

# BUSINESS REVIEW



# DOES THE FOREIGN DIRECT INVESTMENT AFFECT ECONOMIC GROWTH IN JORDAN IN LIGHT OF COMMERCIAL OPENNESS

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#### **ABSTRACT**

**Purpose:** This paper aims to examine the effect of foreign direct investment on economic growth in Jordan in light of the trade openness, during the period from 1999 to 2019.

**Theoretical Framework:** This paper discusses how Jordan, as a developing country, has worked over the years to attract foreign investment by creating an environment of incentives, benefits, and legislation that encourages such investments; taking advantage of low local labor wages, high administrative costs, and great commercial openness.

**Design/methodology/approach:** To achieve the objectives of the study and to construct the statistical model the study used analytical methodology. The following statistical methods were applied; Hausman, Wald Test, F-Test Statistic, Granger, Multicollinearity test, Normality Test, Lagrange Test, Multiplier Test, and Causality Test.

**Findings:** After conducting the analysis tests, the results showed a statistically significant impact of open trade direct investment on economic growth, Moreover, findings showed a positive impact on the degree of economic growth, whenever the degree of trade openness and the flow of foreign investment increase.

**Research, Practical & Social implications:** The independent variables in the study model were measured by the ratio of foreign direct investment from the nominal GDP. The variable (the degree of trade openness) was expressed as the ratio of exports and imports to trade volume. The generalized Method of Moments (GMM) was used in this study.

**Originality/value:** In light of Jordan's extensive commercial openness, This investigation looked at the impact of FDI on economic expansion. The study's findings are in line with theoretical research and other studies that hold that a country's level of economic growth is not adversely affected by significant trade openness because foreign investments are not less effective.

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## O INVESTIMENTO ESTRANGEIRO DIRETO AFETA O CRESCIMENTO ECONÔMICO NA JORDÂNIA À LUZ DA ABERTURA COMERCIAL

#### **RESUMO**

**Objetivo:** Este artigo tem como objetivo examinar o efeito do investimento estrangeiro direto no crescimento econômico da Jordânia à luz da abertura comercial, durante o período de 1999 a 2019.

**Referencial Teórico:** Este artigo discute como a Jordânia, como um país em desenvolvimento, tem trabalhado ao longo dos anos para atrair investimentos estrangeiros por meio da criação de um ambiente de incentivos, benefícios e legislação que incentiva tais investimentos; aproveitando os baixos salários da mão de obra local, altos custos administrativos e grande abertura comercial.

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**Desenho/metodologia/abordagem:** Para alcançar os objetivos do estudo e construir o modelo estatístico o estudo utilizou metodologia analítica. Os seguintes métodos estatísticos foram aplicados; Hausman, Wald Test, F-Test Statistic, Granger, Multicolinearity test, Normality Test, Lagrange Test, Multiplier Test e Causality Test.

**Resultados:** Após a realização dos testes de análise, os resultados mostraram um impacto estatisticamente significativo do investimento direto comercial aberto no crescimento econômico. Além disso, os resultados mostraram um impacto positivo no grau de crescimento econômico, sempre que o grau de abertura comercial e o fluxo de investimento estrangeiro aumentar.

Implicações de pesquisa, práticas e sociais: As variáveis independentes no modelo de estudo foram medidas pela proporção de investimento estrangeiro direto em relação ao PIB nominal. A variável (o grau de abertura comercial) foi expressa como a razão entre exportações e importações sobre o volume comercial. O método generalizado dos momentos (GMM) foi utilizado neste estudo.

**Originalidade/valor:** À luz da ampla abertura comercial da Jordânia, esta investigação analisou o impacto do IDE na expansão econômica. As conclusões do estudo estão de acordo com pesquisas teóricas e outros estudos que sustentam que o nível de crescimento econômico de um país não é afetado negativamente por uma abertura comercial significativa porque os investimentos estrangeiros não são menos eficazes.

Palavras-chave: Crescimento Econômico, Abertura Comercial, Investimento Estrangeiro Direto, Jordânia.

