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Role of Investment Funds in Economic Growth (Case Study of Jordanian Hajj Fund for Savings and Investment)

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Abstract

As a case study of the Jordanian Hajj Fund for Savings and Investment, this study aims to clarify the role of investment funds by investigating their role in long-term and short-term investment activities for economic growth in Jordan. This study was based on data collected from available annual reports of the Fund for the period of (2013–2021) and the Department of Statistics for information on GDP growth as a representative of economic growth and EViews. The statistical analysis showed the positive and statistically significant effect of the total investment activities (long-term and short-term) of the Fund on economic growth. In addition, the analysis demonstrated the positive and statistically significant effects of the long-term investment and short-term investment activities of the Fund on economic growth. However, the effect of the long-term investment activities of the Fund on economic growth was stronger than that of its short-term investment activities, because long-term investment activities directly affect economic growth. The analysis also revealed the positive and statistically significant relationship between the lagging economic growth (GGDP-2) and economic growth in the current year and negative relationship between the unemployment rate and economic growth. Results promote the establishment of investment funds, especially those operating according to modern Islamic financing tools, owing to their ability to attract savings from small savers, thereby contributing to economic growth in the country. The most important recommendation of this study involves long-term investment, owing to its considerable impact on economic growth. Increased investment funds should be established to attract savings to contribute to economic growth and benefit from the experiences of leading countries in this field.

Introduction
Investment funds play a major role in economic activities owing to their ability to innovate and develop by attracting savings on the one hand and investment on the other hand.
Such funds increased in recent years, as they were established in many countries to help savers perform Hajj rituals and for use in various investment activities (Aishaath et al., 2018).

In light of the growth of such funds, many researchers in the field of finance and investment examined their role in economic growth by investigating the relationship between the development of financing tools and investment in such funds and economic growth, as such

funds can contribute significantly to economic development and achieve rates and continuous and sustainable growth.

Jordan is the first Arab country and second globally to establish an investment fund, namely, the Hajj Fund, after Malaysia, which is considered to be the first in the world and has made substantial progress in this field, encouraging savings for the Hajj and investment of such savings for the benefit of the savers (Hajj Provident and Investment Fund, https://www.awqaf.gov.jo).

Therefore, this study aims to clarify the role of the Hajj Fund in the economic growth of Jordan by examining the various investment activities of the Fund as well as the role of long-term investment activities in supporting economic growth in Jordan. This study also highlights the role of the short-term investment activities of the Fund in support of economic growth.

This study is an important research stemming from the urgent need for investment funds leading to return to savers and at the same time, financing investment in economic projects leading to economic growth. The importance of this study involves its highlighting of the urgent need for investment funds that can attract savings from small savers to contribute to the national economy by financing investments, leading to the reduction of unemployment and addressing various economic problems in Jordan. Moreover, this study sheds light on the role of creativity and development in attracting deposits and financing investments using modern financing tools instead of traditional financing.

The problem of this study is that the Fund uses various long- and short-term investment methods that affect economic growth in Jordan. Accordingly, this study formulates the following questions: What is the impact of the Fund's total investment activities on economic growth? What is the impact of the Fund's long-term investment activities on economic growth? What is the impact of the Fund's short-term investment activities on economic growth? To answer these questions, this study proposes the following hypotheses:

1. A positive and statistically significant relationship exists between the Fund's total investment activities and economic growth.

2. A positive and statistically significant relationship exists between the Fund's long-term investment activities and economic growth.

3. A positive and statistically significant relationship exists between the Fund's short-term investment activities and economic growth.

To test the hypotheses, this study conducts statistical analysis using EViews. Specifically, this study analyzes the hypotheses using three standard models, in which the first model analyzes the impact of the Fund's total investment activities (long term and short term) on economic growth, the second model analyzes the impact of the Fund's long-term investment activities on economic growth, and the third model analyzes the impact of the Fund's short-term investment activities on economic growth.

To discuss the research topics, this study is divided into three sections. The first section presents the Introduction, previous studies, theoretical side of the study, and descriptive analysis; the second section discusses the research methodology and statistical analysis to test the hypotheses; and the third section highlights the results and recommendations.

Study variables1.1
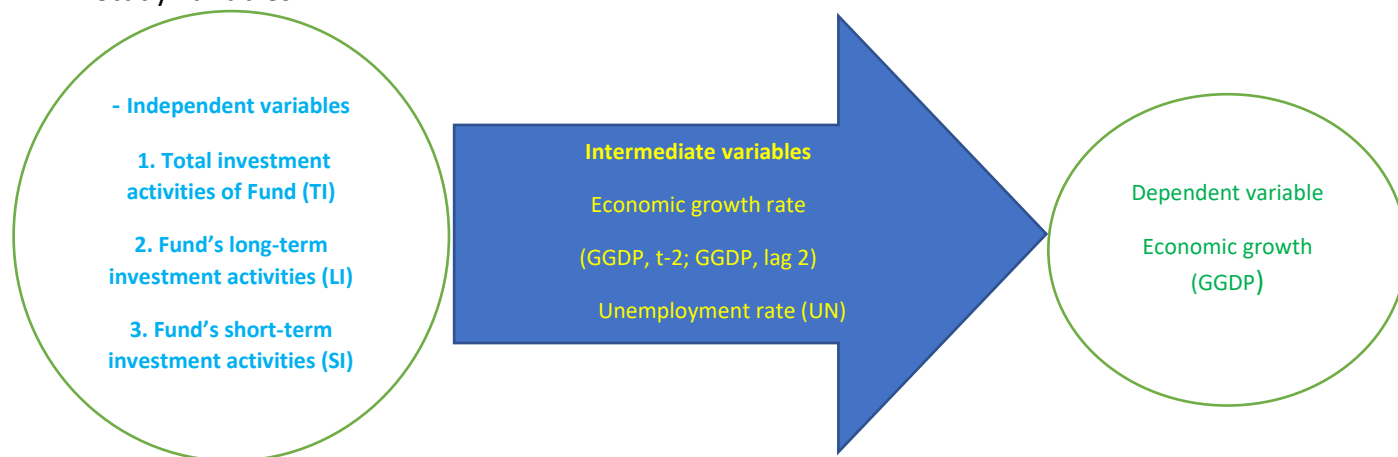
Source: Figure by researcher based on previous studies

Previous Studies and Theoretical Side

Previous Studies

Many previous studies on the Hajj Fund exist, with most conducting standard analysis and descriptive analysis. The majority of international studies focuses on Malaysia and Indonesia, which are considered to be pioneers in the field of investment funds, such as the Hajj Fund. The two countries use the Hajj Fund directly for long-term and short-term investments to obtain returns for the fund savers and contribute to economic growth (bin Hassan, 2014).

