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Macroeconomic Determinants of Inward Foreign Direct Investment into Qatar

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Abstract: *The article describes the scenario modeling mechanism of social, ecological and economic system, allowing the decision maker in the region of the control system, to develop a comprehensive strategy for the development of the territory with the use of fuzzy cognitive maps. The main attention is paid to issues of environmental management, taking into account the mutual influences problematic factors (economic, environmental, social), internal and external environment, significant for the Penza region. The method of pulse processes, predicted alternative scenarios of socio-economic and ecological systems at various regional strategies.*

Key words: *social, ecological and economic system, internal environmental factors, environmental factors, cognitive modeling, system development scenario, the administrative decision.*

INTRODUCTION

FDI is a major factor in sustaining great economic growth and great development in many countries such as United States (US), United Kingdom (UK), German, France, Malaysia, United Arab Emirates (UAE), Qatar, and Bahrain which have accomplished recently. The FDI is mainly carried by Multinational Corporations (MNCs) from many different countries around the world that bring capital, technology, management expertise, and etc. Hence, the inflow of FDI contributes to productivity growth, high-paying jobs, and exports for U.S workers.

Advanced and developed economies recognize the value of investment by foreigners, resulting in a high competitive for international environment that are seeking FDI. The Organization-for-Economic-Cooperation-and-Development (OECD) and many countries sustain an investment promotion agency to invite FDI. Sandhu and Fredericks (2005) post that the government of Malaysia come up with several motivations and make a new further policy attracted MNCs to locate the country production plants. On the other hand Qatari government amends its bureaucratic and legislative to attract FDI to its country (Manhal, 2005). Furthermore, the government of Qatar issues the law of 1990 No. 25 as the first time to allow international investment capital participates in its economic activities, which is Qatari exclusive.

Over the past years, foreign investment and economic environment in Qatar have shown improvements according to several factors i.e., the high quality of its infrastructure, the country's political stability, the lowest tax rates, and an investment law passed in 2010 which allows foreign investors to own the totality of a firm in certain sectors (such as counselling, culture, information technology, sports, and distribution). United Nations Conference on Trade and Development (UNCTAD) press that U.S, Japan, Singapore, and South Korea are the main investing countries in Qatar. Furthermore, it is expected that a large amount of foreign

investors will surely inflow into Qatar next coming years because of the organisation of the FIFA 2022 World Cup.

According to Trading Economic (2011-2017), the net inflow of FDI into Qatar is increased by Qatar Riyal (QAR) 1,251 Million in the third quarter of 2016. The-FDI-Report-White-Paper-for-Promoting-Economic-Development in 2016 reports that although the number of FDI projects in the Middle East and Africa increased by 16% in 2011, the total capital investment is decreased slightly because of Arab Spring of 2011.

Research on the macroeconomic determinant of inward FDI has been debated among the researchers (see for example, Ade et al., 2011; Aremu, 2005; Asiedu, 2002; Borensztein et al., 1998; Camurdan and Ismail, 2009; Omankhanlen, 2011). Ade, Babatunde and Awoniyi (2011) argue that the attractive of more FDI into a country is depended on political stability, development of infrastructure, harmonizing of investment policies, and enhancing of investment promotion activities that lead to economic and social development. Aremu (2005) highlights the attractiveness of FDI opportunities are derived from the injection of foreign capital into domestic economy to enhance savings and economic growth in most developing economies. Asidu (2002) indicates that Gross Domestic Product (GDP) is not associated with FDI. Borensztein et al. (1998) argue that FDI is more effected economic growth as compared to other factors such as domestic investment because of the transmission of technology. Camurdan and Ismail (2009) argue that the growth rate, the interest rate, the inflation rate, the trade rate are the key drivers influenced the inflows of FDI in the host country. Omankhanlen (2011) conduct a research to investigate the relationship between home and host countries based on the international system as the powerful issue to the development of developing countries.

Research on the determinant factors of FDI in Gulf countries including Qatar is limited (see for example, Abdul Aziz and Makkawi, 2012; Fernandez and Joseph, 2015; Gharaibeh, 2015; Manhal, 2005). Among them in Qatar, Manhal (2005) examines the relationship of GDP and government spending with FDI and in addition recommends other future research could be considered other type of variables i.e., exchange rate, interest rate, and inflation rate. Therefore, this current research extends the study of Manhal (2005) in Qatar. Thus, this paper is among the early studies contributes to the area of finance and economic literature at examining the macroeconomic determinant of inward FDI into Qatar. Furthermore, the finding of this paper is important to policymakers for deciding their policies while it is also important to investors and managers for deciding their investments.

