

Monetary Policy's Impact on Jordanian Economic Growth: Long and Short-Term Effects for the Period (1990 – 2021)

تأثير السياسة النقدية على النمو الاقتصادي الأردني: الآثار طويلة وقصيرة الأجل للفترة
(2021 – 1990)

Mazen Hasan Basha

Associate Professor, Department of Economics, Faculty of Economics and Administrative Sciences, Zarqa
University, Jordan

E-mail: mbasha@zu.edu.jo

ORCID ID: 0000-0002-6946-3092

Accepted

قبول البحث

2024/5/30

Revised

مراجعة البحث

2024/5/13

Received

استلام البحث

2024 /4/21

DOI: <https://doi.org/10.31559/GJEB2024.14.4.5>



This file is licensed under a [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/)

Monetary Policy's Impact on Jordanian Economic Growth: Long and Short-Term Effects for the Period (1990 – 2021)

تأثير السياسة النقدية على النمو الاقتصادي الأردني: الآثار طويلة وقصيرة الأجل للفترة (2021 – 1990)

Abstract:

Objectives: This study aims to examine how monetary policy affects Jordan's economic growth in the long and short term. The study incorporates the time series data from 1990 to 2021.

Methods: To examine the impacts of monetary policy on economic growth measures, such as GDP, this study used the Autoregressive Distributive Lag (ARDL) and Vector Error Correction (VEC) models. The independent variables are the real interest rate, inflation rate, and broad money supply as monetary policy indicators.

Results: The current study shows that monetary policy (real interest rate, inflation rate, and broad money supply) has positive significant implications that impact Jordanian economic growth in both the short and long term. Furthermore, the data demonstrate a bidirectional link between monetary policy and Jordanian economic growth in both the long and short term.

Conclusion: The monetary policy has a positive significant impact on Jordanian economic growth measures (real interest rate, inflation rate, and broad money supply).

Keywords: Monetary policy; long and short- term effects; economic growth; Autoregressive Distributive Lag (ARDL); Vector Error Correction (VEC) models; Jordan.

المخلص:

الأهداف: تهدف هذه الدراسة إلى اختبار تأثير السياسة النقدية على النمو الاقتصادي الأردني على المدى الطويل والقصير تتضمن الدراسة بيانات السلاسل الزمنية من عام 1990 إلى عام 2021.

المنهجية: لدراسة آثار السياسة النقدية على مقاييس النمو الاقتصادي، مثل الناتج المحلي الإجمالي، استخدمت هذه الدراسة نماذج الانحدار الذاتي للفتحات الزمنية الموزعة (ARDL)، وتصحيح خطأ المتجهات (VEC). وتم أخذ المتغيرات المستقلة (سعر الفائدة الحقيقي، معدل التضخم وعرض النقد الواسع) كمؤشرات للسياسة النقدية.

النتائج: تظهر الدراسة الحالية أن السياسة النقدية (سعر الفائدة الحقيقي، ومعدل التضخم، وعرض النقود الواسع) لها آثار إيجابية كبيرة تؤثر على النمو الاقتصادي الأردني على المدى القصير والطويل. علاوة على ذلك، تظهر البيانات وجود صلة ثنائية الاتجاه بين السياسة النقدية والنمو الاقتصادي الأردني على المدى الطويل والقصير.

الخلاصة: بناءً على هذه النتائج خلص البحث إلى أن السياسة النقدية لها تأثير إيجابي على النمو الاقتصادي في الأردن.

الكلمات المفتاحية: السياسة النقدية؛ الآثار طويلة وقصيرة الأجل؛ النمو الاقتصادي؛ الانحدار الذاتي للفتحات الزمنية الموزعة؛ تصحيح خطأ المتجهات؛ الأردن.