The study of (bin Hassan, 2014) focused on the Hajj Fund in Malaysia and board of the Hajj Fund in India and obtained data through an electronic questionnaire and from secondary sources such as books and periodicals to enhance the theoretical aspect, obtain results, and conduct descriptive analysis. The analysis involved multiple regression between the study variables, and the results showed that the establishment of such financial institutions can lead to job opportunities and easy savings mobilization owing to their benefit-free advantage and provide a platform for investments, which can lead to positive impacts on the economic and social situations of the country. In addition to examining the study of (Al-Jabari and Rodina, 2017), this study aims to clarify the areas of investment of the Jordanian Hajj Fund, as it relies on the descriptive analysis of books, various magazines, and primary Jordanian Hajj Fund sources. This study concludes that savings in the Hajj Fund through a *suksuk* subscription by the savers can contribute to financing investments in economic projects, which in turn can contribute to economic development. This study also shows that investing funds through the Hajj Fund will enable the savers to participate in investment operations and gain ownership of companies and projects they cannot own through the investment methods followed by the Fund, which are consistent with the principles of the Islamic Sharia. This study also shows that the Jordanian Hajj Fund is one of the investment funds that achieved success in increasing the volume of investments and number of savers to increase their profits, thereby helping them cover the cost of performing the Hajj. One of the most important recommendations of this study is to activate the role of the Fund by entering into many investment fields, specifically, the development field, by providing grants to outstanding students in universities to serve the Fund in the future (Aishaath et al., 2018). conducted a comparative study on the management of the Hajj Fund in Malaysia, Indonesia, and the Maldives and relied on descriptive analysis for the data. The study showed that Hajj Fund management institutions

play an important role in investments, and such funds contribute indirectly to depositors in terms of economic development and thus enhance economic growth in the country. Through the analysis, the study found that the Hajj Fund in Malaysia is based on fund management through investment portfolios, which was deemed highly advanced, diversified, and innovative owing to the use of banking products and Islamic tools as well as shares to finance small companies. The study also showed that the Hajj Fund in Indonesia is based on investment and money management through investments in Islamic instruments, such as Islamic bonds, and diversification into various investment activities. Meanwhile, the study revealed that in the Maldives, income from investments is not entirely clear. As its most important recommendations, the study stated that Indonesia and the Maldives can benefit and learn from the Malaysian experience to improve Hajj Fund management to obtain the largest possible financial return and simultaneously contribute to economic development and improve social welfare at the national level. Muheramtohadi (2019) aimed to clarify the use of financial resources in the Hajj Fund in investment activities and conducted descriptive analysis by referring to the Fund's financial statements. The study revealed the possibility of using financial resources in investments through the use of Islamic investment financing tools such as speculation and *murabaha*. The study also demonstrated that the use of Fund financial resources can lead to development and economic growth. In addition, Sayyidah (2020) analyzed the impact of investment costs, investment volume, and an asset allocation policy on the investment performance of the Hajj Fund in Malaysia. The study relied on the financial reports issued by the Hajj Fund during the period of 2008–2017 and conducted multiple regression analysis using SPSS. The analysis showed the significant positive impact of investment costs on the performance of the Hajj Fund. In addition, the size of the investment and partial asset allocation policy had a significant positive impact on the performance of the Hajj Fund. One of the most important recommendations of the study was the need to find satisfactory administrative skills, which can lead to a satisfactory impact on the performance of the Fund.

Some studies explained the role of Islamic finance in economic development, including Naeima (2021), who analyzed the impact of Islamic finance on economic growth in Algeria for the period of 1993–2019 through (An autoregressive distributed lag (ARDL) status analysis. The study relied on the annual reports issued by the Al Baraka Islamic Bank of Islamic Finance and took the total output as an indicator of economic growth in Algeria. The study concluded that Islamic finance exerted a positive impact on economic growth, and in the long term, one of the most important recommendations of the study is the need to support Islamic banks by providing facilities to promote comprehensive development in all economic sectors and educate individuals about the importance of Islamic finance for economic growth and directing funds for investment rather than hoarding.

The studies highlighted and strengthened the possibility of the Fund's role in financing and bolstering the state's infrastructure, which requires long-term financing and considerable amounts of money and is reflected in the country's economic development (Arabiyat, 2015) emphasized the role of companies in the public and private sectors in financing the state's infrastructure and focused on the role of public financial institutions, such as the Hajj Fund, in contributing to financing the state's infrastructure. The study relied on descriptive analysis by referring to primary sources such as books and magazines and secondary sources such as annual reports of the Hajj Fund. The study concluded that the Fund can finance infrastructure projects that the government is unable to finance and showed the importance of this process in reducing the deficit in the public budget. In addition to the possibility of paying installments

over long periods, the study revealed the importance of investments for the Fund for long and stable periods. One of the most important recommendations of the study was the need for public economic institutions (e.g., Hajj Fund) to finance the state's infrastructure as well as the need to abandon traditional direct financing by partnership with the public and private sectors to finance infrastructure projects.

(Munira and Astuti, 2019) analyzed Hajj Fund management in Indonesia through the possibility of using funds in infrastructure investment in the country. In addition(Lis Sulistiani and Nurrachmi, 2021) assessed the use of the funds of Hajj Fund depositors in Indonesia and showed the possibility of using Hajj Fund financial resources to invest in the infrastructure of the country, which can benefit society considerably. The study also showed the possibility of utilizing Hajj Fund financial resources in commercial activities that do not conflict with the Islamic Sharia.

Studies also analyzed the relationship between the return and risk of investments made by and from the Fund

(Setyawan et al., 2020) examined the relationship between the risks and returns of the investment portfolios of the Hajj Fund in Indonesia. The study was based on the analysis of the data issued by the Hajj Fund during the period of 20019–2017 using MS Excel Solver. The analysis showed that three types of investment portfolio scenarios existed in the Fund, namely, a balanced portfolio, offensive portfolio, and conservative portfolio, and that the balanced portfolio gave a return of 14.7% at a risk level of 3.322%, whereas the offensive portfolio obtained a high return of 26.62% at a risk level of 6.39%. However, the conservative portfolio obtained a return of 7.76% at a risk level of 1.09%. One of the most important recommendations of the study was the possibility of maximizing the Fund's returns by investing in different types of portfolios while reducing the level of risk.

(Pujiharto et al., 2022) assessed the financial management of the Indonesian Hajj Fund in terms of returns and used a dynamic model through dynamic systems modeling by simulating the returns received with expenses. In addition, the study attempted to provide strategies to increase Hajj Fund returns through financial management. The study used two models, namely, an economic model and social model, to simulate the return obtained with expenditures. The study found three scenarios: an optimistic scenario, a medium scenario, and a conservative scenario. The study also suggested the possibility of making changes in the Fund's portfolio through the optimistic scenario of investing the Fund's financial resources in Islamic banks, with a maximum investment of 20% and 80%, and increasing pilgrims' deposits from IDR 25 million to IDR 30 million through government policies that can lead to satisfactory returns.

Several studies showed the hedge in the Fund against the low prices of the local currency saved in the Fund, including (Maulana and Muhammad, 2018). The authors presented a proposal for a hedge against the depreciation of the rupiah in Indonesia against the dollar, leading to a decrease in the pilgrims' fund deposits. The study used an analysis method by simulating the exchange of Islamic currencies, and the analysis showed that the dollar and riyal were in a state of high volatility in 2018. Therefore, based on the analysis, hedging was necessary to reduce volatility. The study indicated the possibility of replacing the Islamic currencies with the US dollar as a hedge. According to the study, hedging in dollars is possible for periods of 30 days, 90 days, 180 days, and 360 days, whereas hedging in riyal is effective in the evenings for periods of 30 days, 90 days, and 180 days.

From the review of previous studies, it can be concluded that multiple studies were conducted on the Hajj Fund. For instance, a study focused on the impact of the Fund on economic growth through the Fund's financing of economic projects through *murabaha* and *musharaka* financing methods. Other studies confirmed the possibility of using the Fund's financial resources to finance the state's infrastructure, which can enhance the Fund's role in economic growth. Several studies presented proposals for investing the Fund's money in investment portfolios supporting the increase of the Fund's returns to reduce risks, with a return commensurate with investment risks through diversification methods for investments. Meanwhile, other studies presented proposals to hedge against exchange rate fluctuations.

