
ECONOMIC EFFECTS OF POLITICAL INSTABILITY IN THE MIDDLE EAST: A CASE STUDY OF JORDAN

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ABSTRACT

The study highlighted the impact of political shocks in the Middle East during the study period (2000-2016). It aimed at identifying the most important political shocks along with its economic dimensions by identifying the political scene in the Middle East during that period. The study proved that there is cointegration between Jordan and the countries under study (Syria, Iraq, Palestine, and Lebanon) according to the variables under study (growth, inflation, and investment). The main hypothesis of this study is to test the extent to which the Middle Eastern shocks have affected Jordan's economic variables. In order to achieve that goal, the study used different types of econometric tests. The results showed a causal relationship between growth in Jordan, Syria, and Palestine, i.e., growth in Jordan is one of the growth factors in these countries. In addition, the results indicate that there was an impact of shocks in the countries under study on the economic variables in Jordan.

Keywords: Political instability, the Middle East, Jordan.

INTRODUCTION

Political shocks often undermine the economies of nations. Thus, economies cannot be disassociated from those shocks that affect some countries and pass through other countries, putting them in the midst of unprecedented challenges of at least maintaining stability.

Since the beginning of the twenty-first century, the world has witnessed great political transformations, some of which impacted all countries of the world, and some had an impact on certain regions. The Middle East region has had a significant share of these transformations or shocks, as it has experienced considerable fluctuations in its political stability, and thus a profound impact on its economic stability.

When observing the phases of its economic development, Jordan, being the subject of the study, is always found affected by the regional events in particular, and global events in general, in spite of its relative stability compared to the neighboring countries, due to the fact that its

economy is one of the small open economies. Political science literature attributes this to the vulnerability of these economies to regional and international tensions, and their dependence on the economic, political, and social consequences they face without the possibility of affecting any other economies (Sweidan, 2016).

The importance of this study stems from the fact that neighbors of Jordan (Iraq, Syria, Lebanon, and Palestine) have been hit by a series of political instabilities during much of the study period (2000-2016). The study aims at estimating the effects of these political shocks on the most important variables of the Jordanian economy during the period of 2000-2016.

Objectives and hypotheses of the study

This study is aimed at:

1. Identifying political instability along with its economic dimensions.
2. Identifying the political scene in the Middle East, and the most important political shocks experienced during the study period (2000-2016).
3. Identifying the impact of political shocks in the Middle East during the study period on Jordan's economic variables under study (growth, investment, and inflation).
4. Investigating whether there is a cointegration between Jordan and the countries under study (Syria, Iraq, Palestine, and Lebanon) according to the variables under study (growth, inflation, and investment).

Two main hypotheses or two main questions will be examined in this study:

1. Is there an impact for the shocks in the countries under study on the economic variables in Jordan?
2. Is there a cointegration between Jordan and the countries under study (Syria, Iraq, Palestine, and Lebanon) according to the variables under study (growth, inflation, and investment).

PREVIOUS LITERATURE

Several studies have investigated the impact of external political shocks that happen in some countries on the economies of their neighboring countries. The general findings of most previous papers conclude there is a negative impact for these shocks on the economies of the neighboring countries with differences in the selected time period, the economic variables, and the models or the methodologies used.

Easterly and Levine (1998) and Ales and Chua (1997) agreed there are negative effects for the political events in the neighboring countries on the economies of countries not experiencing local instability. Easterly and Levine found there is a regular transmission of infection to the national borders of a neighboring country, and this effect, whether good or bad, will eventually appear in the long run. This result was confirmed by Aisen and Veiga (2011) using the GMM estimation of linear panel data models on a sample of 169 countries for five sub-sample periods during the years 1960-2004.

Ales and Chua (1997) noted that regional instability (political instability in the neighboring countries) has strong effects on the economic performance of countries. The more the external negative effects are, the more the local instability will be. It turned out there are two channels through which instability in the region can affect the local economic performance. First, instability disrupts trade flows. Second, instability leads to increased military expenditures, as defense expenditures are higher in unstable countries. Al-Hamdi and Alawin (2017) showed that increased military expenditures depress economic growth.

Inflation was one of the economic variables examined by Aisen and Veiga (2005) during periods of political instability. They studied a sample of 100 countries during the period of 1960 to 1999 and found that the more politically instable the countries are, measured by multiple political and institutional variables, the higher inflation rates will be.

As far as investment is concerned, Barro (1991) found that instability, represented by the number of assassinations, coups, and revolutions, is inversely related to investment. These results were also confirmed by Alesina and Perotti (1996) by studying a sample of 70 countries during the period of 1960-1985.

METHODOLOGY

This study used the descriptive and quantitative-analytical approaches. The descriptive approach was used to review the political scene of the Middle East during the period (2000-2016). In addition, it studied the most important political shocks that have profoundly affected the region and tried to analyze their impacts on the Jordanian economy.

The quantitative-analytical approach was used to test the hypotheses of the study and determine the extent to which Middle Eastern shocks have affected Jordan's economic variables under study (growth, investment, and inflation) for the same period.

Time-series tests were used to test the stationarity of such time series, and then cointegration tests were used. The tests used in this regard were the Augmented Dickey-Fuller (ADF) test and then the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) test was used as a confirmatory analysis. In

addition, the Engle–Granger causality test and the Johansen cointegration test were applied to check for the existence of a relationship in the long run among the variables.

With regard to testing the hypotheses of the study, the VAR model was used after calculating the lag periods and using the Engle–Granger causality test, and the Johansen cointegration test. Through the VAR model, it was possible to estimate the IRFs.

The annual time series for the period 2000-2016 was studied due to the absence of quarterly data about growth, investment, and inflation rates in some countries. In addition to Jordan, the sample includes some Middle Eastern countries suffering from political unrest during the study period; Syria, Iraq, Lebanon, and Palestine.