1 Introduction

Monetary policy is essential to economic and strategic planning for ensuring economic development and the public's welfare (Gillani & Abdin, 2021). Traditionally, the impact of monetary policy is explored by testing the consequences of the inflation rate, interest rate, and money supply (as indicators of monetary policy) on the gross domestic product (GDP) (as an indicator of economic growth) (Sulaiman & Migiro, 2014). Various transmission channels facilitate the monetary policy to influence economic activities significantly, and such networks are studied by different schools of thought like Keynesians and monetarists (Keynes, 1930). These schools hypothesize that modifications in the money supply considerably alter the absolute magnitude of money in the economy. According to Friedman (1970), "An extensive open market operation increased money stock, which also increases the commercial bank reserves and loan facility and leads to an increased money supply by the multiplier effect" (Friedman, 1970). The money supply then needs to be reduced. For this, organizations start buying the securities the central bank sells, motivating the activities in real sectors. This view is also supported by Tobin (1958), who investigated the transmission effect for asset portfolio choice (Tobin, 1958). The monetary policy stimulates asset exchange and transfer between bonds, commercial papers, equities, and bank deposits.

Contrary to this, the Keynesian school of thought argues that the influence of money stock on economic variables is significant due to the activities of the financial market (Garg & Gupta, 2013). Consequently, all school of thought discusses the considerable market reaction to monetary policy and economic indicators, hence overall economic growth (Ahmad, et al., 2016). In this regard, the current study aims to investigate whether the monetary policy of Jordan has a long or short-run impact on the economic growth of Jordan.

2 Literature Review

The central bank designs and implements a country's monetary policy (Durrani et al., 2020). The inflation rate, interest rate, and money supply in an economy are controlled by its monetary policy. Moreover, monetary policy promotes economic expansion and stability, eliminates unemployment, and maintains the exchange rate with different currencies (Gillani & Abdin, 2021). The central bank employs various tools to attain the goals of monetary policy. Such objectives and tools influence bank funds. The monetary policy also creates an equilibrium between supply and demand by maintaining domestic prices (Durrani et al., 2020). Other objectives of monetary policy are the elimination of inflationary pressure through control of the exchange rate, shaping the patterns of production and investment, expansion of financial institutions in the economy, maintenance of interest rates for offering the incentives of investments, and effective and efficient debt management (Chaudhry et al., 2012; Gupta & Keen, 2014). Monetary policy has its tools that facilitate the attainment of objectives. These tools are reserve requirements, open market operations, discount lending, and reserve requirement ratio.

Open market operations include selling and purchasing government securities and bonds through a bidding system in an open market on behalf of the government (Friedman and Schwartz, 2008; Anwar and Nguyen, 2018). The inflationary situation is controlled by increasing the market's liquidity through buying bonds by the monetary authority and the government. On the other hand, the monetary authority manages the deflationary situation by selling the bonds to reduce liquidity in the market (Akalpler & Duhok, 2018). Open market operation is a feasible and straightforward process for controlling the economic situation as it doesn't incorporate any administrative delays (Champagne & Sekkel, 2018). The central bank plays a crucial role as a lender of last resort by extending loans to financial institutions, particularly banks experiencing financial difficulties or on the verge of collapse. (Durrani et al., 2020; Varlik & Berument, 2017). The other tool is the discount policy, which significantly influences the economy's money supply and interest rate. Monetary policy also emphasizes banks' reserve requirement, the specific amount required by the central bank to be reserved by all commercial banks compared to their loaning out amount (Durrani et al., 2020).

Effective monetary policy is required by developing economies to maintain internal and external economic balance. To ensure economic growth, effective financial planning is needed to support credit planning and monetary management (Srithilat et al., 2017). Underdeveloped economies face severe inflation issues owing to enhanced effective demands resulting from government spending (Anwar & Nguyen, 2018). However, a realistic exchange rate and a stable domestic price level are significantly required for sustained economic growth (Meher, 2022). For this, an equilibrium of investments and savings is essential. It's a problematic and

