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Developmental Effect of Rising Oil Price and Inflation on Economic Performance in the US: Incorporating the Global Economic Crisis

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Abstract

This research provides a distinctive perspective by analyzing the influence of inflation and increasing oil prices on the economic performance of the United States. Additionally, it takes into account other factors, including unemployment, the exchange rate, and manufacturing output, that may have contributed to the global economic crisis. Secondary data from the World Bank's annual publication, which spans the years 1990 to 2023, was collected and analyzed for this study. The Johansen co-integration was implemented, which implies that the endogenous series are co-integrated and that it is necessary to specify VECM. We employed the VAR model and VECM, and the results indicate a substantial correlation between the short- and long-term performance of the US economy and the increasing prices of oil, inflation, and other economic factors. According to the OLS regression model, the US economic performance is enhanced by the increase in the crude price and exchange rate, while the inflation rate and manufacturing output have a negative impact. Inflation and manufacturing output have a long-term detrimental impact on the performance of the US economy, according to the FMOLS. As a result, the US government should establish a sustainable monetary policy through policymakers in order to control inflation, which will have a positive impact on the output of US manufacturing. In turn, this will improve sustainable economic performance by assuring consistent affordable housing and a lower overall cost of living, as well as combating other unforeseen economic crises in the United States.

Keywords: Economic Performance, FMOLS, Inflation, Oil Price, OLS Regression, VECM.

Introduction

In 2021, inflation rates in the United States increased due to the economy's adaptation to the COVID-19 outbreak, increased demand, limited labor supply, supply chain disruptions, and the recovery of energy costs from their low levels during the pandemic (1). The price of West Texas Intermediate (WTI) oil has exceeded $80 per barrel since October 2021. The price of a barrel briefly exceeded $120 following the Russian invasion of Ukraine in early 2022. Policymakers and researchers are apprehensive that the persistent increase in inflation in the United States may be attributable to the increasing cost of motor fuel. Additionally, consumers may anticipate an abrupt rise in inflation, which they may employ to establish prices and wages. On October 1, 2021, analysts at Bank of America issued a warning that inflation would result from a rise in petroleum and gasoline prices exceeding $100 (2). The United States experienced inflation rates that were unprecedented in recent history during the early months of 2022. This incited a policy debate regarding the regulation of the increasing cost of motor petroleum. However, there is a dearth of quantitative analysis that addresses the inflationary implications of the current rise in oil prices. Inflation has been widely perceived as a significant concern by economists. As inflation has a substantial impact on both economic and social progress, economic agents predominantly make decisions based on their inflation expectations (3, 4). The level of inflation can be influenced by a variety of factors, including the recent COVID-19 pandemic, exchange rates, energy costs, and unemployment rates (5). In recent years, inflation has been a significant concern for a significant number of individuals (6). However, what is the duration of its presence? The inflation rate in the United States for June 2022 was 9.1 percent, the greatest level since February 1982.

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The current global inflation rate, which has surpassed the levels of approximately 2 percent that existed prior to the COVID-19 pandemic, is gradually returning to its historical patterns. Investors anticipated that the long-term inflation rate would stabilize at 2.5 percent by the conclusion of 2022. This is in stark contrast to the concern that long-term inflation would replicate the patterns that were observed in the 1970s and early 1980s, when inflation exceeded 10 percent. Inflation is the gradual increase in prices within the economy, which results in a reduction in the purchasing power of both individuals and enterprises. Energy price fluctuations significantly influence this phenomenon. The period from the mid-1960s to the early 1980s is referred to as the "Great Inflation" in the United States. In 1980, the inflation rate reached its highest point, which was 14.8 percent. The Federal Reserve increased interest rates to approximately 20 percent in order to alleviate the effects of inflation. Some economists argue that this phenomenon is partially due to monetary policy errors rather than other factors, such as elevated petroleum oil prices.

The volatility of critical economic indicators has been significantly influenced by the price of crude oil, which has garnered significant attention. The causal relationship between oil prices and other factors, such as the exchange rate, financial market assets, U.S. interest rates, aggregate output, and the price of products and services, has been the subject of numerous studies (7-10). In order to gain a more comprehensive understanding of the effects of oil price fluctuations on various economic components, it is essential to analyze and differentiate the numerous causes of these price fluctuations. This will enable the establishment of a distinct correlation between these causes and other relevant variables (11). Variations in oil prices that result from interruptions in aggregate demand have a substantial impact on the U.S. GDP, regardless of the circumstances (12).

