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# The Impact of Foreign Direct Investment, Aids and Economic Growth: Evidence from Structural Breaks for Jordan

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**Abstract**
In the past decade, the fundamental problems associated with the real gross domestic product (GDP) in Jordan are apparent since the foreign aid is highly influenced by macroeconomic shocks that have severely affected the GDP through changes in macroeconomic factors. However, this relationship has not been adequately addressed. The main purpose of this paper is to investigate the influence of foreign direct investment and aids and trade openness on economic growth in Jordan by employing time series data from 1970 to 2017. The Autoregressive Distributed Lag (ARDL) model and Bayer-Hanck Cointegration was employed to examine the relationship between the variables empirically. The findings revealed the existence of a long-run relationship among the variables. Foreign direct investment (FDI), aids, trade openness and structural breaks are positive and significantly influencing the economic growth in both short run and long run. The results recommended that higher foreign investment may increase the ability of aids to increase the economic growth. Therefore, policy makers should balance between investment friendly policies such as foreign direct investment that will be attracted into the country for sustainable economic growth.
**Keywords**: *Bayer-Hanck Cointegration, Foreign Direct Investment, (FDI), Aids, Autoregressive Distributed Lag (ARDL) model, Economic growth*

## Introduction

International transfers are significant features of the global economy. Foreign Direct Investment (FDI) is one of the most important components of such transfers. Being critical to the formation of capital

in both developed as well as developing countries and much research into its impact has grown substantially over the years. Most countries, especially developing nations target to attract FDI into their economies, as they expect the long-term economic growth from additional stable resources in host countries. There are some more fundamental reasons that support the attractiveness of FDI, such as advanced technology, skills, research and development (R&D) and know-how to host countries. These intangible assets would be useful for host countries to stimulate productivity and economic growth. FDI may also help to access foreign markets when host countries are used as an export platform to distribute products in the region. Hence, FDI appears to offer good characteristics ranging from a high degree of stability, financial resource augmentation, positive productivity effects and access to foreign market (Iamsiraroj, 2016)

In addition, in developing countries for example Jordan, to finance the development program foreign aid is considered as an essential source. Foreign aid has been a topic of intense debate for its role played in the growth process of Jordan. Foreign aid with its implications and assassination in struggling poverty decrease in developing countries is a significant topic. Moreover, its role in stimulating and prodding economic growth is to strengthen internal bases of finance, for example, reserve funds, in this way raising the amount of speculation and capital stock. Hence, it is essential to take note of that in current circumstances there has been a prominent change in help proceeds and commitment to advancing nations although different sorts of commitment, for example, other private streams and foreign direct investment are blurring. For example, as per the Organization for Economic Corporation and Development (2014), pronounced that other private streams and foreign direct investment are on the drop, and enclosures are expected to drop essentially in 2009. Spending plans of different developing nations were pounded hard by rises costs of oil and sustenance in the most recent decade. Numerous nations are not in a solid financial circumstance to talk about the existing financial crisis. The estimation of foreign aids to the economies of developing nations does truly exist, it is important to comprehend its offering to the economic increase.

Additionally, the significance of this thesis occurs in the effect of foreign aid which has been the subject of wide analysis for both the giver and the beneficiary nations. The essential analysis is whether aids have any effect on advancing nations' development and their level of poverty. This issue has been tended to from numerous perspectives; in spite of the fact that, a specific and particular answer still does not exist. Accordingly, it is important to take note of those not just reasons, for example, the amount and kind of money related guide impact the viability of conceivable finances additionally the appropriate utilize of these resources by the accumulating nation plays an essential role.

However, in the past decade, the fundamental problems associated with the real gross domestic product (RGDP), foreign direct investment and aids in Jordan are apparent since the foreign aid and foreign direct investment are highly influenced by macroeconomic shocks that have severely affected the RGDP through changes in macroeconomic factors. In recent years, the real growth rate of Jordan was unstable. It is fluctuating positive and negative as shown in Figure 1 below

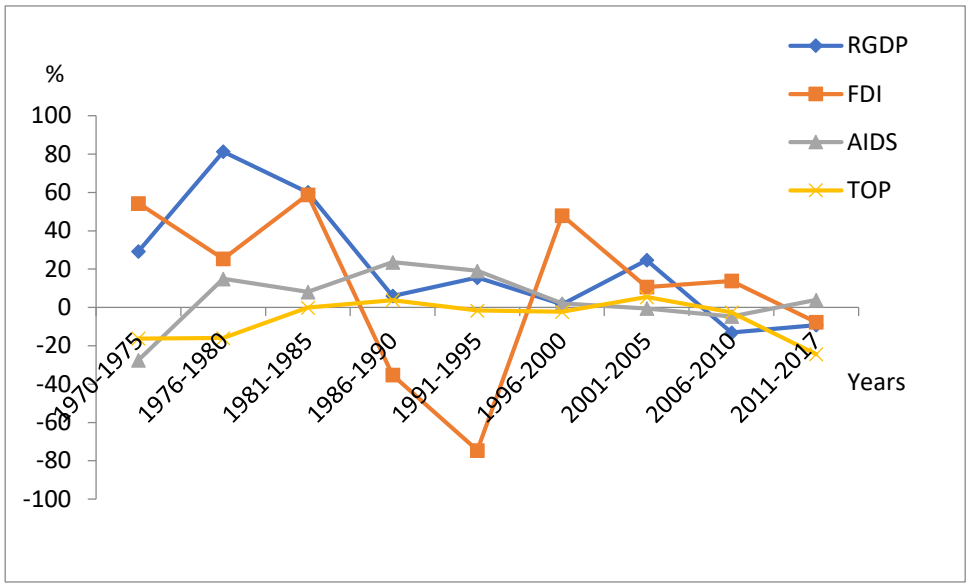


Figure 1.1 Average Percentage of Real Gross Domestic Product, Foreign Direct Investment, Aids and Trade Openness from 1970-2017

As a result of this nature of the economy, this study is intended to examine the factors that cause this fluctuation nature of the economic growth in Jordan. To ascertain the relationship between foreign aid, foreign direct investment and economic growth a number of studies have been conducted for example examples; Ekanayake, and Chatrna, (2010); Al-Foul, (2013); Dennis and Anuli, (2015); Shuaib, and Dania, (2015); Al Amarat, (2016); Bhattarai, (2016); Gopalan, and Rajan, (2016); Ibrahim, and Dahie, (2016); Koch, and Weingart, (2016); Boothby, (2017); Flora, and Agrawal, (2017); Kalai, and Zghidi, (2017). These were done to determine the relation between foreign aid, and economic growth. However, all these studies conducted had their share of inadequacy that may undermine their findings. Therefore, this study will investigates the impact of foreign aid and foreign direct investment, on the economic growth in Jordan over the period of 1970-2017.

