



CORRUPTION AND FDI INFLOWS: EVIDENCE FROM A SMALL DEVELOPING ECONOMY



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ABSTRACT

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This study proposes an analytical framework for examining factors affecting foreign direct investment (FDI) inflows into developing economies, taking Jordan as an example. It uses multivariate VAR analysis to address the relationships of FDI with institutional factors, economic factors, population and financial factors. It thus demonstrates the existence of a significant negative effect of corruption on FDI inflows. However, this effect is substantially alleviated by improving the quality of institutions and good governance in the country. Based on the analysis, the study proposes a number of policies that could assist in attracting FDI. Supportive policies that tend to limit corruption are more likely to enforce the rule of law and good governance, which can contribute positively to attracting FDI.

Contribution/ Originality: The study contributes to existing literature and assists policymakers in understanding the effect of corruption on FDI inflows. This is seemingly the first application of an analytical framework to analyse FDI determinants in a small developing economy like Jordan.

1. INTRODUCTION

Factors affecting foreign direct investment (FDI) inflows to countries differ from country to country and from region to region. Among those considered important, corruption affects the business climate and partially determines FDI inflows in both developed and developing countries (Gutierrez, 2015; Kirti and Prasad, 2016; Serfraz, 2018). Similarly, the different motives for decisions to invest in foreign countries include market expansion, securing the supply of natural resources and reducing production costs. In recent years, it has become clear to many developing countries that corruption undermines their efforts to achieve sustainable economic development and inclusive growth. A recent study by the IMF (2018) shows that corruption and poor governance are associated with higher inequality and lower inclusive growth, while UNCTAD (2017) reports that total world FDI inflows reached US\$ 1.75 trillion in 2016, of which only 37% went to developing countries. Countries which attract greater FDI inflows find it easier to implement investment projects and achieve economic development and growth. Therefore, many countries adopt investment measures and make legal and institutional reforms to attract more FDI into their

economies. Compared to the benefits of domestic investment in creating jobs, FDI can enhance or maximize some of the benefits already generated by domestic investments in a developing economy. For instance, FDI inflows to developing countries can introduce more advanced technologies, managerial and marketing practices. Partnerships with foreign investors also help firms in developing countries to benefit from improved market access and increased market share, to reduce costs and to exploit natural resources (Gerschewski, 2013; World Bank, 2017). According to the World Bank (2017) foreign direct investment has become the largest source of external finance in developing countries. However, while FDI inflows to developing countries are increasing every year, their quality and their role in achieving sustainable economic growth are still questioned. For instance, Sadik and Bolbol (2001) show that the quality of FDI in developing countries is very poor and that technological spill overs arising from FDI inflows are not yet apparent. Finally, FDI flows to Arab countries are considered very weak by comparison with all other parts of the world (Eid, 2001; Krogstrup and Matar, 2005).

This study examines the relationship between FDI and corruption as an institutional variable. The FDI-corruption relationship has received close attention from academia and development organizations alike over the last three decades and is considered one of the most controversial areas of economic and social development. For instance, the World Bank has identified corruption as among the greatest obstacles to economic and social development. In developing countries, the relationship between FDI and fighting corruption has become more important than ever with the recognition of the need to achieve inclusive economic growth in response to persistent poverty and high unemployment. Some studies of the effects of corruption on economic activity have concluded that these are negative (Wei, 2000; Alemu, 2012; Mathur and Singh, 2013; Zaouali, 2014) whereas others have found no effect of corruption on FDI (Wheeler and Mody, 1992; Hines, 1995). Using time series data from 1990 to 2015, this study examines the relationship between FDI inflows and its main determinants in Jordan by focusing on corruption. The empirical analysis assesses whether FDI inflows have been enhanced after a series of economic reforms in the country. It also explores how FDI inflows have changed since a series of measures to reduce corruption.

This paper is structured as follows: Section 2 reviews the literature to establish the theoretical background; Section 3 provides a brief account of corruption and FDI; Section 4 explains the conceptual research model and hypothesis development; Section 5 describes the methodology; Section 6 discusses the results and Section 7 offers conclusions.

