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Foreign Direct Investment, Domestic Investment and Oil Price Nexus in Saudi Arabia

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ABSTRACT

Foreign direct investment (FDI) inflows are targeted by every country to give external support to the economy and to fill saving-investment gap as well. This paper highlights the contributing factors of FDI inflows in Saudi Arabia by using annual data of 1970-2015 and by applying auto-regressive distributive lag cointegration methodology. This paper finds that oil price and financial market development (FMD) are positively affecting to the FDI inflows. But, increasing domestic investment (DI) is found responsible for decreasing FDI inflows. Therefore, DI can be considered as substitute for FDI inflows. This research recommends the Saudi government to promote FMD to support FDI inflows in Saudi Arabia and to diversify from oil dependence.

Keywords: Foreign Direct Investment Inflows, Oil Price, Financial Market Development, Domestic Investment

JEL Classifications: F21, F41, O16

1. INTRODUCTION

A very common and thought provoking question which comes in the mind of thinkers, policy makers and researchers; that why do countries of similar financial infrastructure, geographic location, economy level, technological resources etc. grow at different pace? It has been a self-proclaimed fact that financial investments in a country for up-gradation of production processes, technological advancements and to fill capital gap which lifts economic growth and development.

Foreign direct investment (FDI) may term as an investment by an investor or enterprises in another enterprises or equivalent in order to get voting power or control by other means outside their geographical boundaries with the target to achieve the investment share and to maximize return. Such an investment not only involves the transmission of fund but also the allocation of physical funds, procedure of manufacturing, decision-making and marketing proficiency, product promotion and corporate practice with the objective to earn profit. FDI is a long-term financial participation that involves two countries as one investor from

one country invests in the enterprise of foreign country. FDI can be in the form of acquisition of firms of host country as well as established of new companies. FDI not only has direct impact on the countries' development but also linked to productive investment. FDI provides the new job opportunities through the provision of capital. Multinational Enterprises (MNEs) account around two-thirds of the world total investment.

The countries emphasize on various factions of production so they can catch the eyes of the developed countries to entice FDI. The developed countries invest outside their geographical boundaries seek for various motives to be benefited in terms of resources, raw material, efficient markets, cheap land, intellectual human resource and strategic implementations. Mostly inflow of FDI in countries is to avail benefit of resources. The motive behind this may be to exploit the cheap availability of labor and raw material. Investing countries may be attracted to explore and develop these resources.

Investment is targeted to reach local or regional markets of bordering nearby as well. Market-seeking FDI happens when supplier corporations trace their clients overseas. For example, the

manufacturer of auto components could follow a car manufacturer. Market-seeking investment is frequently self-protective in order to avoid actual or susceptible obstacles of import. An open policy of trade administration is vital if the investor desires to oblige nearby bordering or foreign markets.

To accomplish with the efficiency of markets, the investment is made only if across border markets are liberal and highly established. As a consequence, such kind of FDI is most common in markets which are locally integrated, most remarkably in Asia and Europe. The best example of FDI to seek efficiency by undergoing a product on smaller-scale within a few nearby countries which can be explained by Nestlé's Middle Eastern and North African affiliated sub business units. The motive of each affiliated small business unit is to produce a particular product to target the local market. FDI is also motivated to promote long term strategic objectives when companies undertake investments, acquisitions or alliances.

Many of the researchers have laid a focus on the topic and concluded widespread researches to crack the notion of the topic from various countries perspective in different period of time by considering a number of variables. de Mello (1997) argues that mainly company-specific factors consider apart of demand Factors. On the other hand, cost factors are those that persuades a specific corporation to acquire plenteously of profits by low costs application. The parent company may transfer a portion or sometimes entire production to that country with low cost of production. Therefore, trend of FDI may also be affected by microeconomic variables. The present paper is focusing on the macroeconomic factors of Saudi Arabia. An interesting fact has been observed that developing countries are able to attract more than 40% of the total FDI of the whole world. The reason is might that these are relatively less affected by the global financial crises and recessions. Therefore, this is extremely important to investigate the determinants of FDI in Saudi Arabia which is carrying very low level of FDI.

After discussing the all possible motives of foreign investors or FDI, Saudi Arabia is carrying prime location for foreign investments that can serve the purpose of foreign investors. Further, it has a very big market size in terms of geographical area and it is heavily depending on the imports of goods as it has limited domestic production for consumer goods. Particularly, Saudi Arabia has highest proportion of motor vehicles in its total imports but there is no single manufacturing unit either by local or foreign investors. Therefore, this paper is motivated to find the suitability of macroeconomic determinants or environment for the foreign investments in Saudi Arabia.