The present study differs from previous studies, because they conducted money management analysis through descriptive analysis and analysis using data from primary sources. However, to the best of the researcher's knowledge, this study is unique, as it is based on the analysis of the impact of investment activities on economic growth using standard models. Through its use of multiple regression, this work can be considered as one of the first studies based on standard analysis to clarify the impact of investment funds, as a case study of the Hajj Fund in Jordan using this standard analytical method. This study also examines analytical aspects to demonstrate the impact of long- and short-term investment activities on economic growth and determine which activities have the greatest impact on economic growth. This study also conducts some tests to confirm whether standard problems exist in the test models (model forecasts, Jarque–Bera test, heteroskedasticity test, serial correlation LM test, and Ramsey Reset)

Theoretical Aspect of Study
In this section, the concept of investment funds is presented, then the Hajj Fund as an investment fund is clarified in terms of its establishment and objectives. The theoretical aspect can explain the practical and scientific relationships between the Hajj Fund as an investment fund and economic growth.

Investment Funds
The idea of investment funds resulted from the need of small investors unable to engage in investment activities requiring large sums in addition to diversification in investment activities through fund management. For small Fund investors, obtaining appropriate returns with the least possible risks, in addition to liquidity, can achieve returns through current revenues from dividends or capital revenues from the sale of the value of the asset at a price higher than the purchase value. Returns can also be obtained by reevaluating the assets owned by Fund shareholders from the increase in prices (Shaqiri et al.,2012).
At the state level, the Fund has many advantages, as it can lead to increased activity and financial market development through investment in national companies. It can also encourage growth in the private sector through various investment activities. Moreover, the Fund can achieve effective management, especially for small investors unable to manage their money or make investments requiring a large capital. In addition, investment funds provide liquidity to small investors when needed (Shaqiri et al., 2012).

Hajj Fund as an Investment Fund
The Hajj Fund is a government investment management institution that operates through the provisions of the Islamic Sharia and based on the accumulation and investment of savings using Islamic investment methods, granting savers who meet the conditions the privilege of

going on a pilgrimage to the Sacred House of God, according to the principles determined by the Endowment Council each year. The Fund was established by the Law of the Ministry of Endowments and Islamic Affairs No. (32) in 2001. The article stipulated the establishment of a fund in the Ministry called the Hajj Fund to encourage savings for the Hajj, which is based on the investment of money for the benefit of the savers through the provisions of the Islamic Sharia (Arabiyat, 2015). The Fund aims to encourage Muslim individuals to save at an early age for the expenses of performing the Hajj and to invest the funds based on the provisions of the Islamic Sharia to obtain profits for the savers, thereby contributing to social and economic development. The funds are also invested in the development of land and real estate endowments in support of the charitable endowment message (Jordanian Hajj Fund, https://www.awqaf.gov.jo).

Fund's Working Mechanism

Investment funds mainly aim to obtain current returns from profits, as in the case of the Jordanian Hajj Fund, in which the Fund distributes the profits to the savers annually from its investment profits, which vary yearly depending on the return. The investment operation of the Jordan Hajj Fund comes from investment funds through *murabaha* to order purchases, as it is one of the most prevalent forms of Islamic financing. M*urabaha* is carried out in the Jordanian Hajj Fund through the request of an individual or buyer to purchase a specific commodity from another individual with specific specifications. Based on his/her promise to buy the commodity, a crisis has a *murabaha* proportion to the agreed profit, and the buyer pays the price in installment according to his/her financial capabilities. The Fund involves a *murabaha* committee, who is responsible for accepting or rejecting, as conditions for granting *murabaha* exist in the process according to the value of the investment (Al-Jabari& Rodina, 2017).

For *murabahas* with a value not exceeding JOD 6,000 and the investment process through *murabahas* exceeding JOD 10,000 or investment operations through *murabahas* with a value exceeding JOD 30,000, the committee attributes the approval or rejection according to the examination of the investment process, the conditions of the client, and the conditions of each transaction in the *murabaha* investment operations. The Fund also invests through participation, which is one of the most suitable operations for investment funds such as the Hajj Fund, as it is used to finance investment and economic activities and a major strategy for investment funds. In terms of the types of participation, the Jordanian Hajj Fund involves fixed (long-term) participation, which is based on the contribution of the bank and investment funds, such as the Hajj Fund, in financing part of the capital of a specific project. This type of financing is suitable for various production processes, such as industrial, agricultural, and trade. A partnership ending with ownership or a diminishing partnership also exists, in which an agreement is made between two or more parties based on their participation with a known capital, according to which the share of one party is transferred to the other party gradually until the ownership of the company is fully transferred under specific conditions (Al-Jabari& Rodina, 2017).

It can be concluded that the Hajj Fund manages the depositors' funds through the deposit tools provided by the Fund to small investors who purchase deposit instruments. Subsequently, the Fund invests the financial resources according to various available long- and short-term investments.

Investment activities of Jordanian Hajj Fund

(Hajj Provident and Investment Fund, Hajj Fund Annual Report, 2021:

https://www.hajjfund.gov.jo/sites/default/files/sndwq_lhj-compressed.pdf)

Through its annual reports, the investment activities of the Hajj Fund in Jordan are clarified in this study. The assets of the Fund represent actual investments or investment portfolios, except for the current cash, which are explained in detail in the subsequent sections.

Short-term Investments

Through the annual reports of the Hajj Fund, its short-term investments are described below. Investments represent short-term funds in Islamic banks located in Jordan that invest in the Fund through joint investments. The Fund receives an annual return from the following investments:

    A.   Investment portfolios in Jordan Islamic Bank

Investment portfolios are accounts in which money is deposited on behalf of the savers for investment in exchange for an annual bank fee determined by the percentage of the deposited amount and according to the agency contract concluded with the account holder (Jordan Islamic Bank: https://www.jordanislamicbank.com/ar/content). According to the Jordanian Hajj Fund, profits are paid at the end of every six months.

    B.   Joint investment between Fund and bank

This type of investment involves the Fund's time deposits at the Jordan Islamic Bank, Al-Rajhi Bank, Safwa Islamic Bank, and Islamic International Arab Bank. Term deposits in Islamic banks are due during the year, as well as profits, and announced when the profits are distributed to the joint investment accounts (absolute).

    C.   Deposit *al sukuk*

This item represents the value of a deposit *al sukuk*, which was issued by the Jordan Islamic Bank and Safwa Islamic Bank before the Hajj Fund in favor of the savers. Savers are entitled to redeem the value of the *al sukuk* or any part of it with their profits at any time via the instructions issued. In this regard, the profits record the realized investment on the savers' account and are added to their account at the end of each year.

2.2.6 Long-term investments

(Hajj Provident and Investment Fund, Hajj Fund Annual Report, 2021:

https://www.hajjfund.gov.jo/sites/default/files/sndwq_lhj-compressed.pdf)

Through the annual reports of the Hajj Fund, its long-term investments are described in the subsequent sections. The Fund's noncurrent assets represent its long-term investments, including the following:

A. Certificates of deposit maturing after more than one year

This item includes the value of investment certificates of deposit with the Safwa Islamic Bank. Such certificates are entitled to annual profits ranging from 3.5% to 5.1%, and the maturity period of such certificates ranges from two to five years.

B. Dedicated investment with Jordan Islamic Bank

In 2014, the Fund signed an agreement with the Islamic Bank, under which deposited amounts are invested in the named account (dedicated investment account) to carry out

murabaha sales for purchase orders or leases ending with ownership and according to the procedures of the Jordan Islamic Bank.

