

*Nawaf Alghusin* \*  
*Ayman Abdalmajeed Alsmadi* \*\*  
*Esraa Alkhatib* \*\*\*  
*Atala Mohammad Alqtish* \*\*\*\*

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## THE IMPACT OF FINANCIAL POLICY ON ECONOMIC GROWTH IN JORDAN (2000-2017): AN ARDL APPROACH

*The aim of this paper is to examine the impact of financial policy on rate of economic growth in Jordan for the period of (2000-2017) taking into the considerations the fluctuations of taxation system. Autoregressive Distributed Lag (ARDL) approach has been utilized in order to analyze the long term relationship between study variable which are; money supply (M2), domestic credit provided by banks (DCBS) and real Gross Domestic Product GDP. The results shows that, money (M2) and domestic credit provided by banks (DCBS) can effects on GDP in Jordan for the study period. The taxation system in Jordan has been fluctuated many times during 2017 and 2018, which made the data partly not available. This led the researchers to spend long time to find an accurate data in order to finalize this study. This study will add good practical evidence on the impact of changing the taxation system positively or negatively on the economic growth.*

*Keywords: Financial Policy, GDP, Taxation, Money Supply, ARDL.*

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\* N. Alghusin, PhD, Associate Professor, AL Zaytoonah University of Jordan, Faculty of Business. (e-mail: N.Salem@zuj.edu.jo).

\*\* A. Abdalmajeed Alsmadi PhD, Assistant Professor, AL Zaytoonah University of Jordan, Faculty of Business (e-mail: ayman.smadi@zuj.edu.jo).

\*\*\* E. Alkhatib PhD, Assistant Professor, AL Zaytoonah University of Jordan, Faculty of Business. (e-mail: e.alkhatib@zuj.edu.jo).

\*\*\*\* A. M. Alqtish, PhD, Assistant Professor, AL Zaytoonah University of Jordan, Faculty of Business. (e-mail: Atalla.Q@zuj.edu.jo). The paper was received on 19.11.2018. It was accepted for publication on 29.03.2019.

## 1. Introduction

The most important economic policies affecting economic growth is fiscal policy because it can play an important role in achieving the various objectives of the national economy, especially in terms of raising the rate of economic growth, through its various tools (Samargandi, 2014).

Financial policy is defined as the policy that relates to managing income and public expense to achieve the objectives emanating from the economic, social and political situations adopted by the country (Baltagi et al., 2009). In addition, the economic development considered as a one of the major concerns of all countries. This issue in developing countries is very important as the main option to emerge from economic underdevelopment. Hence, developing countries placed “development” as their main issue and mobilized their available resources - Material and human - to achieve that goal, and these countries have diverged in the strategy adopted to achieve the goal (Adeniyi, 2015).

The relationship between financial policy and economic growth has been deeply studied (Landau ,1983, Grier and Tullock ,1989, Barro, 1991, Kormendi and Meguire, 1985, levine and Renelt, 1992). They provided theoretical and empirical evidence of the relationship between financial policy and economic growth.

The financial policy gains its importance from its tools, since public expenditure affects national economic activity. In addition, financial policy affects consumption, savings, investment, and revenues. It represents the resources that the country receives to cover its expenses. More revenues receive through investment lead to increase the economic growth in the country. Financial policy also aims to achieve economic growth and stability in the overall price (Kamal, 2010).

According to economic theory, high taxes lead to slowdown economic growth because of the negative consequences of high income tax. High taxes rates mean lower levels of expendable incomes, which mean lower levels of consumption. This applies to companies as well where the high tax rate on corporate income means reduce profit and this leads to a reduction in investment (Landau ,1983)

Jordanian economy currently faces a number of economic obstacles which decline in the performance of public finance represented by the widening of the government deficit gap. The budget deficit amounted to 6.8% of GDP in 2011 (Government Finance Bulletin, 2011). In addition, the Jordanian economy has faced many external shocks such as an increase in the import bill of energy generated by frequent interruptions in the flow of natural gas from Egypt which leading to a rise in the central government deficit, and escalating operating losses in the Electricity company. Later on, budget has increased in 2012 because of the political conditions experienced by some neighboring Arab countries, and contributes

to the burden of providing housing and medical services for refugees coming from Syria. This instability of the tax legislation in Jordan is the biggest obstacle faces investors. More increase in the volatility in the tax rates imposed by the Jordanian government lead to increase the obstacles that faces investors (Samargandi, 2014).

Although the abundant research on X focused on the Y (e.g. some studies), there is limited research concentrated on the effect of financial policy on the economic growth taking into consideration the recent fluctuation of taxation system. This paper attempts to understand this effect by addressing the following research question: To which extent the financial policy can effect economic growth taking into the considerations the fluctuations of taxation system?