Additionally, empirical research has revealed evidence that the Gross Domestic Product (GDP) of the United States can be influenced by demand shocks associated with the energy market, more specifically speculative demand shocks (13). Furthermore, consumer price inflation (CPI) is generally favored by fluctuations in oil prices, which can be attributed to either generalized demand shocks or specific shocks in the oil market. Nevertheless, there is insufficient evidence to suggest that inflation is significantly impacted by disruptions in energy supplies (14). This research employed the "Theory of Growth," which posits that vagaries in oil prices frequently result in fluctuations in a country's overall production (GDP). The theory suggested that macroeconomic variables like oil prices positively influence the economic performance. The concept posits that the fluctuations in oil prices are causally related to the rate of economic advancement, as measured by GDP. A study conducted pioneering investigation on this theory (15). Studies discovered, however, that the economic growth was significantly and equivalently affected by the abrupt and unexpected increase in energy prices, as evidenced by the GDP (16). Conversely, GDP is adversely affected by macroeconomic indicators, including inflation (17).

A diverse array of studies has been conducted by researchers to investigate the cause-and-effect relationship between the price of oil and other variables. For instance, the current corpus of research examines the correlation between fluctuations in crude oil prices and fluctuations in the exchange rate (13). Scholars investigated the causal relationship between the U.S. dollar, the U.S. real interest rate, and fluctuations in oil prices, considering a diverse array of factors that contribute to oil shocks (8). It was found that fluctuations in the value of the U.S. dollar can have a substantial impact on the price of oil. For instance, the fall in the value of the dollar during the early 1980s, the oil shocks of the 1970s, and the financial crisis of 2008 may have resulted in an increase in energy demand, which in turn led to an increase in crude prices. The cause-and-effect relationship between fluctuations in oil prices and the economic expansion of the United States has been the subject of prior research (13, 18). The global economy is significantly influenced by oil prices, as evidenced by prior research (19, 20) that has specifically addressed the prediction of crude oil prices in the United States (21) and other significant economies of the world (22, 23). However, these studies have neglected to account for other significant macroeconomic factors, such as unemployment, exchange rates, and manufacturing output, which can also affect the economic performance of the United States and

contribute to global economic crises. The objective of this investigation is to rectify the substantial gap in the current corpus of knowledge. This investigation offers a distinctive viewpoint by examining the economic performance of the United States in the context of increasing inflation and energy costs. Furthermore, it takes into account supplementary variables, including unemployment, exchange rates, and manufacturing production, which have the potential to exacerbate the global economic crisis. As a result, we developed hypotheses by utilizing the growth theory that was implemented in this study, as delineated below:

H1: Oil Price has positive significant effect on the economic performance.

H2: Inflation has a detrimental effect on the economic performance.

Methodology

This study utilized a quantitative causal research design to examine the impact of increasing oil prices and inflation on the economic performance of the United States. It also considered other factors such as unemployment, the exchange rate, and manufacturing output, which have the potential to contribute to the global economic crisis according to the theory of growth. We utilized secondary data for our research, specifically retrieved from the World Bank's annual publications covering the years 1990 to 2023. The data was selected via purposive selection, which took into account data availability and the global economic crisis. The study employed many quantitative methods, such as descriptive statistics, the OLS regression model, completely modified least squares, unit root tests, Johansen co-integration, the VAR model, and VECM.

Ordinary Least Square Regression (OLS Regression) and Fully Modified Least Squares (FMOLS)

This study utilized the functional model technique, employing OLS regression to establish the connection between the variables and FMOLS to examine the lasting influence of the predictor variables on the dependent variable (14). The functional link between the two models given above can be defined as follows:

$$GDP = f(Oil, Inf, Unemp, Exch, Manuf) \quad [1]$$

The OLS regression model specification will take this form:

$$GDP_t = \beta_0 + \beta_1(Oil)_t + \beta_2(Inf)_t + \beta_3(Unemp)_t + \beta_4(Exch)_t + \beta_5(Manuf)_t + \varepsilon_t \quad [2]$$

The oil price (Oil), inflation (Inf), unemployment (Unemp), exchange rate (Exch), and manufacturing output (Manuf) are the independent variables in this scenario. The gross domestic product (GDP), a stand-in for economic performance, is the dependent variable. The residual or error term is represented by ε_t, where t is the period in years, the constant term is designated by β0, and the predictor variable coefficient estimations are represented by β_1 through β_5. Simultaneously, the FMOLS estimate of β will be assessed in order to decipher the predictors' long-term contribution.

Unit Root Test

As part of the research, the Augmented Dickey Fuller method was used to conduct a unit root test. Determining whether or not the series is stationary is the aim of the test. This is accomplished by contrasting the alternative hypothesis—which holds that the series is stationary—with the null hypothesis, which is predicated on the existence of a unit root. The test is crucial for detecting and removing any non-stationarity that may lead to an erroneous conclusion or a false correlation.

Johansen Co-Integration Analysis

The Johansen cointegration test can be used to assess if integrated variables show cointegration at levels of one, two following the first difference, or two following the second difference at maximum. This test permits several cointegrating relationships. In the Johansen cointegration test, the trace and max eigenvalue are two variations that are regarded as foundational for inferences or decision-making. The presence of co-integration signifies the existence of a long-term association between the variables, and therefore, we proposed the vector error correction model (VECM) and the vector autoregressive (VAR) model-preceded VECM.

