Research Article
e-ISSN: 2687-4695
Journal of Economics, Business & Political Studies
Volume: 10, Issue: 2
http://dergipark.gov.tr/equinox

Investigating Factors Influencing Inflation in the USA

Sevgi COŞKUN YILMAZ

sevgi.coskun@medeniyet.edu.tr

Istanbul Medeniyet University

orcid.org/ 0000-0002-9561-7200

JEL Code: C22, C52, E31, O51.

Received: 07.08.2023

Revised: 13.09.2023

Accepted: 19.09.2023

Available Online: 22.09.2023

To cite this document

Coskun Yılmaz, S. (2023). Investigating Factors Influencing Inflation in the USA. Equinox, Journal of Economics, Business & Political Studies, 10 (2), 128-142 doi: 10.48064/equinox.1339198

Abstract

The determination of inflation has been extensively explored in economic literature and it remains an ongoing and developing field of study. Researchers have examined diverse econometric methodologies and analyzed data from varying time spans to identify the factors influencing inflation. In this research paper, we explore the factors influencing inflation in the USA by utilizing the monthly data from 2002 to 2020. To achieve our aim, we employ error correction model (ECM) and then granger causality method. The findings indicate that certain lagged changes in inflation, consumer price index (CPI) for fuel and utilities, CPI all city average and production price index play a significant role in accounting for the variations in inflation in the USA but the lagged changes in money supply are not a significant determinant in accounting for the fluctuations in inflation in the USA. Moreover, the results of causality analysis suggest that all factors have significant Granger causality on inflation, except money supply.

Keywords: *Inflation, USA, ECM, Granger Causality.*

ABD'de Enflasyonu Etkileyen Faktörlerin İncelenmesi

Öz

Enflasyonun belirlenmesi konusu ekonomi literatüründe kapsamlı bir şekilde araştırılmış olmasına rağmen hala gelişmekte olan bir çalışma konusudur. Araştırmacılar, farklı ekonometrik yöntemleri uygulayarak ve farklı zaman aralıklarındaki verileri analiz ederek enflasyonu etkileyen faktörleri belirlemeye çalışmaktadırlar. Bu çalışmanın amacı, 2002'den 2020'ye kadar olan aylık verileri kullanarak Amerika Birleşik Devletleri'ndeki enflasyonu etkileyen faktörleri araştırmaktır. Amaca ulaşmak için ilk olarak, hata düzeltme modeli ve ardından Granger nedensellik testi uygulanmaktadır. Bulgular, enflasyonun Amerika Birleşik Devletleri'ndeki değişimlerini açıklamada belirli gecikmiş enflasyon değişimleri, yakıt ve hizmetler tüketici fiyat endeksi, tüm şehir ortalaması tüketici fiyat endeksi ve üretim fiyat endeksinin önemli bir rol oynadığını göstermektedir, ancak para arzındaki gecikmiş değişimler enflasyon dalgalanmaları için anlamlı bir belirleyici değildir. Dahası, nedensellik analizi sonuçları, para arzı hariç tüm faktörlerin enflasyon üzerinde önemli Granger nedenselliğine sahip olduğunu göstermektedir.

Anahtar Kelimeler: *Enflasyon, ABD, ECM, Granger Nedensellik.*

1. Introduction

Inflation refers to the persistent rise in the overall price level of an economy and serves as a significant barometer to gauge an economy's health. Therefore, it remains a fundamental concern for economists and policymakers globally. While it is often perceived as harmful to an economy, a moderate level of inflation (approximately 3-4%) is considered as beneficial for a country's economic growth. However, it is crucial to exercise caution, as excessive inflation can cause to stagnant job creation, uncertainties in income and expenses, therefore, potentially impeding economic growth significantly. Conversely, sustaining a stable and appropriate level of inflation enhances financial system stability and promotes economic growth. Hereby, the long-term growth and sustainability of an economy are dependent on the absence of uncertain and unpredictable fluctuations in the purchasing power of money, requiring a stable and well-managed monetary and financial system.

