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# Determinants of Jordanian foreign direct investment inflows: Bounds testing approach



### Hussain Ali Bekhet \*, Raed Walid Al-Smadi

Graduate Business School, College of Graduate Studies, Universiti Tenaga Nasional (UNITEN), 43000 Selangor, Malaysia

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ABSTRACT

This study aims to evaluate the long-run and short-run relationships among foreign direct investment (FDI) inflows and their determinants in Jordan for the (1978–2012) period. The bounds testing approach is used to analyze the long-run and short-run relationships among the variables. However, the Granger causality test is utilized to explore the directions of causality among the variables. The results identify that there are long-run and short-run relationships among FDI and its determinants. Moreover, the Granger causality test recommends a deferent causal relationship among FDI and their determinants. In general, the Jordanian policy makers have to be aware to the importance of inward FDI in the Jordanian economy.

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1. Introduction

Over the past decades, foreign direct investment (FDI) became a major source of funding for capital projects in the majority of world economies. Theories and existing literature have given conflicting results about the relationship between FDI and its determinants. Some researchers argued that FDI inflows could stimulate technological change through the adoption of foreign technology, necessary capital and skills to facilitate high levels of productivity (Bekhet and Mugableh, 2013; Chudnovsky and Lopez, 1999; Fedderke and Romm, 2006; Singhania and Gupta, 2011). On the contrary, other researchers believed that FDI might bring a crowding effect on domestic investment, external vulnerability and dependence, destructive competition of foreign affiliates with domestic firms and a market-stealing effect as a result of poor absorptive capacity (Krstevska and Petrovska, 2012; Lipsey, 2004; Nourbakhshian et al., 2012).

Nowadays, renewed research interest in FDI inflows stems from the change of perspectives among policy makers in host countries to encourage and attract more FDI that would create opportunities and help developing countries to achieve sustainable development (Cassidy and Callaghan, 2006; Erdal and Tatoglu, 2002). The various relationships between FDI inflow and its determinants have been studied comprehensively. For instance, Angelo et al. (2010), Faras and Ghali (2009) and Nwankwo (2006) argued the relationship between FDI inflows and macroeconomic variables. Their results showed that there were strong relationships among macroeconomic variables and FDI inflows.

In another vein, a strong financial market encourages foreign investors to invest and support those productive projects that will ultimately lead to economic development (Kumar, 2011; Raza et al., 2012). Moreover, the finance literature contains many studies that examined stock price behavior. Dynamic linkages between macroeconomic variables and stock returns have received increase attention from economists, financial investors, and policy makers (Ibrahim and Aziz, 2003). Consequently, Kumar (2011), Rangel (2011), Karim and Majid (2010) and Chen (2009) examined the long-run and short-run relationships between stock market index (SMI) and its determinants. Their results supported evidence of long-run and short-run relationships among the variables.

Furthermore, there are several reasons for firms to enter a particular market. These reasons are classified into three categories (Dunning, 1980, 1988). These categories are market related factors, resource related factors and seeking efficiency. From this point of view, FDI can fuel the development of financial markets through different channels. First, FDI can be conducive to the participation of firms in capital markets, since foreign investors might want to finance part of their investment with external capital or might want to recover their investment by selling equity in capital markets (Errunza, 1983). Second, given that foreign investors partly invest through purchasing existing equity, the liquidity of stock markets will likely rise (Saibu et al., 2011). Third, the value of equity traded internationally might increase depending on where these purchases take place. However, several studies have examined the relationship between financial market development (FMD) and FDI by using deferent variables, for example money supply (M2), SMI and domestic credit provided by the banking sector as a percentage of gross domestic product (GDP).

Recently, the FDI in the Jordanian economy achieved 51% from the total investment in the end of 2012. The highest value was achieved

<sup>\*</sup> Corresponding author.

*E-mail addresses:* profhussain@uniten.edu.my, drbekhet1953@hotmail.com (H.A. Bekhet).

by 79% in the industrial sector while the lowest value was recorded in agricultural sectors with 2% (Jordan Investment Board, 2012). Moreover, FDI inflows as a percentage of domestic market capitalization (DMC) increased to 48.9%, 49.6%, 51.3%, and 51.6% in 2009, 2010, 2011, and 2012, respectively (ASE/Annual Report, 2012).

Furthermore, Fig. 1 shows that FDI inflows recorded an annual growth rate of 16% for the (1980–2012) period. Also, the Jordanian economic growth rate, "Real Gross Domestic Product (RGDP)", achieved 3.9% for the (1980–2012) period. It is therefore reasonable to conclude that the Jordanian FDI inflows growth rate was much higher than the RGDP growth rate for the same time period. In the light of the recent developments, it is imperative to understand the trend of FDI inflows and to identify the relationships among FDI inflows and their determinants.

Therefore, the main objective of this study is to evaluate the equilibrium relationships and to detect the directions of causality among Jordanian FDI inflows and their determinants for the (1978–2012) period. However, the determinants that have been employed in this study are the financial development indicators (M2 and SMI), GDP, economic openness (EO) and (CPI).