## ¿AFECTA LA INVERSIÓN EXTRANJERA DIRECTA EL CRECIMIENTO ECONÓMICO EN JORDANIA A LA LUZ DE LA APERTURA COMERCIAL?

#### **RESUMEN**

**Propósito:** Este documento tiene como objetivo examinar el efecto de la inversión extranjera directa en el crecimiento económico de Jordania a la luz de la apertura comercial, durante el período de 1999 a 2019.

**Marco teórico:** este documento analiza cómo Jordania, como país en desarrollo, ha trabajado a lo largo de los años para atraer inversiones extranjeras mediante la creación de un entorno de incentivos, beneficios y legislación que fomente dichas inversiones; aprovechando los bajos salarios de la mano de obra local, los altos costos administrativos y la gran apertura comercial.

**Diseño/metodología/enfoque:** Para lograr los objetivos del estudio y construir el modelo estadístico, el estudio utilizó una metodología analítica. Se aplicaron los siguientes métodos estadísticos; Hausman, prueba de Wald, estadística F-Test, Granger, prueba de multicolinealidad, prueba de normalidad, prueba de Lagrange, prueba del multiplicador y prueba de causalidad.

**Hallazgos:** Después de realizar las pruebas de análisis, los resultados mostraron un impacto estadísticamente significativo de la inversión directa de comercio abierto en el crecimiento económico. Además, los hallazgos mostraron un impacto positivo en el grado de crecimiento económico, siempre que el grado de apertura comercial y el flujo de inversión extranjera aumentar.

**Implicaciones de investigación, prácticas y sociales:** Las variables independientes en el modelo de estudio se midieron por la relación entre la inversión extranjera directa y el PIB nominal. La variable (el grado de apertura comercial) se expresó como la relación entre las exportaciones e importaciones y el volumen comercial. En este estudio se utilizó el método generalizado de los momentos (GMM).

**Originalidad/valor:** A la luz de la amplia apertura comercial de Jordania, esta investigación analizó el impacto de la IED en la expansión económica. Los hallazgos del estudio están en línea con la investigación teórica y otros estudios que sostienen que el nivel de crecimiento económico de un país no se ve afectado negativamente por una apertura comercial significativa porque las inversiones extranjeras no son menos efectivas.

Palabras clave: Crecimiento Económico, Apertura Comercial, La Inversión Extranjera Directa, Jordán.

#### **INTRODUCTION**

Most economic literature indicates the effect and ability of a foreign direct investment to cause economic growth in various countries compared to the funds available within the local economy of these countries. The economists who adopt this view see that foreign investments are able to produce technology and administrative competencies that may not be available

within the state, which qualifies the country hosting such investments to be economically advanced and contributes to increasing the ability of its economy to absorb and attract more investments (Pradhan 2016). Despite the fact that it is obvious that many factors, including political and economic stability as well as the constancy of labor and investment laws, play a significant role in luring such investments, which are actually available in advanced economies, there is a large share of foreign direct investment for emerging economies and developing countries (Al-Qadi et al., 2023).

Despite economic, political, and legislative challenges, that face these countries such as trade openness, a deficit of the balance of payments, an increase in the size of the state's debt, weak and unstable legislation, and many other challenges, investments are still flowing to these countries, due to the fact that investor decisions balance between these challenges on one hand, the opportunities that may be available in these countries such as the cheap labors and the ability to open new markets in such countries; compared to protected markets and high costs in developed countries on the other hand. Jordan exposed, as a developing country, to several major economic challenges, such as the accelerating increase in the size of the state debt, permanent shortage in the balance of payments, and great commercial openness, has endeavored during the past decades to attract foreign investment by providing the appropriate environment of incentives, benefits, and legislations that attract such investments; taking advantage of the low wages of local labor, high administrative and operational labor skills, the central geographical location, and the adequate infrastructure for these investments. Hence (Bakari & Tiba, 2019). this study aims to test the effect of foreign direct investment on the economic growth in Jordan, in light of the commercial openness, during the period from 2000 to 2018.

