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DETERMINANTS OF FOREIGN PORTFOLIO INVESTMENT: THE CASE OF JORDAN

Abstract

This study investigates the determinants of foreign portfolio investment in Jordan using series of data covering the period from 2000 to 2016. Eight independent variables were employed. They are: aggregate economic activity, inflation, interest rate differentiation, stock market performance, risk diversification, country creditworthiness, governance, and corruption. The regression results show that good and stable macroeconomic environment attracts foreign investors. In addition, foreign investors prefer to invest in the capital market which provides an opportunity of risk diversification. A country that has enough liquidity to meet its obligation, and has well-governed environment attracts more portfolio investment. The results of the study provide empirical evidence about the factors that have a significant impact on the flow of foreign portfolio investment to Jordan. These factors can be utilized when formulating policies by the specialized authorities who are seeking to attract more portfolio investment.

Keywords

foreign portfolio investment, macroeconomic factors,
financial factors, Jordan

JEL Classification

G10

INTRODUCTION

Capital markets provide a mechanism for the mobilization of long-term financial resources through which financial securities in form of stocks and bonds are dealt with. It provides the needed funds for domestic companies, which impact positively on income, employment, and therefore, increase the economy's ability to transfer its savings to the national productive activities. In addition, capital markets protect the domestic capital through preventing the outflow of domestic capitals that search for acceptable investment opportunities (Yartey, 2008). The role of the capital market is more important in developing countries; this is because the saving rates in these countries are low, which leads to a shortage of the financial resources needed to support economic growth (OlugBenga & Grace, 2015). Hence, international institutions such as World Bank and International Monetary Fund have supported reforms which are aimed at developing the capital markets in developing countries. The market capitalization of emerging stock markets increased from less than \$2 trillion in 1995 reaching to \$5 trillion in 2005 (Yartey, 2008).

Since 1990s, most of the developing countries have begun to liberalize their capital markets; they eliminated restrictions between financial markets around the world, which led to opening domestic capital markets to foreign portfolio investment (FPI) (Umutlu, Akdeniz, & Altay-Salih, 2010). Bley and Saad (2011) and Naceur, Ghazouani, and Omran (2008) mentioned that liberalization of capital market in emerging markets gives international investors advantages of high return and

the opportunity of international diversification. In addition, they suggested that the liberalization of the stock market is beneficial for capital market and economic growth; it reduces the cost of equity capital, increases the liquidity for the market, and reduces the risk premium in the market as a result of risk sharing between foreign and domestic investors. Therefore, the prudent authorities in developing countries have implemented substantial reforms in their capital markets' environments in order to carry out their key role in attracting foreign portfolio capital investors, and consequently, increase the financial resources available for domestic investments (Aduda, Masila, & Onsongo, 2012; Pala & Orgun, 2015). Conversely, the benefits of financial liberalization are not without cost. Bley and Saad (2011) argued that financial liberalization increases stock market volatility which in turn disturbs the allocation of resources and thus affects performing of capital market negatively.

Jordan has started a comprehensive reform program to meet the requirements of financial liberalization. According to the ratio of domestic equities traded in the capital market to gross domestic product, Jordan is one of the top five countries between 42 emerging countries (Yartey, 2008). Therefore, the Jordanian Securities Commission (JSC) in collaboration with Amman Stock Exchange (ASE) and Securities Depository Center (SDC) has developed the capital market environment in order to attract foreign investment in the capital market. Positive results have emerged for these reforms in terms of the contribution of foreign investors of the market capitalization. The ratio of non-Jordanian ownership of market capitalization in 2012, 2013, 2014, 2015, and 2016 are 51.7%, 49.9%, 48.8%, 49.5%, and 49.6%, respectively, where it ranged between 20% and 25% in the markets in the same region (Amman Stock Exchange, 2016). In contrast, there is a significant fluctuation of net investment of foreign investors as seen in Table 1. Garg and Dua (2014) and Waqas, Hashmi, and Nazir (2015) pointed out that FPI needs attention because it is characterized by volatility, and it is important to understand the factors that influence it, which helps in managing portfolio flows by regulators and investors efficiently. Although special authorities in Jordan are aimed at increasing the volume of foreign investment in the capital market, the determinants of FPI in Jordan have not received much attention; most of the previous studies that examined determinants of foreign investment in Jordan have concentrated on foreign direct investment (e.g., Bakir & Alfawwaz, 2009; Ghunmi, Al-Zu'bi, Badreddine, & Chaudhry, 2013; Khrawish & Siam, 2010).