The VAR model can be written mathematically as follows:

$$Y_t = \varphi_i + \Phi_1 Y_{t-1} + \cdots + \Phi_p Y_{t-p} + \varepsilon_t \quad [3]$$

Where Y_t represents the vector of the endogenous stationary series of GDP, oil price, inflation, unemployment, exchange rate, and manufacturing output. Since cointegration exist among the endogenous variables, vector error correction model (VECM) was specified as follows:

$$Y_t = \varphi_i + \Pi Y_{t-1} + \sum_{j=1}^{p-1} \Phi_j \Delta(Y_{t-j}) + \varepsilon_t \quad [4]$$

Note that ΠY_{t-1} is the error-correction term and the VECM take the following form for each of the endogenous variables.

Diagnostic Check

The FMOLS, VAR and VEC models underwent diagnostic tests like the residuals' normality test. In contrast, the OLS regression underwent diagnostic tests for normality, multicollinearity, autocorrelation, heteroscedasticity, and model stability to confirm the model's validity. Additionally, Table 1 is the variables description which includes the variables, the definition and measurement.

Table 1: Variables Description

Variables	Definition	Measurement
GDP	Gross domestic product (GDP) is a quantitative measure that measures the overall worth of all the final products and services produced and provided by a specific country during a specific period of time (24). This study employs a GDP proxy as a means of quantifying economic performance.	Billion of USD
Oil Price	The term "oil price" often denotes the current market value of a standard unit of crude oil, commonly measured in barrels, within the United States (8). This value is widely used as a standard for determining the worldwide cost of oil. It serves as a sign of vitality.	US Dollars Per Barrel
Inflation	Inflation is the gradual increase in the costs of products and services across the economy, which leads to a decrease in the ability of both individuals and businesses to buy things (6).	Percentage (%)
Unemployment	It refers to a scenario in which individuals who are capable of working are unable to secure compensated job (25).	Percentage (%)
Exchange rate	The exchange rate is the numerical representation of the relative worth between one country's currency and another currency (26).	LCU Per US$
Manufacturing Output	Manufacturing output encompasses the total production of all factories throughout the entire nation (25). It refers to a portion of industrial output or production that contributes to the overall percentage of Gross Domestic Product (27).	% Of GDP

Results

Table 2 presents the mean United States Gross Domestic Product (GDP) at roughly 14075 billion USD, with a standard deviation of around 5814 billion USD. The mean price of oil is approximately 48 USD per barrel, with a standard deviation of around 30 USD per barrel. The mean inflation rate is roughly 3%, with a standard deviation of about 2%. The mean unemployment rate is approximately 5.8%, with a standard deviation of approximately 1.6%. The mean exchange rate stands at approximately 110 LCU per US dollar, exhibiting a standard deviation of around 9 LCU per US dollar. Lastly, the average manufacturing output is approximately 9.9%, with a variability of about 5.3%. These figures are based on data from the period spanning from 1990 to 2023.

Table 2: Descriptive Statistics

Statistics	GDP	Oil Price	Inflation	Unemployment	Exchange	Manufacturing
Mean	14074.85	47.24088	2.905356	5.763824	110.1341	9.906553
Median	14144.91	41.34000	2.642300	5.475000	109.9158	11.68055
Maximum	27356.40	95.99000	11.40280	9.610000	127.3282	16.08720
Minimum	5963.144	10.87000	-0.355500	3.630000	95.00835	0.000000
Std. Dev.	5813.715	29.93157	2.116317	1.639259	9.076263	5.321829
Observations	34	34	34	34	34	34

Table 3: OLS Regression Model

GDP	Coefficient	Std. Error	t-Statistic	Prob.	VIF
C	-40250.71	9054.729	-4.445269	0.0001	NA
Oil Price	220.4617	22.59144	9.758638	0.0000	2.481719
Inflation	-1058.423	323.9004	-3.267742	0.0029	2.550293
Unemployment	-401.9202	358.3967	-1.121439	0.2716	1.873393
Exchange	483.6563	79.41661	6.090115	0.0000	2.819958
Manufacturing	-400.2023	133.5430	-2.996805	0.0057	2.741384
R-squared	0.847368				
Adjusted R-squared	0.820113				
S.E. of regression	2465.779				
Sum squared resid	1.70E+08				
Log likelihood	-310.4922				
F-statistic	31.08962				
Prob(F-statistic)	0.000000				