#### LITERATURE REVIEW

Investments play a prominent role in bringing development to the country through many examples and practical guides by directing these investments to specific export sectors, preparing and developing the country's infrastructure, accumulating capital, increasing production elements, expanding trade, and developing workers skills, which contributes to reach the targeted economic growth and increasing economic competitiveness (Wong & Tang, 2007). Investments generally consist of domestic investments (DI) and foreign investments (FI), which in turn are divided into foreign direct investment (FDI) and indirect foreign investments. As a result of the increasing integration of markets in the global economy in the

past few decades, these investments have become the milestone for such integration adding more challenges for economic and political decision-makers in different countries (Malahim et al.,2022).

The role and effectiveness of these investments are affected by two factors; the first one is related to the country's economic policies, such as the degree of commercial openness, prevailing legislation, regulations of the labor market and taxes; the second one is related to market size, geographical dimension, and political stability (Fedderke & Romm, 2006). Several previous studies have examined the relationship between foreign direct investment and other economic variables. These studies split up in two different directions: dealt with a set of factors affecting the flow of foreign direct investment as a (Walsh & Yu, 2010) study, which was conducted on a sample of developed countries and emerging economies, in which the factors included the impact of exchange rate and the degree of commercial openness on various economic sectors. The study shows that flows affected the services sectors more than productive sectors and secondary activities more than primary activities. Moreover, the study shows a weak impact of commercial openness to on the flow of investment and the economic growth in these countries.

A study by (Maradana et al., 2017) (Pradhan 2016), which included 19 European countries, investigated the causal relationship between the degree of commercial openness, FDI inflows, financial growth and the degree of economic growth of the country–Study results proved that there is an effect of the degree of openness in the euro area and financial development on the flow of investments in the long term, while in the short term there was an effect of the flow of investments in strengthening the financial system and promoting economic growth. In a study by (Bakari & Tiba, 2019) that aimed to test the effect of the degree of commercial openness, domestic investment, foreign direct investment on the economic growth of a sample of (24) Asian countries, shows an effect of local investments on economic growth, with a limited impact of foreign investments and the degree of commercial.

The study of sub- Saharan countries by (OLABISI, 2016) (Lau,2018), shows an effect on of trade openness and foreign investment flows on economic growth in those countries. The Study by (Müller et al., 2017), proved a positive relationship between trade openness and foreign investment flows on economic growth, as well the study by (Wong & Tang, 2007). The direction of the studies dealt with the relationship between individual economic variables and their effect on the flow of foreign investment. Some of these studies have shown that there is a relationship between market size and direct investments, as (Blonigen, 2019) study (

Resmini 2000), which showed that countries in Europe with higher population density were able to attract more direct investment than other countries. With regard to the relationship between currency fluctuations and investment flows, many studies have found that the weak exchange rate encourages the flow of vertical investments to take advantage of lower prices to own different assets, (Froot & Stein, 1991) while the study by (Blonigen, 2019) has proved that a strong currency exchange rate is capable of attracting horizontal investments. As for the factor administrative efficiency and internal and political stability of the state, studies have taken two different directions, while the (Sane, 2016) study has not proven a relationship between administrative efficiency and internal stability, a study by (Busse & Hefeker, 2011), proved the existence of this relationship.

Some other studies distinguish between the concept of administrative competence and the concept of institutionalization in the state, especially in developing countries, because economic growth is linked to the country that exercise high institutionalization, and the degree of institutionalization necessarily means lack of the rule of law and thus will increase the size of financial and administrative corruption and increase the chances of political turmoil in the country and reduce the chances of direct investment flow .This was proven by (Davis, 2001). However, the study did not measure the quality and degree of institutionalism. As for the effect of the degree of commercial openness and foreign direct investment on economic growth, it has been discussed in many economic literatures. Several studies have confirmed the direct impact of these variables on economic growth as studies by, (Lee et al., 2015), (Soltani & Ochi, 2012), (Bakari, Sayef and Fakraoui, Nissar and Tiba, 2019), and a study by (Bakari, Sayef and Mabrouki, 2018). Some of these studies have examined the effect of a decrease or increase in this ratio of trade openness on the flow of foreign investment and in turn the effect on the economic growth of the state. The decrease in the degree of commercial openness linked to the flow of horizontal investments to the state through establishment of foreign projects by passing restrictions on trade, in the case of increase in the degree of commercial openness, the flow of vertical investments increases (Singh & Jun, 1999). However, in the (ERKİŞİ, 2018) study, which included within its methodology the use of the causal effect of both the ratio of exports and imports to the flow of investments and consequently economic growth, the result of the study was the presence of the causal effect only of imports on economic growth, while this relationship was not proven to exports.