According to Hamilton (2001), inflation can be determined as an economic scenario wherein the growth in the money supply surpasses the rate of new production of goods and services within the same economy. Moreover, the quantity theory of money shows a systematic analysis of the direct association among the growth in the money supply and inflation. This theory shows that, in the long term, if there is a rise in the money supply, it will enhance proportionally the price level, not real output growth. Furthermore, Keynes explains that inflation increases when the total demand exceeds the total supply at the full employment. Also, when the government rises the money supply and taxes, people are willing to spend more money (Shah et al., 2014). The reason is that when inflation rises, taxes also increase, causing people to be even more willing to spend their money due to two main reasons: avoiding taxes on holding currency and purchasing products before their prices go up. Consequently, in such economic circumstances, there is a rapid growth rate in the demand for various goods, resulting in a natural price increase. In the literature, many researchers focus on the determinants of inflation. These determinants are mostly categorized into supply side and demand side factors (Eftekhari and Kiaee, 2015). Supply side determinants involve output growth, capital formation, oil and import prices, wage levels and exchange rates. Conversely, demand side determinants involve factors such as money growth, private consumption expenditure, and government consumption expenditure.

Although the factors affecting inflation are complex, money supply, CPI for fuel and utilities, CPI for all urban areas and production price index can be considered to be the major culprits behind the inflation in the United States (USA). In this research paper, we hence investigate the impacts of these factors on inflation in the USA during the period from January 2002 to February 2020. To achieve this aim, we use monthly data by applying the error correction model (ECM) and Granger causality test. The selection of the variables in our

paper is based on their perceived relevance and potential influence in the USA. Each factor is chosen for its theoretical significance and empirical evidence suggesting a relation with inflationary trends. The money supply is often related to inflationary pressures. If there is a change in the money supply, it will affect consumer spending and aggregate demand. Also, energy costs are an important input for production and consumption hence, the fluctuations in the consumer price index for fuel and utilities can influence overall price levels and inflation. Moreover, the consumer price index for all urban areas provides insights into how price levels for a basket of commonly consumed items evolve overtime. Lastly, the production price index quantifies the variations in the price of goods and services at the producer level. As producers often pass on cost changes to consumers, the PPI provides insights into potential cost-push inflation.

In section 2, we present the literature review. In section 3, we display the data and the methodology. In section 4, we present the outcomes and in section 5, we conclude the work.

2. Literature Review

The determination of inflation has been a subject of extensive investigation in economic literature and it remains an ongoing and evolving research area. Researchers have studied various econometric techniques and analyzed data from different periods to discern the factors affecting inflation. Based on several research findings concerning the factors influencing inflation, the following are identified as follows.

Bandara (2011) shows the factors influencing inflation in Sri Lanka from 1993 to 2008 using VAR models and the Granger causality method. The findings show that money supply, exchange rate and GDP exhibit significant information to explain the inflationary trends in Sri Lanka. Putra (2022) also investigates the factors affecting inflation in Indonesia from 2015 to 2020. They employ the Engel Granger Error Correction model to search the influence of currency supply and demand, interest rates and exchange rates on inflation. They find that these variables affect inflation positively and significantly. Moreover, Bashir et al. (2011) explore the factors affecting inflation in Pakistan from both the demand and supply sides and causal relations among the selected macroeconomic variables by utilizing the data from 1972 to 2010. To obtain the findings from the long run and short run, they use Johansen cointegration and VEC approaches. Also, to examine the causal relationship, they employ the Granger causality method. They find that the CPI is positively affected by more supply, GDP, imports and government spendings. Conversely, they explore that government revenue has a decreasing effect on the overall price level in Pakistan.

Bawa et al. (2016) investigate the inflationary dynamics in Nigeria between 1981- 2015 by employing the bound testing approach to cointegration. Their results show that past inflation and average rainfall are the primary factors of inflationary trends in Nigeria. Also, Hemmati et al. (2018) explore the external factors of inflation dynamics in Iran by utilizing the OLS single equation model and VEC model. Their outcomes display that money supply, exchange rate and import price index contribute to the overall rise in the price level in the long term. Also, they find that exchange rates and effective tariffs are the primary factors of inflation in Iran. Furthermore, El-Baze (2014) delves into the factors affecting inflation in Egypt applying data from 1991 to 2012 employing a vector autoregression model. The results show that the inflation rate is predominantly affected by its variations, followed by the output gap, the growth rate of domestic liquidity and nominal depreciation of the Egyptian pound against the US dollar. Also, Mohanty and John (2015) examine the factors affecting inflation in India through a comprehensive econometric approach using quarterly data from 1996-1997 to 2013-2014. They focus on the factors like crude oil prices, output gap, fiscal policy, and monetary policy and investigate their connection with inflation by employing a structural VAR approach. Their results show that inflation dynamics have experienced significant changes over time in India.

