# Foreign Direct Investment and Economic Growth( in the case of Iran)

Feisal Mirkazehi Rigi

Ph.D in economics from university of Pune
feisal.rigi@gmail.com

**Absract:** In this study linkage between FDI and economic growth in Iran by emphasizing on economic conditions is invetigated .Two specification , is used that benchmark model is based on a Cobb-Douglas production function and only is considered fundamental factors(population growth,net export and gross capital formation),where as in the second specification, Bad and good times during variable as included as well. To achieve the stated objective of the study annual time series data during(1973-2010) of the variables were used. The data was sourced from the Central Bank of Iran's statistical Bulletin.Data was tested for unit root by using the Augmented Dickey Fuller(ADF). We find that FDI have a positive and significant effect on economic growth in Iran.Neverthless seperating Iran's economic conditions to bad and good times according to macroeconomics instability and financial development show FDI have a larger effect on growth in good times.

**Key Words:** economic, Foreign Direct Investment, Empirical Mode

## 1.Introduction

Foreign Direct Investment (FDI) as a developing factor has gained great consideration from developed economies in general and developing countries in specific in recent years.It has been a matter of high attention for many economists that how FDI impacts economic growth of the home country.Most emerging economies are now considering FDI as an integral source of growth.Developing countreis are not unware from the adventages of FDI. Therefor these countreis usually compete with each other to attact FDI inflow through applying various attractive policies for foreign investors.FDI helps an economy by bringing most required capital fund,arrogant managerial skills,developed production capibilities,specialized advertising and marketing,global links as well as uncertain phenomenon of transfer pricing.Major determinants of FDI are balance of trade and market size of domestic country(Tsai,1994).In order to attact FDI, host countries prior focus should be acheve economic freedom, sufficint human capital, economic and political stability in country (Bengoa & Robles, 2003). It is also widely accepted that FDI can have direct positive potential impact on host economies including the creation of well paid employment for scientists and engineers, better use of locally available materials,technology transfer, and the design of consume products better suited to domestic needs, the development of new deciplines and specializations at local universities, the development of R&D cluster, and spin-offs of by-products that TNC`s do not want to develop themselves.(UNCTAD2005).With around 1% of the population of the world, Iran currently possesses 7% of the world's natural reserves including 10% of global proven reserves, 16% of the world's natural gas resources and has the largest natural gas resources world wide after Russia(BMI2008).The availability of these energy reserves and an abundance of natural resources provide an obvious locational adventage with respect to attracting FDI given the increasing importance of energy and other materials in the expanding global market.From the perspectives of the economies of scale involved in the activities of TNC's, many studies conclude that the size of the host country market measured by GDP or real GDP can put significantly positive influence on the flows of FDI into a region, in other words the bigger the market of an economy, the more FDI the region attact.(Duran and Ubed2001;Sun,Tong et al.200;Zhoa and Lall 2005, Ang2008).

## 2.Literature review

### 2 .1.Empirical Model

The purpose of the empirical analysis is to determine whether economics conditions of the recipient country is an important factor for FDI to have a positive impact on economic growth. Therefore, two specification are considered, that the benchmark model is based on a Cobb–Douglas production function and can be specified as:

$$RGDP_t = C + \beta X_t + \gamma FDI_t + u_t \qquad (1)$$

Where:

$RGDP_t$ =growth rate of real per capita income; $X_t$ =vector of fundamental determinants of economic

growth; $FDI_t$ = inflow of foreign direct investment as a percent of GDP; and $u_t$ =the error term.

The vector of fundamental determinants of growth ( $X_t$ ) include the standard variables in growth regression such as: Demographic development (population growth); Gross Capital Formation as percentage of GDP; Government consumption as a percent of GDP; and Openness (Share of external sector to GDP).whereas in the second specification, Bad and good times dummy variable as s included as well. This model is following:

$$RGDP = C + \beta X_t + \gamma FDI_t + \tilde{\gamma} D_t FDI_t + u_t$$
(2)

Where: $D_t$, that is, the regime (Bad and good times) dummy variable is not directly observable, and must be proxied. here, the two main determinants of the regime is using : financial development(credit to the private sector) and Economic stability(inflation rate). According to the first and second definition of bad times, t year is belongs to the bad time regime and $D_t = 1$, if $P^0$ exceeds of a certain value 15% and $CR/GDP$ lessers of 20% value in the previous year.