As for discussing the effect of the degree of commercial openness on economic growth, (Abu Mudallala, 2018) study, which was conducted on data from the Jordanian economy, found

out a limited contribution of trade openness to the growth of the Jordanian economy which lead in turn to its exposure to the outside world and its direct impact by global economic crises. These facts reflected the fragility of the Jordanian trade balance and the sustainability deficit, which considered not temporary or transitory problem in the Jordanian economy. A study by (Akayleh, 2014) which was conducted on Jordanian economy, aimed to determine the impact of trade openness on economic growth, where the study result shows that, the economic correction programs with the help of the International Monetary Fund for Foreign Trade, did not improve the outputs of trade and that the relationship between the degree of trade openness and economic growth were negative in light of the small and weakness of Jordanian economy.

#### MATERIAL AND METHODOLOGY

When reviewing the above studies, the study believes that the studies that dealt with a set of economic factors, depended on the literature that assumed the correlation of the macroeconomic factors with each other, while the second type of studies examined the effect of single factors as independent variables on economic growth as a dependent variable and without taking into consideration a group of other factors. Also the study believes that studies conducted on countries with advanced economies have proven a relationship between these variables, including foreign investments, and economic growth in general, compared to studies conducted on developing countries which did not find direct impact of foreign investments on economic growth as in (Dutta et al., 2017), which necessarily means that these factors should either be taken together or should be dealt with as controlling variables as in the case of the (the degree of commercial openness) variable which is considered significant in developing countries while it is not in to developed countries.

The study believes that taking a group of factors may lead to the emergence of a problem (Multicolinearity) between these factors, which make it difficult to interpret the data. The degree of commercial openness variable, can be expressed either as the percentage of trade, as in (Yanikkaya, 2003), and (Giles & Stroomer, 2006), or as the ratio of exports and imports to the volume of trade, as in (Balassa, 1978), which demonstrated the effect of this factor on economic growth, or it can be expressed as the ratio of imports to trade volume in order to measure the degree of commercial openness as in (Irwin & Terviö, 2002), which also confirmed the positive effect of this factor on economic growth. Exports, imports, or the proportion of trade as an expression of trade openness have all failed to define and measure the impact of trade openness on a country's economic growth due to endogeniety as variables are correlated

with error term how independent and dependent variables on affect each other) (Akayleh, 2014), and (Walsh & Yu, 2010).

The ratio of the volume of traded goods and services (exports and imports) to GDP will be the first independent variable to be measured (Walsh & Yu, 2010), which is a practical proxy for measuring goods, services, employment and cross-border capital (Graebner et al., 2017).

The second independent variable in the study model as the ratio of foreign direct investment to nominal GDP (A share of nominal GDP). Because of the debate over foreign direct investment measurement and components, (Gray, 2014), the following definition in (OECD, 2008) would be adopted throughout this study: Foreign direct investment is the "Equity position of a non-resident owner who owns more than 10% of the target company's shares increases (i.e., the direct investor in the home country)". Data on foreign direct investment were obtained from the World Economic Forum and from the (World Bank's development indicators).

By summarize up the previous data, the study model using the Generalized Method of Moments (GMM), which is a dynamic estimator based on the Arellano-Bond method, which allows time-invariant for some variables, and this subtraction is considered acceptable in the case of FDI inflows, as some variables outside the model may have little effect if any during the time period of analysis.