C. Investment in financial assets at fair value through other comprehensive incomes
This item represents the value of the investment in the shares of the Jordan Islamic Bank, totalling 2,536,576. The fair value of such shares amounted to JOD 8,827,284 in 2021.
D. Corporate finance
This item represents the costs paid to a diminishing participation contract for the establishment of a commercial mall in the Aqaba Governorate, which was completed in 2021, with a total value of JOD 6.9 million. This item also represents the costs paid to a contract for a commercial complex in the Karak Governorate, with a total value of JOD 800,000.
E. Investment in subsidiaries and real estate
This type of investment involves investing in national companies and real estate in Jordan.

Development of Fund's investment activities and economic growth in Jordan
In this section, the development of the Fund's investment activities and economic growth during the research period are explained.
Table (1) shows the development of the Fund's total investment activities (TI), including long-term and short-term investments. The Fund's investment activities, which are represented by the investments clarified previously, amounted to JOD 17,296,501, which increased by JOD 32,212,496 in 2014 at a growth rate of 86% compared with that in 2013. The volume of the Fund's investment activities continued to rise until it reached JOD 249,874,392 in 2021, with a growth rate of 28% compared with that in 2020. The size of the development of the Fund's total investment activities can also be observed in the graph in Figure (1). The graph shows the evolution of the volume of the investment activities over the research period, which indicates the Fund's continuing role in exerting a positive impact on investments and on the rate of economic growth in Jordan.
In addition, Table (1) presents the development of the Fund's long-term investment activities. Specifically, the Fund's long-term investment activities increased, which are represented by the investments clarified previously. The Fund's investments amounted to JOD 1,778,869 then increased to JOD 4,426,581 in 2014, with a growth rate of 1.5% compared with that in 2013. The volume of the Fund's long-term investment activities continued to rise until it reached JOD 97,955,054 in 2021, with a growth rate of 31% compared with that in 2020. The size of the development of the Fund's long-term investment activities is presented in Figure (2), which shows the evolution of the volume of the long-term investment activities over the research period. The figure also indicates the role of the Fund's long-term investment activities in exerting a positive impact on investments and on the rate of economic growth in Jordan. Such activities are important, as they directly affect actual investments in industry, trade, and actual services, as investments representing the pillars of the national economy most affecting the economic growth rate.
Table (1) also shows the development of the Fund's short-term investment activities. The Fund's short-term investment activities, represented by the investments clarified previously, increased and amounted to JOD 15,517,632, which increased to JOD 27,785,915 in 2014, with a growth rate of 80% compared with that in 2013. The volume of the Fund's short-term investment activities continued to rise until it reached JOD 151,919, 338 in 2021, with a growth rate of 27% compared with that in 2020. The size of the development of the Fund's short-term investment activities can also be seen in the graph presented in Figure (3), which

shows the evolution of the volume of the short-term investment activities over the research period. The figure indicates the role of the Fund's short-term investment activities in exerting a continuous positive impact on investments and the economic growth rate in Jordan.

However, the size of the Fund's short-term investments was larger than the size of its long-term investments during the research period, according to Figure (5), which is clearly shown in green. This finding means that the Fund relies on short-term investments to avoid the risks of long-term investments, especially systemic risks, and invests in small investors through the issuance of deposit instruments and tries not to expose the funds of others to risks.

In terms of the development of economic growth during the research period, as shown in Table (1), the growth rate reached 8.6% in 2013 then decreased to 3% in 2016, as the economic growth rate is considerably affected by various economic factors. In addition, it decreased to 1.8% in 2020 owing to the COVID-19 pandemic, which led to the closure of many economic sectors in Jordan and in other countries across the globe. However, the economic growth began to recover in 2021, when the growth rate reached 4.7%.

The economic growth rate was moderate during the research period owing to the economic imbalance suffered by the Jordanian economy, weak production structure, budget deficit, large internal and external debts, and deficit in the balance of payments (Khasawneh, 2017).

Table (1)

Variable data during research period

Year	*TI		*LI		*SI		**GGDP
	Value	Growth rate	Value	Growth rate	Value	Growth rate	
2013	17,296,501	-	1,778,869		15,517,632	-	8.6
2014	32,212,496	0.86	4,426,581	1.5	27,785,915	0.8	6.6
2015	49,313,957	0.53	7,425,109	0.68	41,888,848	0.50	4.7
2016	68,544,215	0.39	11,827,437	0.6	56,716,778	0.35	3
2017	105,620,151	0.54	31,214,734	1.64	74,405,417	0.31	3.8
2018	130,059,665	0.23	54,157,979	0.74	75,901,686	0.02	3.7
2019	163,422,381	0.26	61,763,287	0.14	101,659,094	0.33	3.7
2020	194,429,036	0.19	74,549,907	0.20	119,879,129	0.18	1.8
2021	249,874,392	0.28	97,955,054	0.31	151,919,338	0.27	4.7

*Source: Hajj Provident and Investment Fund, Hajj Fund Annual Report: different numbers: https://www.hajjfund.gov.jo/sites/default/files/sndwq_lhj-compressed.pdf

Source: **Department of Statistics, Jordan in Numbers; different numbers: http://dosweb.dos.gov.jo/ar/product-category/jordan-in-figures-a

Evolution of study variables during research period (Figure [1], Figure [2], Figure [3], and Figure [4])
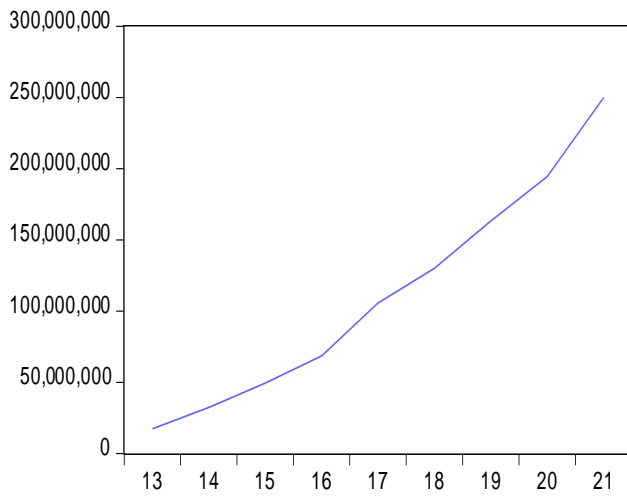

