



# The Role of Financial Development in Attracting Foreign Direct Investment and its implications on Economic Growth

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**Abstract:** *The key role of financial sector in economic development and growth is undisputable. Therefore, the relationship between financial development and economic growth is of great importance. This study provides an analysis of the effects of financial development on economic growth considering additional applicable factors on economic growth including human capital, economy openness degree, foreign direct investment as well as inflation rate. In order to concurrently examine the relationship between economic growth and the stock of foreign direct investment during the period of 1981-2011, the simultaneous system of equations and the generalized method of moments have been employed and other important variables have been considered in regards to economic growth including financial development, human capital and the degree of economy openness. The results show that Iran's economic growth is most correlated with human capital. Increasing financial development level has no impact on economic growth. The entry of foreign direct investment is shown to have negative impact on economic growth yet not facilitated the accumulation of domestic capital. A rise in the degree of openness has caused economic growth to increase and foreign investment to decrease. Also, economic growth has been identified to be a key variable in the growth of foreign investment stock.*

**Keywords:** *Economic Growth, Financial Development, Domestic Stock, Foreign Investment Stock, Simultaneous System of Equations.*

## INTRODUCTION

In the recent decades, the relationship between financial development and economic growth seems to be one of the most important economic discussions. In this regard, Schumpeter (1934) and Hicks (1976) have emphasized on the effects of financial markets on economic productivity and growth. They believe that no economic growth is achieved in absence of an efficient and developed market. Today, policy makers are focusing more and more on financial sector and believe that a financial system with high-return projects can lead to total efficiency of the economy (Hadi Zonouz & Kamali Dehkordi, 2009).

Based on classic models, capital stock is one of the most substantial factors in economic growth. Developing countries such as Iran need the accumulation of capital stock in order to experience economic growth (Doudangi, 2016). Adams (2009) believes that due to the fact that there is limitation to capital stock, emerging countries employ foreign direct investment. The Sixth Development Plan general policies of the Islamic Republic of Iran underline the importance of foreign direct investment. These policies include rapid economy

growth, continuous improvement of the work environment, expansion and deepening of the comprehensive financial system and alluring foreign investors (Mirbagheri Hir and Shokouhi Fard, 2015:95).

Furthermore, providing information for investors, the financial system intends to ameliorate effectiveness, increase the information level and decrease transaction costs and consequently increase the growth rate of the economy (Khalili Araghi and Salimi Shendi, 2014). A developed financial system triggers high investment by identifying golden investment opportunities, saving stocks, monitoring managers, increasing trade abilities, decreasing risk and facilitating business transactions (Motameni and Ariani, 2013). Subsequently, optimal allocation of resources is achieved through an increase in the speed of physical and human capital accumulation causing economic growth. Financial systems involve duties such as risk management, collecting information on investments, allocating resources, monitoring managers and facilitating business transactions (Tayebi et al., 2013:143).

In the literature of endogenous economic growth (Romer, 1986; Lucas (1993:398)) financial development can have an effect on long-term economic growth. On the matter of the financial brokers' freedom of action, Schumpeter (1911) emphasizes on the significant role that financial services play in economy growth through innovation. Financial development improves economic growth directly and indirectly via domestic capital accumulation and productivity increase in total production variables (Daliri, 2017:83). Financial development triggers an increase in savings' activities as well as a decrease in information asymmetry and leads to better allocation of resources. Correspondingly, financial development leads to better monitoring of management actions and through better control of companies risk can be hedged (Roubini & Sala-I-Martin, 1992:10 and King & Levine, 1993: 717). Studies show that countries with better financial development are more resilient to monetary calamities (Federici & Carioli (2009: 285).

Financial development is a process in which compulsory factors, policies and institutions are all constituted in order to create efficient mediators and markets and provide deeper and better access to financial services (Dutta and Roy, 2008). Financial development contributes to economic growth via several channels. For instance in the form of building more trust in the financial system, financial development can encourage households to amass more savings which increases the fund supply of potential investors (Ghaffari and Niknejad, 2012). Also, financial development leads to more efficient employment of financial capitals. Due to the fact that the main source of capital accumulation is investment by nature, there either needs to be enough saving stock available in the financial system or the government needs to invest the construction expenditures. Nevertheless, the issue with developing countries is that the government is inefficiently allocating funds to current expenditures therefore there is no sufficient fund for construction purposes (Shahidi and Yavari, 2014). Moreover, low saving accumulation and lack of up-to-date technology in emerging markets does not allow efficient employment of available capital (Agharkakeli et al., 2016:43). One of the resources that can assist developing countries with the issue of capital insufficiency is foreign direct investment. Of various types of foreign investments, foreign direct investment is more suitable for capital stock accumulation purposes and correspondingly improvement of economic growth due to advantages such as technology transfer, connection with international markets and altering managerial abilities (Mahdavi and Mahdavi, 2008: 130). According to United Nations Conference on Trade and Development, foreign direct investment is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate).

