ln \sum (\beta i M3 t - j \beta i G t - j \beta i PMI t - j) + D1 + D2 + \lambda ECT t - 1 + \epsilon \end{aligned}$$

Before testing this model, the correlation to check multicollinearity has also been tested (Table 3). The table provided below showcases the correlation between variables that are less than 0.5 which indicates a weak relationship among explanatory variables considered in this study.

Table 3: Correlation test for Economic Indicators

	P	P*	NEER	PMI	M3	G
P	1					
P*	-0.12513	1				
NEER	-0.3914	0.046668	1			
PMI	-0.17106	0.258457	-0.20363	1		
M3	0.35226	0.046285	0.067482	0.91944	1	
G	0.044752	-0.12305	-0.12305	-0.15583	-0.27957	1

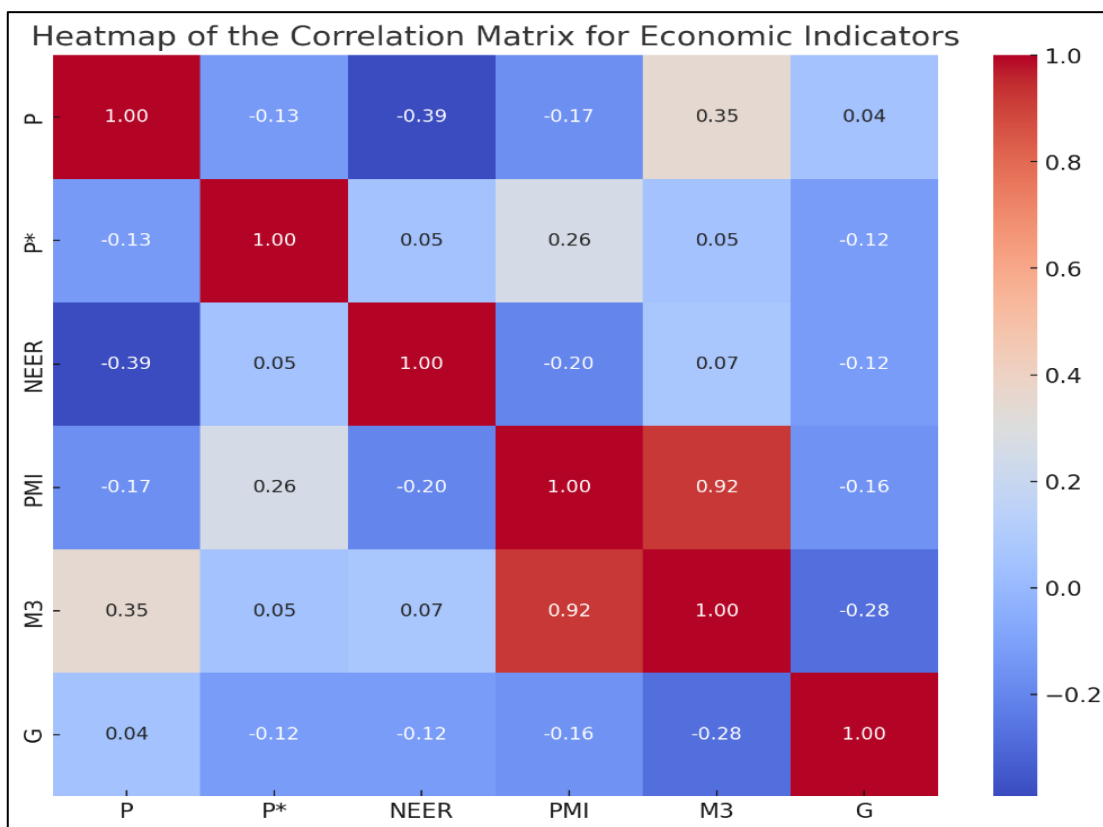


Figure 3: Heatmap of the Correlation Matrix Indicating the Relationship Strength Between Economic Indicators

Heatmap Based on The Correlation Values Presented in Table 3:

The heatmap (Figure 3) displays the correlation coefficients among six economic indicators. The values range from -1 to 1, where 1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 indicates no correlation. High positive values are observed between M3 and PMI, suggesting a strong positive relationship. In contrast, a notable negative correlation is seen between NEER and P, as well as between G and M3, indicating an inverse relationship between these variables. The diversity of the correlation

values signifies the complex interplay between these economic measures.