Table 1. Net investment of non-Jordanians in ASE (JD million)

Source: ASE annual report, various issues.

Year	Net investment	Year	Net investment
2007	466.2	2012	37.6
2008	309.8	2013	146.9
2009	-3.8	2014	-22.2
2010	-14.6	2015	10.6
2011	78.6	2016	237.1

Based on the argument that foreign investment has a positive impact on the economy of the host countries, previous scholars investigated FDI in terms of its impact on economic performance (Gui-Diby, 2014), capital market development (OlugBenga & Grace, 2015), and SMEs development (Tuluze & Dogan, 2014). On the other hand, Evans (2002) suggested that FPI improves performance of the capital market and thus supports the domestic economy through different ways. First, it increases the liquidity of the capital market, which in turn gives the investors a good opportunity to manage their portfolios efficiently, and helps enterprises to get their needed financial resources. Second, it enhances transparency and discipline in the capital market as a result of companies' fulfillment of the information disclosure and accounting standards. Third, it improves corporate governance in a way to achieve good performance and thus increases the value to the firms into the market. Finally, it helps investors to improve their risk-management tools because of the use of financial derivatives. However, the last two decades have witnessed a remarkable growth of the portfolio flows in emerging markets, which increases the debates between scholars about the factors that derive foreign portfolio flows to these markets (Ahmad,

Draz, & Yang, 2015). Empirically, there is a limited work of the literature examining FPI (Albulescu, 2015; Kania-Morales & Mroz, 2014). This scarcity increases ambiguity regarding factors affecting FPI. This paper adds to the existing literature by investigating the relationship between a set of variables that capture potential determinants of FPI in the case of Jordan that strives to attract more portfolio investments as an option to support the economic growth and financial market development. The findings from the study would help local authorities to control the significant factors during the development of policies aimed at attracting portfolio investment.

1. PREVIOUS RESEARCH

Garg and Dua (2014) argued that the liberalization of the capital market leads to openness of the market which allows foreign investors to purchase domestic financial securities. In this context, Naceur et al. (2008) studied the impact of stock market liberalization on economic growth and stock market development in 11 countries in the MENA region. They mentioned that regardless of the liberalization effort in MENA region during last decades, the capital markets were still underdeveloped, and they face structural and legal difficulties besides transparency shortage. They found a negative and significant relationship between stock market liberalization and capital market development in the short run, while this relationship turned positive in the long run. In emerging markets, Umutlu et al. (2010) investigated the relationship between the degree of financial liberalization and the total volatility of stocks' returns during the period from 1991 to 2005. They found that financial liberalization affects aggregated volatility of stocks' returns negatively. They concluded that expanding investment base, including foreign investors, increased accuracy of information flows to the public and thus reduced the volatility of stocks' returns. In this regard, Todea and Plesoianu (2013) found a strong positive relationship between FPI and informational efficiency of the stocks' markets in Central and Eastern Europe. They mentioned that FPI improved the information environment of the market and stimulates the use of financial derivatives as a hedging tool to mitigate risk.

On the other hand, Garg and Dua (2014) studied the impact of selected macroeconomic factors on foreign portfolio measured by net portfolio flows in India. They analyzed the chosen variables according to the disaggregated component of FPI. They mentioned that foreign institutional investment flows and global depository receipts are the