At the 1% level of statistical significance, Table 3 shows that the OLS regression model has a probability value of less than 0.01. This suggests that there is a strong correlation between oil prices, inflation, and a number of other global economic factors, such as industrial production, unemployment, exchange rates, and GDP measures of economic success. Economic performance is positively and statistically significantly impacted by the estimated oil price coefficient. Support for the first hypothesis (H1) is thus provided by the fact that this shows a positive link between rising crude oil prices and improving economic performance. According to the regression analysis, there is a statistically significant negative impact on economic performance from the inflation coefficient estimate. This supports the growth theory and the second hypothesis (H2) that a greater inflation rate has a negative effect on the US economy. Furthermore, the study shows that the manufacturing output coefficient has a statistically significant negative impact on economic performance, while the exchange rate coefficient has a positive and statistically significant impact. This implies that whereas a rise in industrial output has the opposite effect on the US economy, an increase in the country's exchange rate benefits the economy. Furthermore, each independent variable in the model has a variance inflation factor (VIF) of less than 5. This suggests

that the model does not have a multicollinearity problem. Hence, the results obtained from the fitted ordinary least squares (OLS) regression model can be considered trustworthy and free from any misleading information. The R-squared coefficient of determination, which is 0.847, signifies that the collective influence of oil price, inflation, unemployment, exchange rate, and manufacturing output accounts for 84.7% of the fluctuations observed in the US economic performance. The remaining 15.3% of the variability is attributed to factors that were not considered in the model. The R-squared value is markedly high, suggesting a robust connection between the variables. Furthermore, the OLS model exhibits statistical significance, indicating its suitability for forecasting future US economic performance.

Table 4: Fully Modified Ordinary Least Squares (FMOLS)

GDP	Coefficient	Std. Error	t-Statistic	Prob.
Oil Price	244.3090	22.42162	10.89613	0.0000
Inflation	-1386.255	324.4739	-4.272314	0.0002
Unemployment	-584.7205	350.3841	-1.668799	0.1067
Exchange	506.7386	78.35981	6.466817	0.0000
Manufacturing	-550.5283	130.8296	-4.207980	0.0003
C	-40365.42	8948.967	-4.510624	0.0001
R-squared	0.828303			
Adjusted R-squared	0.796508			
S.E. of regression	2581.030			
Long-run variance	5811178.			

Table 4 demonstrates a favourable and statistically significant long-term impact of oil prices and currency rates on economic performance. An upward movement in the price of oil and the exchange rate in the United States will result in enhanced long-term economic performance. Conversely, the inflation rate and manufacturing production exert a large and negative long-term impact on economic performance. An escalation in the inflation rate and manufacturing production in the United States will result in a deterioration of long-term economic performance. The coefficient of determination (R-squared) for the Fully Modified Ordinary Least Squares (FMOLS) model is approximately 82.8%, confirming the accuracy of the FMOLS model fitting.

Table 5: Unit Root Test

Differenced Series	T-statistic	P-value
Δ^1GDP	-7.81	0.0000
Δ^1Oil Price	-5.50	0.0001
Δ^1Inflation	-4.33	0.0018
Δ^1Unemployment	-5.21	0.0002
Δ^1Exchange rate	-4.43	0.0014
Δ^1Manufacturing	-4.79	0.0006

Table 5 presents the results of the unit root test conducted using the augmented Dickey-Fuller technique. All the series are statistically significant after the first difference and become stationary, indicating that the series or variable of interest does not have a unit root that could lead to erroneous findings. Therefore, we can conduct further econometric analysis.

Table 6: Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Eigenvalue	Trace	0.05 Critical Value	Prob.**
None *	0.920322	166.0178	95.75366	0.0000
At most 1 *	0.737186	87.59527	69.81889	0.0010
At most 2	0.644236	46.16966	47.85613	0.0714
At most 3	0.271471	14.13157	29.79707	0.8332
At most 4	0.127961	4.312994	15.49471	0.8767
At most 5	0.002206	0.068456	3.841466	0.7936

In Table 6, the Johansen co-integration rank test (Trace) indicates the presence of two statistically significant co-integration equations at a significance level of 5%. This implies the existence of a durable connection between the endogenous series of GDP, oil price, inflation, unemployment, exchange rate, and manufacturing output. This implies that we can apply the VECM.

Table 7: VAR Model

Equation	Lag Parms	R-sq	P-value
GDP	13	0.9973	0.0000
Oil Prices	13	0.8809	0.0000
Inflation	13	0.8535	0.0000
Unemployment	13	0.6961	0.0000
Exchange rate	13	0.8830	0.0000
Manufacturing	13	0.7713	0.0000

Table 7 demonstrates that the VAR model was calculated with 13 lag parameters for each endogenous series. This indicates that both the series and their corresponding lag parameters are statistically significant at the 1% level. Therefore, it suggests that there is a short-term relationship between the US economic performance and the variables of oil price, inflation, unemployment, exchange rate, and manufacturing output.