2. LITERATURE REVIEW

FDI inflows have been attracted by many factors in empirical literature. Most common and important factor is size of economy or income of economy. This can be estimated by gross domestic product (GDP) or income per capita. In relation of GDP and FDI, Miankhal et al. (2009) reports a positive influence of GDP on the FDI in Pakistan but this positive influence has not been found for

other countries in their testing. This is showing evidence that FDI enters in the economies with a consistent growth of income and income of all countries do not necessarily enough to accommodate the demand for foreign investments. In the causality analysis, Ozturk and Huseyin (2007) find a bidirectional relationship in the FDI and GDP for Turkey. But in testing of Pakistan's economy, FDI is only causing to GDP. Further, Mahmood and Chaudhary (2009) find the positive relationships in FDI inflows and economic growth of Pakistan. In a panel of developing economies, Henrick and Rand (2006) find a positive contribution of GDP in the FDI inflows. Investors anticipate the return on invested capital and significant trends of economic and financial indicators compel the foreign investors to make considerable initiatives for investment in a country. Chakraborty and Basu (2002) find a flow of relationship from GDP to foreign investments in India in the causality analysis. On the other hand, they offer a different explanation on growth effect of inflow of FDI which could be positive or negative, depending upon the incentive offered by the investing country trade policy. Mahmood (2016) investigates the major macroeconomic determinants, including democracy as a proxy for institutional quality, of twenty-four major FDI investing countries in Pakistan by applying PMG estimators on a sample period 1985-2014. He finds that income levels of investor and recipient countries and trade openness are positively contributing to FDI inflows from investing countries in the long run. But, he could not report any significant long run impact of democracy. Although, a short run impact of democracy has been found significant.

Ghazali (2010) finds that there exists a two-way relation between domestic investment (DI) and GDP and one-way relation from GDP to FDI. He argues that FDI inflow in a developing country not only supplements DI but stimulates economic growth and further argues that a country has to create an encouraging atmosphere for foreign investors. Therefore, he claims a complementary relationship between domestic and foreign investments. Mahmood and Chaudhary (2012) investigate this relationship for Pakistan by utilizing the auto-regressive distributive lag (ARDL) cointegration on a sample period of 1972-2010. They proof a negative association between foreign and DI s and report that foreign and DI s are found substitute instead of complement of each and other in Pakistan. Therefore, the relationship between domestic and foreign investments can be substitute or complement and it is an empirical question to be tested.

Majeed and Ahmad (2008) analyze the FDI's elements in twenty-three developing economies. FDI's determinants are examined at both micro and macro levels such as human capital, government spending, military spending, market size and urbanization. According to this study, MNEs believe that they invest in those countries where they are having the expectation of higher rates of return on their investment. Further, different features of host countries determine the profit of firms on FDI like availability of cheap labor force, spending habits of an economy and shift from rural to urbanization. Rihab and Lotfi (2011) evaluate the level of FDI by using various variables including human resources in seventy-one developing countries during the period 2001-2006 and they conclude that human resource development is a tool which has a positive association with FDI inflows. While studying

various factors of FDI inflow in Kenya, Elijah (2006) concludes that TO and human capital both led pleasant impact to FDI inflows. FDI is attracted by availability of cheap labor in the developing countries. But the availability of cheap labor is not enough, to avail the opportunity of FDI; the educated and skilled labor with entrepreneur capabilities is also required.

In the relationship of macroeconomic performance and oil's price, revenue, dependence and exports in Saudi Arabia, Alkhateeb et al. (2017a) estimate the effect of oil revenue on income and employment and find that oil revenue is causing to the employment level. Maalel and Mahmood (2018) investigate the oil dependence on the macroeconomic performance of GCC countries in non-linear settings. They report that oil dependence in term of oil revenue negatively affects the economic growth of Bahrain and Kuwait and positively affects in case of Oman and Qatar. Further, oil dependence in term of oil exports negatively affects the economic growth of Kuwait, Saudi Arabia and UAE and positively affects in case of Bahrain. Alkhateeb et al. (2017b) investigate upshot of oil-prices of Saudi Arabia, using non-linear ARDL model, on employment and find that both increasing and decreasing movements of oil price (OP) have positively affected the employment. However, positive movement shows larger impact than that of negative movement.

After a sufficient literature review, this paper can identify the most important determinants of FDI. These can be claimed as economic growth, financial market development, OP and DI. Considering all of these determinants, this paper is motivated to collect all of these determinants in the FDI inflows' model of Saudi Arabia to test the significant or insignificant impacts.