**Literature Review**

Ekanayake, and Chatrna (2010) examined the impact of aid on the economic growth of emerging countries. The study used panel data of 85 emerging countries covering Africa, Asia, Caribbean as well as Latin America cover from 1980-2007. The study tested the hypothesis that aid can stimulate economic growth in emerging countries Moreover, the findings of the study showed that foreign aid has diversified effects on economic growth in emerging economies. The study of Al-Foul, (2013) studied the long-run linkages between per capita real foreign aid and per capita real GDP for Jordan from 1965-2005 and Egypt from 1960-2005. Their study applied newly developed method to cointegration by Pesaran et al. (2001). The results found that a long-run association exists between the variables in Jordan, while in Egypt there is no evidence of long-run relationship that exist. Moreover, the result of Granger causality test showed one-way causal relationship from foreign aid

to economic growth in Jordan. But, in Egypt, the results showed no causality between foreign aid and economic growth.

Adhikary, (2011) examined the association among capital formation, trade openness, FDI and economic growth rates in Bangladesh applying time series for the period of 1986 to 2008. They used the Johansen-Juselius procedure and vector error correction model. Their results confirmed a strong long-run association between the variables. They also found unidirectional casual flows between the variables. However, the foreign direct investment and capital formation have significant positive influence on economic growth. But, the trade openness has a negative shrinking influence on economic growth. The study conducted in Nigeria, Dennis and Anuli (2015) analysed the long-run and short-run influence of Gross Fixed capital formation, savings and population growth rate, human capital formation on economic growth. They used Autoregressive Distributed Lag (ARDL). Their results indicated that the gross fixed capital formation has positive and negative on economic growth in short-run and long-run respectively, but human capital formation has a negative and positive influence on the economic growth. Similarly, national savings and population have a negative effect on economic growth respectively. Moreover, Shuaib, and Dania, (2015) considered the effect of capital series on the financial advancement of Nigeria from 1960 to 2013. They utilized Harrod – Domar model to Nigerian financial advancement show and tried on the off chance that it has a huge connection with Nigerian economy. They additionally utilized diverse econometrics systems to research the relationship between capital series and financial improvement. Their outcomes affirmed that there is a huge linkage among capital series and financial advancement.

However, In Malysia, Md, and Suleiman, (2016) researched the dynamic connection between capital series, import, trade and financial development over the time of 1967 to 2010. They utilized Vector Autoregressive (VAR) indication. Their discoveries found no presence of cointegration among the factors. Likewise, the consequence of Granger causality test uncovered that financial development and fare Granger cause capital series. The drive reaction work showed that the financial development react both negative and positive direction dependent upon period, because of the stun of import and fare, and capital formation.

Similarly, Bhattarai, (2016) investigated that if Foreign aid from the contributors may or may not promote the economic growth of the receiving countries. Generally, they increased investment to see that if the extent of aid is related with conditionality of exports, it will have negative influences on the economic growth rates. Simulation of the systematic model indicated that if TFP grows wilder in the recipient countries more than in the contributors then emerging countries can meet in the investment saving ratios and capital output ratios with related economic growth patterns as their progressive country contributors over the long horizon. However, if the resource flows out of the emerging countries in return to foreign aid inflows this will have risky effects in economic growth of emerging economies. Econometric estimates revealed that investment rather than foreign aid was a factor contributing to economic growth of the emerging countries. In addition, an export tied to foreign aid has been risky for economic growth of receiving countries. While the panel data analyses showed that British aid has contributed to economic growth in receiving countries as British exports

to Asian DCs were positively associated to by their level of per capita income regardless of the extents of British aid to those economies.

Al Amarat, (2016) intended to identify the extent of foreign direct investment in Jordan and its effect on the rate of unemployment. It likewise intended for identifying the variables against the foreign direct investment. The study inferred that the low levels of these investments are credited to the absence of managing enactments that energize foreign investment in Jordan. The study prescribed the advancement of administrations and frameworks; in addition, the Jordanian concerned divisions ought to plan and scatter the information on investment prospect in Jordan. Also, MENA countries, Pehlivan, and Saglam, (2016) investigated the association between foreign direct investment and economic growth from 1990 to 2014. The study used Hadri Kruzomi and Pesaran et al. Multifactor Error Structure panel unit root tests, Wetland's panel and group cointegration tests. The findings revealed that long run association exists among the variables.

Ibrahim and Dahie, (2016) examined the influence of aid, domestic investment, and FDI on the economic growth in Somalia from 1970-2014. The study also employed regression analysis of the ordinary least square (OLS) procedure. The result of the study showed the strong positive link among aid, domestic investment, FDI and economic growth. Recently, Chacon-Hurtado, et, al (2017) explored the short-run and long-run association between Aid, External Debt, Domestic Saving and Economic Growth in Pakistan from 1980 to 2014. Their study employed Error Correction Mechanism (ECM) and Autoregressive Distributive Lags Model (ARDL) techniques. The results found that negative association between Aid and economic growth exists in the long run, but the positive relationship in the in short run. Conversely, domestic saving revealed a negative association in the short run while the positive association with economic growth in the long run. Also, external debt shows a negative association with economic growth in a long and short run.

In Tanzania, Ramadhan, et al. (2017) analysed the Influence of aid and economic growth using annual time series data cover the period of 1992-2014. The study employed Vector Error Correction Model (VECM) to explore the long-run and short-run effect of aid on economic growth in Tanzania. Moreover, they applied Granger Causality technique to examine the relationship among aid and economic growth. The result displayed that there is evidence of a long-run association between foreign aids and economic growth. However, in short-run, aid does not Granger cause economic growth. The result recommended that government should pursue other forms of foreign aids that are received to encourage their economic growth.

In a recent study of Kalai, and Zghidi, (2017) analysed the interrelationship between international trade, foreign direct investment (FDI) and economic growth for 15 selected North African and Middle Eastern countries over the period 1999 to 2012. They employed Autoregressive Distributed Lag (ARDL) techniques Vector Error Correction Model (VECM). The results indicated that one-way long-run causal relationship is running from FDI to economic growth in MENA countries. The study also showed that FDI has a positive impact on economic growth in MENA countries.

The study of Flora and Agrawal, (2017) studied that foreign direct investment inflows and outflows have a substantial impact on the world economy, and are important for both advanced and emerging countries. The study assumed that foreign investments have positive influences on a country's economy, and to be among the principal factors supporting accelerated economic growth. Moreover, the study found that in the literature, among the most-cited causes of Asia's strong economic growth in the recent time has been the inflow of FDI into the region. This inward FDI has also proven to be an effective means through which Asian countries are integrated with rest of the world and vice-versa. Currently, most countries are motivated to attract FDI, because of the expected favorable influence on revenue generation from progressive technology, capital inflows, and market know-how and management skills. In developing countries, for example India and China, the attraction of foreign capital is considered to be a necessary means for economic growth. It is widely recognized that FDI offers economic reimbursements to receiving countries by providing foreign exchange, technology, and capital, and by growing both access to foreign markets and competition.

Moreover, Ojewumi and Akinlo, (2017) Examined the dynamic relationships between the economic growth, the inflow of foreign direct investment and environmental quality of the Sub-Saharan African (SSA) countries. The study employed Panel Vector Error Correction (PVEC) and Panel-Vector Autoregressive (PVAR) techniques on a sample of thirty-three SSA countries. The findings of the study showed that dynamic cointegration relationship exist between economic growth, foreign direct investment and environmental quality.