Figure (1): TI

Figure (2):LI

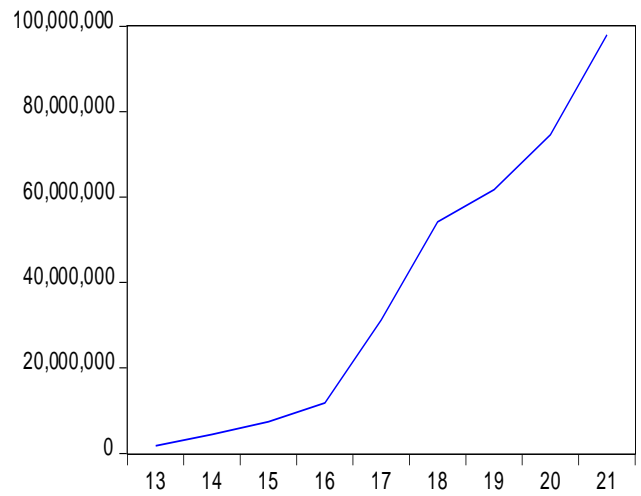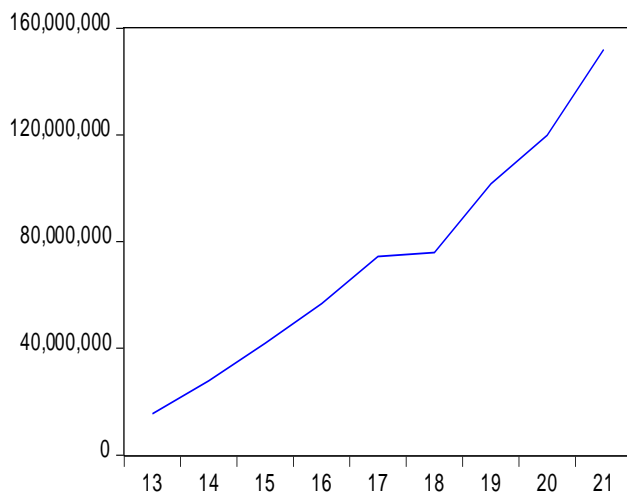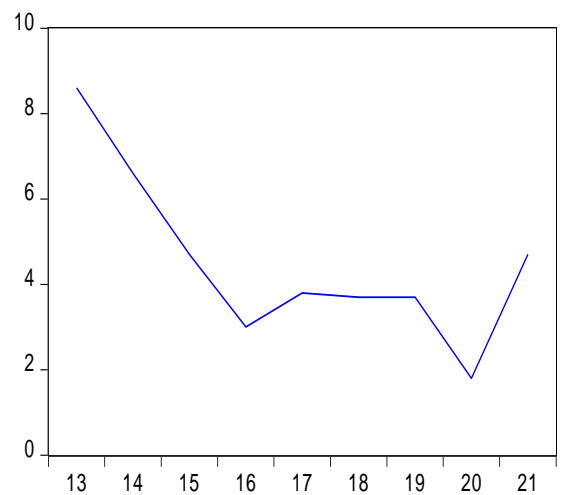Figure (3):SI

Figure (4) : GGDP
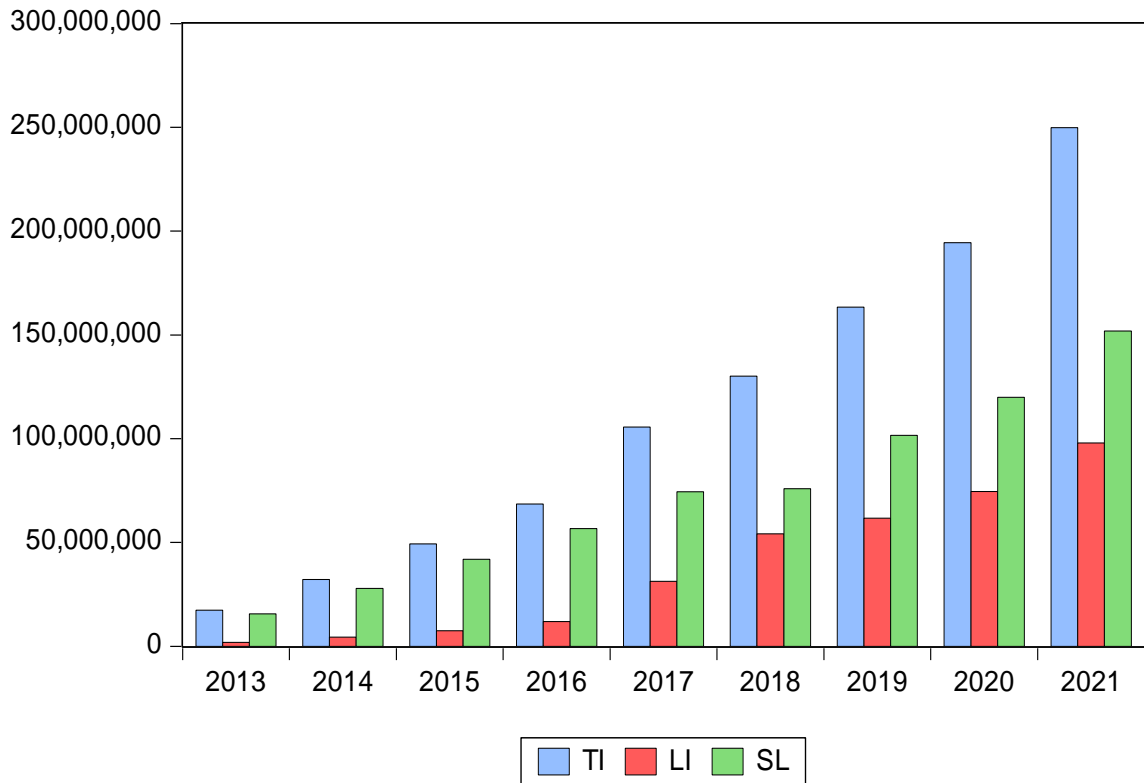
Source: EViews based on Table (1)

Figure (5). Volume of Fund's investment activities during research period
Source: EViews based on Table (1)

Relationship between investment funds (Hajj Fund) and economic growth
The Hajj Fund is one of the investment funds affecting economic activities. Investment funds are based on savings from small investors through deposit tools invested through various Islamic investment methods. Several theoretical references point to the role that such funds play in improving the efficiency of the primary capital market and indicate that investment funds play a role in developing the private sector and expanding investment in productive private companies. Therefore, such funds play a major role in transferring the ownership of productive public sector companies to the private sector because of their role in expanding the base of private companies (Shaqiriet al., 2012).

This concept was also confirmed by studies in many countries that adopted such funds, which demonstrated the important role played by such funds in economic growth (Al-Jabari& Rodina, 2017).

 considered the Fund in Jordan as one of the economic funds contributing to economic development. Small savers can participate in investment operations and own company shares, and the Fund is considered to be one of the investment funds that can lead to an increase in the volume of investments and development of land, real estate, and economic projects that contribute to economic development(Aishaath et al., 2018) confirmed that the Fund plays a major role in economic development and promotes economic growth in Malaysia and Indonesia. In addition, (Muheramtohadi, 2019) determined that in Indonesia, the Fund uses various financing tools such as *murabaha* and *mudaraba* to finance actual investment projects that achieve economic growth.

Studies also confirmed the possibility of the fund playing a role in financing government infrastructure projects for long periods, as indicated by (Arabiyat, 2015) such as those in Jordan.

(Lis Sulistiani and Nurrachmi, 2021) explained the possibility of utilizing the Fund's financial resources in the infrastructure of Malaysia as well as in commercial activities and that the establishment of such funds can lead to opportunities and mobilize savings to provide an investment platform that can positively affect the state's economic situation.

By presenting the theoretical side and previous applied studies, this study concludes that the major role played by the Fund as an investment fund is based on mobilized savings and the drawing in of savings in new ways from small savers wishing to perform the Hajj. The Fund invests this money through modern financing tools such as participation, *murabaha*, and speculation to finance the industrial, service, and agricultural sectors. The Fund also invests the money in short-term projects, such as joint investments with Islamic banks, and plays a role in financing the state's infrastructure, which can lead to job creation and economic growth.

Statistical Analysis

Study Methodology

This study relies on secondary sources such as books, articles, and reports to develop the theoretical aspect of the research. This study also depends on the annual reports issued by the Hajj Fund to obtain information on its investment activities and data issued by the Department of Statistics to obtain the GDP growth rate as a representative of economic growth in Jordan.