POLITICAL STABILITY AND INSTABILITY

Political instability is a relative concept. Almost no society is free of instability, taking into account the differences in the degree of stability, which may be low in developed countries and high in developing countries. There is no commonly agreed upon concept of political instability — some see unrest and demonstrations against the political regime as an indicator of political instability, while others see it as an expression of the vibrancy of society (Bin Nawa, 2015). Aurore (2012) pointed out that political instability is known as a group of political events including assassinations, purges, riots, anti-government demonstrations, and revolutions. On the other hand, Sweidan (2016) defined political instability as an event that generates doubts about the stability of the current regime and/or government, thus negatively affecting the government's authority and effectiveness.

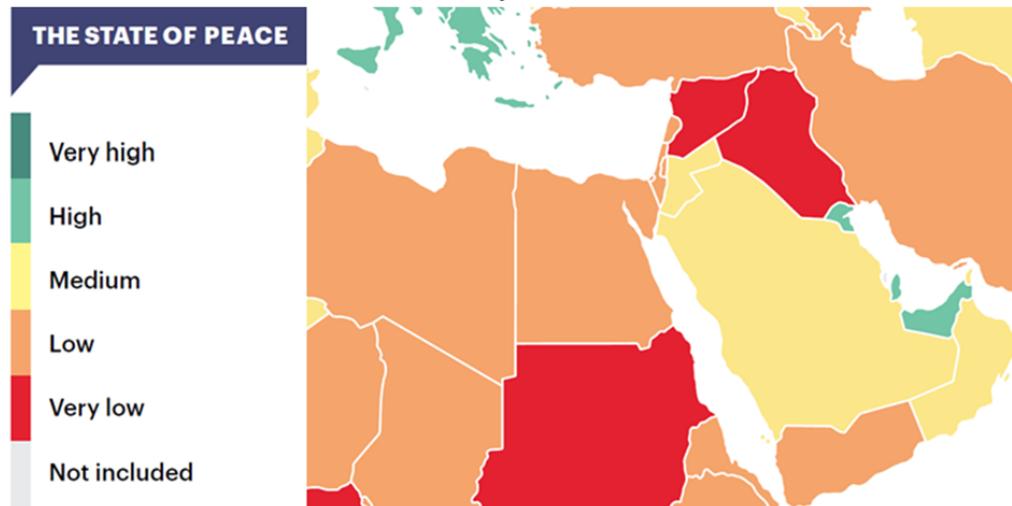
In his definition for political instability, Akongdit (2013) attributed it to two main factors: (1) the number of times the government has changed, and (2) the degree of social unrest.

JORDAN AND POLITICAL STABILITY

First: Internal stability

Jordan is a hereditary monarchy with a parliamentary form of government. This ruling system calls for political stability, as it legitimizes the regime and the type of power transfer. The military system also plays a vigorous role in maintaining stability. Jordanian society is highly homogenous, in spite of religious, ethnic, and other differences (Al-Allan, 2012). The performance of the monarchies in the Arab world was better than their republican counterparts in the midst of some political events in the Middle East, as the power of the royal families, including Jordan, stems from their fundamental role in shaping and building the country, and from the strength of tribal customs and traditions that still believe in and adhere to the principle of hereditary monarchies (Susser, 2013).

Figure (1)
The State of Peace 2015



Source: Global Peace Index, 2015.

Considering the Global Peace Index (GPI), we can see that the countries of the world were ranked according to their state of peace. The GPI consists of 23 qualitative and quantitative indicators ranking 163 countries. It is based on three main criteria: societal safety and security, ongoing domestic and international conflicts, and the level of militarization. Accordingly, Jordan was ranked among the countries with a moderate state of peace, and was considered stable compared to the neighboring countries and the rest of the Middle East, which was ranked as the least peaceful region in the world, as shown in figure (1). Jordan occupied a medium rank, although it is surrounded by Iraq and Syria, the two least peaceful countries in the world and the Middle East, in addition to Palestine (Global Peace Index, 2016).

The Arab Spring, for example, which began at the end of 2010, had a direct impact on the Jordanian political regime. Demonstrations in Jordan started to call for political reforms. However, the Jordanian political openness and the freedom of demonstrations have driven the restoration of internal stability, in spite of the turbulent regional situation in the neighboring countries.

It is noted that Jordan is surrounded by four neighboring countries, three of which are currently witnessing bloody conflicts including Palestine, Syria, and Iraq, thus making it the country most affected by the regional events, and putting its political, economic, and demographic stability at stake. This comes as a result of the wave of Iraqi and Syrian refugees hosted by the Kingdom, in addition to other economic and political pressures. Jordan successfully managed to maintain its relative stability during that period despite all these circumstances.

Second: External stability

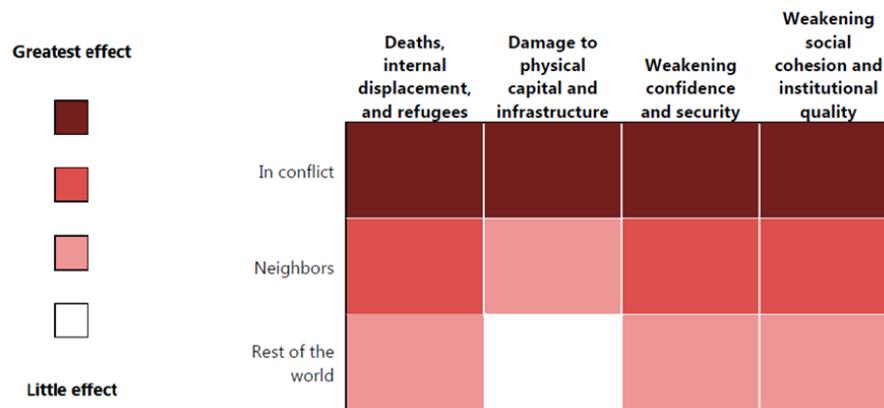
Many studies have demonstrated the powerful negative impact of political instability in the countries of the region on the neighboring countries at political, economic, and social levels. Easterly and Levine (1998) emphasized that a good neighborhood is essential in the development process since economic performance can be infectious to the neighboring countries. Ades and Chua (1997) studied the effects of regional political instability on economic growth through the transmission mechanisms. They pointed out that political instability negatively affects trade flows between neighboring countries, increases military expenditures of the government, and reduces spending on other vital sectors, especially education.