The aim of this paper is to examine the impact of financial policy on rate of economic growth in Jordan for the period of (2000-2017) taking into the considerations the recent fluctuations of taxation system.

The rest of this paper is organized as follows. First, it reviews the literature relevant to the current study. Second, the research methodology is presented. Third, the results are discussed. Finally, the paper concludes.

## 2. Literature review

Issing (2011) found that inflation rate and long-term growth are negatively systematically related to each other. In more meaningfully, high inflation lead to reduce growth rate in the long term. Moreover, this result is not united in opinion, which some studies found no relation among long run growth and the rate of inflation. There are some empirical studies that have found a positive long run relationship between inflation rate and growth rate. However, this relationship holds only for low rates of inflation.

Study by Kim et al. (2009) aims to investigate the co-integration structural shock for purchasing power parity of some Asian currencies by using cointegration model. the findings of this study shows that a structural break took place at the flare-up crisis of Asian currency during the year of 1997.

Alshahrani and Alsadiq (2014) by using data during the period of 1960 – 2010 in Saudi Arabia and they found that the in long-run growth is determined by capital expenditure and health care spending. In other hand, public investment and education expenditures are affecting growth in the short-run. Moreover, Bangake and Eggoh (2010) by using panel data to examine the relationship between financial development and economic growth and the direction of causality for more than 70 developing and developed countries for the period of 1960-2004. The re-

sult on the cointegration test revealed that the variables are cointegrated at the 1 percent significance level which indicates statistical significant long-run relationship among the variables in the study for all the countries. The results indicated that the link is stronger in the high income economies than in lower income economies. The panel VECM results which was based on the GMME revealed that there is statistical significant short and long run causality running from finance to economic growth in all the countries in the study, with the long run causality been strong than the short run causality.. Kojo and Wolde (2013) discussed the Causality relationship between GDP and government expenditure in Ethiopia during the period 1950 – 2007 and Found an unidirectional causality running from GDP to government expenditure.

Marotta (2009) found that the date type fits national banking systems adjusting quietly to the updated financial regimes and bring Euro into the view may make some change. This study employed the multiple break test in EMU countries.

Study by Igbiosa (2012) found a positive correlation between expenditure and economic growth in the Nigerian economy. This is not achieved in the short term, also the relationship will become negative as it reached a lack of significant relationship between the structure of public expenditure according to economic division and economic growth in the long and short term. The study used error correction models, the Granger's causative test, the symmetric integration test and the time series timeliness test to test the relationship between the variables. The results found a positive relationship between local public expenditure and economic growth, and requires that this relationship be achieved that the adjustment in the structure of public spending so that the local and private sector participate in the responsibility of public expenditure, ie the implementation of the policy of financial decentralization. The study was conducted on a group of Eastern European countries to extract Results and lessons learned that can be adapted to the Nigerian situation, using the standard method through a multi-equation regression model that takes into account the multiple relationships between the different variables

According to Romero (2009) investigated hypothesis for real GDP per capita in some countries by Applying the panel data methods for the 1950-2001 period. The results of this analysis shows an evidence of regime-wise trend stationarity which rejects the null hypothesis.

Lee and Chien (2008) in Taiwan tried to investigate if policy system changes have broken down the long run relationship between economic growth and tourism development and process for the period of 1959-2003. The results of this study found that there are shocks. Taking a consideration for these shocks is fundamental to establish a relationship between economic growth and tourism development in Taiwan.

Chakraborty and Ghosh (2011) also used panel data for five Asian countries (Thailand, Korea, Indonesia, Malaysia, and the Philippines) for the period 1989-2006 to examine the link between economic growth and financial development. The outcomes of this study indicated that the series were integrated and are cointegrated. There is a long-run relationship between economic growth and financial development. Results from the granger causality test shows that financial development proxied by market capitalization Granger courses economic growth. Economic growth also Granger causes financial development. They concluded that economic growth helps the banking sector to grow.

A study for Adel (2014) indicates a positive relationship between expenditure and economic growth in the Egyptian economy. This is not achieved in the short term, as the relationship will become negative, and there is no significant relationship between the structure of public expenditure according to economic division and economic growth in the long and short term, based on the methods of critical analysis of literature and the study of the case of Egypt during the period of the fiscal year 1981/1982 to fiscal year 2011/2012, and the use of quantitative analysis tools by employing time series analysis tools, error correction models and testing Symmetric integration.

Ali (2015) proved a positive correlation between public spending and economic growth. The condition of this relationship is that the adjustment in the structure of public expenditure should be made so that both the local and private sectors participate in the responsibility of public expenditure. From Eastern European countries to draw conclusions and lessons learned that can be adapted to the Egyptian situation, using the standard method through a multi-equation regression model that takes into account the multiple relationships between different variables.