First model*: Impact of total investment activities on economic growth*

GGDP ƒ (TI, UN, GGDP-2)
GGDP: Rate of economic growth during research period
TI: Total investment activities of investment fund (Jordanian Hajj Fund)
UN: Unemployment rate during the research period as a mediating variable
GGDP-2: Economic growth rate in the previous year as an average variable
Second model*: Impact of long-term investment activities on economic growth*

GGDP ƒ (LI, UN, GGDP-2)
LI: Fund's long-term investment activities
Third model*: Impact of short-term investment activities on economic growth*
GGDP ƒ (SI, UN, GGDP-2)
SI: Fund's short-term investment activities

Statistical analysis to test research hypotheses
To test the research hypotheses, three models are adopted.

Analysis of impact of total investment activities on economic growth
GGDP ƒ (TI, UN, GGDP-2)
Using EViews, the model is estimated using the OLS method, and the results are presented in

Table (2).

Table (2)

Estimation of impact of Fund's total investment activities on economic growth.

Variable	Coefficient	T-statistic	Prob.
LOG(TI)	1.2	2.3	0.09
LOG(UN)	-4.0	-2.9	0.06
D(GGDP-2)	0.096	3.3	0.04
C	-9.6	-1.7	0.19

Source: E-Views based on Table (1)

The analysis in Table (2) shows a problem with the statistical significance of the constant in the model. Thus, using EViews, constant (C) in the model is deleted to improve the results. The results after the constant is deleted are listed in Table (3).

Table (3)

Estimation of impact of Fund's total investment activities on economic growth after constant is deleted

Variable	Coefficient	T-statistic	Prob.
LOG(TI)	0.35	0.35	0.02
LOG(UN)	-1.8	-1.8	0.03
D(GGDP, 2)	0.10	0.10	0.03
R-squared: 89% Adjusted R-squared: 68% Durbin–Watson stat.: 2.01			

Source: E- Views based on Table (1)

The model clearly shows that the coefficient average (adjusted R-squared: 68%) indicates that the changes in the independent variables can explain about 68% of the changes in the dependent variable.

Table (3) also shows the positive and statistically significant relationship between the Fund's total investment activities and economic growth, as the value of the coefficient of total investment activities (LOGTI; 35%) is positive. This result is consistent with that of the majority of studies that observed the positive impact of the Fund's activities on the economic situation of most of the countries that established such a fund, especially Malaysia and Indonesia, such as (Lis Sulistiani and Nurrachmi, 2021; bin Hassan, 2014; Sayyidah et al., 2020; Muheramtohadi, 2019).

According to the t-test, the result is statistically significant at the 5% level, meaning that the confidence level of this variable is 95%. Thus, the hypothesis proposing the existence of a positive and statistically significant relationship between the Fund's total investment activities and economic growth is accepted. The result also confirms the acceptance of the results in Figure (6). Several standard tests are conducted, in which the bias proportion is 0.01, the variance proportion is 0.031%, and the value of the covariance proportion is 95%. These results indicate that the error in the model is a random error, which demonstrates that the predictive ability of the model regarding the impact of total investment activities on economic growth is acceptable.

The above results confirm the positive and effective role of the Fund through various investment activities in influencing growth and economic activities in Jordan.
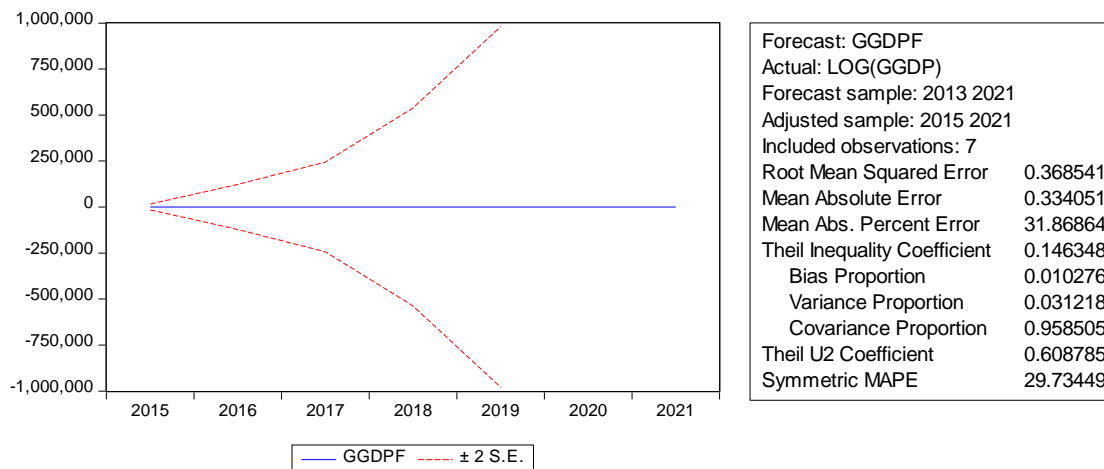

Figure (6). Testing of forecasting ability of model
Source: E- Views based on Table (1)

Impact of long-term investment activities on economic growth
GGDP ƒ (LI, UN, GGDP-2)
Using EViews, the model is estimated using the OLS method, and the results are presented in Table (4).
Table (4)
Estimation of impact of Fund's long-term investment activities on economic growth

Variable	Coefficient	T-statistic	Prob.
LOG(I)	0.61	4.5	0.02
LOG(UN)	-3.60	-5.6	0.01
D(GGDP-2)	0.11	6.8	0.006
C	0.95	1.2	0.31

Source: E-Views based on Table (1)
The analysis in Table (4) shows a problem with the statistical significance of the constant in the model. Thus, with EViews, constant (C) in the model is deleted to improve the results. The results after the constant is deleted are listed in Table (5).

Table (5)
Estimation of impact of Fund's long-term investment activities on economic growth after constant is deleted.

Variable	Coefficient	T-statistic	Prob.
LOG(TI)	0.73	7.6	0.00
LOG(UN)	-3.9	-6.9	0.00
D(GGDP, 2)	0.11	6.4	0.00
R-squared: 94% Adjusted R-squared: 91% Durbin–Watson stat.: 1.5			

Source: E-Views based on Table (1)

The model clearly shows that the coefficient average (adjusted R-squared: 91%) indicates that the changes in the independent variables can explain about 91% of the changes in the dependent variable.

Table (5) also shows the positive and statistically significant relationship between the Fund's long-term investment activities and economic growth, as the value of the coefficient of long-term investment activities (LOGLI; 74%) is positive. This result is consistent with that of the majority of studies that observed the positive impact of the Fund's activities on the economic situation of most of the countries that established such a fund, especially Malaysia and Indonesia. Such studies addressed long-term activities, such as financing through *murabaha* and *mudaraba*, and long-term participation in finance investment (Muheramtohadi, 2019), government infrastructure financing (Arabiyat, 2015; Lis Sulistiani & Nurrachmi , 2021), or real investment forms financing (Al-Jabari & Rodina, 2017).

According to the t-test, this result is statistically significant at the 1% level, meaning that the confidence level of the variable is 99%. Thus, the hypothesis proposing the existence of a positive and statistically significant relationship between the Fund's long-term investment activities and economic growth is accepted.

The result also confirms the acceptance of the results in Figure (3), in which some standard tests are conducted, and the bias proportion is 1%, the variance proportion is 0.02%, and the value of the covariance proportion is 98%. The results indicate that the error in the model is a random error, which reveals that the predictive ability of the model regarding the impact of long-term investment activities on economic growth is acceptable.

The above results confirm the positive and effective role of the Fund through its long-term investment activities in influencing growth and economic activities in Jordan.