2. LITERATURE REVIEW

Several studies have reported a negative relationship between FDI inflows and corruption. According to Transparency International (2017) no county in the world is free of corruption, which means that corruption is a worldwide problem and affects economies in different ways. For instance, corruption affects people's trust in their governments. It also affects standards of living by causing a loss of economic resources, it reduces the incentive to work, it allows people to be less productive and it can increase the cost of doing business for investors. Corruption can be divided into two main types: political and bureaucratic. Political corruption occurs when a party uses public resources to gain power, while bureaucratic corruption is where public servants make illegal use of public goods for private benefit. Although both types of corruption will affect FDI inflows, Zhou (2007) argues that the different types may do so differently. For instance, there may be a positive effect on FDI when government employees accept bribes to help investors avoid the inconvenience of formal procedures. Thus, both positive and negative correlations between FDI and corruption are widely known to many investors and governments. On one hand, corruption can help to increase FDI to countries with weak regulatory frameworks, while on the other it can hinder FDI inflows by increasing the costs of investment and introducing uncertainty (Iloie, 2015).

A review of empirical studies offers no conclusive resolution of the ongoing debate and conflicting views regarding the relationship between corruption and FDI inflows. Many studies have noted that the impact of

corruption depends on a country's level of development, economic structure, FDI motives and need for the exploitation of natural resources. For instance, Tokunova (2015) assessed the relationship between corruption and FDI in both developed and developing countries, finding that corruption positively affects FDI inflows to developed countries, whereas it is negatively related to FDI inflows in developing countries. Egger and Winner (2005) found corruption to be positively correlated with the level of FDI in the host country, while Gutierrez (2015) argues that corruption has no effect on FDI inflows because it concentrates on capital-intensive industries related to the exploitation of natural resources. Some studies have found that corruption has an adverse impact on FDI inflows (Wei, 2000; Ohlsson, 2007; Al-Sadig, 2009; Castro and Nunes, 2013; Khan, 2013; Quazi, 2014; Udenze, 2014; Hossain, 2016; Epaphra and Massawe, 2017). However, this means that countries which support anti-corruption measures will benefit more from increasing FDI inflows. In contrast, others studies report that corruption does not seem to discourage FDI inflows (Biglaiser and DeRouen, 2006; Quazi *et al.*, 2014; Gutierrez, 2015). To clarify why these divergent results are obtained, some studies treat corruption as a multidimensional phenomenon (Bhargava, 2005; Rontos and Vavouras, 2015; Kolnes, 2016).

Among reasons for the above-mixed results are differences in the countries included in the studies and variation in the model specification and in the techniques used to examine the corruption-FDI relationship, which will also have influenced the validity of the results. In contrast to previous studies, this paper reports a study of the effects of corruption on a single economy. In our opinion, this allows us to assess the effects of corruption more specifically and to measure the effects more accurately. The growing importance of FDI inflows to developing countries in pursuit of economic development has led many researchers to investigate determinants and factors affecting FDI inflows to such countries. A review of several studies identifies investment policies, institutional and macroeconomic factors,¹ infrastructural level, financial development, political stability, degree of openness and rule of law as having significant effects on FDI inflows (Al-Sadig, 2009; Jahfer and Inoue, 2014; Gutierrez, 2015; Epaphra and Massawe, 2017).