In their study on the impact of instability in neighboring countries on economic growth, Chua and Ades (1993) emphasized the existence of a strong and inverse relationship between economic growth and political instability; the higher the economic growth rates are in countries, the less political instability will be in neighboring countries. They cited the impact of the Gulf crisis (1990-1991) on Jordan and how this regional political shock affected many countries that are not involved in it. As a result of such shock, Jordan lost its export markets in Iraq, Saudi Arabia, and Kuwait, and lost a large part of tourism revenues and remittances of Jordanians working in Kuwait and Saudi Arabia. In addition, the return of hundreds of thousands of the Jordanians working in the Gulf forced the Jordanian government to increase its educational and health expenses, and thus exacerbated the fiscal deficit, and resulted in a 6% decline in the GDP in 1990.

Rother et al. (2016), in their study on the impact of conflict and refugee crisis in the MENA region, stressed that conflicts, especially those associated with large-scale human displacement, affect the economy through different channels. Figure (2) illustrates four main channels that can affect the economy of the conflict-torn countries, neighboring countries, and the rest of the world at different rates.

Figure (2)

MENA Conflicts: Economic Transmission Channels



Source: Rotheret al, 2016.

THE POLITICAL SHOCKS IN THE ARAB WORLD AND THEIR IMPACT ON JORDAN

This study deals with four major political events in the Arab region between 2000 and 2016. These events have different effects and severities on Jordan’s economy due to their different political weight on the regional and global stage.

First: The Palestinian uprising “Intifada” 2000

The second Palestinian uprising — “Intifada” or Al-Aqsa Uprising — began on the 29th of September, 2000, a day after the visit of the Likud party leader Ariel Sharon to the Al-Aqsa Mosque. In response to this visit, Palestinians held demonstrations.

Due to its geographic proximity with Palestine, Jordan was expected to be the most affected country by the results of this uprising. The most serious scenarios about the uprising included the escalation of this uprising, which was followed by the bad political situation between Palestinians and Israelis and between Israel and the neighboring countries.

Second: The U.S. war on Iraq 2003

The U.S. war on Iraq began on the night of March 19, 2003 and ended on the 9th of April, 2003 with the fall of Baghdad, the loss of many human lives, and the destruction of infrastructure. Also, many Iraqi citizens lost their homes and were displaced to the countries surrounding Iraq, especially Jordan and Syria.

Third: Lebanese War 2006

On the 12th of September, 2006, an armed group from the Hezbollah Party attacked an Israeli patrol on the southern borders of Lebanon, killing three Israeli soldiers and arresting two soldiers. As a result, Israel made a counter attack to retrieve its captured soldiers, sparking a war between the two parties for 34 days. Regionally, this war has increased violent sectarian pressures in Jordan and other neighboring countries such as Egypt and Syria.

Fourth: The Arab Spring 2011

The events of the Arab Spring began in January 2011, in Tunisia. The impact of the Tunisian revolution shifted to various parts of the Arab world, starting with Egypt, followed by Libya, Yemen, and then Syria. Jordan was also affected by the events of the Arab Spring, and protests started calling for reforms in many fields.

POLITICAL INSTABILITY AND ITS RELATIONSHIP TO THE JORDANIAN ECONOMY

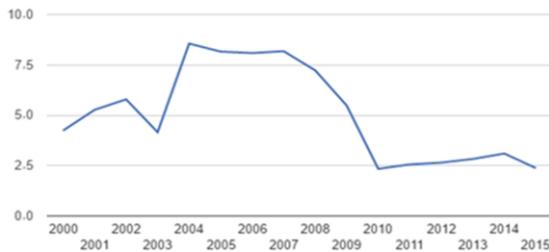
The relationship between politics and economy is a controversial and mutual relationship. The most important aspect of this relationship is the impact of the economic situation of a country on its political situation, as well as internal and external stability. In this part of the study, the impacts of political instability in the Arab world on the Jordanian economy are studied according to three economic variables: growth, investment, and inflation.

First: Growth

Figure (3) shows the economic growth in Jordan, confirming the impact of these events on it. The figure shows the decline in growth rates due to the 2003 Iraq war, the Lebanese war in 2006, and the third Palestinian uprising in 2008-2009. Table (1) also shows a 40% sharp decline in growth rate because of these events (Jordan's Economic Outlook, 2015). The events of the uprising coincided with the global financial crisis and the economic recession that affected, by different means, most of the countries of the world.

Figure (3)

Jordan Economic Growth 2000-2015



Source: *The GlobalEconomy.com, The World Bank.*

Table (1)

Jordan's GDP growth at constant market prices

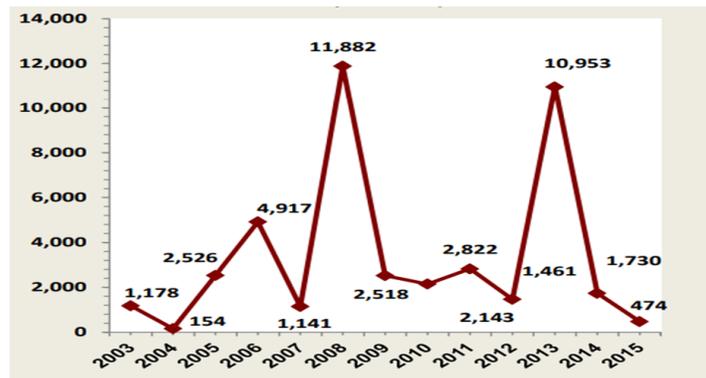
Real Growth Rate %	Period
8.24 (medium)	2007-2005
4.96 (medium)	2008-2010
2.7 (medium)	2011-2013
3.1	2014
2.4	2015

The impact of the Arab Spring on Jordan’s economic growth has also been effective and severe, as in the previous period. The positive growth rates before the Arab Spring decreased dramatically. They decreased to an average growth rate of 2.7% during the period 2011-2013. The countries which have experienced political instability due to the Arab Spring suffered a significant GDP decline from 1% to 7% with the onset of the crises (Khandelwal, 2013).