In Iran, Khoshnevis, Homa, and Soheilzad, (2017) studied the long-run and short-run interaction among tourism, FDI, and economic development. The study applied annual time series data for the period of 1985–2013, the Error Correction Model (VECM) and Autoregressive Distributed Lag (ARDL). The outcomes revealed a positive linkage among tourism and economic development in both short-run and long-run. The outcomes similarly showed a positive association among foreign direct investment (FDI), the real effective exchange rate (REER) and economic development. The result of Granger causality test showed a two-way causal association among tourism and economic development.

Ayad and Belmokaddem, (2017) investigated the causal connections among financial development, trade openness and economic growth for sixteen MENA nations from 1980-2014. They used panel VAR model, panel co-integration techniques, Toda, Yamamoto, Dolado and Lutkepohl Granger causality. The findings showed that both of trade-led growth and finance-led growth hypothesis seem to be rejected by the group as a whole. The findings suggested that trade liberalization do not seem to have made a significant impulse on economic growth. Similarly, Simões, Andrade, and Duarte, (2017) applied a thresholds regression approach to study the economic growth and convergence process of 11 EU member states for the period of 1960–2014 using openness to trade and human capital proxies as thresholds identification indicators to determined exact approach suggestions for various exchange/human capital administrations. Their experimental outcomes affirmed the nearness of assorted administrations as indicated in terms of professional career levels comparing to various development exhibitions because of outside intensity, innovative make up for lost time,

government size and open obligation, the heaviness of tradable merchandise, and physical capital gathering.

Furthermore, Peasah and John, (2017) discovered the causal connection among trade liberalization and economic growth using panel data of the five BRICS Countries covering the period between 1990 to 2014. They employed static fixed effect model and a dynamic panel of the Arrelano-Bond approach to GMM techniques. Their result showed that under both the static and dynamic model, their outcome demonstrated that under both the static and dynamic model, trade progression intermediary in terms of professional career transparency has a critical constructive outcome on financial development rate. They prescribed that rising nations that need to take after the way of BRICS economies to monetary acknowledgment ought to ruminate a rising inward organization that prompts more prominent exchange advancement.

Additionally, Mustafa, Rizov, and Kernohan, (2017) examined the causal linkage among human advancement, financial development, and receptiveness to exchange Asian economies. They connected hypothetically roused concurrent conditions framework and found that however human advancement gives emphatically to financial development, monetary development does not appear to have positively affected human improvement. Uneven financial development supplemented by cover institutional improvement, keeping the human capital arrangement, may have saved human advancement temporarily and to medium term. They additionally affirmed a part for exchange advancement approaches in accomplishing more noteworthy financial development and additionally human improvement.

**Theoretical Framework**

***Endogenous Growth Model***

The endogenous growth model was established by Solow and Swan (1956).It is made of an aggregate, constant return to scale production function that pooled capital with diminishing marginal returns and labour in the production of the commodities. The technology improved at an exogenous rate, while savings are expected to be a fixed fraction of output. Consider the following Cobb- Douglas production function:

$$Q = WR^{\theta} I^{1-\theta} \; 0 < \theta < 1$$

Where Q indicated output, I the number of labours used in the production process, R is the capital stock that measures the level of technology. Output per labour, $q = \frac{Q}{I}$ is therefore specified by $Q = WR^{\theta}$ where, r indicated the capital-labour ratio, W indicated any other factors that contributes to the determinant of growth. The current study will use the foreign aids, foreign direct investment, gross domestic savings, and gross fixed capital formation.

Moreover, in the endogenous growth model, production in an economy relies upon the measure of capital stock labour and the level of technological advance. Expecting that there is no technological advance and the labour constrain develops at a consistent rate, per capita production be contingent just on per capita capital stock. The law of diminishing marginal returns set-in subsequently less and less yield produced according to capita capital stock increments. All things considered, higher capital

aggregation because of higher saving can just temporarily affect growth. Accomplishing long-run growth requires consistent technological advance. This thought, as per Ang (2008) prompts the advent of endogenous growth models following the fundamental work of Lucas (1988).

Therefore, the endogenous growth model managed to the sources of growth method, a recent previous empirical methodology intended at investigating the causes of the variations in output. This technique used an aggregate production function to faster growth into assistances from diverse sources. Specifically, the growing proportions of factor inputs weighted by their competitive factor shares, in addition to a residual which is frequently considered technical progress, nonetheless new sufficiently labelled as the modification among the weighted sum and growth of output of the growth of inputs. Scholars, researchers, and economists today are applying Solow's sources of growth accounting to evaluate the distinct effects of macroeconomic factors on economic growth.

## Methodology

### Introduction

Based on the previous discussions on foreign direct investment, aids, trade openness and their relationship with economic growth, the objective of this chapter is to reveal the sources of data and set up a model framework suitable for the relationship between the foreign direct investment, aids, trade openness and economic growth. The chapter also shows how various methods employed to measure the nexus between the variables.

### Data Sources and Model Specification

This study uses annual frequency data from 1970 to 2017.The data is obtained from World Development Indicators (CD-ROM, 2018). All series transformed into logarithm specification in order to provide efficient findings without robustness problem. Log linear equation has an advantage over the linear form as suggested by Layson (1983). The modeling framework follows the Cobb-Douglas type of production function as follows:

$$Y = AK^{\varphi}L^{\alpha} \quad (1)$$

Where $Y$ is output level, $K$ is capital stock and $L$ represent the labour stock. $A$ is the total factor productivity, while $\varphi$ and $\alpha$ are the coefficients.

The fundamental Cobb-Douglas model leads this study to formulate the following empirical model:

$$RGDPG_t = f(FDI_t, A_t, TOP_t) \quad (2)$$

Where, $RGDPG$ (the dependent variable), *FDI, A,* and *TOP* (the explanatory variables) are the Gross Domestic Product Growth, Foreign Direct Investment, Aids, and Trade Openness.

The empirical equation is transformed into logarithm specification and modelled as follows:

$$lnRGDPG_t = \alpha_1 + \alpha_2 lnFDI_t + \alpha_3 lnA_t + \alpha_4 lnTOP_t + \mu_t \quad (3)$$

Where, $lnRGDPG_t, lnFDI_t, lnA_t, and\ lnTOP_t$ are natural logarithms of *RGDPG, FDI, A, and TOP*. $\mu$ is the error term assuming homoscedastic variance (Satti et al. 2014). Parameter $\alpha_1$ is the intercept, while $\alpha_2$ to $\alpha_4$ are the slope coefficients of the regressors.Unit Root Test