3. METHODOLOGY

This paper inoculates GDP growth rate, FMD, OP and DI as independent variables in the Saudi Arabian FDI inflows' model.

$$FDI_t = f(GR_t, FMD_t, OP_t, DINV_t) \tag{1}$$

FDI_t is reflecting the FDI inflows in Saudi Arabia in billion dollars, GR_t is growth rate of GDP a proxy for market size or income, FMD_t is financial market development measured by total credit by banks to GDP ratio, OP_t is oil price and $DINV_t$ is presenting the DI in Saudi Arabia in billion dollars and it is calculated by subtracting foreign investments from total investments (gross capital formation). All data is ranging from 1970 to 2015.

A higher economic growth is symbol of higher demand for goods produced in a country and foreign investors are expected to have higher returns on their investments. FMD may provide funds for investment, it also can support the business transaction through financial market services and higher FMD is also welcoming the investment in the financial sector. Therefore, higher FDI inflows are expected with higher FMD. Further, Senan et al. (2018) investigate and find the positive effect of FMD on electricity consumption in Saudi Arabia. Electricity consumption is increasing due to higher economic activities and aggregate demand due to FMD in that study. Then, FMD could also have effect on

the foreign investments. Furthermore, Alkhateeb et al. (2018) find the positive effect of FMD and Mahmood and Alkhateeb (2017) find the negative effect of trade on CO₂ emissions of Saudi Arabia. FMD may have a positive effect on CO₂ emissions due to higher economic activities. Therefore, FMD may also affect the FDI inflows considering higher demand level as a result of FMD. Saudi Arabia is majorly depending on oil sector and OP is presenting the major source of income in the kingdom. Therefore, it is expected to positively contribute in FDI inflows. Overall, GR_t , FMD_t and OP_t are expected to positively impact the FDI inflows. In last, DI and foreign investment can be substitutes as corroborated by Mahmood and Chaudhary (2012) and can also be complements as claimed by Ghazali (2010). Therefore, the relationship between domestic and foreign investments is expected either positive or negative.

To capture the impact of modeled variables in equation 1, this research is going to utilize the ARDL model established by Pesaran et al. (2001). But before that, we are interested in identifying unit root problem in variables of equation 1. For this purpose, Augmented Dickey Fuller (ADF) proposed is utilized. ADF equation is as follows:

$$\Delta W_t = \beta_0 + \beta_1 W_{t-1} + \sum_{i=0}^k \beta_{2i} \Delta W_{t-i} + \xi_{it} \tag{2}$$

W_t assumes a time series to be tested. A negative parameter, β_1 , can ensure the evidence of stationarity of a time series with a null hypothesis of $\beta_1 = 0$ (non-stationarity). $\sum_{i=0}^k \beta_{2i} \Delta W_{t-i}$ is used to remove endogeneity in the equation for robust results. Equation 2 is ADF equation with intercept only which can also be tested for intercept and trend.

The FDI inflows model is estimated by ARDL and this technique is applied to exploit the benefit of its efficiency and consistency for mix order of integration. The ARDL equation can be written in following way:

$$\begin{aligned} \Delta FDI_t = & \delta_0 + \delta_1 FDI_{t-1} + \delta_2 GR_{t-1} + \delta_3 FMD_{t-1} + \delta_4 OP_{t-1} \\ & + \delta_5 DINV_{t-1} + \sum_{j=1}^p \phi_{1j} \Delta FDI_{t-j} + \sum_{j=0}^q \phi_{2j} \Delta GR_{t-j} \\ & + \sum_{j=0}^q \phi_{3j} \Delta FMD_{t-j} + \sum_{j=0}^q \phi_{4j} \Delta OP_{t-j} \\ & + \sum_{j=0}^q \phi_{5j} \Delta DINV_{t-j} + \psi_{it} \end{aligned} \tag{3}$$

Equation (3) can be used to find the long run results. At first, bound test could be performed on a null hypothesis of no cointegration $\delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$. Further, long run effects of independent variables can be captured through normalized coefficients of independent variables normalized with estimated coefficient of FDI_{t-1} in equation 3.

$$\begin{aligned} \Delta FDI_t = & \sum_{j=1}^p \lambda_{1j} \Delta FDI_{t-j} + \sum_{j=0}^q \lambda_{2j} \Delta GR_{t-j} \\ & + \sum_{j=0}^q \lambda_{3j} \Delta FMD_{t-j} + \sum_{j=0}^q \lambda_{4j} \Delta OP_{t-j} \\ & + \sum_{j=0}^q \lambda_{5j} \Delta DINV_{t-j} + \vartheta ECT_{t-1} + \varepsilon_{it} \end{aligned} \tag{4}$$

The coefficients of differenced variables of equation (4) can be estimated for short run effects. ECT_{t-1} is the lagged error term in ECM and its negative coefficient may ensure the short run relationship in proposed model and it can also an alternative way to declare cointegration in the model (Pesaran et al., 2001).