imperative task for growing economies. However, enhancing the pace of economic development requires the improvement of technologies (Gormez, 2019). The enhancement of the growth rate of capital formation is also a necessity. This improvement leads to technological advancement and economic development (Kareem et al., 2013). Therefore, economies mainly adopt easy monetary policies, whereas economies facing inflation issues implement tight monetary policies. However, it is difficult for economies to control inflation due to increased domestic commodity prices (Mehar, 2022 & Fasanya et al., 2013). Monetary policy is among the key drivers of promoting economic growth. Economic growth is imperative to eliminate poverty and enhance livelihood (Gillani and Abdin, 2021 & Montiel et al., 2012). Almost all governments recognize monetary policy's significant impact on economic growth. However, the formulation process of monetary policy changes multiple times with the changes in developing economies and the increasing concerns of monetary policies internationally. (Varlik and Berument, 2017). The money supply is the key critical and imperative target variable in most economies. The central banks employ this variable for strategic planning and policy objectives, assuming that the supply and demand of money can significantly impact economic prosperity (Durrani et al., 2020). Monetary policy has real as well as nominal effects on the economy's growth, indicating a direct relationship (Kamaan and Nyamongo, 2014; Fasanya et al., 2013; Obeid & Awad, 2017). reported the relationships among monetary policy, inflation rate, fiscal deficit, and real exchange rate (Fasanya et al., 2013; Obeid & Awad, 2017). Contrary to these studies, some researchers have reported the absence of a relationship between monetary policies and economic development (Montiel et al., 2012; Kamaan; Nyamongo, 2014 & Buigut, 2009). The significant influence of monetary policy shocks on the output is also reported. Monetary policy innovations mostly lead to output fluctuations. Moreover, the disparity of monetary policy procedures influences the credit variable that ultimately impacts the real side of economies. Similarly, many researchers reported that exchange and interest rates negatively influence non-oil exporters (Chaudhry et al., 2012; Kareem et al., 2013; Fasanya et al., 2013; Havi and Enu, 2015). The fiscal policy also negatively affects non-oil exporters. It indicates that oil and non-oil exporters' monetary policy affects economic indicators differently (Gormez, 2019).

Jordan is an oil-exporting economy (Obeid & Awad, 2017). The Jordanian government has employed a financial growth plan for Jordan (2018-2022) to stabilize macroeconomic indicators (Mugableh, 2019). This growth plan requires a 5% growth rate for the top five contributing sectors, including government services, finance, manufacturing, transport and tourism, and hospitality (JEGPR, 2018). The significant contributory factors to this growth need to be highlighted. Therefore, this study contributes significantly by highlighting monetary policies' long and short-run impacts on economic development.

3 Methodology

The current study investigates the casual long- and short-run relationship between monetary policy and economic development in Jordan, using the money supply, inflation rate, real interest rate, and GDP as indicators of economic growth. The research includes annual time series data from 1990-2021, resulting in a small sample of 30 observations. The local currency's GDP, the billion Jordanian dinars (JD), measures Jordan's economic development. The interest rate is among the primary instruments of monetary policy. It is utilized as the real interest rate. "Broad monetary aggregate (M2, billion JD)" measures the money supply. M2 (billion JD) is a proxy of the Jordanian economy's total monetary aggregates. The inflation rate is measured through the consumer price index (CPI). Data is collected from the official website of the World Bank (2022) (Bank, 2022). The variables are used after transforming to the natural logarithmic form. Incorporating these variables, the empirical model of this study is as follows:

$$\text{Log GDP}_t = \beta_0 + \beta_1 \text{Log M2}_t + \beta_2 \text{Log IFR}_t + \beta_3 \text{Log IR}_t + \varepsilon_t \quad \text{eq. (1)}$$

Where Log GDP_t is the logarithm of gross domestic product, Log M2 is the logarithm of broad monetary aggregate, Log IFR_t is the logarithm of the inflation rate, Log IR_t is the logarithm of interest rate, and ε_t is the residual term. Grounded upon the economic and financial theories, the expected signs of coefficients are as follows; $\beta_1, \beta_3 > 0, \beta_2 < 0$ (Keynes, 1930; Friedman, 1970; Fisher, 1930 & Mundell, 1963).