The presence of Syrian refugees in Jordan has had a clear impact on the Jordanian economy. The crowding out of competition on jobs in the private sector has increased, resulting in lower wages, deterioration of economic conditions of the poor Jordanians, and exhaustion of social services such as education and health care. The provision of public and social services to Syrian refugees negatively affected growth rates and the Gross Domestic Product (GDP) (Khandelwal, 2013). According to the Central Bank of Jordan, the crisis in Syria, including the refugee crisis, caused a reduction in Jordan’s GDP by 2% in 2013 (Jordan Independent Economy Watch, 2015).

Second: Investment

The second Palestinian uprising had an impact on the investment situation in Jordan. In general, before the outbreak of the uprising, Jordan suffered from several economic problems, such as high unemployment rates, external indebtedness, and the need for foreign investments. The state of instability in the surrounding countries, the negative expectations about investment in light of these events, and the fear of the consequences of the second Palestinian uprising have reduced the trade exchange between the Arab countries and countries in the West. Investors and businessmen have also refrained from implementing their investment projects in Jordan (Nevo, 2003).

Figure (4)*Inward Investment capex to Jordan (\$million) (2003-2015)*

Source: *Dhaman Investment Attractiveness Index (DIAI), 2016.*

It was a little bit of a surprise to see the impact of the Iraq war on foreign direct investment. Figure (4) shows the volume of the investments coming to Jordan during the period 2003-2015. The impact of the Iraq war was directly observed in 2003. The volume of investments coming to Jordan fell by 86% in 2004, followed by a significant increase. From 1995 to 2002, the average Iraqi capital registered in Jordan was about JD5.5 million, never exceeding 8 million dinars. However, since 2003, the value of the registered Iraqi capital in Jordan has increased to JD14.4 million in 2003, JD35.7 million in 2004 and JD106.8 million in 2005. The registered capital has increased rapidly, reaching to JD109.3 million in 2006 (Saif and DeBartolo, 2007).

In contrast, the Lebanese war led to a drop in the volume of investment by 76% in 2006-2007. In the Arab Spring period, the volume of investments fluctuated. Investments peaked in 2013 to reach \$11 billion, and reached the lowest levels of investment volumes in 2015 by \$474 million.

The Jordan Independent Economy Watch (2015), in its study on the economic and social impact of Syrian refugees on Jordan, reported that the Syrian capital out of the total foreign capitals invested in new companies in Jordan has increased from 0.7% in 2011 to 14.1% in 2013, with a total increase rate of 563% (29 million dinars). In spite of the decline in the volume of Syrian investments in 2014, their share out of the total foreign capitals continued to increase to reach 14.7%.

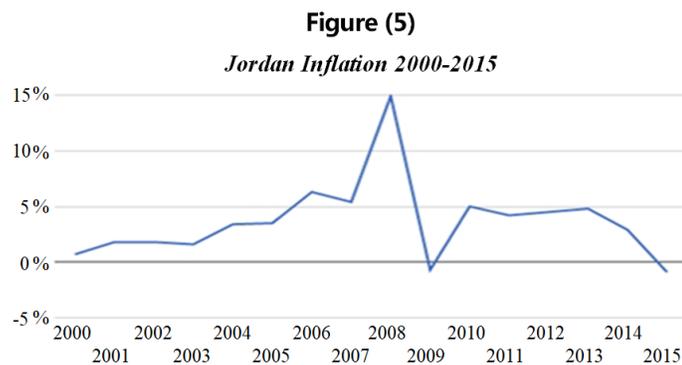
Third: Inflation

The second Palestinian uprising was linked to a set of economic expectations at a regional level including Jordan, due to its geographic proximity. One of the most important expectations was the potential impact of the arrival of refugees on the demographic balance in Jordan, as this

could lead to an increase in the economic consumption and prices, a decline in the purchasing power of labor, and an increase in the economic pressure on Jordanian citizens.

The Lebanese war has raised many expectations that have been reflected on the real economic situation of the world and the countries surrounding Lebanon, such as Syria and Jordan. Although both Lebanon and Israel are not oil-producing countries, the conflict has increased geopolitical anxiety and tension in the Middle East. Oil prices, during this crisis, surged to a new record of \$78 per barrel, causing the prices of food and service goods to increase around the world and in the countries surrounding Lebanon (Kotia and Edu-Addul, 2014).

With regard to the U.S. war on Iraq, the inflation rate in Jordan jumped from 1.6% in 2003 to 6.25% in 2006, as shown in figure (5).



Source: The GlobalEconomy.com, the World Bank.

The increase in inflation was due to several reasons, such as higher fuel prices, higher housing costs, increased private and public expenditures, and money supply.

In general, the refugee flow to Jordan was a major source of the economic inflation problem. The increase in population resulting from the flow of Syrian refugees, whose numbers are estimated at about one and a half million refugees by 2015, has had an important impact on the increase of demand for goods, particularly in the field of housing, which also has contributed to the increase of inflation in Jordan. The Syrian crisis also had an impact on various economic sectors such as education, health, and housing. In the education sector, the government offered free education to Syrian refugees in the public education system. According to the National Adaptation Plan, public expenditures on education have increased by JD200 million since the beginning of the crisis in 2011 (Jordan Independent Economic Watch, 2015).