Moreover, in order to test the heteroscedasticity following assumptions have been used for simplicity:

$$"y = X\beta + e"$$

In case these assumptions are satisfied the data variance is not considered heteroskedastic which indicates the preferred outcomes as given in the table below:

Table 4: Summary of Key Statistical Measures and Their Significance Levels

Statistic	Value	Distribution	P-value
F-statistics	324	F (23,6)	> 0.05
Obs*R-squared	739	Chi-Squared (23)	< 0.01
Scaled explained SS	406	Chi-Squared (23)	< 0.001
Breusch-Pagan-Godfrey Statistic	22.26	Chi-Squared (3)	5.75E-05

Table 4 summarizes important statistical measures from a regression analysis. The F-statistics, with a value of 324 and a non-significant p-value (> 0.05), indicate that the model may not be significantly better than an intercept-only model. The Obs*R-squared value of 739 suggests a strong goodness of fit, with a high level of significance (< 0.01). The Scaled explained SS, valued at 406, demonstrates substantial explanatory

power with a very high level of significance (< 0.001). Lastly, the Breusch-Pagan-Godfrey test statistic, at 22.26 with a p-value of approximately 0.0000575, strongly indicates the presence of heteroskedasticity. This means that the variance of the errors is not constant across observations, an important consideration for the validity of the model and the reliability of inferences drawn from it.

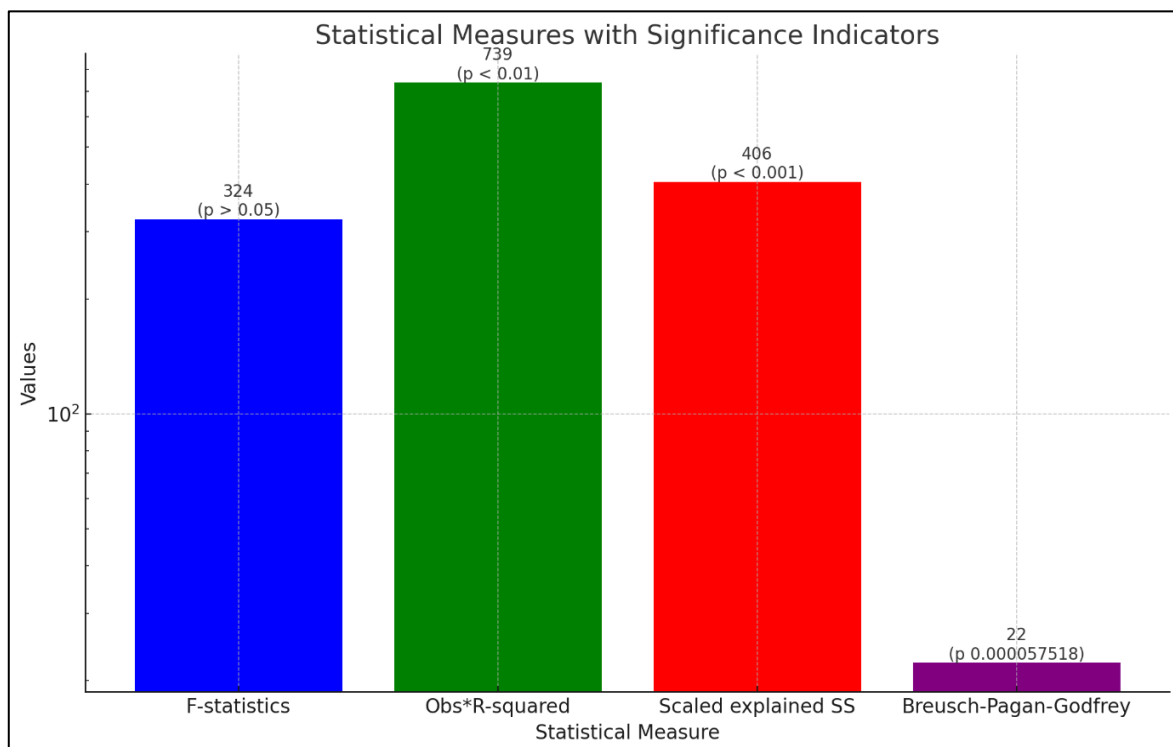


Figure 4: Bar Graph Representing Statistical Measures with P-Values

Summary of Key Statistical Measures and Their Significance Levels:

The bar graph (Figure 4) visually represents the key statistical measures from Table 4, including F-statistics, Obs*R-squared, Scaled explained SS, and the

Breusch-Pagan-Godfrey statistic, along with their corrected p-values. Each bar corresponds to a different statistical measure, with its value indicated on the vertical axis and the p-value labeled above the bar. The

use of a logarithmic scale helps to accommodate the wide range of values.

RESULTS AND DISCUSSION

After running the above model, the determinants of inflation estimated in the long run in Saudi Arabia are provided in the table below:

Table 5: Drivers of Inflation in the long run

	Coefficient	Impact	P-value
Domestic factors:			
Demand (PMI)	0.0937	9%	0.0249**
Net Government Spending (G)	0.1815	18%	0.0152**
Money Supply (M3)	0.0072	0.7%	0.0447**
External Factors:			
Imported inflation (P*)	0.2990	29%	0.0580*
Nominal effective exchange rate (NEER)	-0.2648	-27%	0.0230**

Table 5 titled "Drivers of Inflation in the Long Run" presents a comprehensive analysis of the factors influencing inflation, categorized into domestic and external factors. Each factor is evaluated based on its coefficient, impact percentage, and statistical significance as indicated by the p-values.

In the domestic category, the factors include Demand (as measured by the Purchasing Managers' Index, PMI), Net Government Spending (G), and Money Supply (M3). The coefficients for these variables suggest their respective contributions to inflation. For example, a positive coefficient for Demand (PMI) and Net Government Spending (G) indicates a direct relationship with inflation, meaning as these factors increase, inflation tends to rise. Conversely, the Money Supply (M3) shows a relatively smaller coefficient, suggesting a lesser but still significant effect.

In the external factors category, Imported Inflation (P*) and the Nominal Effective Exchange Rate

(NEER) are considered. The coefficient for Imported Inflation is positive and substantial, implying a strong influence on domestic inflation. The NEER's negative coefficient indicates an inverse relationship; as the NEER increases, implying a stronger domestic currency, inflation tends to decrease.

The p-values in the table, marked with asterisks, denote the statistical significance of each coefficient, with '**' indicating a significance level of less than 5% and '*' indicating less than 10%. These significance levels reinforce the reliability of the coefficients in predicting inflationary trends.

Table 5 provides valuable insights into the various domestic and external elements that shape the inflationary landscape over the long run, offering a nuanced understanding essential for policymakers and economists in formulating effective monetary and fiscal strategies.