3.1. Co-Integration

ARDL and VEC models determine the variables' long and short-run effects. This study employs the ARDL approach to scrutinize the equilibrium relationship between GDP and monetary policy indicators (IFR, M2, and IR). ARDL model is used after testing the unit root of the series of interest. The variables are stationary at the first difference (Table 1).

Table 1: Unit Root Test

Variables	t-statistics		Critical Values		
	Lower Bound	Upper Bound	10%	5%	1%
LogGDP_t	-1.03	-5.15**			
LogM2_t	-2.01	-3.21***	-3.18	-3.51	-4.20
LogIFR_t	-1.62	-3.29***			
LogIR_t	-2.74	-3.31***			

***, **, * shows the significance at a 1%, 5%, and 10% respectively.

The ARDL model allows for estimating stationary series at the level or first difference but not at the second difference. Hence, the series under study are suitable for implying the ARDL approach. So, the model of this study is specified as follows:

$$\Delta \text{Log GDP}_t = \alpha_0 + \alpha_{1t} \text{Log GDP}_{t-1} + \alpha_{2t} \text{Log M2}_{t-1} + \alpha_{3t} \text{Log IFR}_{t-1} + \alpha_{4t} \text{Log IR}_{t-1} + \sum_{s=1}^n \alpha_{5s} \Delta \text{Log GDP}_{t-s} + \sum_{s=0}^n \alpha_{6s} \Delta \text{Log M2}_{t-s} + \sum_{s=0}^n \alpha_{7s} \Delta \text{Log IFR}_{t-s} + \sum_{s=0}^n \alpha_{8s} \Delta \text{Log IR}_{t-s} + \varepsilon_t \quad \text{eq. (2)}$$

Where $\alpha_1, \alpha_2, \alpha_3$, and α_4 are the estimates indicating a long-run relationship, while coefficients $\alpha_5, \alpha_6, \alpha_7$, and α_8 are the estimates for a short-run relationship. For estimating the ARDL model, initially, equation 2 is estimated through ordinary least squares. The null hypothesis assumes no co-integration. The decision is made based on Bound F-statistics. Afterward, the estimated values are compared with the critical values of F-statistics. If the estimated value of F-statistics is greater than the upper bound I (I), the null hypothesis will be rejected, signifying co-integration. If the estimated value of F-statistics is lower than the lower bound I (0), the null hypothesis will be accepted, concluding no co-integration. The outcomes are inconclusive if the estimated value lies within I (I) and I (0).

The vector autoregressive (VAR) model explores the lag order. The lag order for this study is found to be two, based on the Akaike information criterion (AIC) and Schwarz Bayesian (SB) criterion. The results indicate that the estimated value of F-statistics (5.19) is greater than the upper bound value (5.12) at a 5% significance level, indicating the existence of co-integration between monetary policy indicators and economic growth (Table 2). These outcomes are in harmony with the results of Mugableh (2019) and Sulaiman and Migiro (2014).

Table 2: Co-integration Test

Empirical Model:	$\text{LogGDP}_t = f(\text{LogM2}_t, \text{LogIFR}_t, \text{LogIR}_t)$		
Estimated F-statistics	Tabulated F-statistics		
5.19***	Upper Bound	Lower Bound	
	5.12	3.82	1%
	4.05	2.85	5%
	3.57	2.43	10%

*** shows the significance at a 1% significance level

Once co-integration is confirmed, the subsequent stage investigates the equilibrium relationship between the variables under study. Results indicate that all variables positively influence the Jordanian economic growth except the inflation rate (Table 3). These findings are in concord with the outcomes reported by Anwar and Nguyen (2018), Champagne and Sekkel (2018), Mugableh (2019), and Varlik and Berument (2017).