Literature Reviews

Foreign investors always take in their considerations the movement of exchange rate and the uncertainty of exchange rate in their decision when they have planned to invest abroad of their countries. Froot and Stein (1991) argue that exchange rate level may influence FDI because of the host country currency depreciation against the currency of the home country raises the relative wealth of foreign investors. They also argue that if the capital market is a case of information imperfections, the movement of exchange rate may affect FDI. Campa (1993) show that a high exchange rate and the more it is increasing, the higher would be predicted of future returns from crossing a foreign markets. Blonigen (1997) investigates a study in Japan using a sample of Japanese acquisition in the U.S over a period of 1975 to 1992. He suggests that exchange rate level can influence the acquisitions of FDI as it is involved in purchasing company special assets in the foreign currency which may generate profits in other currency.

Lewis (1999) concludes that highly exchange rate affects FDI significantly. However, Pan (2003) note that exchange rate in China is insignificant determinant for FDI. Oladipo (2013) tests the macroeconomic determinants factors of FDI using a secondary data based on annual time series over a period of 1985 to 2010 in Nigeria. He finds that exchange rate effects FDI positively at 5% level of significance. Gharaibeh (2015) investigate the relationship between the proposed explanatory variables and inward FDI into Bahrain. He finds that inflation rate is considered as the main determinants of FDI inflows and its effect is statistically

significant on FDI inflows into Bahrain. In contrast, he finds that the effects of export of goods and services and exchange rate are positive and insignificant on FDI inflows.

Uygur (2005) examines the determinants of several factors which are 'real interest rate, growth rate, export of goods and services, investment atmosphere, and inflation rate and budget deficit rate on FDI in Turkey over the period of 1992 to 2004. He shows that the real interest rate of consolidated budget balance and official treasury department is the main factor that determine the FDI in Turkey. Mercereau (2005) tests the influence of China emergence on the flow of FDI into Asia and the determinants of FDI inflows to the region using a sample of 14 Asian economies from 1984 to 2002. He finds that China does not have more effect on FDI to other Asian countries. He also concludes that a few economic fundamentals e.g., an appreciating real exchange rate, low interest rates, and low inflation explained the allocations of the FDI flows between Asian economies.

Grosse and Trevino (1996) find that interest rate at home country influences the FDI in US. Pan (2003) finds that the effect of interest rate in source country is negative on its FDI inflow. Venkataramany (2004) shows that commercial and deposit interest rates are significantly associated with FDI. Singhania (2011) report that interest rates are return on investment, investors may channel their investment from lower interest rate level to higher level because it offers motivation to foreign investors to look at higher returns; hence, high interest rate may lead to enhance FDI. Oladipo (2013) finds that interest rate determine FDI positively at 5% level of significance.

Venkataramany (2004) shows that the change in inflation rate influences FDI inflow to India negatively. Singhania (2011) show that inflation rate determins the capital preservation of FDI. Lower or higher inflation rate may influence the profitability as Lower or higher prices may lead to raise the costs or reduce the returns. Thus, the stability of inflation rate is more attractiveness for FDI. Aw and Tang (2010) investigates the determinants of FDI in Malaysian context and he finds that exchange rate, interest rate, and inflation rate are a key factors determinants of FDI in Malaysia. Bouoiyour (2003) found that inflation rate affects FDI significantly at the 0.05 level. However, Oladipo (2013) found that inflation rate is insignificant in influencing FDI inflow to Nigeria.

Lopez (2002) finds that a causality effect between import of goods and services and FDI inflow, which means that FDI inflow, has more close relationship with import of goods and services. Bouoiyour (2003) finds that a raise FDI is related to rise of import of goods and services against the investing countries. Venkataramany (2004) finds that the effect of change in import of goods and services is significant impact of FDI into India. He also finds that change in export of goods and services insignificantly affect FDI inflows. Lopez (2002) finds a bi-directional Granger causality between FDI inflow and export of goods and services. Bouoiyour (2003) finds higher export of goods and services versus the investing countries enhance the inflow of FDI in Morocco.