Before begin with empirical analysis, this study will face the stationarity analysis; as such the study employed, Zivot-Andrews (1992) structural break test to examine the stationarity issue. ZA unit root test provided a solution when shift prevail in the time series and it is superior over the widely used Augmented Dickey-Fuller (ADF), Phillip-Perron (PP), DF-GLS and other traditional approaches to unit root tests since they may lead to inefficient and bias results when there is a level shift in the series (Shahbaz, 2013). Therefore, following Zivot-Andrews (1992) to carry out the unit root test, the empirical modelling is as follows:

$$\Delta\varphi_t = \vartheta + \vartheta\sigma_{t-1} + \gamma_t + \pi\Delta\delta_t + \sum_{j=i}^{q} d_j\,\Delta\sigma_{t-j} + \tau_t \qquad (4)$$

$$\Delta z_t = \gamma + \gamma\sigma_{t-1} + \pi_t + \gamma\Delta T + \sum_{j=i}^{q} d_j\,\Delta\sigma_{t-j} + \tau_t \qquad (5)$$

$$\Delta\varphi_t = \pi + \pi\sigma_{t-1} + \omega_t + d\Delta\forall_t + d\Delta T_t + \sum_{j=i}^{q} d_j\,\Delta\sigma_{t-j} + \tau_t \qquad (6)$$

The dummy indicators are specified by $\Delta\forall_t$ presenting mean shift arisen at separately point with time break but trend shift indicators is presented by $\Delta Q_t$ so,

$$f_t = d_{1t} \coloneqq \begin{cases} 0, t < T_{1982} \\ 1, \geq T_{1982} \end{cases} \qquad (5)$$

**Cointegration Test**

In terms of examining the long-run relationship between the variables, the cointegration analysis utilized. This study used two cointegration tests. The newly approach established by Bayer-Hank (2013) approach and the most widely use ARDL procedure (Pesaran et al., 2001). The ARDL approach has the qualities of accommodating small sample data. It can also be used for integrating variables at *I*(0), *I*(1) or mixed and it is widely used in econometric research (Satti et al., 2014). It has the advantage of determining both the short and long-run relationship simultaneously (Shahbaz, 2013).

***Bayer and Hanck Cointegration Approach***

The time series in econometric analysis is said to be incorporated when different arrangement are freely cointegrated, yet some direct blend of them has a lower request of cointegration. Engle and Granger (1987) respectable the fundamental approach of cointegration test in perspective of the assessed residuals of a long run relapse show. This approach was then named as the residuals based test for cointegration. Later some cointegration tests were made, for instance, the structure based trial of Johansen (1988), in light of residuals Phillips– Ouliar of Phillips and Ouliaris (1990), the ECM-based F-trial of Boswijk (1994) and the ECM-based t-trial of Banerjee et al. (BDM, 1998).

In any case, the unmistakable tests may propose different conclusion since none of the cointegration tests was absolutely vivacious and perfect for all applications (Elliott et al. 2005). This furthermore showed all these cointegration techniques have various theoretical establishments and convey clashing results and that the energy of situating cointegration approaches is touchy with the estimation of disturbance estimators. To improve the energy of cointegration test, with the

uncommon piece of creating a joint test-estimation for the invalid of no cointegration in light of Engle and Granger, Phillips and Ouliaris, Johansen, Boswijk, and Banerjee tests, the gathered Bayer-Hanck test was as of late stately by Bayer and Hanck. Since this new system empowers us to join a couple of individual cointegration test results to give a more unquestionable finding, it is in like manner used as a piece of this examination to check the presence of a cointegrating relationship among Economic development and its determinant in Jordan. On this, Bayer and Hanck defined to consolidate the processed importance level (p-values) of the individual cointegration test with the accompanying Fisher's equations:

$$E - J = -2\left[LN(PH_E) + LN\left(PH_J\right)\right] \quad (6)$$

$$E - J - B - BM == -2[LN(PH_E) + LN\left(PH_J\right) + LN(PH_B) + LN(PH_{BM}) \quad (7)$$

Where the p-values of several individual cointegration tests, for example, Engle-Granger (EG, 1987); Johansen (J, 1988); Boswijik (B, 1994) and, Banerjee et al. (BDM, 1998) are shown by $PH_E$,$PH_J$, $PH_B$ and $PH_{BM}$ respectively. If the premeditated Fisher statistics surpass the critical values offered by Bayer and Hanck, the null hypothesis of no cointegration can be rejected.

***Autoregressive Distributive Lag (ARDL) approach***

Bayer and Hanck test to cointegration show just the existence of long-run cointegration among the variables, however, leave short-run dynamics to be flawed. Therefore, this study applies Autoregressive Distributed Lag (ARDL) approach referred to as the bound test as displayed by Pesaran and Shin (1999) and stressed by Pesaran, Shin, and Smith (2001). As against the ordinary Johanssen cointegration technique that uses a series of the condition to assess long-run association. The use of ARDL forestalls issues related to deciding short time series data (Enisan and Olufisayo, 2009). The ARDL procedure, in reality, was perceived to have extra focal points of yielding predictable assessments of the short-run and the long-run coefficients. The approach can test for cointegration among the variables paying little respect to whether the underlying variables are$I(0), I(1)$, or partially incorporated. However, the approach has a confinement with regards to integration of order two $I(2)$. Also, the long and short-run parameters of the model are evaluated simultaneously. Therefore, the inability to test hypotheses on estimated coefficients in the long-run associated with Engle-Granger method is avoided. Thusly, the ARDL model in this study is determined as follows.

$$\begin{aligned}\Delta lnRGDPG_t = {} & \varphi_1 + \varphi_2 T_{1982} + \varphi_3 lnRGDPG_{t-1} + \varphi_4\, lnFDI_{t-1} + \varphi_5 lnA_{\,t-1} + \varphi_6 lnTOP_{\,t-1} \\ & + \sum_{i=1}^{e} \varphi_i\, \Delta lnRGDPG_{t-i} + \sum_{j=0}^{f} \varphi_j\, \Delta lnFDI_{t-j} + \sum_{j=0}^{f} \varphi_k\, \Delta lnA_{t-j} + \sum_{k=0}^{g} \varphi_l\, \Delta lnTOP_{t-l} \\ & + \mu_t \end{aligned} \quad (8)$$

Where, Δ denotes difference operator, $\varphi_1$, is the intercept while, $\varphi_2, \varphi_3, \varphi_4, \varphi_5, \varphi_6, \varphi_j, \varphi_k, \varphi_l, and \varphi_m$ are and the long and short-run coefficients. Residual term is $\mu_t$ and it is assumed to be normally, identically and independently distributed. Time period is denoted by $t$. The optimal lag length will be chosen using Schwarz Information Criterion (SIC). It has advantage of effective performance and computational simplicity (Neath et al., 1997). F-test statistic will be applied to examine the significance of the coefficients of the lag variables.