Therefore, due to the significance of the topic at hand, the relationship between financial development and foreign direct investment is analyzed in this study. Also, for the purposes of policy-making suggestions the effects of foreign direct investment on the level of financial development in developing countries have been examined.

#### **Theoretical framework:**

Capital accumulation consists of prescribing more complex production methods, more productivity and an excess future inflow for the society. More accumulation of capital requires development of financial mediators also known as financial development. Easier access and decreasing costs to access financial services are considered the main factors of a financial structure development (Alfaro et. al., 2004). A developed financial market is a market in which the liberty of choice and information transparency is well respected and the demanders and suppliers of financial services trade the services with free will and awareness (Haddad and Harrison, 1993). If a financial market fulfills the expectations, economic growth is achieved. These expectations involves decreasing costs of providing information, facilitating transactions, more rigorous monitoring of costs, financing for innovative activities, paving the way for savings allocation and providing proper resources for investing funds. (Taghavi et al., 2011: 80).

Today, the relationship between financial markets development and economic growth is a significant and ongoing discussion in finance and economy studies. The process of financial sector development in developed countries and various financial services they provide is a proof to that significance (Alfaro et. al, 2010). The role of financial markets on production is so undeniable that some believe economic growth and production cannot be achieved without an efficient financial sector (Alizadeh et. al, 2014). Schumpeter considers financial development as an engine force and inseparable factor in the process of economic growth (Goldsmith, 1969:23; cited by Luntiel & Khan, 2008). In Schumpeter's opinion the mediators in the financial market play a key role in the economy because they determine on the final loaners and consequently on how the savings are allocated. Noting the statement above, we can derive that financial brokers do not merely determine the savings rate but also they affect the optimal allocation of savings. Hence, Schumpeterians focus more on the role financial brokers play in productivity growth and technological change (Beck & Levine, 2004).

On the matter of the relationship between financial development and economic growth, there are various yet sometimes contradictory views. Some economists argue that monetary and financial development has no impact on the long-term economic growth. Nonetheless economic growth is caused by from the development of financial mediators. For instance, John Robinson believes that financial development is a result of economic growth and causality drives from economic growth towards financial development. In other words as economy grows, supply of brokers and financial services increases (Shah Abadi & Mahmoodi, 2006).

Today, policymakers pay more attention on the financial sector. They reason that financial systems with high-return projects lead to a total increase in the economy (Najjarzadeh and Maleki, 2005). Furthermore, by providing information for investors, financial systems attempt to increase productivity, increase information level, decrease transaction costs and ultimately increase the rate of economic growth. A developed financial system, recognizes golden opportunities, accumulates savings, monitors management, increases trading power, reduces risk and facilitates business transactions and it consequently improves investments. Subsequently, optimal allocation of resources increases the rate of physical and human capitals leading to economic growth.

In defining financial development the role of financial markets and institutions cannot be denied (Hossini et. al., 2012). According to economists such as Schumpeter and Hicks, a growth in financial institutions lead to a growth in financial market and that leads to financial development and accordingly economic growth (Seifipour, 2010). In fact financial institutions make the ground for financial market growth. Generally, financial markets are categorized into two groups: financial brokers and financial institutions. The first group i.e. financial brokers include trading banks, credit unions, saving and loan associations, life insurance companies, leasing companies, property-causality insurance companies, pension funds and real state investment trusts. The second group i.e. financial institutions include traders and brokers of stock exchanges, investment banks, mortgage bankers and other institutions providing expert financial services (Hermes & Lensink, 2003).