3. FDI INFLOWS AND CORRUPTION IN JORDAN

Over the last three decades, Jordan has embarked on various structural economic reforms, including the liberalization of its trade system, financial system, and investment. These gradual reforms over the last thirty years have transformed the country into one of the most open economies in the region. Nonetheless, during this period, regional instability and adverse negative shocks have unfavourably, affected the Jordanian economy. The current investment law grants equal treatment to local and foreign investors; it also provides specific incentives for local and foreign investment in most sectors of the economy. During the first decade of the millennium, Jordan performed relatively well in attracting FDI. Inflows grew on average from US\$ 770.9 million between 2000 and 2004 to US\$ 2767.1 million between 2005 and 2008, while UNCTAD (2008) categorised Jordan as a country with increasing potential for FDI. Since then, the international financial crisis of 2008 and political instability in the Middle East have adversely affected inflows. FDI declined to US\$ 1880.5 million on average during the period 2009-2011 and this decline continued between 2012 and 2015, when inflows averaged US\$ 1665.7 million. According to the GAN Business Anti-Corruption Portal (2017) corruption is considered an obstacle to business investment in Jordan, as are the high level of bureaucracy, the prevalence of 'red tape' and the vagueness of regulations. Jordan is committed to continuing reforms and achieving higher levels of integrity and transparency in its public and private sectors in order to improve its investment climate and attract FDI, thereby achieving higher economic growth. The government therefore ratified the United Nations Convention Against Corruption in 2005 and implemented laws to address corruption within the country. Thus, the Penal Criminal Code of 1960 has been augmented by the Anti-Corruption Act of 2006, the Anti-Money-Laundering Act of 2007 and the Integrity and

¹ Macroeconomic variables include population size, economic growth, balance of trade, interest rate, inflation rate, unemployment rate and exchange rate.

Anti- Corruption Act of 2016. Other measures to counter corruption include the establishment of institutions such as the Jordan Integrity and Anti-corruption Commission, the Audit Bureau, the Jordan Securities Commission and the Money Laundry Unit. According to the World Economic Forum (2016) Jordan was perceived as more corrupt and less transparent than in the year 2015. The Forum’s report highlights corruption as one of the most problematic barriers to doing business in Jordan and states that the effect of corruption as an obstacle to investment in Jordan increased from 1.8% in 2008 to 7.7% during the period 2014-2015. Shah (2016) states that in many countries of the Middle East and North Africa, corruption is considered the major obstacle to investment, constituting 16.7% in Lebanon, 12.7% in Kuwait, 11.7% in Tunisia, 10.5% in Morocco and 7.7% in Egypt. Table 1 lists Jordan’s scores in Transparency International’s 2016 corruption perception index (CPI), showing a fall in 2016 by five points compared to 2015. Jordan came third regionally, following the United Arab Emirates and Qatar. Data related to FDI inflows and CPI in Jordan over the period 2000 to 2016 show that levels of corruption and FDI are strongly related. FDI and CPI followed similar cyclical patterns and were highly correlated.

Table-1. Development of corruption and FDI inflows in Jordan (2000-2016)

| | FDI (US\$ millions) | % change | CPI | % change |
|------|---------------------|----------|-----|----------|
| 2000 | 920.3 | - | 46 | - |
| 2001 | 261.7 | -71.6 | 47 | + 2.2 |
| 2002 | 238.9 | -8.7 | 45 | - 4.3 |
| 2003 | 550.1 | +130.3 | 46 | + 2.2 |
| 2004 | 944.5 | +71.7 | 53 | + 15.2 |
| 2005 | 2001.4 | +111.9 | 57 | + 7.5 |
| 2006 | 3571.2 | +78.5 | 59 | + 3.5 |
| 2007 | 2644.4 | -25.9 | 47 | - 20.3 |
| 2008 | 2852.0 | +7.8 | 51 | + 8.5 |
| 2009 | 2445.2 | - 14.3 | 50 | - 1.9 |
| 2010 | 1704.1 | - 30.3 | 47 | - 6.5 |
| 2011 | 1500.7 | - 11.9 | 43 | - 8.5 |
| 2012 | 1527.7 | + 1.7 | 48 | + 11.6 |
| 2013 | 1822.2 | + 19.3 | 45 | - 6.2 |
| 2014 | 2028.4 | + 11.3 | 49 | + 16.7 |
| 2015 | 1284.5 | - 36.7 | 53 | + 8.1 |
| 2016 | 783.8 | - 38.9 | 48 | - 9.4 |

Sources: Central Bank of Jordan and Transparency International reports.