Study for Walid (2014) examined the effect of monetary policy on economic growth, which is an applied study on the state of Algeria using the quantitative approach using modern standard methods and time series. The study concluded that through the use of the integration test there is a long-term equilibrium relationship between monetary policy indicators and GDP Overall, there is a causal relationship between M1 and M2 and GDP.

In Jordan, study through Awad and Yasin (2011) aimed to analyzing the impact of monetary and financial development on economic growth for quarterly data (1993-2008). The study concluded that the causal relationship test showed a causal relationship between the monetary variables and the real growth rate of the individual income. This means that changes in the indicators of monetary development help to explain the changes in economic growth rates and the results of the dynamic standard model showed that the most influential variables on economic growth.

Kamaan (2014) aims to investigate the impact of monetary policy on economic growth in Kenya. The study followed the quantitative approach to study the impact of monetary policy on economic growth in Kenya. The study concluded that the monetary policy of the country must be effective and found that economic growth does not respond to the shock of monetary policy in Kenya, pointing out that there are other factors that affect economic growth.

### **3. Data and methodology**

#### **3.1 Data**

Macroeconomic indicators before and after correction programs 1976- time series data for the period of (2000-2017) to test financial development variables and financial policy, unit root tests has employed. Data were collected from Jordanian central bank. The indicators that selected for testing unit root test are; money (M2), domestic credit provided by banks (DCBS) and GDP has been taken as a measurement for economic growth in the current paper.

#### **3.2 Unit root test**

In time series data analysis, stationarity test must be applied on the study variables. Stationarity test using to explore the integration order of study data in the long-run.

If the time series data is non-stationary and its first difference is stationary, it is says to have a unit root in its characteristic equation. However, if the time series data are not constant that will reflect non truth results of regression (Engle and Granger, 1987). However, this study used the most popular test which is Augmented Dickey-Fuller (ADF), The commonly used method to test the presence of unit roots is Augmented Dickey Fuller (ADF) test.

### 3.3. Empirical Methodology

#### 3.3.1 Cointegration Tests:

In economic view, the two variables will be co-integrated if they have a long-term or equilibrium relationship between them.

#### 3.3.2 Bounds F-statistic Approach

Pesaran et al. (2001) mentioned that Bounds Tests Approach may used to examine the long- run co-integrating relationship between the variables depends on the F-test. However, the critical values of F-test are classified into two critical values; lower critical bound (LCB) and upper critical bound (UCB).

### 3.3 Autoregressive Distributed Lag Model (ARDL)

ARDL approach by Pesaran *et al.* (2001) has developed to solve the problem of test the existence of a level relationship among the study variables.

To investigate the long run relationships among the variables, The following equation have been developed:

$$\Delta GDP_t = \mu_1 + \sum_{j=1}^k \beta_1 \Delta GDP_{t-1} + \sum_{j=1}^k \beta_2 \Delta M2_{t-1} + \sum_{j=1}^k \beta_3 \Delta LDCBS_{t-1} + \lambda_1 ECT_{t-1} + \varepsilon_{1t}$$

Where,  $\mu_i$ s ( $i= 1$  to 3) denote intercepts;  $B_{ij}$ s ( $i,j= 1$  to 3) represent the coefficients of the variables which are used to test the long run coefficient among the variables;  $\lambda_i$ s ( $i= 1$  to 3) represent the coefficients of the error correction terms ( $ECT_{t-1}$ ); which are used to test the equilibrium relationship among the variables;  $\varepsilon_{ij}$ s ( $i,j= 1$  to 3) represent the error terms.

## 4. Discussion Of the Results

### 4.1 Results of Unit Root Test

Table 4.1 contains the results of ADF at different level of  $I(0)$  and  $I(1)$ .

Table 4.1:

(ADF)

Variables	$I(0)$		$I(1)$	
	ADF		ADF	
	Intercept	Intercept & Trend	Intercept	Intercept & Trend
M2	0.31	-3.89	-3.01***	-3.28***
GDP	0.41	-3.77	-4.77***	-4.55***
DCBS				

Source: output of Eviews 7.8 econometric software

Notes: 1- \*, \*\*, \*\*\*, significance at 1%, 5% and 10% levels, respectively; 2- Both ADF and PP tests examine the null hypothesis of unit root against the stationarity.

Table 4.1 concluded that (M2, GDP and DCBS) are stationary at their respective levels in ADF test at  $I(1)$ . Thus, these results suggested that the null hypothesis of unit root for all variables in ADF test is rejected.