main components of FPI in India. They reported a significant and negative relationship between currency risk and portfolio flows in India. This result implies that volatility of exchange rate of the host country increases uncertainty of expected returns of foreign investor. In addition, they found that higher equity return in the competitive emerging markets affects foreign portfolio flows negatively. They also found that the differential of interest rate between host and source country encourages foreign portfolio investment. Same results are found by Ahmad et al. (2015) who explored the determinants of capital flows in China. They also asserted that external debts of China are the most influential factor on foreign flows. In Turkey, Pala and Orgun (2015) examined the effect of twenty three macroeconomic and financial variables on FPI from 1998 to 2012. They used factor analysis method to evaluate the most important variables. Three variables are selected, which are: deposit interest rate, current account balance, and gross national income. They found a significant and positive relationship between the chosen variables and FPI. Onuorah and Akujuobi (2013) examined the impact of macroeconomic variables on FPI in Nigeria. Regression results showed that gross domestic product, money supply, interest rate, exchange rate and inflation are statistically significant to FPI. The first two variables have negative coefficients, while the last three variables have positive coefficients. In the same country, Idowu (2015) examined factors that encourage the inflows of foreign investment using four governance indicators. The author found a significant and negative impact of internal conflicts and corruption on foreign portfolio inflows.

At the cross country level, Waqas et al. (2015) investigated the relationship between macroeconomic variables and FPI volatility in four South Asian countries, which are India, China, Pakistan and Sri Lanka. They found a significant and nega-

tive relationship between inflation and volatility of FPI in China and India. They also reported a significant and negative impact of foreign direct investment on the volatility of FPI in China, India, and Pakistan, which suggests that increase of foreign direct investment leads to a decrease in the volatility of FPI. As for exchange rate, they found a significant and positive effect on FPI in China. They argued that China increases the value of its currency which in turn reduces returns and thus increases the volatility of FPI. A negative relationship was found between economic growth measured by the growth rate of gross domestic product and volatility of FPI in China, Pakistan, and Sri Lanka. They concluded that good economic growth affects stocks' return positively, which decreases the volatility of FPI. Finally, they found that real interest rate has a positive impact on the volatility of FPI in Pakistan and India. They concluded that the higher inflation rate compared with interest rates in the host country affects foreign investors negatively, forcing them to look for a higher return investment opportunity in a different country. In a different region, Atobrah (2015) examined the determinants of portfolio investment in 17 Sub-Saharan African countries over the period 2005–2013. He classified potential determinants of portfolio inflows into internal and external factors. As for internal factors, he found that past portfolio inflows and market size measured by GDP growth rate affected FPI positively, while financial development and current account deficit had a negative impact on portfolio investment. Regarding external factors, they found a significant and positive relationship between the growth rate of developed countries and portfolio inflows, which suggests that the portfolio inflows in Sub-Saharan African countries depend on the global economic cycle.

Furthermore, Abdioglu, Khurshed, and Stathopoulos (2013) investigated the role of the governance quality on the preferences of foreign institutional investors. They argued that the level of governance quality of home and host countries has an important role in selecting the country of investment by investors. They found that foreign institutional investors from countries, which have the same level of governance compared with the United States invest more in U.S., while foreign institutional investors are moving to other countries if the level of governance in their country is lower or

higher than the level of governance in the U.S. Min and Bowman (2015) mentioned that corporate governance decreases cost of monitoring manager's and thus reduce investments risk. They examined the role of corporate governance, particularly the appointment of outside directors in attracting foreign portfolio investment in Korea during the period from 1999 to 2003. A positive and significant relationship was found between the ratio of outside board directors to total directors and foreigner's share of company's equity. They concluded that good corporate governance can facilitate capital movements between countries. Recently, Jain, Kuvvet, and Pagano (2017) argued that corruption level has a negative impact on foreign equity investment. The asymmetric information and investor uncertainty resulting from corruption lead to increased adverse selection cost and thus restrain investors from investing in the financial market. Using a panel data for 49 countries from 2004 to 2008, they found a negative and significant relationship between the level of corruption measured by corruption perceptions index and equity investment. This relationship tended to be nonlinear.

2. DATA AND METHODOLOGY

2.1. Variables of the study

Sound and stable macroeconomic environment is considered as an attractive factor for foreign portfolio investment. High economic growth rate and low inflation rate affect the profitability of the corporations positively and thus motivate investors to invest in the capital market in order to earn a high return. In addition, the flow of foreign portfolio investment is sensitive to the difference of interest rate between the host and source country; investors move their investments to the countries where the interest rate is higher (Garg & Dua, 2014). I use the growth rate of real GDP, inflation rate and interest rate differential measured by the difference between the three-month certificates of deposits rate in Jordan and three-month London Inter Bank Offered Rate (LIBOR) to determine the impact of macroeconomic environment on FPI in Jordan.