ECONOMETRICS MODELS AND HYPOTHESES TESTING

In order to test the study hypotheses, the following standard models can be used:

1. Vector autoregression (VAR)

The VAR model is considered a modern model to study the nature of the relationships between macroeconomic variables. In this model, each variable is written as a linear function of the lag of variable itself. In addition, the model would include the lags of the other variables included in the theoretical model. It can be written as follows (Al-As'ad, 2010):

$$Y_t = A_1 Y_{t-1} + \dots + A_p Y_{t-p} + u_t \quad (1)$$

where Y_t is a matrix of related variables, A_i is coefficient matrix, and u_t is a vector of random error.

When building a VAR model, the following steps must be checked and used. First, we need to verify that the time series is stationary and has no unit root. Second, we need to determine the number of lag periods used in cointegration test (Naqar and Awad, 2012).

2. Time-series stationarity test (Unit Root Test)

In this study, we will use two tests which validate each other as follows:

- Augmented Dickey-Fuller test

Assuming we have the random variable X_t , and we calculate the following regression:

$$\Delta X_t = \varphi X_{t-1} + \sum_{i=1}^p \alpha_i (X_{t-i} - X_{t-i-1}) + \varepsilon_t \quad (2)$$

where $\varphi = \rho - 1$.

The hypotheses to be tested is (H0: $\varphi=0$) against the alternative one: (H1: $\varphi<0$).

If the test results indicate the time series is non-stationary and has a root unit, we convert it to a stationary series by applying the first difference. If the result shows the series is still non-stationary, we take a second difference and test again.

By calculating t statistic for the test and comparing it with the tabulated value, we accept the null hypothesis if the former is greater than the later, and this means the time series is stationary. Otherwise the alternative hypothesis will be taken, meaning that the series is non-stationary over time.

- KPSS test

The KPSS model developed by Kwiatkowski, Phillips, Schmidt, and Shin (1992) is one of the most popular models of economic literature which confirm the (ADF) unit root test results. The null hypothesis in this test is different from that of the ADF test, and is contrary to it as shown in

Table (2). The null hypothesis in this test assumes the time series is stationary, while the alternative hypothesis assumes the time series is non-stationary and has a unit root (Al-As'ad, 2010).

Table (2)

Potential results from the ADF1 and KPSS Tests of the null hypothesis

KPSS ²	ADF ¹	
	Refusal	Acceptance
Acceptance	There is no root unit (Stationary)	There is a root unit (non-Stationary)
Refusal	There is a root unit (non-Stationary)	There is no root unit (Stationary)

1. refers to the null hypothesis of non-stationarity in the ADF model
2. refers to the null hypothesis of stationarity in the KPSS model

The KPSS model assumes the variable of interest can be divided as follows (Al-As'ad, 2010):

$$X_t = X(t) + X(s) + \varepsilon_t \tag{3}$$

where $X(t)$ is the deterministic trend, $X(s)$ is the random walk and ε_t is stationary error.

And since:

$$X(s)_t = X(s)_{t-1} + u_t \tag{4}$$

We calculate the standard deviation of the resulting random error u_t , where the variable is considered stationary if $(\sigma_u = 0)$. This hypothesis can be tested by calculating the Lagrange multiplier as follows:

$$LM = \frac{\sum_{t=1}^N S_t^2}{\hat{\sigma}_\varepsilon^2}$$

In the case the LM statistical value is lower than the critical value, then the null hypothesis cannot be refused.

3. Selection lag length test

Through this test, we can determine the optimal number of lags based on some criteria, the most important of which are as follows (Naqqar and Al-Awad, 2012):

- *Final Predictor Error criterion (FPE):*

It can be expressed as:

$$FPE = \left[\frac{N + P - n}{n - P.n} \right]^n \cdot \det \tau(p)$$

where τ is a matrix of variance-covariance of estimated residuals, n is the number of endogenous variables, N is the number of total observations.

We calculate the FPE of the consecutive values of p up to ($K=N/10$), and then choose the smallest value of FPE's through which we get the number of lags, as follows:

$$FPE(P_0) = \text{Min}_{p=1}^K FPE(P)$$

- *AKAIKE information criterion:*

It can be expressed as follows:

$$AIC(P) = \log(\det \tau(P)) + 2 \left[\frac{n^2 P}{N} \right]$$

Symbols have the same meaning as in the previous criterion. We choose P_0 to express the following formula:

$$AIC(P_0) = \text{Min}_{p=1}^K AIC(P)$$

4. Granger's causality test

This test is used to examine the causal relationship between two variables, depending mainly on the F test. Variable X is said to Granger cause variable Y if the time lags of variable X have a predictive power higher than that of the time lags of variable Y . The null hypothesis states that X does not affect Y , and the rejection of the null hypothesis means that X affects Y , *i.e.*, the time lag of variable X has an additional predictive power on the variable Y when added to the time lag of Y values itself.

5. Johansen cointegration test

Using this test, we can determine the relationship between the variables of the study by looking at the cointegration vector and ensuring a long-term equilibrium relationship between the variables under study.

Johansen cointegration test is considered a more convenient test compared to Engel-Granger cointegration test, especially for small-sample studies that target more than two variables (as in the current study). In addition, it is more appropriate for cases where the time series variables are integrated of the same order, i.e., order one (Salami and Shaikhi, 2013).

To determine the number of cointegration vectors, Johansen and Juselius (1990) suggested conducting two tests (Kanaan and Al-Jabbouri, 2012):

- *Trace test:*

This test employs the hypothesis that the number of cointegrating vectors equals or less than (r) as a null hypothesis. This test has the following formula:

$$Trace = -T \sum_{i=r+1}^p \ln(1 - \hat{\lambda}_i)$$

where $\hat{\lambda}_{r+1}, \dots, \hat{\lambda}_p$ are the $(p - r)$ smallest estimated eigenvalues.