According to De Mello (1997), financial institutions act in the fields of money markets, capital markets and risk hedging markets. Depending on the kinds of markets available, different countries take bank-based, market-based or strong market-based positions. In the first position financial system is mainly limited to a bank network. Also, short-term loans to agencies and saving transfers lie in this category. In the second position a financial system consists of monetary and capital systems. In this stage agencies rely on financing from outside of the agency and despite the greater risk capital flows to this kind of market. In the third position that is strongly market based, all money markets, capital markets and risk-hedging markets are active. In this position both agencies and savers show more tendency towards capital markets and higher risk in this market creates the need for risk-hedging markets such as insurance and future markets (Dutta & Roy, 2008).

**Literature review:**

Ljungwall and Junjie (2007) investigated foreign direct investment, financial market development and economic growth for 28 states in China using the generalized method of moments over the period of 1986 to 2003. They exhibited that the two-way relationship between foreign direct investment and financial indices improve economic growth.

Chee (2010) empirically studied the relationship between foreign direct investment, financial development and economic growth for 24 countries using panel data for the period of 1996 to 2005). He implemented cash liabilities over gross domestic product and credit loaned to the private sector by financial institutions over gross domestic product as indices for financial development. Control variables accounted to gross domestic product per capita, gross capital, the government consumptions over gross domestic product, trade openness, high school registration rate, population growth and the government effectiveness index. The results of the study demonstrated that the development of financial sector play a key role in increasing the impact of foreign direct investment on economic growth. Also, foreign direct investment and financial development are complementary. Some suggestions were presented and discussed in order to increase the impact of foreign direct investment and financial development on economic growth in developing and less developed countries.

Choong and Lam (2011) examined the relationship between financial development and economic growth in 70 developed countries using the generalized method of moments during the period of 1988 to 2002. The results show that foreign direct investment has a considerable negative impact on economic growth. After they divided the 70 countries into three groups based on the net income, different results were achieved: 1- foreign direct investment had a positive impact on economic growth rate in countries with high income. 2- foreign direct investment had a substantial negative impact on countries with average income. 3- despite the fact that foreign direct investment had a negative impact in some regression, when financial development was considered in the regressions the impact was positive.

Hassan et al. (2011) authored a paper called “Financial development and economic growth: New evidence from panel data”. They examined the role of financial development in accounting for economic growth in low and average income countries in various geographic regions. To document the relationship between financial development and economic growth, they estimated a regression based on panel data and analysis of gross domestic product growth rate variance per capita in order to determine which criteria of economic growth matter in time and how they explain economic growth in various geographic regions with different income levels. In the aforementioned study, a positive relationship was found between financial development and economic growth in developing countries. Furthermore, a short-term multi-variable analysis presents dissimilar results: a two-way causality between financial development and growth in most areas and a one-way causality relation from growth towards financing for poorer areas. Also, other variables from the real sector such as trades and government consumptions take an important part in explaining economic growth. Hence, it seems that there is a need for an operational financial system although not necessarily adequate for achieving a stable economic growth in developing countries.

Jalaei and Sabbaghpourfard (2009) conducted a research on the impacts of foreign direct investment on economic growth in Iran considering financial markets. In this research the impact of foreign direct investment in Iran's growth was primarily determined, then control variables were employed in order to prove the constancy of the role that foreign direct investment played in Iran's economic. Based on the model specification and the estimations in the aforementioned study, foreign direct investment is considered a crucial factor in Iran's economic growth. Accounting for control variables it was determined that the impact of foreign direct investment on economic growth is vague and insignificant. Instead, financial variables were taken into account so that both constancy of foreign direct investment in Iran's economic growth and the impacts of financial markets resulting from foreign direct investment are revealed. The results showed that the development of financial markets increased the impacts of foreign direct investment on Iran's economic growth.

Mahdavi (2008), performed a panel data approach for three groups of developed countries, less developed countries and all countries in the period of 1990 to 2005. The results of the estimations indicate that stock exchange indices extremely matter in development of financial markets. He determined that in less developed countries the expansion of stock exchange markets could affect the impacts of foreign direct investment on economic growth. Unlike less developed countries, the size of stock exchange markets is less financially significant in developed countries. Additionally, study indicates that in less financially developed countries financial market is so developed in terms of ratios of assets of trading banks over the size of stock exchange markets that it has a significant effect on economic growth when compiled with foreign direct investment. But this index is not sufficient on its own and uncovers the fact that financial markets need to develop more in these countries in order to be able to directly and significantly affect economic growth.