In addition to macroeconomic conditions, the empirical literature indicates that the financial conditions within the host country can influence the

flow of portfolio investments in such a country. Hence, I select three financial variables, which are: performance of stock market, risk diversification, and country creditworthiness. The performance of the stock market in the host country could have an impact on foreign investors' decisions. An increase of the market index reflects a rise of the value of shares of listed companies, and thus market becomes attractive to foreign investors who are looking for high return. I use the annual index weighted by free float market capitalization of ASE to measure the performance of the stock market. In addition, Idowu (2015) mentioned that FPI gave the investors a good opportunity to diversify their portfolios. Total risk to the portfolio can be minimized through international diversification. This type of diversification depends upon the correlation between the capital markets of the host country and the source country. The lower correlation means lower co-movements between the markets and thus more benefit from diversification (Garg & Dua, 2014). I measure risk diversification by the correlation between Morgan Stanley Capital International (MSCI) Jordan's index and MSCI all country world index. On the other hand, previous studies focused on the worthiness of the host country as a potential determinant of FPI. It refers to the sufficient liquidity to meet the withdrawals of the fund by investors. I measure country creditworthiness by calculating international reserves to import ratio. The higher the ratio, the higher the possibility of meeting obligation, which means strong country creditworthiness and thus more foreign portfolio inflow.

Governance is considered as an important factor that determines the flow of FPI. Abdioglu et al. (2013) mentioned that the level of governance in both host and source country determines the preferences of foreign investors. Investor select stocks of foreign firms that have good governance systems to mitigate cost resulting from asymmetric information (Das, 2014). In this context, corruption contributes in increasing the asymmetric information and investor uncertainty, which discourages investors from investing in the market (Jain et al., 2017). Hence, in line with the previous studies, I use the average of Worldwide Governance Indicators (WGI) to measure governance. WGI is the estimation of the performance for six dimensions of governance, which are: voice

and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of corruption. WGI ranges from -2.5 (bad governance) to 2.5 (good governance). The yearly value of Corruption Perception Index (CPI) is used to measure corruption. CPI ranks countries according to the perception of officials and politicians of the level of corruption in their countries, using a scale from 0 (highly corrupt) to 100 (least corrupt).

2.2. Source of data

The study uses secondary data during the period from 2000 to 2016. The statistics of the Central Bank of Jordan is the main source of data on GDP growth rate, inflation rate, certificate of deposit rate, LIBOR, international reserves and amount of imports. Data on the capital market performance, the annual market index, were obtained from the statistics of Amman Stock Exchange. MSCI Jordan index and MSCI all country world index were obtained from www.msicbarra.com. I used the World Development Indicators (WDI) database of the World Bank to obtain data about governance indicators, and CPI was obtained from www.transparency.org.

2.3. Empirical model

This study examines the determinants of foreign portfolio investment in Jordan. In line with the previous studies, Ordinary Least Square (OLS) regression analysis is used. According to the variables discussed in the previous section, I developed the following mathematical model:

$$FPI_t = \alpha_0 + \alpha_1 GDP_t + \alpha_2 INF_t + \alpha_3 IDIF_t + \alpha_4 SMP_t + \alpha_5 RDIV_t + \alpha_6 CCRW_t + \alpha_7 GOV_t + \alpha_8 CORR_t + \varepsilon_t, \quad (1)$$

where FPI_t is the foreign portfolio investment at time t , α_0 is the intercept and ε_t is a random error. The model consists of eight independent variables which are: aggregate economic activity (GDP), inflation (INF), interest rate differentiation ($IDIF$), stock market performance (SMP), risk diversification ($RDIV$), country creditworthiness ($CCRW$), governance (GOV) and corruption ($CORR$).