Carvalho et al. (2018) investigate the relation among economic development and inflation levels by employing the data for 65 nations from 2001 to 2011. They find that inflation rates are influenced by factors regarding to economic development. More specifically, the persistence of inflation, globalization and trade, and the level of openness to trade are positively associated with inflation. Conversely, while a higher per capita income, high-tech exports, and unemployment growth are associated with lower inflation rates. Moreover, Lim and Sek (2015) delve into the dynamics of inflation in both high inflation nations and low inflation nations, employing data from 1970 to 2011. They use an ECM model in accordance with the ARDL method to explore both short and long term impacts of various indicators on inflation in each group. Their findings show that the growth of GDP and imports significantly influence inflation in low inflation nations. However, money supply, national spending and GDP emerge as the main factors of inflation in high inflation nations.

Eftekhari and Kiaee (2015) focus on the development of models to explore the factors that affect the inflation using the data between 2008-2012. They utilize the random effect log-linear model and the ordinal logistic model to analyze continuous and categorial inflation rate variables, respectively. Their outcomes display that money growth, GDP, oil price, and the level of income are strong indicators with a rising impact regarding the inflation rate for the upcoming year. Also, Hall et al. (2023) search the factors of inflation in three currency areas: the United States, the Euro area and the United Kingdom applying the vector autoregression method. Their results show that

inflationary shocks in the US have a significant and consistent effect on both the Euro area and the United Kingdom. Moreover, Acar and Orhan (2023) investigate the factors of inflation in OECD nations in the aftermath of a pandemic by employing the OLS method with cross sectional data. They find that there is a strong relation between fiscal and monetary expansions throughout and in the aftermath of the pandemic and high inflation rates across countries.

Adjemian et al. (2023) try to understand the drivers behind the changes in food prices in the USA. They explain that there has been a notable and rapid rise in food prices in the USA starting from the middle of 2021 and this surge can be linked to various factors, including disruptions in supply chains and labor shortages caused by the pandemic as well as rising transportation costs and wages, etc. In their study, they decompose the BLS food price to CPI to gain insights into how these determinants affect the fluctuations in food price during regular periods and how they might have influenced the significant price surges observed during the pandemic. They find that while supply-side factors account for the majority of the price fluctuations, the demand-side determinants, especially the money supply have a more significant association with recent food price rises compared to their historical impact. Baek and Koo (2010) also examine the impacts of market determinants, including energy and agricultural commodity prices, and exchange rates on US food prices employing cointegration analysis. Their findings express that agricultural commodity prices and exchange rates have significant roles in defining both short and long term fluctuations in the US food prices. Additionally, they observe that the energy price has a substantial long term effect on US food prices but its effect is minimal in the short run. Lastly, Hossain and Mitra (2017) examine the short and long term influences of various economic factors on the US inflation rate from 1978 to 2014 by employing Granger F-test on the vector error correction model. Their findings show short run unidirectional causalities from certain factors.

3. Data and Methodology

In this research paper, we look at the determinants influencing the inflation in the USA from 2002 January to 2020 February by applying the error correction model and Granger causality test. For this aim, we collect the monthly data for inflation of consumer prices in the USA as a percentage (INF), money supply M1 in billions of US dollars (M1), consumer price index for fuel and utilities (CPIFUELUTI), consumer price index all city average (CPIALLURBAN) and production price index (PPI). The data is generated from Federal Reserve Economic Data. Using this data, we define the model in the following manner:

$$dINF = \alpha_0 + \sum_{i=-1}^{p} \alpha_i dINF_{t-i} + \sum_{i=0}^{q} \emptyset_i \, dM1_{t-i} + \sum_{i=0}^{r} \theta_i \, dCPIFUELUTI_{t-i} + \sum_{i=0}^{s} \varphi_i \, dCPIALLURBAN_{t-i} + \sum_{i=0}^{u} \delta_i \, dPPI_{t-i} + ECM_{t-1} + u_{it}$$

ECM is the error correction term. It has the lagged error term from the previous time period which stands for the difference among the actual inflation and the predicted inflation from the model. α_0 is the intercept term, representing a constant value. u_{it} is the error term or the random disturbance at time t, representing unexplained factors affecting inflation that are not accounted for by the other indicators in the model. The coefficients $\alpha_i, \emptyset_i, \theta_i, \varphi_i, \delta_i$ show the impacts of the corresponding indicators on inflation. Table 1 displays the summary statistics of the distribution and characteristics of the indicators we used.