The joint null hypothesis of no long-run cointegration is;

$H_O: \varphi_2 = \varphi_3 = \varphi_4 = \varphi_5 = \varphi_6 = 0.$
Against the alternative hypothesis of long-run cointegration, that is;
$H_1: \varphi_2 \neq \varphi_3 \neq \varphi_4 \neq \varphi_5 \neq \varphi_6 \neq 0.$

**Non-Granger Causality Test (MWALD)**

After the cointegration has been established, the next test will be the Modified WALD or Non-granger causality test in order to give additionally legitimacy to the cointegration comes about and the estimations of short-run and long-run come about. This approach is similarly vital when the monetary arrangements are either coordinated of various requests, not cointegrated or both. In these cases, the ECM can't be connected for Granger causality tests and the standard (match astute) Granger causality test may not give strong outcomes. Subsequently, Toda and Yamamoto (1995) gives a strategy to test to the nearness of causality, regardless of whether the factors are $I(0), I(1)\ or\ I(2)$, not cointegrated or cointegrated of a self-assertive request. The model is introduced in the accompanying VAR framework:

$$\begin{aligned}\Delta LNGDG_t = \theta_0 &+ \sum_{i=0}^{n} \gamma_1 \Delta LNRGDPG_{t-i} + \sum_{i=k+1}^{k+dmx} \gamma_2 \Delta LNRGDPG_{t-i} \\ &+ \sum_{i=1}^{n} \beta_1 \Delta LNFDI_{t-i} + \sum_{i=k+1}^{k+dmx} \beta_2 \Delta LNFDI_{t-i} + \sum_{i=0}^{n} \theta_1 \Delta LNA_{t-i} + \sum_{i=k+1}^{k+dmx} \theta_2 \Delta LNA_{t-i} \\ &+ \sum_{i=0}^{n} \delta_1 \Delta LNTOP_{t-i} + \sum_{i=k+1}^{k+dmx} \delta_2 \Delta LNTOP_{t-i} \\ &+ \varepsilon_{1t} \end{aligned} \quad (9)$$

$$\begin{aligned}\Delta LNFDI_t = \theta_0 &+ \sum_{i=0}^{n} \vartheta_1 \Delta LNFDI_{t-i} + \sum_{i=k+1}^{k+dmx} \theta_2 \Delta LNFDI_{t-i} + \sum_{i=0}^{n} \gamma_1 \Delta LNRGDPG_{t-i} \\ &+ \sum_{i=k+1}^{k+dmx} \gamma_2 \Delta LNRGDPG_{t-i} + \sum_{i=1}^{n} \beta_1 \Delta LNA_{t-i} + \sum_{i=k+1}^{k+dmx} \beta_2 \Delta LNA_{t-i} \\ &+ \sum_{i=0}^{n} \theta_1 \Delta LNTOP_{t-i} + \sum_{i=k+1}^{k+dmx} \theta_2 \Delta LNTOP_{t-i} \\ &+ \varepsilon_{5t} \end{aligned} \quad (10)$$

$$\Delta LNA_t = \theta_0 + \sum_{i=0}^{n} \theta_1 \Delta LNA_{t-i} + \sum_{i=k+1}^{k+dmx} \theta_2 \Delta LNA_{t-i} + \sum_{i=0}^{n} \gamma_1 \Delta LNRGDPG_{t-i} + \sum_{i=k+1}^{k+dmx} \gamma_2 \Delta LNRGDPG_{t-i} + \sum_{i=1}^{n} \beta_1 \Delta LNFDI_{t-i} + \sum_{i=k+1}^{k+dmx} \beta_2 \Delta LNFDI_{t-i} + \sum_{i=0}^{n} \delta_1 \Delta LNTOP_{t-i} + \sum_{i=k+1}^{k+dmx} \delta_2 \Delta LNTOP_{t-i} + \varepsilon_{3t} \quad (11)$$

$$\Delta LNTOP_t = \theta_0 + \sum_{i=1}^{n} \beta_1 \Delta LNT_{t-i} + \sum_{i=k+1}^{k+dmx} \beta_2 \Delta LNTOP_{t-i} \sum_{i=0}^{n} \gamma_1 \Delta LNRGDPG_{t-i} + \sum_{i=k+1}^{k+dmx} \gamma_2 \Delta LNRGDPG_{t-i} + \sum_{i=0}^{n} \theta_1 \Delta LNFDI_{t-i} + \sum_{i=k+1}^{k+dmx} \theta_2 \Delta LNFDI_{t-i} + \sum_{i=0}^{n} \delta_1 \Delta LNA_{t-i} + \sum_{i=k+1}^{k+dmx} \delta_2 \Delta LNA_{t-i} + \varepsilon_{4t} \quad (12)$$

Where$LNRGDPG_{it}$ is the natural logarithms of real gross domestic product growth, $LNTL_{it}$ is the natural logarithms of trade openness, $LNFDI_{it}$ is the natural logarithms of foreign direct investment, $LNA_{it}$ is the natural logarithms of aids, $\alpha_0, \beta_1, \beta_2, \gamma_1, \gamma_2, \theta_1, \theta_2, \delta_1, \delta_2, \vartheta_1, and\ \vartheta_2$ are the model's parameters; k is the Lag length, $dmx$ is the maximum order of integration, $\varepsilon_{1t}\varepsilon_{2t}\varepsilon_{3t}$, ~$N$(0, $\varepsilon_{1t}\varepsilon_{2t}\varepsilon_{3t}\varepsilon_{4t}$) are the residual of the model. The null hypothesis ($H_0$) of non-Causality among the variables is expressed as: $H_0$: $\beta_1\ and\ \beta_2 = 0 \forall_i = 1,2,3 \quad k, \gamma_1\ and\ \gamma_2 = 0 \forall_i = 1,2,3 \quad k, \theta_1\ and\ \theta_2 = 0 \forall_i = 1,2,3 \quad k$ are tested using modified Wald test (MWALD).

## Findings and Results

### Introduction

This section discusses the empirical outcomes of the impact of foreign direct investment, aids, and trade openness on economic growth in Jordan from 1970 to 2017. The discussions are presented in phases, starting with the descriptive statistics, correlation analysis, the analysis of the empirical result of unit root tests using Zivot-Andrews (1992), Augmented Dickey-Fuller (ADF), and Phillip-Perron (PP),. The cointegration tests use an Autoregressive Distributive Lag Bound testing method that was established by Pesaran et al. (1996) and Bayer-Hank (2013) Cointegration. The estimates of the long-run and short-run coefficients are observed through the Autoregressive Distributive Lag (ARDL). The last phase is the determination of Non-Granger causality test.

**The Descriptive Statistics and Correlation Matrix**

The Descriptive Statistics and Correlation Matrix are presented in table 4.1 below. The p-values from the Jarque-Bera statistical test shows that all the series are normally distributed. The correlation coefficients indicate that both import and export have a positive correlation with output growth *RGDPG*. However, the positive linkage is found between import and export. It can be observed that *GDPG, FDI, A and TOP* have a positive relationship at 1% level of significant.

Table 4.1: Descriptive Statistics and Correlation Matrix.

| | LNRGDP | LNFDI | LNAIDS | LNTOP |
|---|---|---|---|---|
| LNRGDP | 1.000 | | | |
| LNFDI | 0.313** | 1.000 | | |
| | (0.030) | | | |
| LNAIDS | 0.736* | 0.311** | 1.000 | |
| | (0.000) | (0.031) | | |
| LNTOP | 0.627* | 0.372* | 0.5692* | 1.000 |
| | (0.000) | (0.009) | (0.000) | |

| | LNRGDP | LNFDI | LNAIDS | LNTOP |
|---|---|---|---|---|
| Mean | -2.230 | 0.503 | 17.75 | 0.143 |
| Std. Dev. | 1.185 | 1.462 | 0.954 | 1.010 |
| Skewness | 0.483 | -0.315 | -0.811 | -0.202 |
| Kurtosis | 2.382 | 2.499 | 2.645 | 4.420 |
| Jarque-Bera | 2.635 | 1.298 | 5.517 | 4.362 |
| Probability | (0.267) | (0.522) | (0.063) | ( 0.112) |

Note that * and ** indicate level of significance at 1% and 5% respectively. p-values are in parenthesis

**Unit Root Results**

Table 5.2 below shows the results of the unit root. This study utilized Zivot-Andrews (1992) analysis. The result shows that the order of integration of the variables are at *I*(1). All the variables are non-stationary at a level in the presence of structural break at 1% level of significance. After the first difference, they become stationary. However, this unique order of integration allows this study to employ the ARDL Bound test and Bayer and Hanck analysis of long-run cointegration. Although ARDL method can be applied in the case of a mixed order of integration, i.e., *I*(0) and *I*(1) but in the case of *I*(2), calculated F-statistics would not provide meaningful results (Ouattara, 2004).