4. DATA ANALYSES AND DISCUSSIONS

Table 1 presents the ADF test on the modeled variables. The results show that OP_t , FDI_t , FMD_t and $DINV_t$ are showing unit root in the levels of series. GR_t is stationary at level. Further, all variables are showing stationary behavior in the first difference forms. Though, analysis exhibits a mix order of integration but it is fine as ARDL cointegration is targeted afterwards.

Table 2 shows the estimates of FDI inflows model of Saudi Arabia. Before going in detail analysis, F-value calculated from bound test is very low but negative and significant coefficient of ECT_{t-1} may be claimed for cointegration as mentioned in methodology. Therefore, a cointegration can be claimed in the estimated ARDL model.

In the long results, GDP growth is positively but insignificantly impacting the FDI inflows. Therefore, rising economic activities with rising economic growth are not supporting the FDI inflows in Saudi Arabia. FMD is positively and significantly impacting

to the FDI inflows. 1% increase in FMD is attracting the 0.67 billion US dollars FDI inflows. FMD is very helpful in supporting directly and indirectly the economic activities and investments. Saudi financial market is growing at a good pace now-a-days. Therefore, it is also helping the FDI inflows to grow. Further, OP is positively and significantly impacting the FDI inflows. Therefore, rising OP would be helpful in increasing FDI inflows but overall economic growth is supporting FDI inflows as mentioned before. Lastly, DI has a negative influence on the FDI inflows. Here, we can claim that DI is the substitute of FDI inflows. This substitution effect of DI on the FDI inflows is also corroborating the empirical finds of Mahmood and Chaudhary (2012).

In the short run analysis, parameter of ECT_{t-1} is negatively significant. This is an evidence for the presence of short run relationship in our proposed model. Further, the magnitude of this coefficient is reflecting the 26.91% speed of convergence in a year. FMD and OP are again showing a positive influence on the FDI inflows in short run like long run results. However, the magnitudes of coefficients are considerably low in the short run. Therefore, we can claim that these variables have more impact in long run than that of short run. DI is also showing the same negative impact on FDI inflows and substitution effect is again proved between domestic and foreign investment. Therefore, DI is playing a negative impact in same manners in the short run.

5. CONCLUSIONS AND RECOMMENDATIONS

The countries are always welcoming foreign investment to fill the saving or foreign exchange gap. This paper investigates the pulling forces of FDI inflows of Saudi Arabia by using the annual data of 1970-2015. The determinants of FDI inflows are assumed as economic growth, FMD, OP and DI s. ARDL cointegration and ADF unit root test have been used for the data analysis. Unit root analysis shows a mix order of integration in our model. Further, cointegration and short run relationship have been found through ARDL methodology in our proposed model. Economic growth has shown the positive but insignificant influence on the FDI inflows in long and short run analyses. Further, FMD is showing a positive impact. Therefore, financial development in Saudi Arabia is successful in attracting FDI inflows. Furthermore, rising OP is also found attractive for foreign investors in the kingdom with its positive impact on FDI inflows. But, DI s are found substitute of foreign investments by showing a negative impact on FDI inflows.

Based on our results, we are recommending the government of Saudi Arabia that financial market should be liberalized and supported through tax holidays and relaxation in opening new business in financial markets to support foreign investments. As OP has positive effect on FDI and OP is low in the world market, government should float some prudent economic policy to give big push to economic growth by adopting diversification policy instead of only dependence on oil sector to boost foreign investments in the kingdom through diversification policy.

Table 1: ADF test

Variable	Intercept	Intercept and trend
FDI_t	-2.3208	-2.8281
GR_t	-3.5734**	-3.6369**
FMD_t	1.0037	-3.1267
OP_t	-1.4970	-1.9916
$DINV_t$	3.4552	1.3392
ΔFDI_t	-4.7201***	-4.6654***
ΔFDM_t	-5.1441***	-5.3589***
ΔOP_t	-4.9723***	-4.8235***
$\Delta DINV_t$	-1.3207	-6.0344***