Table 1. Descriptive Statistics

	INF	M1	CPIFUELUTI	CPIALLURBAN	PPI
Mean	0.308176	1443.237	159.4635	182.5521	146.3003
Median	0.193	1412.4	148.7	196.2	137.7
Maximum	1.38	2322.9	222.29	238.46	207.6
Minimum	-1.8	1073.8	127.6	151.2	137
Skewness	-1.387261	1.373950	0.273717	0.182973	0.513545
Kurtosis	14.29672	4.168721	1.481049	1.677814	1.520311

4. Results

To address the issue of spurious regression, we initiate the modeling process by converting each variable into its stationary form by utilizing the Augmented Dickey-Fuller (ADF) method. This is achieved by differencing each variable at the first order, resulting in all variables being integrated at order 1. That is, Table 2 shows that the changes in these variables exhibit no evidence of a unit root (non-stationarity). It also displays the results of standard deviation. The findings show that there is a considerable decrease of the value of the standard deviation between the variable in level and in first difference.

The identification of cointegration relationships among time-series variables has garnered significant attention in recent years. However, economists have not yet arrived at a definitive consensus regarding the appropriate modeling of such relationships. Cointegration arises when variables exhibit a long-term linkage, regardless of their individual levels of stationarity. In an effort to address this challenge, the method outlined below is adopted.

$$INF = \alpha_0 + \alpha_1 M1 + \alpha_2 CPIFUELUTI + \alpha_3 CPIALLURBAN + \alpha_4 PPI + u$$

Table 2. Standard Deviation Values and ADF Test Results of Variables

	Standard Deviation	**ADF (prob)**
INF	0.3720	0.1849
dINF	0.1458	0.0005
M1	126.95	0.4578
dM1	42.603	0.0000
CPIFUELUTI	4.4090	0.2080
dCPIFUELUTI	2.6246	0.0000
CPIALLURBAN	1.7869	0.0156
dCPIALLURBAN	0.4899	0.0009
PPI	2.1105	0.2924
dPPI	1.7269	0.0000

If the residuals of the aforementioned regression exhibit stationarity, it indicates the presence of cointegration among the variables. The ADF test of the error term in the model has been employed to assess cointegration, and the outcomes in Table 3 display the existence of a cointegrating link between the indicators. The findings show that ADF test statistic (-4.049757) is lower than all the critical values. Hence, we can confidently reject the null hypothesis that the residuals have a unit root and determine that the residuals are stationary. As a consequence, we can incorporate an ECM into the modeling procedure.

Table 3. ADF Test Results for the Residuals

Null Hypothesis: RESID has a unit root			
		t-Statictic	Probability*
ADF Test Statistic		-4.049757	0.0016
Test Critical Values	1% level	-3.472813	
	5% level	-2.880088	
	10% level	-2.576739	

Utilizing model selection criteria, the subsequent ECM is identified as the most optimal. T statistics of the lags, F-test values, robustness, and the minimum values of Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) are employed to determine the appropriate lag length. ECM is then added since we find the variables are cointegrated:

$$dINF = \alpha_0 + \sum_{i=1}^{6} \alpha_i dINF_{t-i} + \sum_{i=0}^{3} \emptyset_i \, dM1_{t-i} + \sum_{i=0}^{3} \theta_i \, dCPIFUELUTI_{t-i} + \sum_{i=0}^{7} \varphi_i \, dCPIALLURBAN_{t-i} + \sum_{i=0}^{2} \delta_i \, dPPI_{t-i} + ECM_{t-1} + u_{it}$$

Table 4 indicates the results between the inflation and lagged changes in inflation, money supply, consumer price index for fuel and utilities, consumer price index all city average and production price index. These results will show us the importance of these factors in accounting for inflation in the USA. We observe that the lag changes in inflation have a negative coefficient. More specifically, the coefficients of the lagged variables are statistically significant, implying that lagged changes in inflation play a significant role in explaining the variations in inflation in the USA.