- *Maximum Eigenvalue (λ) test:*

The (λ_{\max}) test examines the null hypothesis that there is (r) of cointegrating vectors against the alternative that ($r+1$) cointegrating vectors. The following formula shows how it is computed:

$$\lambda_{\max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1})$$

6. Impulse response function

The impulse response function is one of the important applications of the VAR model used to identify the impact of any shock to the independent variables on the dependent variable. In other words, this function shows the number of time lags in which the shocks to the dependent variable will continue in the future until the impact of these shocks will disappear.

THE EMPIRICAL RESULTS

Table (3) indicates that the time series becomes stationary after taking the first difference, and that all variables are integrated of order one, I(1).

Table (3): Results of Time Series Stationarity Tests

	Growth		Investment		Inflation	
Dickey -Fuller test - at a significance level of 5%						
	(t) tabulated	(t) calculated	(t) tabulated	(t) calculated	(t) tabulated	(t) calculated
Jordan	-3.081	-4.053774	-3.081002	-3.404731	-3.081002	-7.465230
Palestine	3.119	-6.924602	-3.081002	-6.045910	-3.081002	-7.458311
Syria	-3.081	-6.041101	-1.966270	-2.977201	-3.081002	5.403112
Iraq	-3.119910	4.509992	-1.970978	-2.743436	-3.081002	-6.114959
Lebanon	-3.081002	-3.980627	-3.081002	-4.237579	-3.081002	-4.309125
KPSS Test - at a significance level of 5%						
	(t) tabulated	(t) calculated	(t) tabulated	(t) calculated	(t) tabulated	(t) calculated
Jordan	0.463	0.199275	0.463000	0.137962	0.463000	0.177048
Palestine	0.463	0.127256	0.463000	0.059941	0.739000	0.500000
Syria	0.463	0.122698	0.463000	0.133154	0.739000	0.468750
Iraq	0.739	0.500000	0.463000	0.185576	0.463000	0.344965
Lebanon	0.463	0.162634	0.463000	0.267397	0.463000	0.289578

2. VAR lag order selection criteria test

Through this test, the optimal number of time lags in VAR model was determined. Table (4) shows the number of time lags for Jordan and the other countries for the variables (inflation, investment, and growth).

Table (4): The optimal number of time lags between Jordan and Iraq, Syria, Palestine, and Lebanon

	Palestine	Lebanon	Syria	Iraq		Palestine	Lebanon	Syria	Iraq		Palestine	Lebanon	Syria	Iraq	Jordan with			
	4	1	1	4	Growth	1	4	1	4	Investment	4	4	0	2	Inflation	Lag		
	*	*	*	*		*	*	*	*		*	*	*	*		*	*	LR
	*	*	*	*		*	*	*	*		*	*	*	*		*	*	FPE
	*	*	*	*		*	*	*	*		*	*	*	*		*	*	AIC
	*	*	*	*		*	*	*	*		*	*	*	*		*	*	SC
	*	*	*	*		*	*	*	*		*	*	*	*		*	*	HQ

- (*) indicates the number of time lags selected by each criterion in this test.

3. Granger's causality test

The results have shown, as in table (5A), that there is a one-way causal growth relationship between Jordan, and both Syria and Palestine. This means that growth in Jordan is one of the growth drivers in the mentioned countries. The results also indicate there is no causal growth relationship between Jordan and Iraq.

Table (5) :The results of Granger's causality test

(5A) Growth

Null Hypothesis	Lag	Obs	F-Statistic	Prob.
IRQGROWTH does not Granger Cause JORGROWTH	4	13	1.24819	0.418
JORGROWTH does not Granger Cause IRQGROWTH	4	13	0.85373	0.559
SYRGROWTH does not Granger Cause JORGROWTH	1	16	0.72727	0.4092
JORGROWTH does not Granger Cause SYRGROWTH	1	16	6.30985	0.026
LEBGROWTH does not Granger Cause JORGROWTH	1	16	3.01194	0.106
JORGROWTH does not Granger Cause LEBGROWTH	1	16	3.86679	0.071
PALAGROWTH does not Granger Cause JORGROWTH	4	13	2.19766	0.232
JORGROWTH does not Granger Cause PALAGROWTH	4	13	8.44840	0.031

Moreover, the results also showed a one-way causal inflation relationship between Iraq and Jordan at 5% significance level as shown in the table (5B). Furthermore, the results indicate there is also a causal inflation relationship between Lebanon and Jordan, while there is no causal inflation relationship between Palestine and Jordan with $P > 5\%$.

(5B) Inflation

Null Hypothesis	Lag	Obs	F-Statistic	Prob.
IRQINF does not Granger Cause JORINF	2	15	18.0470	0.001
JORINF does not Granger Cause IRQINF	2	15	0.61350	0.561
LEBINF does not Granger Cause JORINF	4	13	10.6926	0.021
JORINF does not Granger Cause LEBINF	4	13	1.01921	0.493
PALAINF does not Granger Cause JORINF	4	13	1.57671	0.335
JORINF does not Granger Cause PALAINF	4	13	0.71375	0.624

According to table (5C), the results show there is no bidirectional causal investment relationship between Jordan and all the countries under study since $P > 5\%$.

(5C) Investment

Null Hypothesis	Lag	Obs	F-Statistic	Prob.
IRQINVEST does not Granger Cause JORINVEST	4	13	0.633	0.67
JORINVEST does not Granger Cause IRQINVEST	4	13	0.282	0.88
SYRINVEST does not Granger Cause JORINVEST	1	16	0.036	0.85
JORINVEST does not Granger Cause SYRINVEST	1	16	0.520	0.48
PALAINVEST does not Granger Cause JORINVEST	1	16	1.310	0.27
JORINVEST does not Granger Cause PALAINVEST	1	16	0.970	0.34
LEBANINVEST does not Granger Cause JORINVEST	4	13	1.042	0.48
JORINVEST does not Granger Cause LEBANINVEST	4	13	3.011	0.16

4. Johansen cointegration test

The test was applied to Jordan, together with Palestine, Iraq, and Syria, for the following two reasons: (a) All these countries have geographical borders with Jordan, and (b) all these countries are suffering from deep political upheaval and constant violence.