Table 2. Correlation matrix of the independent variables

	GDP	INF	IDIF	SMP	RDIV	CCRW	GOV	CORR
GDP	1.000	–	–	–	–	–	–	–
INF	0.593	1.000	–	–	–	–	–	–
IDIF	0.052	0.321	1.000	–	–	–	–	–
SMP	0.428	–0.081	0.648	1.000	–	–	–	–
RDIV	0.026	0.362	0.481	0.097	1.000	–	–	–
CCRW	0.109	–0.221	0.103	0.124	0.105	1.000	–	–
GOV	0.126	0.085	0.216	0.317	0.361	0.361	1.000	–
CORR	0.214	0.094	0.021	0.221	0.048	–0.542	0.485	1.000

3. RESULTS AND DISCUSSION

In order to get robust results, a number of tests were conducted. One of the key issues in the multiple regression analysis is multicollinearity. The results of the correlation between the independent variables are presented in Table 2. They do not show high correlation between the variables, which indicates that multicollinearity does not exist.

Since this study deals with time series explanatory variables, it is necessary to test the unit root of the used variables. Table 3 presents the results of unit root test using Augmented Dickey-Fuller (ADF) test. The calculated ADF test values for all the independent variables are greater than the critical value. This indicates that the null hypothesis of the existence of unit root was rejected at 5% level of significance. Hence, all time-series variables are stationary at levels.

Table 3. Results of Augmented Dickey-Fuller (ADF) unit root test

Variable	ADF test statistics	Order of integration	Result
GDP	–6.512	I(0)	It is stationary
INF	–4.952	I(0)	It is stationary
IDIF	–5.125	I(0)	It is stationary
SMP	–8.661	I(0)	It is stationary
RDIV	–6.341	I(0)	It is stationary
CCRW	–4.619	I(0)	It is stationary
GOV	–6.459	I(0)	It is stationary
CORR	–5.398	I(0)	It is stationary

Notes: (1) ADF statistics with intercept and trend. (2) The critical value of ADF test at 0.05 is –2.789.

To check the heteroscedasticity problem, Levene's test for equality of variance was used. The results showed the presence of heteroscedasticity. Hence, Corrected Standard Errors using White procedure included in E Views software used. All regression results in Table 4 were corrected for heteroscedasticity using White matrix.

Table 4. Results of OLS regression analysis

Variable	Coefficient	Std. Error	t-statistics	Prob.
Constant	7.782	2.651	2.926	0.004
GDP	0.677***	0.043	8.877	0.000
INF	–0.176**	0.063	–2.633	0.010
IDIF	0.646	0.362	1.781	0.325
SMP	0.645	0.182	2.345	0.101
RDIV	0.971***	0.149	6.512	0.000
CCRW	0.112*	0.436	1.869	0.062
GOV	0.145**	0.009	2.280	0.025
CORR	0.667**	0.226	3.021	0.015
R2	0.532	–	–	–
Adjusted R2	0.474	–	–	–
DW	1.63	–	–	–
F-statistics	9.126	–	–	–
Prob (F-statistics)	0.016	–	–	–

Notes: (1) *, **, *** means significance at 10%, 5% and 1%; (2) the results were corrected for heteroscedasticity using White matrix.

Table 5. Results of Granger causality tests

Null hypothesis	F-statistics	Probability	Result
GDP does not Granger cause FPI	5.086	0.047	Reject H0
FPI does not Granger cause GDP	4.791	0.125	Accept H0
INF does not Granger cause FPI	3.364	0.025	Reject H0
FPI does not Granger cause INF	0.410	0.757	Accept H0
IDIF does not Granger cause FPI	1.385	0.260	Accept H0
FPI does not Granger cause IDIF	1.105	0.371	Accept H0
SMP does not Granger cause FPI	0.304	0.740	Accept H0
FPI does not Granger cause SMP	0.073	0.931	Accept H0
RDIV does not Granger cause FPI	4.031	0.025	Reject H0
FPI does not Granger cause RDIV	2.273	0.115	Accept H0
CCRW does not Granger cause FPI	3.365	0.024	Reject H0
FPI does not Granger cause CCRW	0.469	0.630	Accept H0
GOV does not Granger cause FPI	7.403	0.002	Reject H0
FPI does not Granger cause GOV	0.262	0.771	Accept H0
CORR does not Granger cause FPI	5.086	0.048	Reject H0
FPI does not Granger cause CORR	2.791	0.126	Accept H0