Table 3: ARDL Results

Variables	Coefficient	Variables	Coefficient
Constant term	-2.491 (0.486)		
Long run		Short run	
LogM2_{t-1}	8.123* (0.008)	ΔLogM2_{t-s}	2.136** (0.012)
LogIFR_{t-1}	7.405** (0.014)	$\Delta\text{LogIFR}_{t-s}$	3.451** (0.0024)
LogIR_{t-1}	-3.536*** (0.052)	ΔLogIR_{t-s}	-5.798*** (0.058)

***, **, * shows the significance level at a 1%, 5%, and 10% respectively.

Table 4: Diagnostic Tests

Diagnostic tests	Null Hypotheses (H ₀)	F-statistics	Decision
Homoscedasticity	Heteroscedasticity	7.67* (0.011)	H ₀ rejected
Normality	$\varepsilon_t \sim N(0, \delta^2)$	6.53** (0.21)	H ₀ rejected
Ramsey reset	The empirical model is not correctly specified	4.52** (0.032)	H ₀ rejected

***, **, * shows the significance level at a 1%, 5%, and 10% respectively.

Inflation has a dual impact on the economy. On one side, it can contribute positively to the country's economic growth. On the other side, it may adversely impact economic growth. Thus, economists and policymakers must follow the moderation strategy to influence economic growth positively. Central banks can use interest rates and money supply for this. The money supply is considered a major economic engine, while the interest rate can motivate investors (Durrani et al., 2020). The outcomes of diagnostic tests (Table 4) indicate that the empirical equation of this study doesn't have a heteroscedasticity problem. It is accurately designated along with a normal distribution of residuals.

3.2. Granger Causality: The VEC Model

When co-integration is confirmed among the variables of interest, the VEC model is employed rather than the VAR model. The significant negative error correction (EC) term indicates the presence of a long-run causal relationship, and the F-statistics indicate the short-run causal relationship. The equation is transformed into the error correction model (ECM).

$$\begin{bmatrix} \Delta\text{LogGDP} \\ \Delta\text{LogM2} \\ \Delta\text{LogIFR} \\ \Delta\text{LogIR} \end{bmatrix}_t = \begin{bmatrix} \alpha_{1t} \\ \alpha_{2t} \\ \alpha_{3t} \\ \alpha_{4t} \end{bmatrix} + \sum_{s=0}^n \begin{bmatrix} \delta_{11t} & \delta_{12t} & \delta_{13t} & \delta_{14t} \\ \delta_{21t} & \delta_{22t} & \delta_{23t} & \delta_{24t} \\ \delta_{31t} & \delta_{32t} & \delta_{33t} & \delta_{34t} \\ \delta_{41t} & \delta_{42t} & \delta_{43t} & \delta_{44t} \end{bmatrix} \begin{bmatrix} \Delta\text{LogGDP} \\ \Delta\text{LogM2} \\ \Delta\text{LogIFR} \\ \Delta\text{LogIR} \end{bmatrix}_{t-s} + \begin{bmatrix} \beta_{1t} \\ \beta_{2t} \\ \beta_{3t} \\ \beta_{4t} \end{bmatrix} [Ect]_{t-1} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \end{bmatrix} \quad \text{eq. (3)}$$

Where α (1-4) indicates the intercept term, δ_{kl} ($k, l = 1, 4$) specifies the coefficients for testing the null hypothesis of no short-run Granger causality, and β (1-4) indicates the coefficients of ECT_{t-1} . These coefficients indicate the results for the null hypothesis of no long-run Granger bi-directional causality. The findings suggest a bi-directional causal relationship between the monetary policy indicators and economic growth in the short and long run (Table 5). These findings are consistent with Mugableh's (2019) and Srithilat et al. (2017) findings. The significant negative ECM term approves the existence of co-integration among variables.