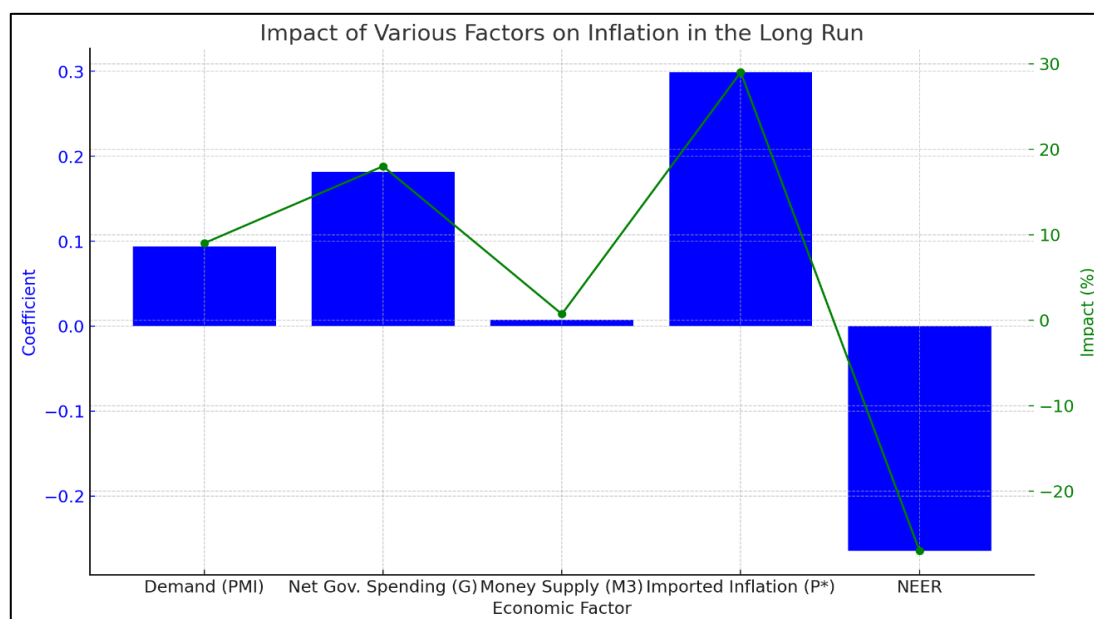


Figure 5: Coefficients and Impact of Economic Factors on Long-term Inflation

The bar graph and line plot in Figure 5 illustrate the impact of various economic factors on long-term inflation, as detailed in Table 5. The bar graph represents the coefficients of each factor, while the line plot shows the percentage impact on inflation.

Table 5 titled 'Drivers of Inflation in the Long Run' analyzes various factors affecting inflation, encompassing both domestic and external influences. Domestic factors include demand (represented by PMI), net government spending (G), and money supply (M3). External factors are imported inflation (P*) and the nominal effective exchange rate (NEER). The coefficients reflect the degree of influence each factor has on inflation. Notably, Net Government Spending and Imported Inflation have significant coefficients of 0.1815 and 0.2990, respectively, indicating a strong influence on inflation. The NEER has a negative coefficient (-0.2648), suggesting an inverse relationship with inflation. The impact percentages align with these coefficients, with Imported Inflation and NEER showing the most substantial positive and negative impacts, respectively. The p-values, mostly below 0.05, indicate that these relationships are statistically significant. This analysis is crucial for understanding the multi-faceted drivers of inflation in a long-term economic context.

Based on the results obtained it can be stated that imported inflation is estimated to be one of the most dominant factors in the long-term inflation rate in Saudi Arabia with an estimated value of around 29%. For instance, if considering the inflation rate at 1% then 0.29% can be attributed to imported inflation. This in turn can be attributed to the higher dependency of the inflation rate in Saudi Arabia on imports (Revoredo-Giha *et al.*, 2022) [19]. On the other hand, looking at the degree of its dependency on imports, the share of non-oil GDP can be considered. On average in the last 5 years, Saudi Arabia has recorded around 37% of total imports as a part of non-oil GDP as compared to an average of 24% of G20 according to World Bank data. This suggests that the economy of Saudi Arabia is largely dependent on imports and fluctuations and this factor can affect its economic growth drastically (Williams, 2018) [20]. Similarly, considering the second dominant factor such as exchange rate fluctuations by an inverse relationship accounts for around 27%. This represents that the exchange rates have a significant influence on the inflation rate in Saudi Arabia more specifically, through the purchasing power of its currency such as Saudi Riyal (Voumik *et al.*, 2022) [21]. This currency is usually pegged to the US dollar which represents that if the dollar is stronger, the Riyal will also be strong.

Net spending of its government is also an important factor that impacts almost 18% of its inflation rates. This indicates that the inflation in Saudi Arabia is partly enforced by government spending such as through public sector wages, welfare programs, and infrastructure projects which has developed demand-pull

inflation (Futi *et al.*, 2016) [22]. Additionally, domestic demand is also significant which accounts for 9% of its economy (Fernandes *et al.*, 2021) [23]. Studies suggest that the domestic demand has limited pressure on business organizations and producers in Saudi Arabia provided that higher domestic demand is met effectively with high imports (Yang *et al.*, 2022) [24]. It can be stated in this aspect that imported inflation has more impact on the overall inflation rates of Saudi Arabia as compared to domestic demands.