Table 4.2: Unit Root Tests with Structural Break

| | ADF | | PP | | ZA | | |
|---|---|---|---|---|---|---|---|
| Variables | Level | 1st Diff. | Level | 1st Diff. | t stat - Level | t stat - 1st diff. | Break Date |
| *LNAIDS* | -1.383 | -10.26* | -1.235 | -11.47* | -3.953 | -11.17* | 1985 |
| *LNFDI* | -2.453 | -4.706* | -2.289 | -9.156* | -2.421 | -8.029* | 1996 |
| *LNRGDP* | -1.731 | -12.12* | -2.588 | -14.05* | -1.899 | -15.13* | 1982 |
| *LNTOP* | -2.337 | -3.153** | -2.243 | -8.498* | -3.595 | -9.753* | 2009 |

Note: *, **, *** denotes 1%, 5% and 10% level of significance respectively

**Lag Order Selection Criteria**

After the unit root test, the selection of lag length is vital for the ARDL model to calculate F-statistics for cointegration (Shahbaz and Rahman, 2010). Table 4.3 indicates lag 1 as an optimal lag to be use. The lag length was determined by the Schwarz information criterion.

Table 4.3: VAR Lag Order Selection Criteria.

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -228.7006 | NA | 0.461083 | 10.57730 | 10.73950 | 10.63745 |
| 1 | -127.6330 | 179.1653* | 0.009687* | 6.710591* | 7.521586* | 7.011347* |
| 2 | -118.6794 | 14.24428 | 0.013606 | 7.030884 | 8.490676 | 7.572245 |
| 3 | -107.3381 | 15.98104 | 0.017664 | 7.242639 | 9.351227 | 8.024605 |
| 4 | -98.70424 | 10.59606 | 0.027193 | 7.577465 | 10.33485 | 8.600036 |

**ARDL Bounds Test**

To examine the relationship between foreign direct investment, aids, trade openness and economic growth in Jordan, this study applies the long-run nexus between the variables with the aid of ARDL Bounds test and Bayer and Hanck (2013) combine cointegration test. The empirical results from table 4.4 indicate that the computed F-statistics for the first model using RGDP as a dependent variable exceeded the upper bound of Pesaran et al. (2001) table. Therefore, the null hypothesis suggesting the absence of a long-run relationship is rejected at 1% significance level. However, economic growth as a dependent variable also has a long-run nexus with the rest of the regressors at 1% level of significance. The model reveals that foreign direct investment, aids, trade openness and economic growth have a relationship in the long-run. Moreover, the diagnostic test shows that the chi-square values indicated the absence of serial correlation and heteroscedasticity. It also reveals that the model is correctly specified and the series is normally distributed. Therefore, we do not reject the null hypothesis for the diagnostic test.

Table 4.3: ARDL Bounds Testing for Cointegration

| Bounds Testing to Cointegration (*k=4*) | | |
|---|---|---|
| Estimated Models | Optimal Lag Structure | *F*-statistics |
| $GDPG_t = f(FDI_t, A_t, TOP_t)$ | (1,0,0,0,1) | 5.361* |
| Level of significant | Lower Bounds *I*(0) | Upper Bounds *I*(1) |
| 1% level | 2.88 | 3.99 |
| 5% level | 2.27 | 3.28 |
| 10% level | 1.99 | 2.94 |

Diagnostic Tests

| $X^2_{SERIAL}$ | $X^2_{NORM}$ | $X^2_{ARCH}$ | $R^2$ | $R^2_{ADJ}$ |
|---|---|---|---|---|
| 0.037 (0.848) | 3.422 (0.181) | 0.721 (0.654) | 0.724 | 0.675 |

Note that *, ** and *** denotes 1%, 5% and 10% significant levels respectively. The optimal lag criteria are determined by SIC. P-values are in parenthesis. Critical values for bounds are based on Pesaran et al. (2001) following restricted intercept and no trend.

**The Bayer and Hancks Combine Cointegration Test**

Table 4.5 below, report the results from the combine long-run nexus between the variables using Bayer and Hanck (2013) test. Since the unit root test reveals that all variables are integrated at *I*(1), we used the combine cointegration test. The result shows Fisher-statistics for the combine tests of EG-JH-BO-BA: Engle and Granger (1987), Johansen (1995), Boswijk (1995) and Bannerjee et al. (1998). The Fisher-statistics values for*, LNRGDPG*, *LNFDI, LNA,* and *LNTOP* are greater than 1% critical values. These combine statistical tests allow us to reject the null hypothesis of no long-run relationship and confirmed the existence of cointegration between *LNRGDPG*, *LNFDI, LNA,* and *LNTOP* and their explanatory variables.

Table 4.5: Bayer and Hanck Combine Cointegration Analysis

| Estimated models | EG-JH-BA-BO | Cointegration |
|---|---|---|
| $GDPG_t = f(FDI_t, A_t, TOP_t)$ | 65.46* | Yes |
| Significance level | Critical value | |
| 1% level | 30.774 | |
| 5% level | 20.143 | |
| 10% level | 15.938 | |

Note that **and *** indicate the level of significant of 5% and 10% respectively. EG-J means Engel-Granger and Johansen combine tests while EG-J-BA-Bo is the Engel-Grange, Johansen, Banerjee, and Boswijk combine tests. 'Yes' indicate the presence of cointegration and 'No' means there is no cointegration between the variables. The results is supported by Ekanayake and Chatrna (2010), Bhattarai, (2016), Pehlivan, and Saglam, (2016), Sabra, and Eltalla,. (2016) and Kalai, and Zghidi, (2017)