Table 5: VEC model; Granger Causality Estimation

Dependent Variables	Sources of Causation				
	Short-run				Long-run
	$\Delta\text{LogGDP}_{t-s}$	ΔLogM2_{t-s}	$\Delta\text{LogIFR}_{t-s}$	ΔLogIR_{t-s}	ECT_{t-1}
$\Delta\text{LogGDP}_{t-s}$	-	5.74* (0.01)	6.63* (0.01)	5.29** (0.02)	-0.81* (.01)
ΔLogM2_{t-s}	9.2* (0.01)	-	7.3* (0.01)	5.19** (0.02)	-0.71* (.01)
$\Delta\text{LogIFR}_{t-s}$	8.05* (0.01)	6.2* (0.01)	-	4.3** (0.02)	-0.62* (.01)
ΔLogIR_{t-s}	2.31** (0.03)	4.1** (0.02)	1.2** (0.04)	-	-0.51* (.01)

***, **, * shows the significance level at a 1%, 5%, and 10% respectively.

4 Discussion, Conclusion, and Recommendations

This study examined the effects of monetary policy on Jordan's economic development. This study uses IFR, M2, and IR as monetary policy indicators, and GDP to calculate economic growth. The article looked at both long-term and short-term effects to emphasize the impact of various monetary policy measures. The ARDL model was used in the study because it allows the series to remain stationary at multiple levels and may be estimated using small sample sets. The study used yearly time series data from 1990 to 2019 and included 30 observations.

Furthermore, the unit root test confirmed that the ARDL model fits the series under consideration. The study's empirical findings show that money supply and interest rates have a favorable influence on economic growth. Inflation is shown to have a detrimental effect. Monetary policy indicators are directly tied to a country's long- and short-term economic growth.

These results have important consequences for Jordan's economics and policymakers. It emphasizes the relevance of monetary policy in the country's economic growth and development. It has a big impact on financial stability; thus, policymakers must concentrate on monetary policy indicators so that they may contribute even more favorably to economic growth and prosperity. The inflation rate, in particular, requires close attention to minimize inflationary pressures and ensure that growing domestic prices do not stifle growth. Inflation has a negative influence on poor individuals. The standard of living suffers, culminating in economic downturns if the trend continues over time. To maintain economic success, inflation must be kept under control.

Furthermore, the interest rate must be attractive to attract domestic and overseas investors. These investments have the potential to dramatically boost the country's economy. Thus, monetary policy indicators have an important role in a country's economic development. The state's central authority and central bank oversee monetary policy through interest rate rules, money supply, and other monetary measures that have a considerable impact on economic activity. These restrictions and managerial practices contribute to the country's balance of payments and employment rate. Furthermore, the Jordanian government must have fixed exchange rates and price levels to control the money market. It needs to focus on stabilizing economic growth through effective monetary policy measures and management of monetary assets.

References:

- Ahmad, D., Afzal, M. & Ghani, U., (2016). Impact of Monetary Policy on Economic Growth Empirical Evidence of Pakistan. *International Journal of Applied Economic Studies*, 4(6).
- Akalpler, E. & Duhok, D. (2018). Does monetary policy affect economic growth: evidence from Malaysia. *Journal of Economic and Administrative Sciences*, 34(1), 2-20. [CrossRef]
- Anwar, S. & Nguyen, L.P. (2018). Channels of monetary policy transmission in Vietnam. *Journal of Policy Modeling*, 40(4), 709-729. [CrossRef]
- Bank, W. (2022). *World Development Indicators Database*. <https://databank.worldbank.org/source/world-development-indicators>.
- Buigut, S. (2009). *Monetary policy transmission mechanism: implications for the proposed East African Community (EAC) monetary union*. in CSAE conference.
- Champagne, J. & Sekkel, R. (2018). Changes in monetary regimes and the identification of monetary policy shocks: Narrative evidence from Canada. *Journal of Monetary Economics*, 99, 72-87. [CrossRef]
- Chaudhry, I.S., Qamber, Y. & Farooq, F. (2012). Monetary policy, inflation and economic growth in Pakistan: Exploring the co-integration and causality relationships. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 6(2), 332-347.
- Durrani, A., Rosmin, M. & Volz, U. (2020). The role of central banks in scaling up sustainable finance—what do monetary authorities in the Asia-Pacific region think? *Journal of sustainable finance & investment*, 10(2), 92-112. [CrossRef]
- Fasanya, I.O., Onakoya, A.B. & Agboluaje, M.A. (2013). Does monetary policy influence economic growth in Nigeria? *Asian Economic and Financial Review*, 3(5), 635-646.
- Fisher, I., (1930). *The theory of interest*. New York, 43, 1-19.
- Friedman, M. & Schwartz, A.J. (2008). *A monetary history of the United States, 1867-1960.*, Princeton University Press.