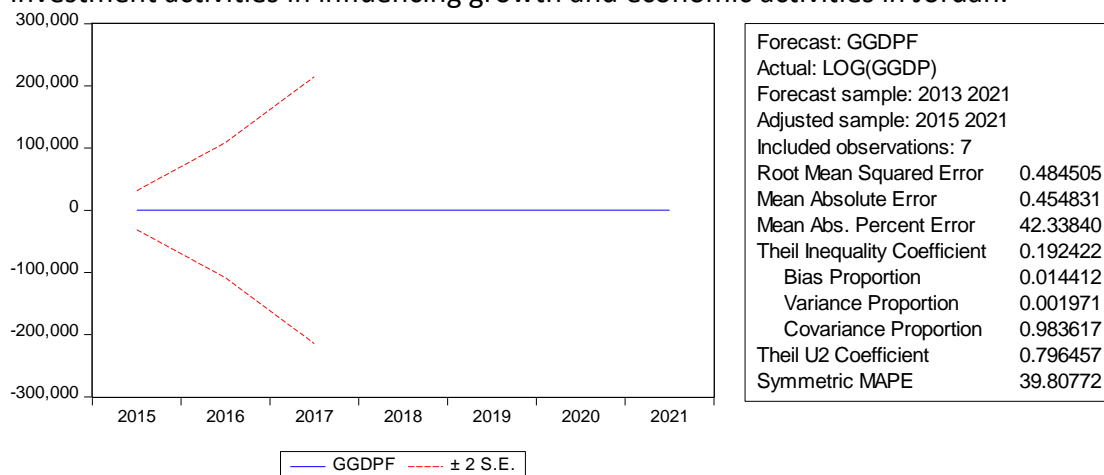| Forecast: GGDPF	
Actual: LOG(GGDP)	
Forecast sample: 2013 2021	
Adjusted sample: 2015 2021	
Included observations: 7	
Root Mean Squared Error	0.484505
Mean Absolute Error	0.454831
Mean Abs. Percent Error	42.33840
Theil Inequality Coefficient	0.192422
Bias Proportion	0.014412
Variance Proportion	0.001971
Covariance Proportion	0.983617
Theil U2 Coefficient	0.796457
Symmetric MAPE	39.80772

Figure (7) Testing of forecasting ability of model
Source: E-Views based on Table (1)

Impact of short-term investment activities on economic growth
GGDP ƒ (SI, UN, GGDP-2)
With EViews, the model is estimated using the OLS method, and the results are presented in Table (6).

Table (6)
Estimation of impact of Fund's short-term investment activities on economic growth

Variable	Coefficient	T-statistic	Prob.
LOG(SI)	0.62	0.56	0.61
LOG(UN)	-2.09	-0.92	0.42
D(GGDP,2)	0.09	1.82	0.16
C	-4.17	-0.3	0.78

Source: EViews based on Table (1)

The analysis in Table (6) shows a problem with the statistical significance of the constant in the model. Thus, with EViews, constant (C) in the model is deleted to improve the results. The results after the constant is deleted are listed in Table (7).

Table (7)
Estimation of impact of Fund's short-term investment activities on economic growth after constant is deleted

Variable	Coefficient	T-statistic	Prob.
LOG(SI)	0.3	2.9	0.04
LOG(UN)	-1.46	-2.33	0.08
D(GGDP,2)	0.10	2.6	0.06
R-squared: 71% Adjusted R-squared: 57% Durbin–Watson stat.: 2.07			

Source: E- Views based on Table (1)

The model clearly shows that the coefficient average (adjusted R-squared: 71%) demonstrates that the changes in the independent variables can explain about 71% of the changes in the dependent variable.

Table (7) also reveals the positive and statistically significant relationship between the Fund's short-term investment activities and economic growth, as the value of the coefficient of short-term investment activities (LOGSI; 30%) is positive.

This result is consistent with that of the majority of studies that observed a positive impact in the short term, especially those that addressed short-term activities, such as (Aishaath et al., 2018; Pujihartoet al., 2022).

According to the t-test, this result is statistically significant at the 5% level, meaning that the confidence level of this variable is 95%. Thus, the hypothesis proposing the existence of a positive and statistically significant relationship between the Fund's short-term investment activities and economic growth is accepted.

The result also confirms the acceptance of the results in Figure (4), in which some standard tests are conducted. The figure shows that the bias proportion is 1%, the variance proportion is 2%, and the value of the covariance proportion is 98%. The results indicate that the error in the model is a random error, demonstrating that the predictive ability of the model regarding the impact of short-term investment activities on economic growth is acceptable.

The above results confirm the positive and effective role of the Fund through its short-term investment activities in influencing growth and economic activities in Jordan.

Regarding the intermediate variables, the three models show a negative relationship between the unemployment rate and economic growth but a positive relationship between economic growth in the previous period (lag 2) and economic growth in the current year.

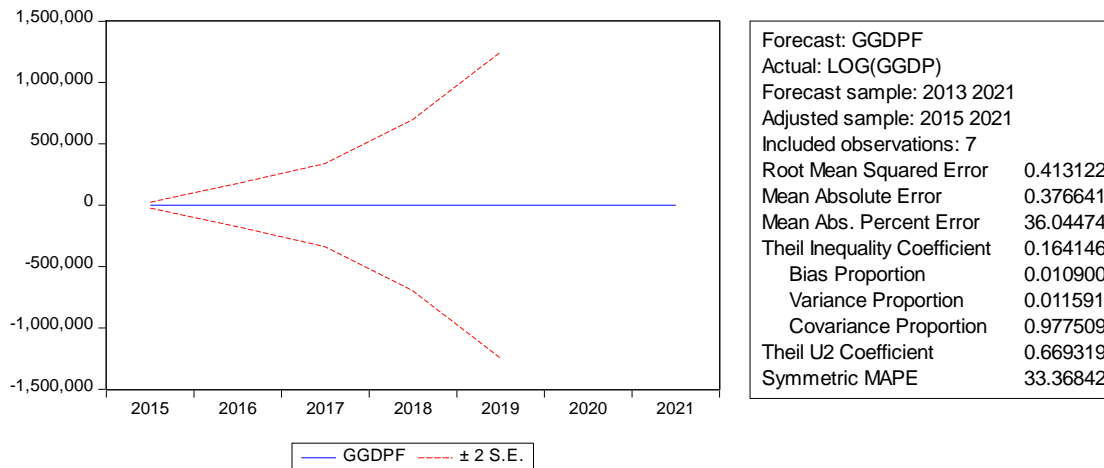| Forecast: GGDPF	
Actual: LOG(GGDP)	
Forecast sample: 2013 2021	
Adjusted sample: 2015 2021	
Included observations: 7	
Root Mean Squared Error	0.413122
Mean Absolute Error	0.376641
Mean Abs. Percent Error	36.04474
Theil Inequality Coefficient	0.164146
Bias Proportion	0.010900
Variance Proportion	0.011591
Covariance Proportion	0.977509
Theil U2 Coefficient	0.669319
Symmetric MAPE	33.36842

Figure (8). Testing of forecasting ability of model
Source: E- Views based on Table (1)

The aforementioned results confirm the positive and effective role of the Fund through its total investment activities and long-term as well as short-term investment activities in influencing economic growth in Jordan. Furthermore, the impact of long-term investment activities on economic growth is stronger, because long-term investment in economic, service, and industrial sectors can promote economic growth more than short-term investment.

Other tests are conducted, and the results in Appendix (1) show that the data of the research models are distributed normally based on the probability value of the Jarque–Bera test of > 0.05. Appendix (2) also clearly shows that the models do not suffer from the problem of homogeneity. That is, the variance of the study models is stable based on the heteroskedasticity test, in which the probability value of the F-statistic and chi square is not significant.