#### RESULTS AND DISCUSSION

#### **Assumptions and Statistical Model**

Many studies have confirmed that commercial openness leads to an investments flows which leads to increasing nation wealth, therefore the main hypothesis of this study will test the interconnection between foreign direct investment and economic growth in Jordan, as follows:

H0: Foreign direct investment does not affect economic growth. This study is based on the simple regression analysis model, where GDP is the dependent variable and foreign direct investment and trade openness are the independent variables in the following equation model:

Log (GDP) it = 
$$\alpha 0 + \alpha 1 \log (\text{Openness})$$
it +  $\alpha 2 \log (\text{FDI})$ it +  $\epsilon$ 

#### Whereas:

The variable (GDP) of the state (i), (Jordan) for a time period (t),  $\alpha 0$  is the constant in the equation, and the vectors in the equation are  $\alpha 1$ ,  $\alpha 2$ , respectively

The variable (GDP) is an indicator of the health of the country's economy and the higher this indicator, means increasing the country's production (and it is calculated on an annual basis).

As for the variable (the degree of trade openness) previously mentioned, it will be measured by the ratio of the value of exports and imports to the value of GDP in Jordan during a certain period, and when this ratio increases, it indicates an increase in the degree of trade openness.

The independent variable in this equation is the real value of foreign direct investment (FDI).

The symbol  $(\epsilon)$  is the error on the model. To build the statistical model robustly, the following statistical methods had to be chosen:

**F-Test Statistic**: In order to test the hypotheses, more accurately test the significance of the regression model.

**Wald Test**: This test is used to check the effectiveness of variables in the model, by excluding explanatory variables that do not add anything to the model.

**Lagrange Multiplier Test**: This test is used to measure the fit of the random effect model and the pooled OLS model.

**Hausman Test:** This test is used to compare the fixed effects model or the random effects model

**Normality Test:** To test whether the data have a normal distribution or not, and also to measure the behavior of random variables

**Multicolinearity Test**: To measure the durability between the variables and is there a strong relationship between the variables so that a variable in the model defines another variable

**Granger Causality Test**: To test the causal relationship between variables.

**Time bounded:** Time is an integral component to analyze panel data. This study was conducted during the time period from 1999 to 2019.

#### Analysis and discussion of the results

Following are the results obtained from the previously applied tests and the accumulated data

Table .1 Descriptive Analysis

	(GDP)	Trade Openness (TO)	(FDI)
Observations	84	84	84
Mean	14.6	0.64	2.7
St. Deviation	1.24	0.83	1.01
Skewness	3.1	2.1	1.7
Kurtosis	12.8	4.9	6.2

Source: prepared by the researcher

The number of views was (84) and they were all calculated quarterly. (GDP) and (FDI), were taken in their actual values in billions of Jordanian dinars, (TO) was calculated as a percentage. The study shows that the skewness is normal, although it is slightly leaning to the right.

#### **Regression Model Analysis**

Table.2 (A) Wald Test

Wald Test	Value	Degree of Freedom (df)	Probability
F- statistics	136.9	3.54	00.00

Source: prepared by the researcher

It found that the value of F- statistics is (0.00), given that the level of significance is (0.05), and this means that all variables add value in the regression model.

Table. 3 (B) Lagrange Multiplier Test

	Test Hypothesis		
Breusch-Pagan	Cross Section	Time	Both
	0.00	0.00	0.00

Source: prepared by the researcher

The result of the Bresuch-Pagan LM test assumes that the random effect model is most suitable for the pooled OLS model because the value of the p-value is (0.00), which is not a significant value.

Table. 4 (C) Hausman Test

Hausman Test	Chi-Sq. Statistic	d.f.	Probability
Cross-section random	269.4	4	0.00

Source: prepared by the researcher

At the (0.05) significance level, the results of the Hausman test proves that the fixed effects model is the best model for variables interpretation.

#### (D) Normality Test

To test whether or not there is a normal distribution of data, a Jarque - Bera test was used where test results proved normal distribution and positive deviation.