Table 8: VECM

Equation	Lag Parms	R-sq	P-value
ΔGDP	8	0.8316	0.0000
ΔOil Prices	8	0.9587	0.0000
ΔInflation	8	0.8842	0.0000
ΔUnemployment	8	0.9169	0.0000
ΔExchange rate	8	0.7843	0.0000
ΔManufacturing	8	0.8127	0.0000

The results in Table 8 show that the VECM was estimated with few lag parameters (parsimony) for each of the endogenous series or variables of interest. The results show that both the series and the corresponding lag parameters are statistically significant at 1% level, which suggests that the US economy is linked to the price of oil, inflation, unemployment, the exchange rate, and manufacturing output over the long term. Meanwhile in Figure 1, it can be deduced that the probability value of the normality test of the OLS regression residuals exceeds 0.05, indicating that the model is normally distributed, satisfying the OLS normality assumption.

Diagnostic Tests

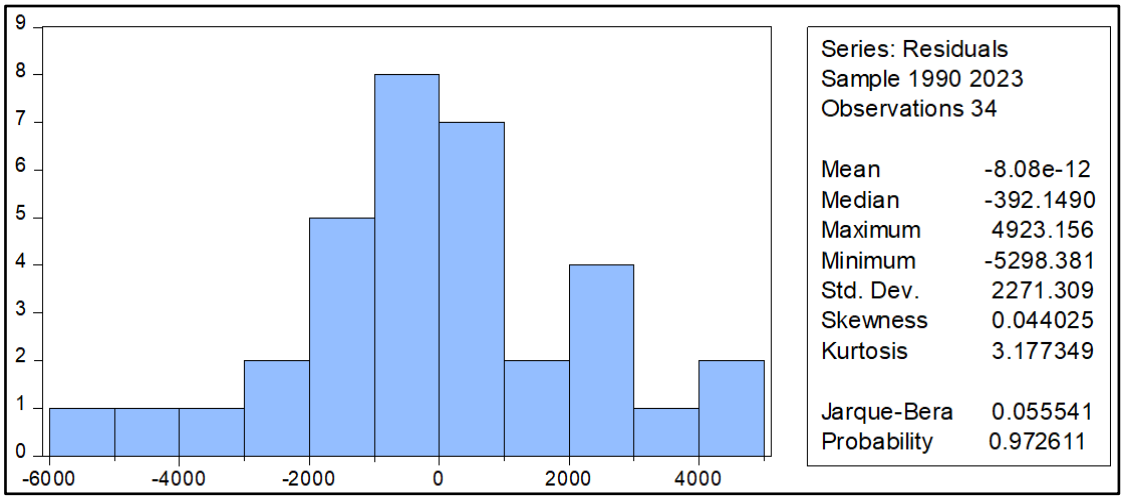

Figure 1: Normality test for OLS Regression

Table 9: Breusch-Godfrey Serial Correlation LM Test

F-statistic	3.781126	Prob. F(2,26)	0.0362	F-statistic
Obs*R-squared	7.660885	Prob. Chi-Square(2)	0.0217	Obs*R-squared

The probability value of 0.0217 in Table 9 exceeds the significance level of 0.01, indicating that the fitted OLS regression model is not affected by autocorrelation. This indicates that it satisfies the OLS assumption of autocorrelation or serial correlation.

Table 10: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	4.017446	Prob. F(5,28)	0.0071
Obs*R-squared	14.20264	Prob. Chi-Square(5)	0.0144
Scaled explained SS	10.48638	Prob. Chi-Square(5)	0.0626

The heteroskedasticity test result in Table 10 is 0.0144, exceeding the significance limit of 0.001. Therefore, the fitted OLS regression model is free from the issue of heteroskedasticity, which contradicts the OLS assumption of heteroskedasticity. Figure 2 illustrates the CUSUM test used to assess the stability of the OLS model. The fact that the parameters of the fitted OLS regression model lie within the two 95% confidence intervals indicates that the model is stable. In addition, the normality test conducted on the FMOLS residuals in Figure 3 shows that the P-value of 0.803 exceeds the significance level of 0.05, showing that the FMOLS residuals follow a normal distribution.