Lucas (1990) argues that unemployment rate is not associated with FDI. Kornecki and Ekanayake (2012) test the identification of state-specifics determinant of FDI based on annual data from 1997 to 2007 and investigate the changes in their importance due the period. They find that the effect of unemployment rate is negative on FDI inflows. Pearson, Nyonna, and Kim, (2012) using a panel data of all 50 states from 1984 to 2007 to test the determinants factors of FDI inflows into US. They find that unemployment rate exhibit negative relations with FDI. Their result is in line with Edwards (1992) while it is not in line with Lipsey (1999).

Research Methodology

Data for this paper is time series secondarily data is obtained from world development indicators DataStream and the global market information DataStream. The period of the paper is from 1980 to 2016, covering 37 years data collected (annual basis). Multiple Regression model is utilized to analyse the macroeconomic

determinant of inward FDI in Qatar. Multiple Regression model assumptions including normality, heteroskedasticity, and multicollinearity are met. Therefore, the model is taken form of:

$$FDI_t = B_0 + B_1 EXR_t + B_2 IR_t + B_3 IFR_t + B_4 EXP_t + B_5 IMP_t + B_6 UNMP_t + e_t$$

Where FDI_t is the natural log of the annual inward FDI into Qatar; B_0 is the constant; EXR_t is the natural log of the annual exchange rate of QAR to US Dollar; IR_t is the natural log of the annual interest rate; IFR_t is the natural log of the annual inflation rate; EXP_t is the natural log of the annual export of goods and services; IMP_t is the natural log of the annual import of goods and services; $UNMP_t$ is the natural log of the annual unemployment rate; e_t is the error term.

Results and Discussions

Descriptive analysis involves finding the average (mean) values of the variables, the minimum, medians, and maximum values in the series sample, measure of spread of the variables (standard deviation). Table 1 provides the descriptive statistics for all variables used in this paper. The mean value of inward FDI into Qatar during the period 1980 to 2016, covering 37 years is 1.775. It is higher than the mean value of 0.65 reported for period of 2005 to 2014 in Kenya by Kwoba and Kibati (2016). However, it is lower than the mean value of 7.697 reported for the period of 1980 to 2013 in Bahrain by Gharaibeh (2015). Therefore, the range of FDI is from lowest value of 0.413 to highest value of 8.307 with standard deviation value of 2.211.

Table 1: Descriptive Analyses of the Variables (Total 37 observations)

Variables	FDI	EXR	IR	IFR	IMP	EXP	UNEM
Mean	1.775	3.641	8.237	3.756	16.845	236.125	0.377
Median	0.913	3.641	8.862	2.956	23.750	49.719	0.300
Maximum	8.307	3.6561	9.501	15.051	43.329	1182.396	1.500
Minimum	-0.413	3.641	4.963	-4.863	0.000	16.185	0.000
Std. Dev.	2.211	0.002	1.439	4.078	16.266	360.606	0.407

Table 1 also shows that the highest mean value between the determinant factors of FDI is reported for export of goods and services which is 236.125 with median (standard deviation) of 49.719 (1182.396) while the lowest mean value is reported for unemployment rate which is 0.377 with median (standard deviation) of 0.300 (0.407).

Correlation analysis is also used to measure the degree of freedom between all variables. Table 2 shows the results of correlation matrix between all variables. Based on the argument of Judge, Hill, Griffiths, Lutkepohl, and Lee (1988), there is no multicollinearity problem exists between the whole variables.

Table 2: Correlation Matrix between Variables (Total 37 observations)

Variables	FDI	EXR	IR	IFR	IMP	EXP	UNEM
FDI	1						

EXR	-0.128	1					
IR	-0.268	0.152	1				
IFR	0.196	0.129	-0.079	1			
IMP	0.703	-0.181	-0.241	0.148	1		
EXP	0.021	-0.089	-0.594	0.001	0.085	1	
UNEM	0.539	-0.161	-0.247	0.142	0.641	0.012	1

Table 2 also shows that exchange rate and interest rate have negative correlation with FDI while inflation rate, import, export, and unemployment rate have positive correlation with FDI. Moreover, the highest correlation value between independent variables is 0.641 reported between import of goods and services and unemployment rate while the lowest correlation value is -0.079 reported between interest rate and inflation rate.

The results of Multiple Regression model are summarized in Table 3. It shows that the effect of import of goods and services is positive and significant on inward FDI, indicating that a 1 percentage increase in the level of import is associated with 0.081 percentage increase in the level of inward FDI. This result is in line with Bouoiyour (2003), who indicates that a raise FDI is associated with rise of import of goods and services against the investing countries. The reason for a positive relationship could be that inward FDI into Qatar rather than engaging in import activities that are involved in import of inputs of productions. Other reason could be that inward FDI into Qatar concentrate on production of goods and services that are complementary to other import products that increase the import of the complementary product and service.