4. CONCEPTUAL RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

Figure 1 is a conceptual model of the relationships between FDI inflows and its determinants in a given country, where economic, institutional and financial factors are the key determinants. Based on the discussion above, the factors affecting FDI inflows to a given country can be specified as follows:

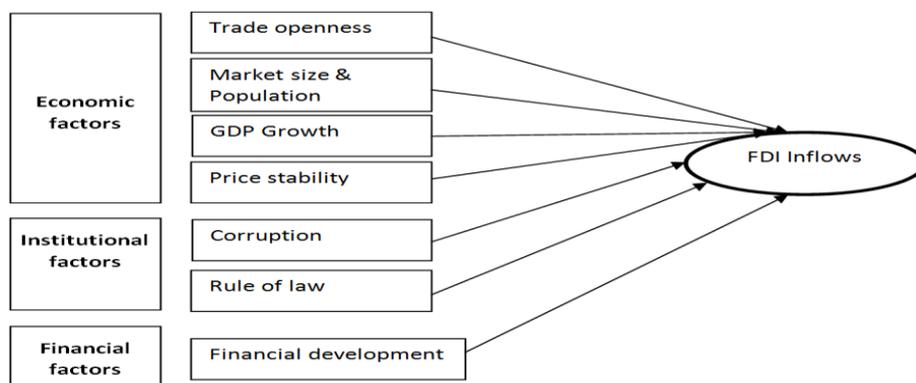


Figure-1. Factors affecting FDI inflows

Source: Constructed by authors based on the relationships between FDI inflows and its determinants.

The following section explains the development of the hypotheses representing the proposed relationships between FDI inflows to a country and its main determinants. It deals in turn with each of the most important factors that have been found to determine FDI inflows.

4.1. Institutional Factors

An important factor that has received substantial attention from researchers and is considered one of the determinants of FDI is the quality of the institutional environment of the country that receives investment. According to Kaufmann *et al.* (2011) the quality of institutional factors has several dimensions, namely Voice and accountability, Political stability and absence of violence, Government effectiveness, Rule of law and Regulatory quality. In addition, absence of corruption is considered to have an important effect on the decisions of potential investors (Babayyan, 2015). (Kurul and Yalta, 2017) confirm the importance of institutional quality in attracting FDI and show that control of corruption, government effectiveness, and voice and accountability have significant positive impacts on FDI flows. There is extensive literature on the relationship between quality of institutions and FDI inflows, but the relationship of corruption and rule of law with FDI inflows into developing countries has not received enough attention. To assess the quality of institutions and the level of corruption, we use the CPI and the rule of law as proxies for the quality of institutional factors in the country, choosing these because they can be found in most governance indicators (Iqbal and Shah, 2008). Accordingly, the study hypothesizes that:

H1: An increase in corruption perception index will have positive effects on FDI inflows into developing countries.

H2: An increase in rule of law index will have positive effects on FDI inflows into developing countries.

4.2. Economic factors (Economic Reform, Trade Openness, Price Stability)

Another important set of factors that have received much attention from researchers and are considered determinants of FDI inflow concern economic reform policies and stability. These factors include trade reform, tax reform, investment and financial reforms, as well as privatization and price stability. Dunning (1993) identifies several factors that influence investment decisions and FDI inflows related to economic reform policies and stability. He shows that a country's ability to control inflation will reduce investment risks, which in turn will encourage FDI inflow. Thus, price stability is important to investors as an indicator of economic stability. In addition, trade liberalization is fundamental to the investment attractiveness of a country. Therefore, we expect that countries seeking to attract more FDI should have more open and liberalized trade systems. It is also expected that countries which implement economic reform policies will attract more FDI (Shotar, 2005). Skuflić *et al.* (2013) note that countries with a rapid rate of GDP growth are more attractive to foreign investors. Investors will see reform efforts and a stable economic system as good signals. Arbatli (2011) argues that lowering corporate tax rates and trade tariffs, adopting fixed or managed exchange rate policies and eliminating FDI-related capital controls have played an important role in attracting more FDI to emerging market economies. Similarly, Biglaiser and DeRouen (2006) show that FDI inflow improved and investor confidence increased when countries implemented good governance, reduced country risk, and improved property rights protection, although governments that implement economic reforms are not always more likely to attract FDI inflows, Mdanat *et al.* (2018). Therefore, the study hypothesizes:

H3: The lower the inflation rate, the higher FDI inflows into developing countries.

H4: GDP has a significant and positive relation with FDI; therefore the higher GDP growth, the more attractive the country for FDI inflows.