The regression results show that aggregate economic activity (GDP) has a positive and significant impact on the flow of portfolio investment to Jordan. A higher growth rate of GDP reflects good economic performance, which means more profit from investment in the local corporations. The results also show a negative and significant effect of inflation (INF) on FPI. A higher inflation rate discourages investment because it reduces the actual return of investors. The coefficient value of interest rate differentiation (IDIF) shows a positive relationship with FPI, but the result is statistically insignificant. The mentioned results confirm the hypothesis that macroeconomic environment within the host country has an important role in attracting foreign portfolio investment. A good and stable macroeconomic environment encourages foreign investors to move their investments to another country in order to take advantage of these conditions.

As for financial variables, a negative and significant association was found between the measurement of risk diversification (RDIV) and FPI. This indicates that the capital market which provides an opportunity for international diversification is more favorable to the foreign investor. The impact of country creditworthiness (CCRW) on FPI is

found to be positive and significant. This implies that stronger creditworthiness countries attract more portfolio investment. The potential explanation of this result is that foreign investors prefer to invest in a strong creditworthiness country to ensure availability of funds for the case of withdrawal. Stock market performance (SMP) was found statistically insignificant.

The coefficient of governance (GOV) is found to be positive and significant. This indicates that foreign investors invest in well governed countries because of the reduction of monitoring and acquisition information costs. The level of corruption (CORR) also affects FPI. The positive and significant relationship indicates that the flows of the portfolio investment increase when the level of corruption within the host country decreases.

In order to investigate the causality effect of the selected variables and FPI, Granger causality test is used. The results in Table 5 show that aggregate economic activity, inflation, country creditworthiness, risk diversification, governance and corruption level are significantly Granger cause of FPI. This suggests that the significant determinants of FPI can improve the flow of portfolio investment to Jordan.

SUMMARY AND CONCLUDING REMARKS

In the line of financial liberalization requirements in the developing countries, Jordan has adopted a series of reforms in the Jordanian capital market. These reforms aim at increasing the flow of foreign portfolio investment to Jordan. Although the ownership of foreign investors increased during the last

years, it is noticed that the net of foreign portfolio investment fluctuated remarkably. This fluctuation raises the question about the factors that affect the flow of portfolio investment to Jordan. Theoretically, most of the related studies in Jordan focused on the determinants of foreign direct investment, while foreign portfolio investment does not have enough attention. Thus, this study provides empirical evidence regarding the factors that contribute in attracting portfolio investment to Jordan.

Using a series of macroeconomic and financial data during the period from 2000 to 2016, a significant impact was found between aggregate economic activity, inflation, risk diversification, country credit-worthiness, governance and corruption and the flow of portfolio investment to Jordan. The findings of the study can be used to develop a framework by the related parties in Jordan, which strive to attract more foreign portfolio investment. The results showed that macroeconomic factors such as aggregate economic activity and inflation can affect the decision of the foreign investor in selecting a country of investment. Hence, Central Bank of Jordan and Ministry of Finance, which are responsible for managing monetary and fiscal policies, should maintain stable macroeconomic environment characterized by high economic growth rate and low rate of inflation to attract portfolio flows. In addition, Central Bank of Jordan should retain an appropriate level of liquidity in order to meet the obligations of investors. Given the significant role for the level of governance and corruption within the host country in attracting portfolio investment, action toward improving a good-quality governance environment is needed. Therefore, Jordan Securities Commission should keep track of World's rules of governance, and apply them in order to promote confidence in the Jordanian economy and support the protection of investors. The Integrity and Anti-Corruption Commission in Jordan should also enhance investor confidence in the integrity of Jordanian institutions and promote country's reputation at the international level. As a result, the attractiveness of portfolio investments in Jordan will increase.

Although this study achieved its goals, it is worth including other explanatory variables to provide more comprehensive understanding of the determinants of foreign portfolio investment in Jordan. In addition, using different statistical techniques could provide different explanation of the results for this study and thus increases the knowledge about this area.

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