Table 3: Multiple Regression model using FDI (Total 37 observations)

Variables	Coefficient	Std. Error	t-Statistic	Prob.
Cont.	-46.998	110.649	-0.424	0.674
EXR	16.010	31.519	0.507	0.615
IR	-1.197	0.601	-1.989	0.056*
IFR	0.026	0.117	0.226	0.822
IMP	0.081	0.026	3.027	0.005***
EXP	-0.004	0.002	-1.941	0.062*

UNEM	-0.136	0.947	-0.144	0.886
R^2	0.601	Adjusted R^2		0.515
F-statistic	7.038	P-value(F)		0.000
DW Test F-critical (dL)	1.9739 (1.889)	WT/BP test P-value(WT)		218.91 (0.623)

Notes.* Significant at the 0.1 level; ** Significant at the 0.05 level; *** Significant at 0.01 level

The above Table on the other hand shows that the effect of export of goods and services is negative and significant on inward FDI into Qatar. This result means that a 1 percentage increase in the level of export of goods and services is associated with -0.004 percentage decrease in the level of FDI inflows. The result is not consistent with Bouoiyour (2003), Gharaibeh (2015), and Venkataramany (2004), where they found export of goods and services is positively and insignificantly influenced inward FDI. Furthermore, the impact of interest rate is also negative and significant on FDI, which indicating that a 1 percentage increase in interest rate is related to -1.197 percentage decrease in inward FDI. This result is consistent with Pan (2003), while it is not consistent with Oladipo (2013).

In contrast, exchange rate is found to be a positive and insignificant influenced inward FDI into Qatar. This result is consistent with Dewnter (1995), Gharaibeh (2015), and Pan (2003), who found that the exchange rate is not a determinant factor of the inward FDI into Qatar. However, it is not consistent with Froot and Stein (1991), Lewis (1999), Masayuki and Ivohasina (2005), and Obida and Nurudeen (2010), who found that exchange rate as one of the key determinants of FDI inflows.

Moreover, inflation rate is also revealed to be a positive and insignificant influenced FDI inflow. This result is in line with Oladipo (2013), who indicates that the inflation rate is not determinant factor of the FDI inflows. However, it is not in line with Asiedu (2002), Camurdan and Ismail (2009), Gharaibeh (2015), Khalid and Varoudakis (2007), Onyeiwu and Shrestha (2004), Venkataramany (2004), and Zenegnaw (2010), who indicate that inflation rate is considered as the main determinants of FDI inflows and its effect is statistically significant on FDI inflows.

On the other hand, the effect of unemployment rate is found to be a negative and insignificant influenced FDI inflow. This result is in line with Edwards (1992), Ekanayake (2012), and Pearson, Nyonna, and Kim (2012), where they find that unemployment rate is negative on FDI inflow.

Conclusion

This paper examined macroeconomic determinant of inward FDI into Qatar using annual data basic over a period 1980 to 2016, covering 37 years. The results of Multiple Regression model show that the impact of import of goods and services is positive and significant on inward FDI while the impacts of interest rate and export of goods and services are negative and significant affect inward FDI. These results indicate that a higher import of goods and services enhances the inward FDI into Qatar; however higher interest rate and export of goods and services reduce the inward FDI into Qatar. The results also show that the impact of exchange rate, inflation rate, and unemployment rate are not related to the inflow of FDI into Qatar.

The result of this paper is crucial to policymakers of government to select and decide their investment policies. The result also provides evidence for investors and managers that higher import of goods and services enhances inward FDI into Qatar while higher interest rate and export of goods and services reduce inward FDI into Qatar.

Future research that tries to examine the effect of other determinant factors on inward FDI; may include other factors such as gross capital formation, gross national income, and external debt to ensure the robust of the findings. Thus, the findings could be compared with this paper. The sample size of this study is only 37 observations based on annual data, future research who are interested in further research; they may increase the sample size as well as use monthly, quarterly, or semi-annual data instead of using annual data. Furthermore, as Arab Spring of 2011 affected the total capital investment in the Africa and Middle East countries, future research can investigate the effect of major factors on FDI in other counties in Africa and Middle East.

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