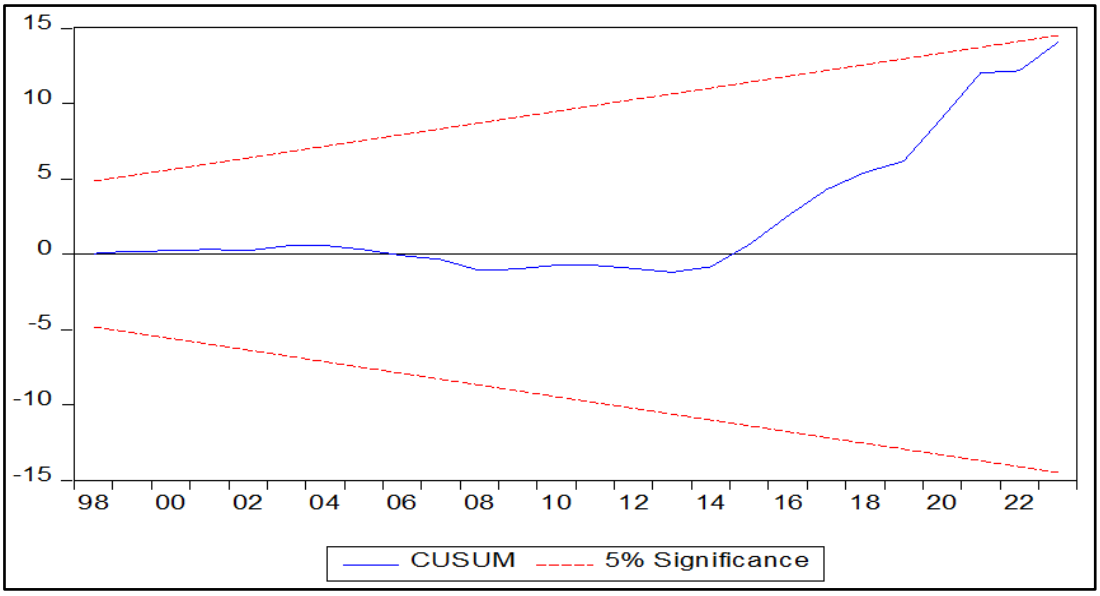

Figure 2: CUSUM Test for OLS Model Stability

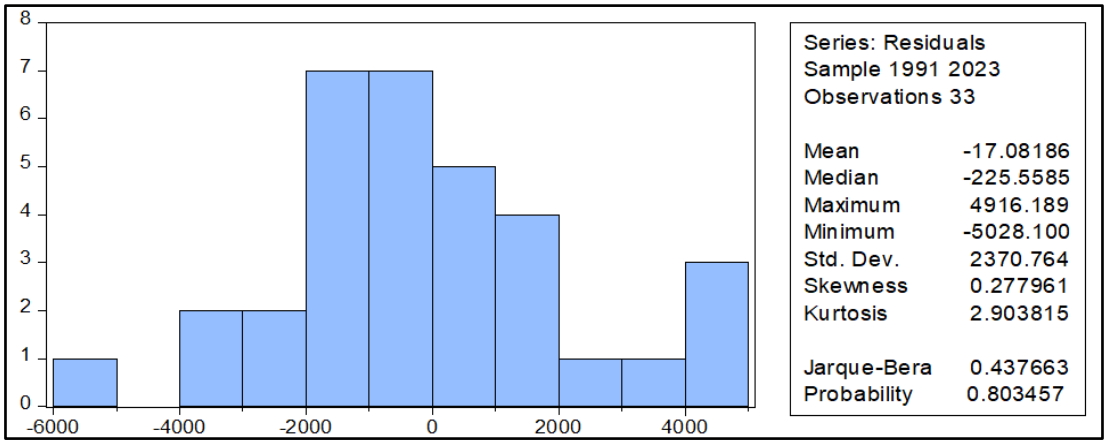

Figure 3: Normality Test for FMOLS

In Tables 11 and 12, each endogenous series component has a normality test with a p-value above 0.05 significant level. This shows that the fitted VAR and VECM residuals are normally distributed (Table 11 and 12).

Table 11: VAR Residual Normality Tests

Component	Skewness	Chi-sq	df	Prob.*
1	-1.094057	6.383789	1	0.0515
2	0.341450	0.621803	1	0.4304
3	-0.242537	0.313729	1	0.5754
4	-0.716189	2.735608	1	0.0981
5	-0.160625	0.137602	1	0.7107
6	0.933384	8.93587	1	0.0624

Table 12: VEC Residual Normality Tests

Component	Skewness	Chi-sq	df	Prob.*
1	0.551438	1.571101	1	0.2100
2	-0.443932	1.018226	1	0.3129
3	-0.746607	2.880015	1	0.0897
4	-0.937835	4.544261	1	0.0530
5	-0.035597	0.006547	1	0.9355
6	0.223527	5.734598	1	0.0754
Joint		17.75475	6	0.0069

Figure 4 shows that the US oil price demonstrated a fluctuating pattern during the period under review and particularly rose sharply from 2020, which was the period of the COVID-19 pandemic. Figure 5 also shows that the US inflation rate increased sharply from 2020 to 2023 due to the current global economic crisis, and Figure 6 shows that the US economic performance demonstrated an upward trend movement but suffered a decline in 2020 due to the lockdown activities during the COVID-19 era.