Tabe.5 (E) Multicolinearity Test

	GDP	TO	FDI
GDP	1	0.13	0.31
TO	0.26	1	0.29
FDI	0.17	0.38	1

Source: prepared by the researcher

Since the values between the variables are less than (0.50), this indicates the absence of Multicolinearity between the variables which indicates positive correlation between the variables.

#### (F) Granger Causality Test

The Granger test with a (0.05) level of significance was used to discover the causal relationship between both exports and imports individually with (GDP), taking into account the presence of (6 lags), the results showed that each of the exports p-value is (0.0032), and imports p-value is (0.0028), does not affect (GDP), and also (GDP) does not affect exports p-value (0.0041), and imports p-value (0.0018) separately.

#### (G) Regression Analysis

The result of the pooled OLS multiple regression tests were as follows:

GDP = 
$$2.14 + 0.7254$$
 (Openness) +  $0.0613$  (FDI) +  $0.1251\epsilon$ 

P-value, and at the (0.05) level of significance, shows that there is an effect of the volume of trade openness on the level of economic growth, and that the coefficient value reached (0.7254), which means that a (0.01) increase in trade openness leads to an increase in the country's economic growth at a rate of (0.7254).

Moreover, there is an effect of the volume of foreign direct investments (FDI) on the level of economic growth in Jordan: an increase of (0.01) in the volume of investments increases economic growth by (0.13).

The value of  $(R^2)$  in this model was (67.22%). This value indicates the ability of the model to explain changes in the dependent variable, while the value of (R) was about (75%) which is considered a good percentage in proving the relationship between the variables.

As the pooled OLS ignores the time period; the results of the (fixed effects model) test interpret the results of the regression test, where the regression equation was as follows:

GDP = 
$$1.03 + 0.126$$
 (Openness) +  $0.0343$  (FDI) +  $0.0681 \epsilon$ 

P-value, (at the 0.05 level of significance), proves the effect of trade openness volume on the level of economic growth, and the coefficient value which was (0.126), means a (0.01) increase in trade openness leads to an increase in the country's economic growth of (0.126).

Moreover, there is an effect of the volume of foreign direct investments on the level of economic growth in Jordan: and an increase of (0.01) in the volume of investments will increase economic growth by a rate of (0.0343). The (81.43%) value of  $(R^2)$  indicates the ability of the model to explain the changes in the dependent variable, which means it, is the most appropriate model to interpret the regression model.

The main research hypothesis, which examines the effect of foreign investment on the impact of economic growth in light of the large commercial openness, with a p-value (0.876) in the multiple regression equation proves that both the size of trade openness and foreign direct investment have a positive impact on economic growth.

#### **CONCLUSION**

This study examined the impact of the effectiveness of foreign direct investment on economic growth in Jordan in light of the great commercial openness, and during the period from 1999 to 2018, the results of this study showed the effect of commercial openness and direct investments on economic growth. This study also found that the higher the degree of commercial openness and flow of foreign investment, the higher the degree of the positive effect economic growth. The study believes that this result is consistent with theoretical literature and studies that have been referred to and which assume that the great commercial openness does not reduce the effectiveness of foreign investments, and in turn, the effect on the level of economic growth in the country, as in the study by (Walsh & Yu, 2010), and study by (Maradana et al., 2017).

Although other studies, such as (Bakari & Tiba, 2019), the two researchers concluded that the effect of foreign investment and the degree of commercial openness on economic growth were limited, we conclude, by referring to their study, that the researchers conducted their study on a whole group of Asian countries that included (24) countries, and not only a

single one, and that the nature of economic activity of these countries and the degree of commercial openness are significantly different from those in this study.

In addition, many of these countries suffer from a large degree of financial and administrative corruption and political instability, while the relative stability in the countries of the region, accompanied by their high degree of stable growth in income as a result of the increase of oil prices, which greatly contributed to Jordan's ability to attract investments from neighboring countries, and this is proved by the composition, type and nationality of the attracted investments.

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