- Friedman, M., (1970). A theoretical framework for monetary analysis. *Journal of Political Economy*, 78(2), 193-238.
- Garg, R. & Gupta, S. (2013). Impact of monetary policy on Indian economy. *International Journal in Management and Social Sciences*, 1.
- Gillani, D.Q., & ul Abidin, A. (2021). Impact of Monetary Policy on Economic Growth in Pakistan Economy. *Journal of Education and Social Studies*, 2(3), 95-101. [[CrossRef](#)]
- Gormez, Y., (2019). *Central bank digital currency: a historical perspective*. Central Bank Digital Currency and Fintech in Asia,
- Gupta, S. & Keen, M. (2014). *Fiscal policy and income inequality*. Policy Paper, International Monetary Fund Washington, DC, <http://www.imf.org/external/np/pp/eng/2014/012314.pdf>
- Havi, E.D.K. & Enu, P. (2015). *The effect of fiscal policy and monetary policy on Ghana's economic growth: which policy is more potent?* *International Journal of Empirical Finance*, 61-75.
- JEGPR. (2018). *The Jordan Economic Growth Plan 2018-2022 (JEGP)*, <https://www.ssif.gov.jo/UploadFiles/JEGProgramEnglish.pdf>
- Kamaan, C.K. & Nyamongo, E. (2014). The effect of monetary policy on economic growth in Kenya. *International Journal of Business and Commerce*, 3(8), 11-24.
- Kareem, R., et al., (2013). Analysis of fiscal and monetary policies on economic growth: Evidence from Nigerian democracy. *Current Research Journal of Economic Theory*, 5(1), 11-19. [[CrossRef](#)]
- Keynes, J. M. (1930). *A treatise on money: in 2 volumes.*, Macmillan & Company.
- Mehar, M.A. (2023). Role of monetary policy in economic growth and development: from theory to empirical evidences. *Asian Journal of Economics and Banking*, 7 (1), 99-120. [[CrossRef](#)]
- Montiel, P., et al. (2012). *Financial Architecture and the Monetary Transmission Mechanism in Tanzania*.
- Mugableh, M.I. (2019). Does monetary policy affect economic growth in Jordan? Evidence from ordinary least square models. *International Business Research*, 12(1), 27-34. [[CrossRef](#)]
- Mundell, R.A. (1963). Capital mobility and stabilization policies under fixed and floatmg exchange rates. *Canadzan Journal of Economzcs and Polmcal Science*, 29 (4), 475- 485.
- Obeid, R. & Awad, B. (2017). Effectiveness of monetary policy instruments on economic growth in Jordan using vector error correction model. *International Journal of Economics and Finance*, 9(11), 194-206. [[CrossRef](#)]
- Srithilat, K., Sun, G. & Thavisay, M. (2017). The impact of monetary policy on economic development: Evidence from Lao PDR. *Global Journal of Human-Social Science*, 17(2), 9-15.
- Sulaiman, L. & Migiro, S. (2014). The nexus between monetary policy and economic growth in Nigeria: a causality test. *Public and Municipal Finance*, 3(2), 35-40.
- Tobin, J., (1958). Liquidity Preference as Behaviour toward Risk. *Review of Economic Studies*, 25(2), 65-86.
- Varlik, S. & Berument, M.H. (2017). Multiple policy interest rates and economic performance in a multiple monetary-policy-tool environment. *International Review of Economics & Finance*, 52, 107-126.