H5: Trade openness and trade liberalization have positive effects on FDI inflows into developing countries.

4.3. Financial Development

The relationship between a country's financial development and its ability to attract FDI has been investigated by many researchers; for example, Desbordes and Wei (2014) and Estrada *et al.* (2015) have shown that countries with well-developed financial systems will grow faster than those with underdeveloped ones. Others have found a strong correlation between the degree of financial development and FDI inflows (Shah, 2016). Many studies have concluded that financial development is an important factor influencing FDI inflows and economic growth. According to Estrada *et al.* (2015) the absence of a sound and efficient financial system may lead to a growth-crippling financial crisis. Therefore, using quasi-money to GDP as a proxy for financial development in the Jordanian economy, the study hypothesizes that:-□

H6: Financial development will have a positive and significant effect on FDI.

4.4. Market Size and Population

FDI inflow is often determined by the market size of the host country and the ability of investors to access international markets and sell goods in the host country. Thus, the market size and population of the host country will be important factors in attracting foreign investment (Kumari and Sharma, 2017). Therefore, the study posits:

H7: Population size has a positive and significant effect on FDI inflows.

5. METHODOLOGY

In this study, we employ a multivariate regression technique to examine the effects of the above factors on FDI inflows in Jordan during the period 1996-2015. To capture the effects of different factors on FDI inflows, we use vector autoregression (VAR) to describe the dynamic relationships of variables, as shown in the following model:

$$FDI_t = B_1 FDI_{t-1} + B_2 CI_{t-1} + B_3 Rul_{t-1} + B_4 IR_{t-1} + B_5 TO_{t-1} + B_6 QMR_{t-1} + B_7 Capita_{t-1} + B_8 PoP_{t-1} + Ut \dots \dots \dots (1)$$

where FDI is net FDI inflows as a percent of GDP, CI is the CPI score (0-100), Rul is rule of law, IR is the inflation rate measured as percentage change in the consumer price index, TO is trade openness measured as a percentage of GDP, QMR is quasi-money supply as a percentage of GDP, Capita is per capita income, PoP is the urban population as a percentage of total population and the U_t is a random error term.

For the purpose of this study, multivariate VAR model has proved to be one of the most powerful models for the analysis of multivariate time series. The optimal lag length is selected by using the Akaike information criterion (AIC), the Schwarz information criterion (SC) and the Hannan-Quinn information criterion (HQ), as these variables are often integrated. The results are listed in Table 2.

Table-2. VAR lag order selection criteria

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|----------|-----------|-----------|-----------|-----------|
| 1 | -114.7353 | NA | 10.37674 | 16.43945 | 17.66476 | 16.56125 |
| 2 | -77.92331 | 30.80989 | 5.244123* | 14.97921* | 17.42984* | 15.22281* |

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error.

Annual time series data are used in this study, the main sources being the Central Bank of Jordan, Transparency International, Worldwide Governance Indicators and the General Department of Statistics. Before conducting multivariate regression analysis, we ran the following statistical tests: variance inflation factor (VIF) to detect multicollinearity, the unit root test to examine the properties of variables and the presence of non-stationarity, and the cointegration test to determine the long-run relationships between variables. Table 3 lists the VIF test results for multicollinearity among independent variables. The value of the VIF is less than 10 and tolerance is greater than 0.1, indicating the absence of multicollinearity problems.

Table-3. Variance inflation factor test

| Variables | Tolerance | VIF |
|-----------------------------------|-----------|-------|
| Corruption index (CI) | .521 | 1.919 |
| Inflation rate (IR) | .516 | 1.937 |
| Rule of Law (Rul) | .545 | 1.816 |
| Trade Openness (TO) | .276 | 3.621 |
| Urban Population ratio (PoP) | .485 | 2.062 |
| Growth of GDP per capita (capita) | .308 | 3.249 |
| Quasi money ratio to GDP (QMR) | .627 | 1.594 |

Source: Variance inflation factor test results extracted from EVIEWS software 8.1.