The reminder of this study is structured as follows. Section 2 presents an overview of the Jordanian economy. Section 3 discusses the literature review. The data sources and methodology are discussed in Section 4. Section 5 provides results and a discussion. The policy implications and future research are discussed in Section 6. The conclusions are presented in Section 6.

#### 2. Overview of Jordanian economy

The Jordanian economy is one of the economies in the Middle East threatened by huge government debts and several economic problems in terms of macroeconomic variables. Jordanian public debt reached JD16.3 billion in 2012 compared to JD13.4 billion in 2011, which comprised 76% of projected GDP and exceeded the legal limit of 60% of GDP (Moody's Credit Outlook, 2013). Moreover, the Jordanian consumer price index (CPI) reached 141 points in 2012 compared to 37.0 points in 1984 (IMF, 2012).

Jordan is classified as one of the top twenty countries in the world in terms of attracting FDI inflows (UNCTAD, 2012). Moreover, Jordan has witnessed structural reforms for the last 15 years including privatization of state enterprises, liberalization of the trade and investment administration and introduction of modern regulations and institutions, which have helped transform the Jordanian economy into one of the most open economies in the Middle Eastern countries (Abu Rumman, 2012). Fig. 1 shows that inward FDI in 1980 started with JD23 million and increased dramatically to the end of 2006 with a value of JD2.480 billion. In 2011 the value of FDI inflows declined by 40% from 2006 with a value of JD2.61 billion compared to JD1.151 billion in 2010 (IMF/Annual Report, 2012). However, this decline in the total investments was due to the current political instability and security environment in the Middle East, which limited capital flow between countries in the region and prompted investors to review their investment strategies (Bekhet and Al-Smadi, 2012). In 2012 FDI inflows to Jordan increased to reach JD1.420 billion compared with 2011 (Alrai Report, 2013).

Furthermore, Fig. 1 represents that Jordanian RGDP started in 1980 with a value of JD2.82 billion and increased to JD3.84 billion in 1988. Due to the 1991 Gulf War and instability in the Middle East region, Jordanian RGDP was largely affected. These conflicts caused massive resource shortages in the Jordanian economy and it limited economic relations with other neighbor countries and reduced the recruitment of Jordanian workers. Besides, there was a decrease in the inward oil supply and declining Jordanian traditional export markets (Bekhet and Matar, 2011(. As a result of these conflicts, Jordanian RGDP decreased from JD3.840 billion in 1988 to JD3.470 billion in 1991. However in 1992, Jordanian RGDP improved again to reach JD3.97 billion and continue increasing to reach JD5.42 billion, JD8.64 billion, JD10.120 billion, and JD10.553 billion in 2000, 2004, 2007, 2011 and 2012 respectively.

Bekhet and Matar (2012a) confirmed that during the last four years, ASE indicators recorded negative performance. This result is attributed to the combination of economic, financial and international factors, for example, the decline of FDI inflows, budget deficits, reduced foreign reserves and high levels of public debts.

Besides, Fig. 2 shows that the performance of the SMI fluctuated from 757 points in 1980 to 1330 points in 2000. These fluctuations were a result of the weakness of the monetary policy during the period of (1980–2000). Moreover, new monetary policy has been adopted in the ASE since 2000, for example, it implemented an electronic trading system in March 2000 to increase the efficiency in the securities market. This system created a suitable environment for trading and led to a rise of the ASE performance generally (ASE/Annual Report, 2012). However, the SMI started to increase with a value of 2615 points in 2003 to reach the first peak in 2005 with 8191 points. The performance of the SMI declined from 8191 in 2005 to 5518 in 2006. However, the SMI achieved 7519 points in 2007, and then declined harshly in 2008 at the value of 6243 points until 2012 with 4593 points.

#### 3. Literature review

Over the past decade, several studies examined the relationships among FDI and its determinants. For example, many researchers identified the long-run and short-run relationships among FDI, exports (EXP), imports (IMP), oil prices (OP), exchange rate (EX), gross fixed capital formation (GFCF), EO, RGDP, labor force (LF), INF, DMC, SMI and M2 (see Alfaro et al., 2004; Bekhet and Al-Smadi, 2012; Bekhet and Mugableh, 2013; Hsiao and Hsiao, 2006; Mushtaq et al., 2012; Othman et al., 2012; Pal and Mittal, 2011). These results showed evidence of significant relationships. In the current study, we classified the previous studies according to the methodology used.

First, a vector autoregressive (VAR) model was employed by many researchers. Onuorah and Nnenna (2013) examined the relationship between FDI inflows and economic growth in Nigeria including GDP, EX, IR, INF and M2 for the (1980–2010) period. The results recorded a



Fig. 1. FDI Inflows, & real gross domestic product of Jordan for the (1980–2012) period. Database, available on line at: http://www.imf.org/external/pubs/ft. Source: IMF (2013).

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