A serial correlation LM test is conducted, and the results show that the models do not suffer from the problem of serial correlation based on the probability value of the F-statistic of > 0.05 in Appendix (3). In addition, a Ramsey RESET is performed, and the results indicate that the models are defined correctly. The results of the tests are summarized in Table (8).

Table (8)
Summary of test results

Test	Result
Residual sample	
Probability value of Jarque–Bera test > 0.05	Data are normally distributed
Heteroskedasticity test	
Probability value of F-statistic and chi square > 0.05	Models are stable
Serial correlation LM test	
Probability value of F-statistic > 0.05	No problem with serial correlation
Ramsey RESET	
Probability value of t-statistic > 0.05	Models are defined correctly

Source: E- Views based on Appendix (1), Appendix (2), and Appendix (3)

Results

this study focused on the impact of the Fund's long-term and short-term investment activities on economic growth in Jordan during the period of 2013–2021 owing to the availability of annual reports issued by the Fund during this period.

To test the research hypotheses and improve the study results, this study was based on the analysis of three standard models through multiple regression. The study adopted the first model, which showed the impact of total investment activities on economic growth; the second model, which demonstrated the impact of long-term investment activities on economic growth; and the third model, which revealed the impact of the Fund's short-term investment activities on economic growth, to improve the results. This study was based on the introduction of intermediate variables represented in the economic growth of previous years (GGDP-2) and unemployment rate.

Through the analysis, this study showed the positive and statistically significant relationship between total investment activities and economic growth and positive and statistically significant relationship between long-term investment activities and economic growth as well as between short-term investment activities and economic growth.

The effect of long-term investment activities on economic growth was stronger than the impact of short-term investment activities, because long-term investments in actual activities can strongly promote economic growth in the country. The results confirmed the effective role of the Fund as an investment fund in attracting savings from small savers and investment in ways compatible with Islamic law that promote economic growth in the country.

Recommendations

The results of this study show that strengthening the role of the Fund in actual long-term investments is necessary, as such investments exert the strongest impact on economic growth, as well as finding new innovative investment funds that can attract small investors

and invest money to achieve economic growth. The results may also encourage investment funds that are compatible with the nature of society and can attract investors who want to save to ease their religious conscience to achieve economic growth in the country.

In addition to the necessity of innovation, creativity, and provision of incentives for establishing investment funds to invest in long-term activities such as industry and agriculture, they are the pillars of the national economy. Fund managers can benefit from the experiences of other countries in managing previous investment funds in adopting investment funds such as the Hajj Fund.

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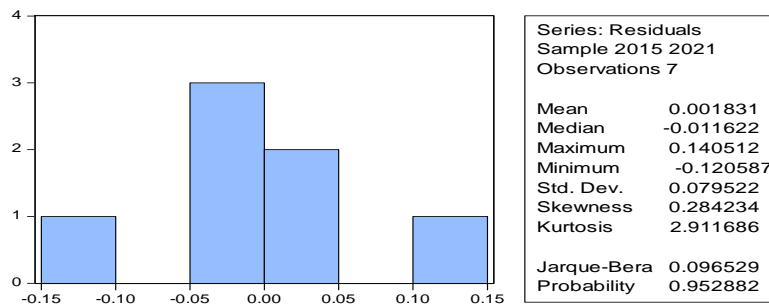
Appendix

Appendix (1). Normally distributed tests for three models
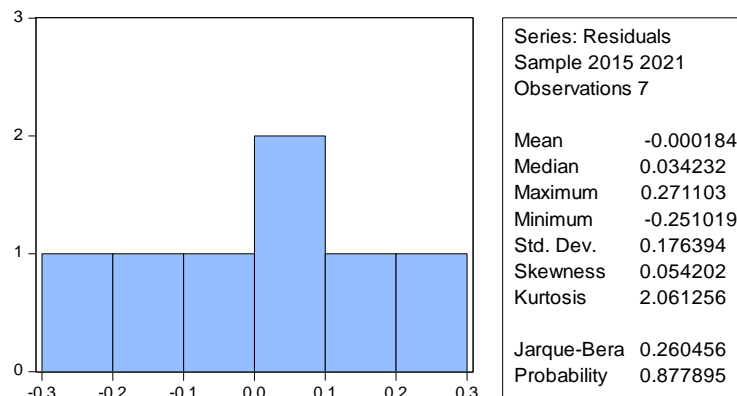Normally distributed test for Model (1)
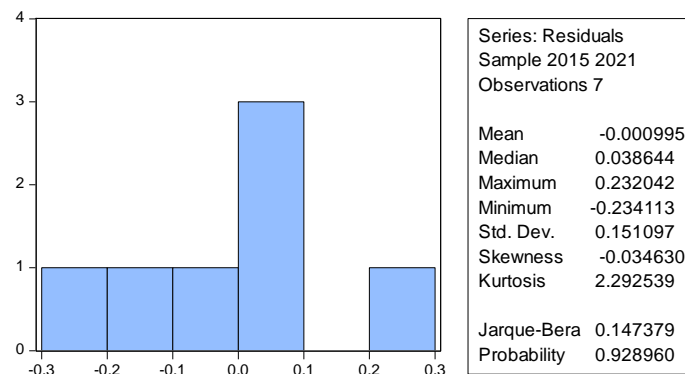
Normally distributed test for Model (2)

Normally distributed test for Model (3)

Source: E- Views based on Table (1)

Appendix (2). Heteroskedasticity tests for three models
Heteroskedasticity test for Model (1)

Heteroskedasticity test for Model (2)

Heteroskedasticity Test: Breusch–Pagan–Godfrey			
F-statistic	0.78	Prob. F(3,3)	0.6
Obs.*R-squared	3.07	Prob. chi square (3)	0.4
Scaled explained SS	0.97	Prob. chi square (3)	0.80

Breusch–Godfrey Serial Correlation LM Test			
F-statistic	1.23	Prob. F(2,2)	0.44
Obs.*R-squared	3.87	Prob. chi square (2)	0.14

Heteroskedasticity test for Model (3)
Source: E- Views based on Table (1)

Heteroskedasticity Test: Breusch–Pagan–Godfrey			
F-statistic	0.23	Prob. F(3,3)	0.86
Obs.*R-squared	1.35	Prob. chi square (3)	0.71
Scaled explained SS	0.3	Prob. chi square (3)	0.96

Appendix (3). Serial correlation LM tests for three models

test for Model (1) Serial correlation LM

Serial correlation LM test for Model (2)

Breusch–Godfrey Serial Correlation LM Test			
F-statistic	0.019	Prob. F(2,2)	0.98
Obs.*R-squared	0.13	Prob. chi square (2)	0.93

Serial correlation LM test for Model (3)

Breusch–Godfrey Serial Correlation LM Test			
F-statistic	1.5	Prob. F(2,2)	0.4
Obs.*R-squared	4.2	Prob. chi square (2)	0.12

Source: E- Views based on Table (1)

Appendix (4). Ramsey RESETs for three models
Ramsey RESET for Model (1)

	Value	df	Probability
T-statistic	0.40	3	0.71
F-statistic	0.16	(1, 3)	0.71

Ramsey RESET for Model (2)

	Value	df	Probability
T-statistic	0.20	3	0.85
F-statistic	0.04	(1, 3)	0.85

Ramsey RESET for Model (3)

	Value	df	Probability
T-statistic	0.75	3	0.50
F-statistic	0.55	(1, 3)	0.50

Source: E-Views based on Table (1)