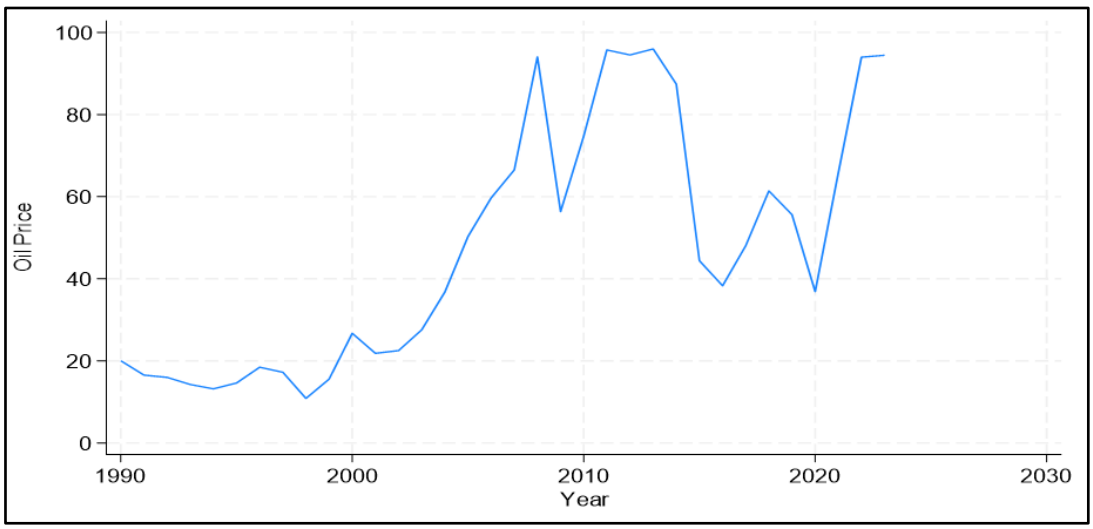

Figure 4: Graph of Oil Price in the United States

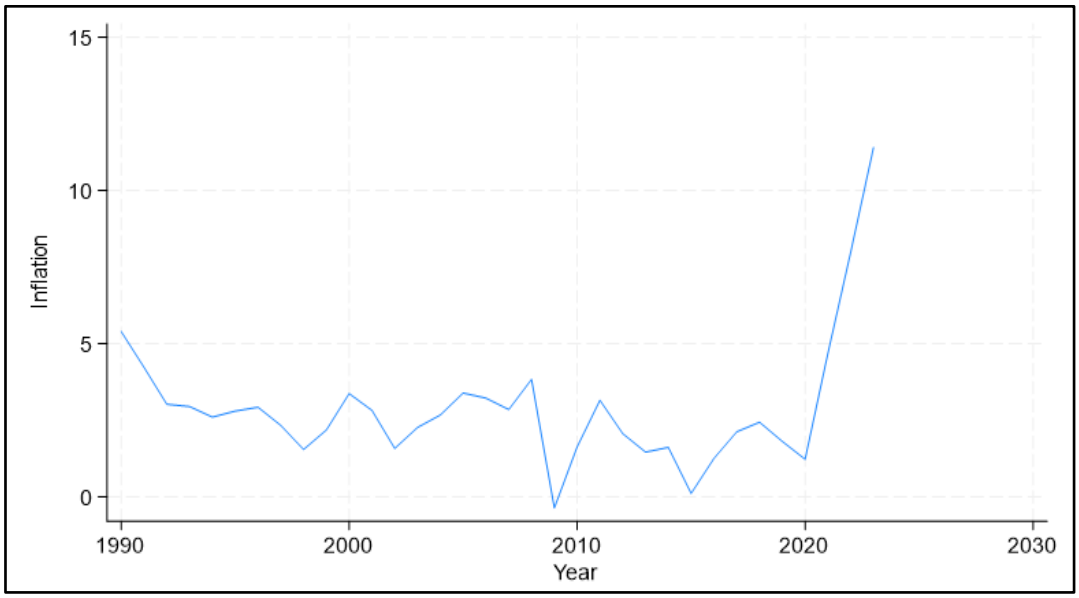

Figure 5: Graph of Inflation rate in the United States

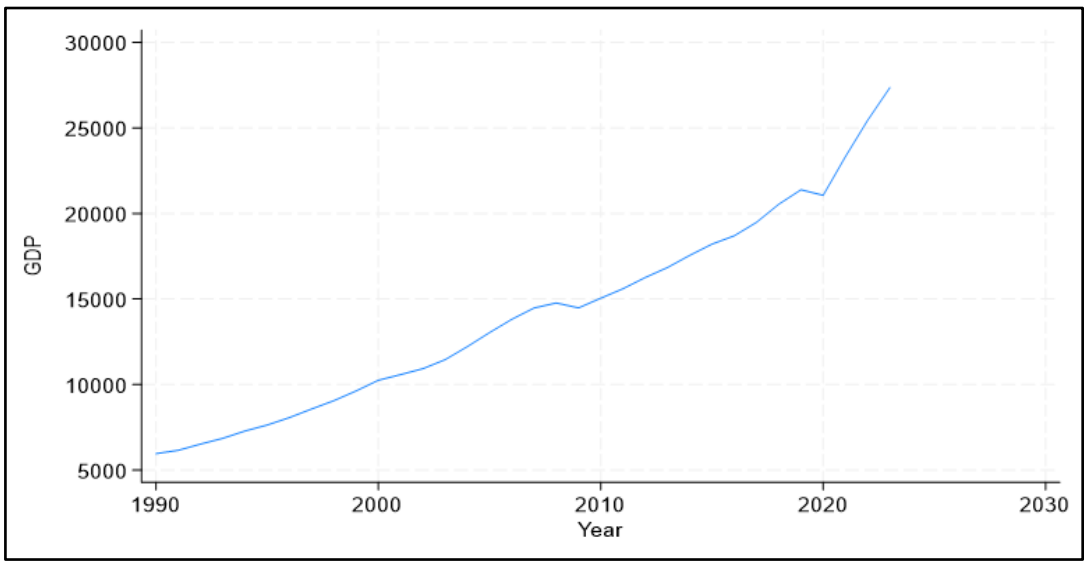

Figure 6: Graph of Economic Performance in the United States

Discussion

Economists have generally seen inflation as a substantial concern. When making decisions, economic actors mostly rely on their expectations of inflation, as inflation has significant impacts on both economic and social advancement (3, 4). Nevertheless, there has been a dearth of quantitative evidence regarding the inflationary impact of the current surge in oil prices. The study undertaken demonstrates a clear and substantial influence of oil prices on economic performance, indicating that higher crude oil prices result in enhanced economic performance, thus confirming the first hypothesis (H1). The regression analysis reveals that the coefficient estimate for inflation has a statistically significant and adverse effect on economic performance. This implies that a greater inflation rate has a detrimental impact on the economic performance of the United States, which supports the second hypothesis (H2) and conforms with the theory of growth. This is in line with the results of studies conducted (13, 18). Moreover, the estimation of the exchange rate coefficient has a positive and significant impact on economic performance, while the estimation of the manufacturing output coefficient shows a negative and significant impact. This implies that a rise in the US exchange rate enhances the economic performance of the

country, whereas an increase in manufacturing production has the opposite effect. Table 4 demonstrates a notable beneficial long-term impact of both oil prices and currency rates on economic performance. Therefore, a rise in the oil price and exchange rate in the United States will result in enhanced long-term economic performance. Conversely, the inflation rate and manufacturing production exert a substantial detrimental impact on long-term economic success. An escalation in the inflation rate and manufacturing production in the United States will adversely affect the long-term economic performance. The coefficient of determination (R-squared) for the Fully Modified Ordinary Least Squares (FMOLS) model is approximately 82.8%, confirming the accuracy of the FMOLS model.

In Table 6, the Johansen cointegration rank test (Trace) reveals the presence of two significant cointegration equations at a significance level of 5%. This implies that there exists a persistent connection between the internal series of GDP, oil price, inflation, unemployment, exchange rate, and manufacturing output. Consequently, we can utilize the VECM. The results shown in Table 8 indicate that the VECM was calculated using a limited number of lag factors, demonstrating parsimony, for