Table 4. The Results of Error Correction Model

Variable	Coeffic.	Std. Err.	t-stat	Prob.
C	0.020539	0.027577	0.74478	0.4575
DINF(-1)	-0.827529	0.163059	-5.075028	0
DINF(-2)	-0.97311	0.156905	-6.20192	0
DINF(-3)	-0.884658	0.151311	-5.846604	0
DINF(-4)	-0.722848	0.136264	-5.30477	0
DINF(-5)	-0.430782	0.108881	-3.956454	0.0001
DINF(-6)	-0.1	0.071074	-1.406977	0.1613
DM1(-1)	-0.045878	0.053621	-0.855601	0.3943
DM1(-2)	-0.060154	0.052147	-1.153550	0.2515
DM1(-3)	-0.057184	0.050534	-1.131608	0.2606
DCPIFUELUTI(-1)	0.007727	0.00516	1.497526	0.1362
DCPIFUELUTI(-2)	0.001817	0.005205	0.349142	0.7274
DCPIFUELUTI(-3)	0.00947	0.004985	1.899508	0.0492
DCPIALLURBAN(-1)	0.10117	0.03138	3.224061	0.0015
DCPIALLURBAN(-2)	0.00564	0.030442	0.185277	0.8532
DCPIALLURBAN(-3)	-0.050634	0.024688	-2.050987	0.0418
DCPIALLURBAN(-4)	-0.074762	0.024468	-3.055547	0.0026
DCPIALLURBAN(-5)	-0.174313	0.026236	-6.643997	0
DCPIALLURBAN(-6)	-0.117494	0.029495	-3.983456	0.0001
DCPIALLURBAN(-7)	-0.06202	0.027539	-2.252109	0.0256
DPPI(-1)	0.055256	0.009188	6.013979	0
DPPI(-2)	0.012197	0.010732	1.136474	0.2574
ECM(-1)	-0.311265	0.158566	-1.963001	0.0513

However, the coefficients of the lagged variables are not statistically significant. This implies that the lagged changes in money supply are not a significant determinant in explaining the fluctuations in inflation in the USA. Furthermore, the lagged changes in the consumer price index for fuel and utilities have a positive coefficient but only the coefficient for lag 3 is statistically significant. Moreover, our observation is that the coefficients of lag 1, 4, 5, 6 for the consumer price index all city average are statistically significant, showing their importance in accounting inflation in the USA.

Lastly, the coefficients of the lagged changes in the producer price index are positive, with DPPI(-1) being statistically significant.

Granger causality is a statistical methodology to investigate the presence of predictability exerted by each independent variable on the dependent variable across time. The Wald test is employed as the chosen method to examine Granger causality for each variable. In consideration of potential predictive insights, lags of the dependent variable are incorporated into the model, recognizing the capacity of past values to yield valuable predictive information.

For INF granger causes inflation null hypothesis is

$$H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = \alpha_6 = 0$$

For M1 granger causes inflation null hypothesis is

$$H_0: \emptyset_1 = \emptyset_2 = \emptyset_3 = 0$$

For CPIFUELUTI granger causes inflation null hypothesis is

$$H_0: \theta_1 = \theta_2 = \theta_3 = 0$$

For CPIALLURBAN granger causes inflation null hypothesis is

$$H_0: \varphi_1 = \varphi_2 = \varphi_3 = \varphi_4 = \varphi_5 = \varphi_6 = \varphi_7 = 0$$

For PPI granger causes inflation null hypothesis is

$$H_0: \delta_1 = \delta_2 = 0$$

Table 5 illustrates the outcomes of the Wald test for the independent indicators in the context of Granger causality with respect to inflation. Based on the test results (t statistics), the lags of INF, CPIFUELUTI, CPIALLURBAN, and PPI exhibit Granger causality in relation to inflation. However, in the case of M1 (money supply), the Wald test results fail to reject the null hypothesis. As a consequence, we can point out that M1 does not Granger cause inflation in the context of our study. Overall, we can conclude that past value of INF Granger cause inflation, meaning that INF contains information that helps predict the current value of inflation. However, the past value of M1 may not significantly help to predict the current value of inflation. Moreover, the past value of CPIALLURBAN, CPIFUELUTI and PPI show Granger causality concerning inflation which mean that they contain information that is useful for predicting the current value of inflation.