According to the results in table (6A) with regards to growth, the null hypothesis stating there is no cointegration in economic growth between the countries combined (Jordan, Palestine, Iraq, and Syria) was rejected, while the alternative hypothesis stating there is a cointegration between the variables was accepted since p-value is less than 5% in the Eigenvalue and Trace tests.

Table (6): Results of Johansen cointegration test

(6A) Growth

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.94	67.66	47.86	0.00
At most 1	0.64	24.33	29.80	0.19
At most 2	0.45	9.16	15.49	0.35
At most 3	0.01	0.12	3.84	0.73
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.94	43.33	27.58	0.00
At most 1	0.64	15.17	21.13	0.28

At most 2	0.45	9.04	14.26	0.28
At most 3	0.01	0.12	3.84	0.73

Regarding inflation, the results as appeared in Table (6B) show that the null hypothesis stating there is no cointegration in inflation between the variables was rejected since the p-value is less than 5% in both tests.

Table (6B): Inflation

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.83	52.37	47.86	0.02
At most 1	0.67	26.03	29.80	0.13
At most 2	0.43	9.19	15.49	0.35
At most 3	0.05	0.83	3.84	0.36
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.83	26.34	27.58	0.07
At most 1	0.67	16.84	21.13	0.18
At most 2	0.43	8.36	14.26	0.34
At most 3	0.05	0.83	3.84	0.36

According to the results in table (6C), it was proved there is a cointegration in investment among the variables since the p-value is less than 5% in the Eigenvalue and Trace tests.

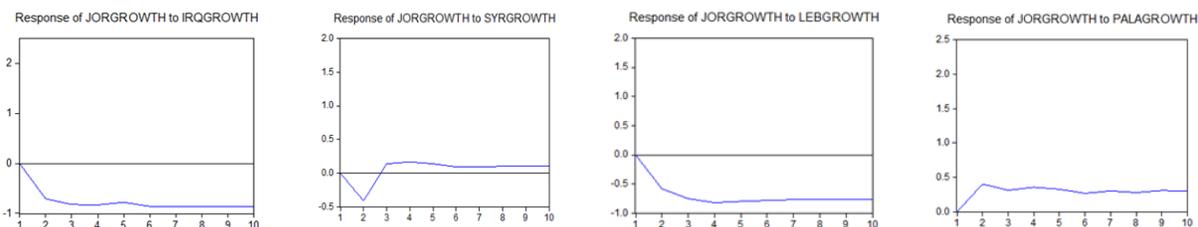
Table (6C): Investment

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.87	56.09	47.86	0.01
At most 1	0.64	25.36	29.80	0.15
At most 2	0.39	10.18	15.49	0.27
At most 3	0.17	2.87	3.84	0.09
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen		0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.87	30.73	27.58	0.02
At most 1	0.64	15.17	21.13	0.28
At most 2	0.39	7.32	14.26	0.45
At most 3	0.17	2.87	3.84	0.09

5. The impulse response function

Figure (6) shows the functions of growth response to the sudden shock of the variable itself and other independent variables by one standard deviation. Functions in the figure represent the response of growth to the shocks of variables in the model. The horizontal axis represents a time period of ten years upon which the shock of the variable has occurred, while the vertical axis measures growth response in percentage (Hammoud, 2011).

Figure (6): Jordan’s growth responses to the growth shocks in Iraq, Syria, Palestine, and Lebanon



According to Figure (6), we can observe that from the growth shock in Iraq and Syria, Lebanon had a negative impact on growth in Jordan. Also, we can see the growth shock in Lebanon and Iraq would have almost the same effect over the ten years, and that the negative impact would

reach its peak in the first three years, and then settle down by the end of the period, while the Syrian growth shock would have a negative impact on the growth rate in Jordan during the first year, fade to zero in the third year, and return with a slightly positive and stable impact by the end of the period.

On the other hand, we can note that the response to the growth rate in Jordan, as a result of the growth rate shock in Palestine, was positive during the first two years, and then became stable by the tenth year.

Figure (7): Jordan's foreign investment responses to the foreign investment shocks in Iraq, Syria, Palestine, and Lebanon

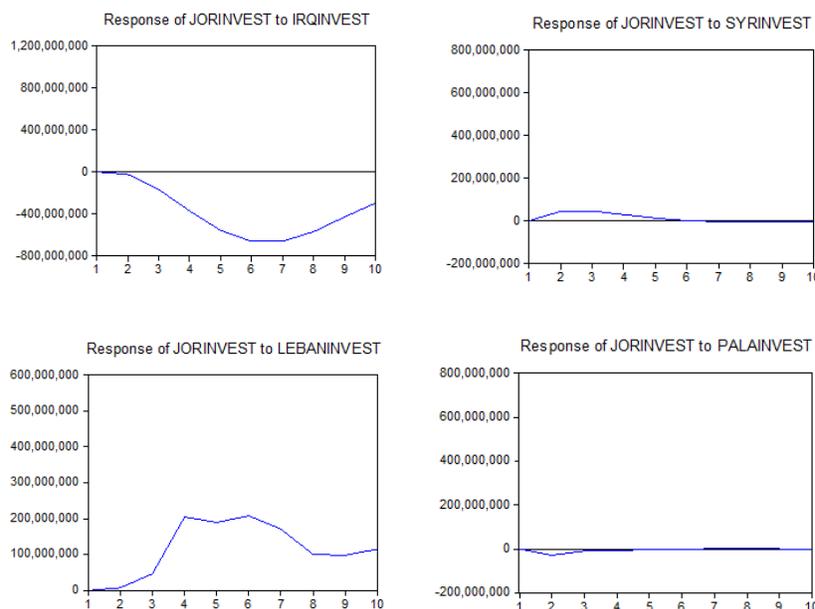
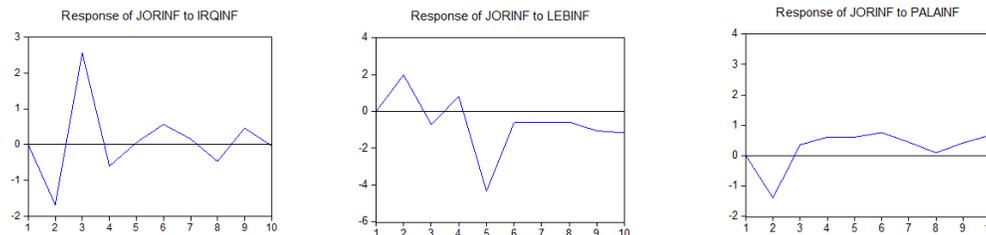