### 4.2 Bounds F-statistics Test Result

Because study variables in current study are stationary, it's easy to go to the next step which called bounds co-integration F-statistics test as proposed by Pesaran et al. (2001) to check the null hypothesis ( $H_0$ ) of no co-integration between the study variables. Table (4.2) provides the results of calculated and critical values of bounds F-statistics test for the study model.

Table 4.2

RESULT OF BOUNDS F-STATISTICS TEST

Model	F-statistics	Level of Significance	I(0)	I(1)
LGDP <sub>t</sub>	3.44***	10%	3.13	2.21
LM2 <sub>t</sub>	2.88**	5%	3.83	2.22
LDCBS <sub>t</sub>	9.02***	10%	3.71	5.33

Notes: \*, \*\*, \*\*\*, significance at 1%, 5% and 10% levels, respectively.

Source Micro-fit 4.5 Software

In Table (4.2) the result shows that the  $H_0$  has been rejected for study model. However, these results are confirmed by Persaran et al. (2001) which argued that if the co-integration exists among the variables means that there is an existence of a steady-state long-run relationship among all the model variables.

4.3 Long-Run relationship results

Table 4.3 present the results of long-run relationship between the study variables at different levels of significance.

Table 4.3

LONG RUN EQUILIBRIUM RESULTS

Model	Constant	LGDP <sub>t-1</sub>	LM2 <sub>t-1</sub>	LDCBS <sub>t-1</sub>
$\Delta$ LGDP <sub>t</sub>	-29.6*	0.71*	1.77*	0.37*

Note: \*, \*\*, \*\*\* denote significance at 1, 5 and 10% level respectively

Source: Output of Micro-fit 4.5 Econometric Software.

Table 4.3 shows that the LGDP model has a positive relationship with LM2<sub>t-1</sub> and LDCBS<sub>t-1</sub> variables. While,  $\Delta$ LGDP<sub>t</sub> model is negatively associated with LGDP<sub>t-1</sub>. Moreover, the results of this test show that the GDP is positive and highly significant, which means that money (M2) and domestic credit provided by banks (DCBS) can be the driver of economic growth in Jordan. An increase 1% in M2 will increase the growth of the economy by over 29% in the long-run.

According to the results of this study, it's easy to conclude that with one unit increase in M2, the GDP increased by 0.71 in long run. In addition, as shown in table (4.3) one unit increase DCBS the GDP will increase by 0.37 in long run as well and vice versa.

## 5. Conclusion and Policy Implications

Financial policy for all countries plays an important role economic growth. The Central Bank of Jordan (CBJ) changed the policy over time in line with the changes of the financial policy structure and as a result of the currency crisis in the late 1980s.

Financial policy usually aims to achieve the goal which is the growth by targeting monetary aggregates in accordance with real GDP growth and inflation. Moreover, this study aims to discover how much M2 and DCBS impact the growth of GDP in Jordan taking into the considerations the recent fluctuations of taxation system.

As this study aimed to investigate the long run relationships between GDP as Dependent Variable and money (M2), domestic credit provided by banks (DCBS) as Independent Variables. The results shows that, money (M2) and domestic credit provided by banks (DCBS) can effects on GDP in Jordan for the study period. Moreover, although the recent fluctuations of taxation system in Jordan the results shows a positive relationship between this fluctuation and the growth of GDP.

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UTJECAJ FINANCIJSKE POLITIKE NA GOSPODARSKI RAST U JORDANU (2000-2017):  
ARDL PRISTUP

Sažetak

Cilj ovog rada je ispitati utjecaj financijske politike na stopu gospodarskog rasta u Jordanu za razdoblje 2000–2017, uzimajući u obzir fluktuacije u poreznom sustavu. Pristup temeljem na autoregresivnim modelima s distributivnim vremenskim pomakom (ARDL) korišten je kako bi se analizirala dugoročna veza između varijabli ispitivanja koje su: novčana masa (M2), domaći kredit banaka (DCBS) i realni bruto domaći proizvod (BDP). Rezultati pokazuju da novac (M2) i domaći kredit banaka (DCBS) mogu utjecati na BDP u Jordanu u promatranom razdoblju. Sustav oporezivanja u Jordanu mnogo je puta oscilirao tijekom 2017. i 2018., zbog čega podaci djelomično nisu dostupni. To je uzrokovalo da istraživači provode dugo vremena kako bi pronašli točne podatke kako bi dovršili ovu studiju. Ova studija će dodati dobre praktične dokaze o utjecaju pozitivne ili negativne promjene poreznog sustava na gospodarski rast.

Ključne riječi: Financijska politika, BDP, oporezivanje, novčana masa, ARDL.