FDI: Foreign direct investment

Table 2: Estimated FDI inflows model through ARDL

Variable	Parameters	SE	t-statistic	P-value
Long run results				
FMD_t	0.6731	0.3548	1.8974	0.0652
OP_t	0.5896	0.2084	2.8295	0.0073
$DINV_t$	-0.3516	0.1532	-2.2945	0.0272
GR_t	0.2035	0.3650	0.5576	0.5803
Intercept	-11.2821	6.0324	-1.8702	0.0690
Short run results				
ECT_{t-1}	-0.2691	0.0621	-4.3351	0.0001
ΔFDI_{t-1}	-0.2691	0.0972	-2.7680	0.0086
ΔFDM_{t-1}	0.1811	0.0815	2.2232	0.0321
ΔOP_t	0.1586	0.0545	2.9127	0.0059
$\Delta DINV_t$	-0.0946	0.0287	-3.2975	0.0021
ΔGR_t	0.0548	0.0965	0.5677	0.5735
Bound test	Estimated F-value=2.7763			
	Critical F-values			
	At 10% (2.45-3.52)			
	At 5% (2.86-4.01)			
	At 1% (3.74-5.06)			

FDI: Foreign direct investment, ARDL: Auto-regressive distributive lag

REFERENCES

- Alkhateeb, T.T.Y., Alkahtani, N.S., Mahmood, H. (2018), Green human resource management, financial markets and pollution nexus in Saudi Arabia. *International Journal of Energy Economics and Policy*, 8(3), 33-36.
- Alkhateeb, T.T.Y., Mahmood, H., Sultan, Z.A., Ahmad, N. (2017b), Oil price and employment nexus in Saudi Arabia. *International Journal of Energy Economics and Policy*, 7(3), 277-281.
- Alkhateeb, T.T.Y., Sultan, Z.A., Mahmood, H. (2017a), Oil revenue, public spending, gross domestic product and employment in Saudi Arabia. *International Journal of Energy Economics and Policy*, 7(6), 27-31.
- Chakraborty, C., Basu, P. (2002), Foreign direct investment and growth in India: A co-integration approach. *Applied Economics*, 34(9), 1061–1073.
- de Mello, L.R. (1997), Foreign direct investment in developing countries and growth: A selective survey. *Journal of Development Studies*, 34(1), 1-34.
- Elijah, O.K. (2006), Determinants of Foreign Direct Investment in Kenya. Dakar: Institute African de Développement Economique et de Planification, BP 3186 CP 1824. Dakar.
- Ghazali, A. (2010), Analyzing the relationship between foreign direct investment, domestic investment and economic growth for Pakistan. *International Research Journal of Finance and Economics*, 47(1), 123-131.
- Henrick, H., Rand, J. (2006), On the causal links between FDI and growth in developing countries. *The World Economy*, 29(1), 21-41.
- Maalel, N.F., Mahmood, H. (2018), Oil-abundance and macroeconomic performance in the GCC countries. *International Journal of Energy Economics and Policy*, 8(2), 182-187.
- Mahmood, H. (2016), Determinants of bilateral foreign direct investment inflows in Pakistan from major investing countries: A dynamic panel approach. *Journal of Applied Economic Sciences*, 11(7:45), 1471-1476.
- Mahmood, H., Alkhateeb, T. T. Y. (2017), Trade and environment nexus in Saudi Arabia: An environmental Kuznets curve hypothesis. *International Journal of Energy Economics and Policy*, 7(5), 291-295.
- Mahmood, H., Chaudhary, A.R. (2009), Application of endogenous growth model to the economy of Pakistan: A cointegration approach. *Pakistan Journal of Commerce and Social Sciences*, 2(1), 16-24.
- Mahmood, H., Chaudhary, A.R. (2012), Foreign direct investment-domestic investment nexus in Pakistan. *Middle-East Journal of Scientific Research*, 11(11), 1500-1507.
- Majeed, M.T., Ahmad, E. (2008), Human capital development and FDI in developing countries. *Journal of Economics Cooperation*, 29(3), 79-104.
- Miankhel, A.K., Thangavelu, S.M., Kalirajan, K. (2009), Foreign Direct Investment, Exports, and Economic Growth in South Asia and Selected Emerging Countries: A Multivariate VAR Analysis. CCAS, Working Paper No. 23, 1-28.
- Ozturk, I., Huseyin, K. (2007), Foreign direct investment and growth: An empirical investigation based on cross-country comparison. *Economia Internazionale*, 60(1), 75-82.
- Pesaran M.H., Shin, Y., Smith, R. (2001), Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326.
- Rihab, B., Lotfi, B. (2011), The institutional and cultural determinants of Foreign direct Investment in transition countries. *Journal of Research in International Business and Management*, 1(2),: 171-182.
- Senan, N.A.M., Mahmood, H., Liaquat, S. (2018), Financial markets and electricity consumption nexus in Saudi Arabia. *International Journal of Energy Economics and Policy*, 8(1), 12-18.