Figure (7) shows the response of foreign investment in Jordan to the foreign investment shocks in Iraq, Lebanon, Palestine, and Syria. The figure demonstrates that any positive shock to the Iraqi investment would lead to a negative impact on the investment in Jordan, starting from the second year and reaching its peak at the sixth year.

As for Syria, the figure shows that any positive shock to the Syrian investments would lead to a slightly positive impact on foreign investment in Jordan, and settle down and nearly fade starting from the sixth year. According to the figure, we can observe that Jordan's response to any shock to the Lebanese foreign investment would appear positively after the second year, continue to fluctuate by the end of the eighth year, and become stable by the end of the period. It is also evident that any shock to the Palestinian foreign investment would not affect its Jordanian counterpart.

Figure (8): Jordan's inflation responses to inflation shocks in Iraq, Syria, Palestine, and Lebanon



Finally, figure (8) confirms that Jordan's inflation response to the Iraqi and Palestinian inflation shocks would have a fluctuating and nearly negative impact during the first three years and during the fourth and eighth years, and a positive impact during the rest of the period. The Lebanese inflation shock would have a fluctuating positive impact on Jordan's inflation rate in the early years, a negative impact reaching its peak in the fifth year, and lasting until the end of the period with a slightly stable impact. As for Syria, the time lag = 0, and thus the test here would not be accurate and cannot be conducted through VAR model.

CONCLUSION

The aim of this study was to investigate the impact of political shocks in the Middle East on some economic variables in Jordan during the period of 2000-2016. The study utilized a number of methods in order to achieve its goals. The study came up with the following main findings:

The results of the unit root tests indicated that all the variables are non-stationary at the level, and that the time series becomes stationary after first differencing. The results of Granger's causality test showed a one-way causal relationship between growth in Jordan, Syria, and Palestine, i.e., growth in Jordan is one of the growth factors in these countries. This can be attributed to the fact that Jordan, due to its geographical location, has links between Syria, Palestine, and the rest of the Arab countries. Hence, it serves as a safety valve for the neighboring countries and is considered an important export outlet.

The results also did not show any bi-directional investment causality relationship between Jordan and each of the countries under study. This result could be related to political instability in the whole region, which may affect the attractiveness of the whole Middle East region, especially the countries that suffer from political unrest in particular. In addition, the results showed a causal inflation relationship between Iraq and Jordan. This was attributed to the suspension of the preferential oil prices, the biggest burden of Jordan's budget, after the U.S. invasion of Iraq in 2003.

The cointegration among the variables (growth, investment, and inflation) in the countries combined (Jordan, Palestine, Iraq, and Syria) allows us to get to some conclusions. The results of this test prove that the economic variables in these countries are moving at the same direction, and this trend will continue in the long term. The cointegration among these countries suggests that continued political tensions in the Middle East will keep Jordan's economy in a state of confusion, and that economic reform programs will be counterproductive as external influences expand instability in the region.

The impulse response function confirmed the results of the previous tests, indicating there was an impact of shocks in the countries under study on the economic variables in Jordan. In terms of growth, the function emphasized Jordan's vulnerability to any growth shock in Iraq, Syria, and Lebanon. Any shock in the growth of these countries would negatively affect Jordanian growth. This may be due to several reasons, as mentioned above. The circle of violence in both Iraq and Syria forced Jordan to increase its readiness along its northern and northeastern borders, raised the volume of military spending at the expense of government spending on capital projects, and led to governmental austerity measures represented by a series of increases in tax burdens. In addition, the costs of hosting refugees doubled government spending due to the pressure on the infrastructure and public services, which, as indicated by the study, was not matched by adequate assistance from international organizations. However, the results indicated the existence of a positive growth response in Jordan to the Palestinian growth rate shock.

For recommendations, the paper ended with the following: more attention should be given to the Jordanian economy as the political instability in neighboring countries, especially the flow of refugees, has revealed that it suffers from great problems. In addition, it is recommended that international communities bear the responsibility of maintaining political stability in Jordan, taking effective measures in that regard. The most important of which is providing assistance to compensate for the damage caused to Jordan by the political upheavals in the neighboring countries and the flow of refugees, which led the government to adopt a tight and restrictive fiscal policy based on increasing taxes and reducing government spending on benefits.

Moreover, it is necessary to have local, regional, and global specific mechanisms to be used during periods of political instabilities in the neighboring countries, since history of the region is full of political conflicts that did not end with the Palestinian uprising, the Iraq war, the Lebanese war, and the Arab Spring. Finally, Jordan must play a prominent role in the reconstruction of countries that have collapsed due to political instability such as Syria and Iraq, and serve as a main base for launching large companies that can contribute to the reconstruction process.

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