In addition, all data were examined for the unit root and whether they were stationary or integrated of the same order. If the variables are non-stationary at level but stationary at first differences i.e. I(1), a cointegration test can be performed. The results of augmented Dickey-Fuller unit root tests in Table 4 show that most of the variables included in the model were integrated in the first order at the 1% and 5% significance levels. Given that all variables were integrated in the first order, the second step was to test the cointegration relationship between variables, in particular between FDI and institutional factors including the corruption perception index and rule of law.

Table-4. Augmented Dickey-Fuller test statistics

| Variable name | Level | | | First Difference | | | Level |
|-----------------------------------|-----------|-----------|-----------|------------------|--------------|------------|----------------|
| | ADF Test | 1% | 5% | ADF Test | 1% | 5% | |
| Foreign Direct Investment (FDI) | -1.870016 | -3.831511 | -3.029970 | -3.681140 | -3.857386*** | -3.04039** | 1st difference |
| Corruption index (CI) | -2.556888 | -3.831511 | -3.02997 | -4.777770 | -3.857386*** | -3.04039** | 2nd difference |
| Inflation rate (IR) | -5.087926 | -3.83151 | -3.0299 | -7.46472 | -3.886751*** | -3.0521** | 1st difference |
| Rule of Law (Rul) | -2.435564 | -3.831511 | -3.0299 | -5.024121 | -3.886751*** | -3.05216** | 1st difference |
| Trade Openness (TO) | -2.083015 | -3.831511 | -3.0299 | -6.218092 | -3.857386*** | -3.04039** | 1st difference |
| Population ratio (PoP) | -1.383557 | -3.831511 | -3.0299 | -3.459360 | -3.040391*** | -3.85736** | 1st difference |
| Growth of GDP per capita (capita) | -1.957061 | -3.831511 | -3.0299 | -6.684803 | -3.857386*** | -3.0403** | 1st difference |
| Quasi money ratio to GDP (QMR) | -2.018383 | -3.831511 | -3.0299 | -5.978610 | -3.857386*** | -3.04039** | 1st difference |

Note: 1) MacKinnon one-sided p-values. 2) ***,** denote rejection of null hypothesis at 1%, 5% and 10% respectively. 3) The null hypothesis is the data series has a unit root (non-stationary).

After confirming that all variables were integrated in the first order I(1), we ran the Johansen cointegration test to confirm the cointegration relationship between FDI and the main determinants. The test results in Tables 5 and 6 show that all variables included in the model were cointegrated. The values of trace statistics at $r=0$, $r=1$ and $r=2$ exceed the critical value at 5% significance; thus, we reject the null hypothesis of no cointegrating equations. In addition, the trace test and the maximum eigenvalue test indicate the presence of cointegrated equations. Thus, we could test for a long-run relationship between FDI and its determinants.

Table-5. Results of Johansen cointegration test

| Hypothesized | | Trace | 0.05 | |
|--------------|------------|-----------|----------------|---------|
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.906135 | 106.4459 | 69.81889 | 0.0000 |
| At most 1 * | 0.776771 | 63.85967 | 47.85613 | 0.0008 |
| At most 2 * | 0.695726 | 36.86762 | 29.79707 | 0.0065 |
| At most 3 | 0.530889 | 15.45075 | 15.49471 | 0.0508 |
| At most 4 | 0.096483 | 1.826277 | 3.841466 | 0.1766 |

Trace test indicates 3 cointegrating eqns at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis p-values

Table-6. Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

| Hypothesized | | Max-Eigen | 0.05 | |
|--------------|------------|-----------|----------------|---------|
| No. of CE(s) | Eigenvalue | Statistic | Critical Value | Prob.** |
| None * | 0.906135 | 42.58624 | 33.87687 | 0.0036 |
| At most 1 | 0.776771 | 26.99205 | 27.58434 | 0.0594 |
| At most 2 * | 0.695726 | 21.41686 | 21.13162 | 0.0456 |
| At most 3 | 0.530889 | 13.62448 | 14.26460 | 0.0629 |
| At most 4 | 0.096483 | 1.826277 | 3.841466 | 0.1766 |

Max-eigenvalue test indicates one cointegrating eqn at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis p-values