It can also be determined from the analysis that the money supply records the lowest impact on Saudi Arabia's economy which is about 1%. The study also considered the velocity of money in Saudi Arabia which has identified that the average 10-year velocity of money in the non-oil economy is around 0.9 as compared to an average of 1.5 in developed countries like the US (Nyambe & Kanyeumbo, 2015) [25]. In emerging countries like Saudi Arabia, the value of velocity of money below 1 indicates that a portion of its liquidity is not being utilized in the economy and is being saved or invested in financial markets (Nyangarika *et al.*, 2018) [26]. Moreover, another explanation for low velocity can be provided as a high level of remittance which usually leaks the liquidity outside of an economy (Rosnawintang *et al.*, 2021) [27].

CONCLUSION

This study examines different factors influencing inflation in Saudi Arabia using the Autoregressive Distributed Lag (ARDL) model from 2013 to 2022. Based on the conclusions of this research, it can be inferred that domestic variables have a relatively minor influence on inflation, contributing to approximately 28.5% of the overall inflation rate. Conversely, the inflation movement in Saudi Arabia is primarily influenced by foreign variables, which account for approximately 55% of its inflation. Furthermore, the remaining 16% of inflation can be seen as a discernible element, such as the combined impact of government policies such as the introduction of VAT, adjustments in energy prices, and levies on expatriates. The study's findings align with previous research on this subject, which has also shown that external variables have a more significant influence on the components that determine inflation in Saudi Arabia. Conducting a study on this subject can contribute to a more thorough comprehension of the factors that influence inflation in Saudi Arabia. This, in turn, can assist policymakers in formulating more efficient strategies to control inflation.

Authors' Contribution

Ms. Rachida conceptualized the research, conducted the analysis, and prepared the draft transcript. Ms. Nahed worked on the literature review and revised the draft. Both authors collectively finalized the article.

Conflict of Interest: Authors certify that they have no affiliations with or involvement in any organization or

entity with any financial interest or non-financial interest in the subject matter or materials discussed in the manuscript.

Funding Acknowledgement: The authors have not received any financial support for the research, authorship, and/or for the publication of the article.