## 2.2.Review of literature

Many studies show that economic growth of recipient country has positive effect on FDI inflows(Veugeers;Grosse and Trovino,1996).FDI has positive impact upon growth(Dunning1993,Ericsson and Irandoust2000)(Trevino and padhyaya,2003) and in some cases, it has negetive effect on growth too(Moran,1998).positive effect of FDI on economic growth occures when FDI comes into protected industries(Encarnation and Wells1986).It is generally believed that not the smaller rather the greater part of domestic investment is submitted by FDI.However, positive relationship between FDI and domestic invesment is greater as compare to that between domestic investment and foreign portfolio investment(Bosworthand collins,1999).

Chakrabarty and Nunnenkamp(2008) in their article titled" Economic Reforms,FDI,and Economic Growth in India";A sector level analysis assed this proposition by subjecting industry specific FDI and output data to Granger causality tests within a panel cointegration framework. It turn out that the growth effect of FDI vary widely acrooss sectors. Mah(2010) in his article titled "FDI inflows and economic growth of China"examined the casuality between FDI inflows and economic growth in case of China using a

small sample to co integration test. The empirical results showed that since economic reform FDI inflows have not caused economic growth, but the latter had caused the former.

Alfaro et al(2010) in their article titled" Does FDI promoted growth?" Exploring the role of financial markets on linkages formalized a mechanism that emphasized the role of local financial markets in enabling FDI to promoted growth through backward linkages. Using realistic parameter values, they quantified the response of growth to FDI and showed that an increase in the share of FDI leaded to higher additional growth in financially developed economies relative to financially under-developed ones.

## 3. Data and Estimation and Results

To achieve the stated objective of the study, annual time series data during (1973–2010) of the variables were used. The data were sourced from the Central Bank of Iran's Statistical Bulletin. In order for the impact of FDI on economic growth to be sustainable, we checked the time series statistics of the included variables. The data were tested for unit root (nonstationarity) by using the Augmented Dickey- Fuller (ADF). The results, presented in Table 1, reveal that all of the variables are integrated of order I(1).

Table 1. ADF test for unit root

| Variables | Describe | ADF 1st diff | Critical Value at 5% |
|---|---|---|---|
| FDI | FDI,net inflows(%of GDP) | -4.35 | -2.96 |
| RGDP | Economic growth | -4.6 | -2.95 |
| RPOP | Population growth (annual %) | -3.41 | -1.95 |
| GC | Gross capital formation (% of GDP) | -6.19 | -2.97 |
| NX | Net exports(% of GDP) | -5.54 | -2.95 |

Then, We estimate models (1) , (2) using ordinary least squares (OLS). Table 2 reports the estimates of the coefficients.

Table(2). results of estimating models (1) and (2)

| Variables | Model 1 | Model 1 | |
|---|---|---|---|
| | | Proxy for D: inflation rate | Proxy for D: credit to private sector |
| $C$ | -7.2 (-0.71) | -6.8 (10.3) | -7.7 (-0.74) |
| $FDI$ | 2.4 (2.9) | 3.16 (0.96) | 8.01 (2.9) |
| $RPOP$ | 1.28 (2.7) | 1.26 (0.69) | 1.2 (3.1) |
| $GC$ | 0.2 (3.8) | 0.18 (0.76) | 0.21 (0.87) |
| $NX$ | -0.17 (-1.1) | 0.17 (2.1) | 0.15 (0.94) |
| $FDI * D\inf$ | - | -1.1 (-0.32) | - |
| $FDI * Dcr$ | - | - | -5.7 (-2.02) |
| $R^2$ | 0.85 | 0.87 | 0.95 |

*Notes: All regressions include a constant term and are estimated by OLS with White's correction of heteroskedasticity. t-values are in parentheses.

Columns (1) through (3) show FDI to have a positive and. Nevertheless, separating Iran's economic conditions to bad and good times according to macroeconomic instability and financial development show FDI to have a larger effect on growth in good times.

## 4. Conclusion

Generally, in this study linkage between FDI and economic growth in Iran by emphasizing on economic conditions is investigated. Therefore, two specification is used, that the benchmark model is based on a Cobb–Douglas production function and only is considered fundamental factors(population growth, net export and gross capital formation), whereas in the second specification, Bad and good times dummy variable as included as well.findings of estimating equation.(1) and two options of equation.(2) based of two dummy variable show a positive and significant effect , so that this positive effect is larger in good times.

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**Corresponding Author:**
Dr. Feisal Mirkazehi Rigi
Ph.D in economics from university of Pune
E-mail: feisal.rigi@gmail.com

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