**Autoregressive Distributive Lag (ARDL) Long run and Short run Estimates**

Table 4.6: Long run and Short run Estimates

| Dependent variable: LN*GDG* | Coefficient | *t*-statistic | Prob. value |
|---|---|---|---|
| | Long run estimates | | |
| Constant | 0.117** | | |
| | (2.801) | 2.267 | 0.029 |
| *LNFDI* | 0..020* | | |
| | (0.134) | 4.929 | 0.000 |
| *LNA* | 0.059* | | |
| | (0.101) | -7.987 | 0.000 |
| *LNTOP* | 0.421** | | |
| | (0.063) | -2.498 | 0.017 |
| $T_{2000}$ | 0.543* | | |
| | (0.034) | 4.766 | 0.000 |
| | Short run estimates | | |
| *ΔLNFDI* | 0.093* | | |
| | (0.037) | 6.523 | 0.000 |
| *Δ LNA* | 0.029* | | |
| | (0.046) | 6.291 | 0.000 |
| *Δ LNTOP* | 0.027 | | |
| | (0.036) | 6.306 | 0.000 |
| $T_{2000}$ | 0.076* | | |
| | (0.043) | 5.546 | 0.000 |
| $ECM_{t-1}$ | -0.772* | | |
| | (0.148) | -5.224 | 0.000 |
| | Diagnostic tests | | |
| | | | 0.037 |
| R-square | 0.724 | $\chi^2_{SERIAL}$ | [0.848] |
| Adj-$R^2$ | 0.675 | | |
| F-statistics | 4.683* | | 3.422 |
| | [0.000] | $\chi^2_{NORMAL}$ | [0.181] |
| DW statistics | 1.949 | $\chi^2_{ARCH}$ | 0.721 |
| | | | [0.654] |

Note that *, ** and *** denote levels of significance at 1%, 5% and 10% respectively. Values in ( ) and [ ] represent standard errors and p- values.

Table 4.6 represented the long-run and short-run results. The standard errors are given in bracket. Foreign direct investment, aids, trade openness and trade liberalization (structural break) have a positive and significant effect on growth in both periods of the analysis. The result showed that in the long-run, a 1% increase in FDI will be accompanied by 0.02% rise in RGDPG, assuming that all things

remain the same, while in the short-run, a 1% rise in FDI will lead to 0.09% increase in RGDPG. Moreover, the elasticity of foreign aids indicated that a 1% increase in FA will be accompanied by 0.059% increase in RGDPG in the long run, while in the short-run, a 1% rise in FA will lead to 0.029% increase in RGDPG. In addition, the results showed that 1% increase of TOP in both long run and short run will lead to the increase of RGDPG by 0.421% and 0.027% respectively. Furthermore, the elasticity of
$T_{2000}$ indicated that 1% increase it will lead to the increase of economic growth by 0.543% and 0.076% in both long run and short run respectively.

Therefore, the results are in line with endogenous growth theory. Similarly, the results of trade openness have been supported by the works of Chen and Feng, 2000, Dar and Amirkhalkhali, 2003, Dollar and Kraay, 2003, Awokuse, 2007, Yucel, 2009, Kakar and Khilji, 2011, Gries and Redlin, 2012, Manni and Afzal, 2012, Muhammad, Hussain and Ali, 2012, Muhammad, Saleheen, and Mohammad, 2012, Kennedy 2013, Mercan, Gocer, Bulut, and Dam 2013, Lachecheb, 2014, and Kyophilavong, et al. 2015, Bakari and Krit, 2017, Bakari, and Mabrouki, 2017 and Huchet-Bourdon, Mouël, and Vijil, 2018. Whereas the result is contrary to the work of Bleaney and Greenaway, 2001, Parikh and Stirbu, 2004, Awokuse, 2008, and Bibi and Rashid, 2014 whose found negative results. This result indicates that in all the short-run and long-run analysis results support the hypothesis that trade openness will rise the economic growth which is set forward by endogenous growth theories. When the role of trade openness in Jordan new technological advancement by more effective production approaches and the role of the increase in overall factor productivity by contributing to an ideal distribution of resources are deliberated, the significance of strategies to upsurge the trade openness clearly emanates concerning both attaining assimilation in the worldwide economy and providing a solid and viable economic growth. Consequently, as a result of policies to be executed in this method, the increase in trade mostly in exports will support economic growth by expanding the economic performance of the Jordan.

The lagged error term, $ECT_{t-1}$ indicates -0.772 at 1% level of significant meaning that, the short run shocks or deviations are corrected by the speed of 77.2% towards the long-run equilibrium. In addition, changes from the equilibrium level of output growth are corrected by more than 77%, confirming our results that indicate a long-run nexus between the variables. In theory, the value *ECM (-1)* must be significant and negative which is exactly the case in the present study. The higher the coefficient, the more stable the short-run association. The results from the diagnostic tests reveals those error terms of the short-run analysis are normally distributed and free from serial correlation and heteroscedasticity. The normality confirmed the results from Jarque-Bera estimates. Therefore, their respective null hypothesis is rejected given their values at more than 10%.

**The Parameters Stability Analysis**

The stability of the parameters in the periods of analysis is investigated using the Cumulative sum of recursive residuals (CUSUM) and the Cumulative sum of squares of recursive residuals (CUSUMsq) developed by Brown et al. (1975). These tests are crucial because if there is misspecification of a model, estimated coefficients may vary in time series dates. Then it is likely to have biased estimates that can affect the explanatory power of the empirical results (Hansen, 1992). Regarding sensitivity, residuals are not very sensitive when there are small parameter variations. It is potential to discover

the deviations through recursive residual analysis. Recursive residual is predictable to have a value of zero if the null hypothesis of the parameter consistency is correct and if the parameters are not consistent, recursive residual will have non-zero predictable values due to parameter variation (Brown et al., 1975). Furthermore, Figure 4.1 and Figure 4.2 showed the graphical presentation of CUSUM and CUSUMsq, respectively. From the graphs, straight lines indicate critical bounds at 5% significant level. The results show the consistency of the parameters since the plot of the tests is within the acceptable boundaries at 5% level of significant, i.e., the regression coefficients are stable overtime (Shahbaz, 2013).

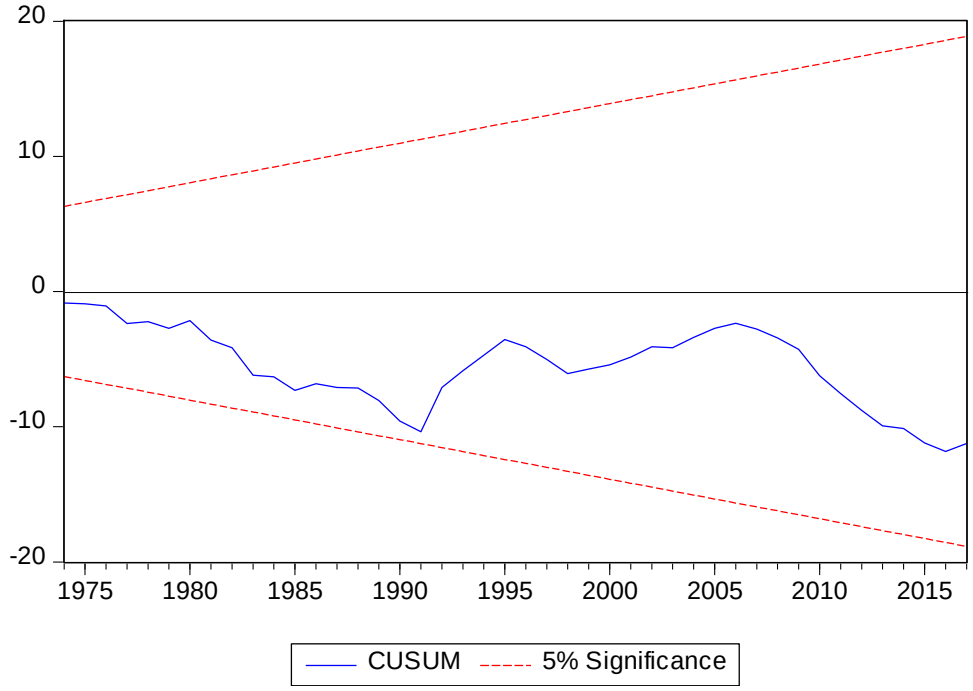


Figure 4.1: Plot of Cumulative Sum of Recursive Residuals.