REFERENCES

- Mahmood, H., & Zamil, A. (2019). Oil price and slumps effects on personal consumption in Saudi Arabia. *International Journal of Energy Economics and Policy*, 9(4), 12-15.
- Almalki, A. M., & Batayneh, K. I. (2015). The relationship between inflation and financial development in Saudi Arabia. *The Journal of Developing Areas*, 49(6), 321-332.
- Alsabban, S., Alghamdi, B., & Alhodaithy, F., (2023). Inflation in Saudi Arabia: Revisiting the Macroeconomic Determinants. [online] Retrieved from: https://www.researchgate.net/publication/373247174_Inflation_in_Saudi_Arabia_Revisiting_the_Macroeconomic_Determinants [Retrieved at 27 November 2023]
- Oxford Business Group, (2023). The Report: Saudi Arabia 2023. [online] Retrieved from: <https://oxfordbusinessgroup.com/reports/saudi-arabia/2023-report/> [Retrieved at 27 November 2023]
- Agarwal, R., & Kimball, M. (2022). Will inflation remain high. IMF Finance & Development. June.
- Aladangady, A., Cho, D., Feiveson, L., & Pinto, E. (2022). Excess Savings during the COVID-19 Pandemic. FEDS Notes. Washington: Board of Governors of the Federal Reserve System, October 2022.
- Alnefaee, S. M. (2018). Short and long-run determinants of inflation in Saudi Arabia: a cointegration analysis. *International Journal of Financial Research*, 9(4), 35-42.
- Bokhari, A. A. (2020). The twinning of inflation and unemployment phenomena in Saudi Arabia: Phillips curve perspective. *Contemporary Economics*, 14(2), 254-271.
- Bonatti, L., Fracasso, A., & Tamborini, R. (2022). What to expect from inflation expectations: theory, empirics and policy issues. Università degli studi di Trento, Dipartimento di economia e management.
- Cutler, D. M., & Summers, L. H. (2020). The COVID-19 pandemic and the \$16 trillion virus. *Jama*, 324(15), 1495-1496.
- Liadze, I., Macchiarelli, C., Mortimer-Lee, P., & Sánchez-Juanino, P. (2022). The economic costs of the Russia–Ukraine conflict (Policy Paper No. 32). *National Institute of Economic and Social Research (NIESR)*.
- Hemrit, W. (2020). Determinants driving Takaful and cooperative insurance financial performance in Saudi Arabia. *Journal of Accounting & Organizational Change*, 16(1), 123-143.
- Liu, F., Ma, Z., Wang, Z., & Xie, S. (2022). Trade-off between COVID-19 pandemic prevention and control and economic stimulus. *International Journal of Environmental Research and Public Health*, 19(21), 13956.
- Naseem, S. (2018). Macroeconomics determinants of Saudi Arabia's inflation 2000-2016: evidence and analysis. *International Journal of Economics and Financial Issues*, 8(3), 137-141.
- Tien, N. H. (2021). Relationship between inflation and economic growth in Vietnam. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(14), 5134-5139.
- Nersisyan, Y., & Wray, L. R. (2022). What's Causing Accelerating Inflation: Pandemic or Policy Response?. Levy Economics Institute, Working Papers Series, 1003.
- Niermann, L., & Pitterle, I. A. (2021). The COVID-19 crisis: what explains cross-country differences in the pandemic's short-term economic impact? University Library of Munich, Germany.
- Rees, D., & Rungcharoenkitkul, P. (2021). Bottlenecks: causes and macroeconomic implications. *BIS Bulletin*, 48.
- Revoredo-Giha, C., Akaichi, F., & Costa-Font, M. (2022). Producer price inflation for food and drink: the role of fuel hikes and the war in Ukraine. *LSE Business Review*.
- Williams, J. (2018). Monetary policy strategies for a low-neutral-interest-rate world: remarks at the 80th Plenary Meeting of the Group of Thirty, Federal Reserve Bank of New York, New York City (No. 303). Federal Reserve Bank of New York.
- Voumik, L. C., Rahman, M. H., & Hossain, M. S. (2022). Investigating the subsistence of Environmental Kuznets Curve in the midst of economic development, population, and energy consumption in Bangladesh: Imminent of ARDL model. *Heliyon*, 8(8).
- Ftiti, Z., Guesmi, K., Teulon, F., & Chouachi, S. (2016). Relationship between crude oil prices and economic growth in selected OPEC countries. *Journal of Applied Business Research (JABR)*, 32(1), 11-22.
- Fernandes, C., Borges, M. R., & Caiado, J. (2021). The contribution of digital financial services to financial inclusion in Mozambique: an ARDL model approach. *Applied Economics*, 53(3), 400-409.
- Yang, L., Bashiru Danwana, S., & Issahaku, F. L. Y. (2022). Achieving environmental sustainability in Africa: the role of renewable energy consumption, natural resources, and government effectiveness—evidence from symmetric and asymmetric ARDL models. *International Journal of Environmental Research and Public Health*, 19(13), 8038.
- Nyambe, J. M., & Kanyeumbo, J. N. (2015). Government and household expenditure

- components, inflation, and their impact on economic growth in Namibia. *European Journal of Business, Economics and Accountancy*, 3(4), 81-86.
26. Nyangarika, A. M., Mikhaylov, A. Y., & Tang, B. J. (2018). Correlation of oil prices and gross domestic product in oil producing countries. *International Journal of Energy Economics and Policy*, 8(5), 42-48.
27. Rosnawintang, R., Tajuddin, T., Adam, P., Pasrun, Y. P., & Saidi, L. O. (2021). Effects of crude oil prices volatility, the internet and inflation on economic growth in ASEAN-5 countries: A panel autoregressive distributed lag approach. *International Journal of Energy Economics and Policy*, 11(1), 15-21.