each of the endogenous series or variables of interest. The findings indicate that both the series and the accompanying lag parameters are statistically significant at the 1% level. This implies that there is a strong connection between the US economy and variables such as the price of oil, inflation, unemployment, the exchange rate, and manufacturing production in the long run. Table 7 displays the results of the VAR model estimation. Each endogenous series in the model is represented by 13 lag parameters. The statistical analysis indicates that both the series and their corresponding lag parameters are significant at the 1% level. This suggests that there is a short-term relationship between the performance of the US economy and variables such as oil price, inflation, unemployment, exchange rate, and manufacturing output.

Meanwhile, Figure 4 shows that the US oil price demonstrated a fluctuating pattern during the period under review and particularly rose sharply in 2020, which was the period of the COVID-19 pandemic. Figure 5 also shows that the US inflation rate increased sharply from 2020 to 2023 due to the current global economic crisis, and Figure 6 shows that the US economic performance demonstrated an upward trend movement but suffered a decline in 2020 due to the lockdown activities during the COVID-19 era.

Conclusion

This study differs in that it investigates the impact of rising oil prices and inflation on US economic performance while incorporating other factors such as unemployment, GNI per capita, exchange rate, and manufacturing output that can contribute to the global economic crisis. The results of the findings indicate that an increase in oil prices and exchange rates positively impact the economic performance of the United States, while the inflation rate and manufacturing output have a detrimental effect on economic performance. On the individual level, the rising inflation rate results in a rising cost of living and a general hike in the price of market commodities, while also hurting the government's economic performance. Therefore, the US government, through policymakers, should implement a sustainable monetary policies like moderately hike in the interest rate and buying of security using the open market operation to tame inflation, which will positively develop US manufacturing output. This, in turn, will enhance sustainable economic performance, ensuring consistent affordable housing and a lower overall cost of living, while also combating other unforeseen economic crises in the United States.

Abbreviations

GDP: Gross Domestic Product, INF: Inflation, UNEMP: Unemployment, MBN: Market Business News.

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Author Contributions

All authors contributed equally.

Conflict of Interest

There is no conflict of interest between the authors.

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