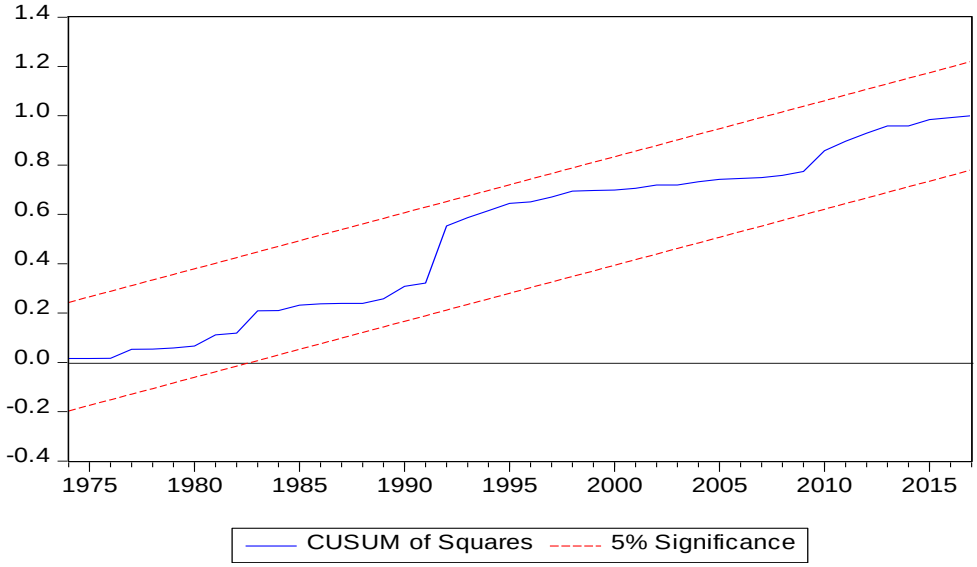


Figure 4.2: Plot of Cumulative Sum of Squares of Recursive Residuals.

**Non-Granger Causality Test Results**

To investigate the causal relationship foreign direct investment, aids, and trade openness and economic growth in Jordan, this study employed Non-Granger causality test (Toda Yamamoto). Moreover, Table 4.8 showed the result of MWALD Test. It indicated bidirectional relationships between economic growth and foreign direct investment, economic growth and trade openness. The result also showed unidirectional relationship between economic growth and aids. The outcome is reliable with study by Hossain (2011). This outcome additionally showed that exchange advancement encourages yield development by the usage of financial matters of scale, decrease the required imperative to permit increments in the import of capital and middle person merchandise enhancing efficiency through extended competition, and empowering the scattering of information through learning by doing. In addition, the present investigation underpins the conflicts that exchange will keep on being viewed as a key reason for yield development.

Table 4.7: MWALD/Non-Granger Causality Test

| Dependent Variable ($\chi^2$) | | | | |
|---|---|---|---|---|
| Variable | *LNRGDPG* | *LNFDI* | *LNA* | *LNTOP* |
| LN*GDPG* | - | 7.032* | 0.032 | 5.114* |
| | | (0.000) | (0.857) | (0.008) |
| LN*FDI* | 6.204* | - | 3.964** | 0.2038 |
| | (0.007) | | (0.047) | (0.651) |
| LNA | 8.245* | 0.029 | - | 0.227 |
| | (0.000) | (0.864) | | (0.634) |
| *LNTOP* | 9.450* | 8.213* | 9.229* | - |
| | (0.000) | (0.004) | (0.002) | |

Note that *, ** and *** refers to 1%, 5% and 10% level of significance respectively. *p*-values are in parenthesis. Significance within 1% to 10% level indicated the presence of causality between the variables.

**Conclusion**

Every country strives to achieve a sustainable economic growth that could lead to economic development in the future. Foreign aids play crucial role on the growth potential of a country through mobilization and allocation of funds to various sectors of the economy. However, despite the contributions by the foreign aids to the economic growth in Jordan, the country is experiencing volatility in economic growth over the years. Unstable growth infuses the question on whether foreign aids, foreign direct investment and trade openness have a long-run causal effect on economic growth in Jordan. The study reviewed the empirical works of various contributors to these relationships. Empirical evidence from those studies provided conflicting results on the relationship. This paper had investigated the nexus between foreign direct investment, foreign aids, trade openness and structural breaks (trade liberalization), and endogenous economic growth in Jordan using annual time series data over a period of 1970 to 2017.

Moreover, the theoretical frame work of this study was based on the works of Solow (1959). He highlighted the relevance of transaction cost and information cost to financial intermediaries that leads technological progress, innovation and investment which in turns bring economic growth in the

long-run. The underpinning theory of growth by the neoclassical school of thought showed how labour and capital inputs are needed for producing the desired level of output with a given state of knowledge and technological progress. Various methods and techniques were employed to determine the relationship such as Zivot-Andrews (1992) unit root test with structural break. This is due to its advantages over other methods. The Autoregressive Distributed Lag (ARDL) procedure (Pesaran et al., 2001) and the combined cointegration test by Bayer and Hank (2013) were used to determing the long-run nexus between the variables. Modified WALD test by Toda and Yamamoto (1995), a non-granger causality analysis is also used to determine the direction of causality between the variables. Additionally, Gross domestic product growth is the regressed variable explained by other independent variables such as foreign aids, foreign direct investment, trade openness and structural breaks (trade liberalization). The results suggesting the positive impact of foreign direct investment, aids, trade openness and trade liberalization (structural break) on economic growth potential in the long run and short run. The result also indicated that large amount of foreign aid to Jordan meets humanitarian needs rather than increasing the productive capacity of the economy or to the economic development projects. Lack of accountability is another reason why donors have decided to reduce foreign aid in Jordan. Most of the foreign aids are often misused on conditions that beneficiary must use high-priced goods and services from donor countries.

Therefore, this paper offered the following recommendations: the government of Jordan should take various stern measures in order to improve her economic growth. Government should seek other forms of foreign aids that is received to promote her economic growth such as cooperate with those countries who provide their aids without giving conditions such as china, India, North Korea, etc. The government of Jordan must review its fiscal policy in order to raise and mobilize more domestic revenue that can be used to meet for long-term development project for the economic development in the various sectors of the her economy. The government must ensure that private sector investment should be mobilized to reduce too much depend on foreign aid as well foreign direct investments inflows. In addition, Jordan should receive foreign aids with non-conditions to promote the economic development. Trade openness, however, provides less importance, as compared to FDI in changing economic growth rates. Side by side, the government should formulate export led fiscal and monetary policies to increase its exports as well as rates of economic growth.

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