Table 5. Wald Test Results for the Independent Variables

	Test Statistic	Value	Probability
INF granger causes on inflation	**F-statistic**	6.0952	0.0000
	Chi-square	48.5146	0.0000
M1 granger causes on inflation	**F-statistic**	2.1311	0.0971
	Chi-square	10.2964	0.0731
CPIFUELUTI granger causes on inflation	**F-statistic**	3.6478	0.0002
	Chi-square	28.5736	0.0000
CPIALLURBAN granger causes on inflation	**F-statistic**	19.7722	0.0000
	Chi-square	132.3751	0.0000
PPI granger causes on inflation	**F-statistic**	14.8911	0.0005
	Chi-square	41.7529	0.0000

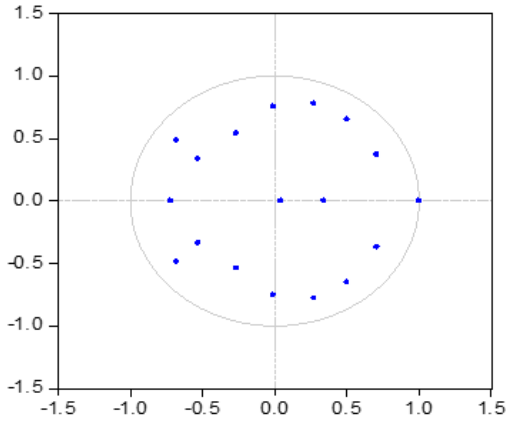
In this study, an examination of serial correlation in the regression errors is conducted using the correlogram of Q statistics for 12 lags (Table 6). The objective is to assess the presence of autocorrelation in the residuals, which could potentially influence the validity of the regression model. The test results presented in Table 6 indicate that the null hypothesis (H_0: There is no serial correlation in the regression error) is not rejected at the 1%, 5%, and 10% levels of significance. The p-values associated with the Q statistics are all above 0.1, suggesting that there is no statistically significant evidence of serial correlation in the regression errors up to 12 lags. Based on these findings, we can conclude that the regression model used in the study is free from serial correlation up to the considered 12 lags.

Table 6. Correlogram of Q Statistics of the Residuals

Autocorrelation	Partial Correlation	Lags	AC	PAC	Q-Stat	Prob.
.|. |	.|. |	1	-0.0270	-0.0270	0.1336	0.7150
.|. |	.|. |	2	-0.0440	-0.0440	0.4845	0.7850
*|. |	*|. |	3	-0.0970	-0.1000	2.2338	0.5250
*|. |	*|. |	4	-0.0700	-0.0790	3.1501	0.5330
.|. |	.|. |	5	-0.0440	-0.0590	3.5062	0.6220
.|. |	*|. |	6	-0.0500	-0.0730	3.9784	0.6800
.|. |	.|. |	7	-0.0060	-0.0330	3.9847	0.7820
.|* |	.|. |	8	0.0840	0.0600	5.3328	0.7210
.|. |	.|. |	9	0.0180	0.0020	5.3970	0.7980
.|. |	*|. |	10	-0.0610	-0.0700	6.1216	0.8050
.|. |	.|. |	11	0.0510	0.0550	6.6373	0.8280
.|. |	.|. |	12	0.0410	0.0490	6.9599	0.8600

The inverse root of AR characteristic polynomial test is employed to examine the stationarity of the model. By analyzing the unit roots within the unit circle, it is determined that all unit roots lie inside the circle. Consequently, the model is deemed to be stationary.

Figure 1. Inverse Roots of AR Characteristic Polynomial



5. Conclusion

The analysis of inflation in the United States involves the utilization of various indices to capture price and expenditure fluctuations. Specifically, money supply, the consumer price index for all urban consumers, consumer price index for fuel and utilities, and the production price index are incorporated in our time series analysis. These factors are chosen to capture different aspects of the economy that are related to inflationary trends. By exploring their relation with inflation from 1982 to 2020, this study aims to gain a deeper comprehension of the factors contributing to inflation in the USA. Prior to modeling, all variables considered are differenced, and the resulting data exhibit stationarity. The error correction model was then selected through a model-building process. It comprises 6 lags of INF, 3 lags of M1, 3 lags of CPIFUELUTI, 7 lags of CPIALLURBAN, and 2 lag of PPI. This model is deemed to be the most appropriate for our analysis.