6. RESULTS AND HYPOTHESIS TESTING

The results of a further test of FDI determinants on one country set during the period 1980–2015 for Jordan, calibrated in the VAR, are given in appendix 1. It shows that FDI inflow is determined by rule of law, corruption and population, while other factors were found to be insignificant. The positive sign indicates that the null hypothesis of no significant impact of corruption on FDI inflows is rejected. This means that a higher CPI score (lower corruption level) indicates higher FDI inflows. Therefore, there is a significant effect of corruption on FDI inflow into Jordan. Other factors such as population and rule of law also have significant positive relationships with FDI inflows. These results are consistent with the findings of many studies (Ohlsson, 2007; Al-Sadig, 2009; Hossain, 2016; Jalil *et al.*, 2016; Epaphra and Massawe, 2017). Interestingly, inflation, trade openness, per capita income and financial development indicators were found to be statistically insignificant in explaining FDI inflows to the Jordanian economy.

6.1. Impulse Response Function

The analysis of impulse response in appendix 2 shows that the response of FDI to trade openness is positive in the first four years and that it then becomes negative before decreasing to zero towards the end of the series. The response of FDI to an unexpected shock to institutional factors starts with an increase until the third year, after which it declines. However, when disturbed by a shock to corruption and rule of law, FDI could be stabilized only after the fifth and sixth years respectively. The effect of a shock to population is an initial increase in FDI, up to the second year, then it starts to decrease until the fourth year is reached. It starts to be stabilized only after the fifth year.

6.2. Variance Decomposition Analysis

The results of variance decomposition in Table 7 show that FDI shocks explain most of the error variance in the first year, then it declines to about 74% and continues falling until it ends at around 49% in the tenth year. The variance in trade openness accounts for 1% in the first three years, increasing to 13.5% in the tenth year. The average contribution of institutional factors accounts for around 19% in the second year, increasing to about 32% in the tenth year. The variance in population accounts for about 6.5% in the second year, which decreases to 4.5% in the tenth year. These findings confirm the importance of institutional factors in contributing to FDI fluctuations.

Table-7. Variance decomposition of FDI, 1996-2015

| Period | S.E. | D(FDI) | D(TO) | D(ROI) | D(UP) | D(CI) |
|--------|----------|----------|----------|----------|----------|----------|
| 1 | 3.834957 | 100.0000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| 2 | 4.572963 | 74.22626 | 0.092986 | 12.06337 | 6.535497 | 7.081895 |
| 3 | 5.024647 | 63.66378 | 0.762584 | 15.11849 | 6.393414 | 14.06174 |
| 4 | 6.175354 | 50.00976 | 12.68138 | 20.84759 | 4.235444 | 12.22583 |
| 5 | 6.322679 | 50.16337 | 13.09970 | 19.89183 | 4.130159 | 12.71495 |
| 6 | 6.361513 | 50.17314 | 13.23101 | 19.66471 | 4.328703 | 12.60243 |
| 7 | 6.426789 | 50.23540 | 12.97420 | 19.27245 | 4.451133 | 13.06681 |
| 8 | 6.463715 | 49.94375 | 13.39734 | 19.05330 | 4.437364 | 13.16824 |
| 9 | 6.480081 | 49.87052 | 13.50071 | 18.95721 | 4.442160 | 13.22941 |
| 10 | 6.500961 | 49.84638 | 13.47416 | 18.96689 | 4.566866 | 13.14570 |

Source: Variance decomposition test results extracted from EViews software 8.1.

7. CONCLUSION

This study has used multivariate VAR analysis to examine factors affecting FDI inflows as well as analysing the relative importance of corruption and rule of law shocks in determining fluctuations in FDI inflows into Jordan. The results confirm the significance of FDI inflows in promoting economic growth for a small developing economy. Empirical evidence shows that the positive effects on FDI inflows of economic factors, population and financial factors were restricted by institutional factors, which hampered the economy from benefiting from FDI. This implies that Jordan can attract more FDI if it takes effective measures and enacts supportive policies to improve the quality of institutions and to combat corruption, given that macroeconomic reform is considered a necessary but not sufficient condition for attracting FDI inflows.

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