The results show that certain lagged changes in inflation, consumer price index for fuel and utilities, consumer price index all city average and production price index play an important role in accounting for the variations in inflation in the USA but the lagged changes in money supply are not a significant determinant in accounting for the fluctuations in inflation in the USA. Moreover, the outcomes of the Wald test for Granger causality analysis suggest that lagged changes in inflation, consumer price indices for fuel and utilities and all urban areas, and the producer price index have significant Granger causality on inflation. However, the lagged changes in money supply do not exhibit statistically significant Granger causality on inflation. Lastly, note that, in order to mitigate the impact of the extraordinary circumstances experienced during the pandemic period on the results, in this research work, the data from the pandemic period has not been taken into account in.

References

Acar, Y. & Orhan, B. (2023). Determinants of Inflation in OECD Countries After the Covid-19 Pandemic. Journal of Economic and Administrative Approaches, 5(1), pp. 53-63.

Adjemian, M.K., Arita, S., Meyer, S., Salin, D. (2023). Factors Affecting Recent Food Price Inflation in the United States. Applied Economic Perspectives and Policy, 1-29.

Baek, J. & Koo, W.W. (2010). Analyzing Factors Affecting U.S. Food Price Inflation. Canadian Journal of Agricultural Economics, 58, 303–20.

Bandara, R. (2011). The Determinants of Inflation in Sri Lanka: An Application of the Vector Autoregression Model. South Asia Economic Journal, vol. 12, no. 2, pp. 271-286.

Bashir, F., Nawaz, S., Yasin, K., Khursheed, U., Khan, J., Qureshi, M. J. (2011). Determinants of Inflation in Pakistan: An Econometric Analysis Using Johansen Co-integration Approach. Australian Journal of Business and Management Research, vol.1, no.5, 71-82.

Bawa, S., Abdullahi, I. S., Ibrahim, A. (2016). Analysis of Inflation Dynamics in Nigeria (1981-2015). CBN Journal of Applied Statistics, vol. 7, no. 1.

Carvalho, A. R, Ribeiro, S. M. & Marques, A. M (2018). "Economic Development and Inflation: A Theoretical and Empirical Analysis. International Review of Applied Economics, Taylor & Francis Journals, vol. 32(4), pages 546-565.

Eftekhari M.S. & Kiaee, H. (2015). Determinants of Inflation in Selected Countries. Journal of Money and Economy, vol. 10(2), pp. 113-148.

El-Baz, O. (2014). The Determinants of Inflation in Egypt: An Empirical Study (1991-2012). MPRA Paper 56978.

Shah, M. A. A, Arshed, N. & Jamal, F. (2014). Statistical Analysis of the Factors Affecting Inflation in Pakistan. International Journal of Research, vol.1, issue-4.

Hall, S. G., Tavla, G. S. & Wang, Y. (2023). Drivers and Spillover Effects of Inflation: The United States, the Euro Area, and the United Kingdom. Journal of International Money and Finance, vol. 131, 102776.

Hamilton, A. (2001). Exploding Inflation. Zeal Intelligence Press.

Hemmati, A., Niakan, L., Varahrami, V. (2018). The External Determinants of Inflation: The Case of Iran. Iran Economic Review, vol. 22, no.3, pp. 745-756.

Hossain, S. & Mitra, R. (2017). The Determinants of Price Inflation in the United States. The Journal of Developing Areas, vol.51, no.1, pp. 153-175.

Lim, Y.C. & Sek, S.K. (2015). An Examination on the Determinant of Inflation. Journal of Economics, Business and Management, vol.3, no.7.

Mohanty, D. & John, J. (2015). Determinants of Inflation in India. Journal of Asian Economics, vol. 36(C), pp 86-96.

Putra, N. (2022). Analysis of Factors Affecting Inflation in Indonesia 2015-2020. Research Horizon, vol.2, no.2, 330-344.