Badiee and Zaheri (2015) authored a paper called "the effects of financial development on the private sector and economic growth". They state that today financial development and investment in the private sector are considered effective on economic growth and both directly and indirectly improve economic growth. The two-way relation between investing in the private sector and financial development is more significant in the long term because on the one hand investment in the private sector requires a developed financial system that can survive in the long run. On the other hand, a constant and continuous growth in investment in the private sector in the field of economic activities leads to financial development. In fact, one of the main drivers of economic development and advancement is an increase in investment stock in the private sector so that the more investors in the private sector engage in the economy; the more they demand capital resources in financial markets. Therefore, one of the key factors of production (capital) also known as a growth engine in economics is determined. Since the two principals in every economic system are its financial sector and production sector correct and proper allocation of resources leads to an increase in economic growth rate and acts as a main operative variable in gross domestic product.

Rezaee (2016) investigated "the role of financial development in economic growth in Iran" claiming that the financial sector is always the center of economic growth and development. In fact, the significance of the development of financial markets has always been a key factor in economic growth. Hence, the relation between financial development and economic growth deems crucial. The study examines the effects of financial development, trade ratio, domestic investment and interest rate on economic growth. In addition to answering this question, the paper investigates other variables such as investment rate, interest rate and trade index. The estimation period was 1978 to 2012. The method employed was ARDL i.e., Auto-Regressive Distributed Lag. The results show a positive significant relationship between interest rate, domestic investment and economic growth. It was also determined that in the short term there is a positive and significant relationship between financial development index and economic growth.

**Model Specification:**

In this study we inspire from the bank-based theory of financial development. According to Anwar and Sun (2011), the impact of financial development on economic growth can be tested using an aggregate production function as follows:

$$Y_t = A_t K_t^{a_1} (FI)_t^{a_2} L_t^{1-a_1-a_2} \tag{1}$$

where  $Y_t$  is the real GDP in period  $t$ ;  $K_t$  is the real domestic capital stock in period  $t$ ;  $FI_t$  is the stock of foreign investment at time  $t$  which is essentially the stock of foreign capital  $L_t$  is the number of workers employed at time  $t$ ;  $A_t$  is total factor productivity (TFP) at time  $t$ ; and  $a_1$  and  $a_2$  respectively are the production elasticities with respect to domestic capital and foreign investment (both are assumed to be positive). The production function above can be written in log-linear form (per unit of labour) as follows:

$$\text{Log} \left[ \frac{Y}{L} \right]_t = \text{log}(A_t) + \alpha_1 \text{log} \left[ \frac{K}{L} \right]_t + \alpha_2 \text{log} \left[ \frac{FI}{L} \right]_t \tag{2}$$

Most existing studies have examined the impact of financial development by making use of equation 2. Specifically, financial development variables have been added to the right hand side of equation 2 or a similar equation. Some studies have utilized equation 2 or a version of equation 2 to estimate TFP.

Here, in order to reduce the possibility of estimation errors, we specify the determinants of TFP as follows:

$$\text{Log}(A_t) = \beta_0 + \beta_1 \text{log}(HC)_t + \beta_2 \text{log}(CPI)_t + \beta_3 \text{log}(Op)_t + \beta_4 \text{log}(Cr)_t + \beta_5 \text{log}(Gc)_t + \varepsilon_t \tag{3}$$

Where HC is human capital, CPI is the consumer price index, OP is a measure of the openness of the economy, CR is total credit and GC is government consumption.

Human capital, which is proxied by real spending on higher education, is likely to have a positive effect on TFP. An increase in the CPI increases uncertainty, which is likely to have a negative effect on TFP. Increased openness can increase TFP but its effect on TFP in developing countries can also be negative. An increase in the amount of private sector credit as a proportion of GDP is likely to have a positive effect on TFP. It is well known that growth in private credit increases investment that facilitates economic growth. The impact of government consumption as a proportion of GDP on TFP in developing countries is generally negative due to the relative inefficiency of the public sector. Consequently, public investment in infrastructure and human capital development can positively affect economic growth in the long term.

Substituting equation 3 in equation 2, the following is derived:

$$\text{Log} \left[ \frac{Y}{L} \right]_t = \gamma_1 + \gamma_2 \text{log} \left[ \frac{K}{L} \right]_t + \gamma_3 \left[ \frac{FI}{L} \right]_t + \gamma_4 (HC)_t + \gamma_5 \text{log}(CPI)_t + \gamma_6 \text{log}(Op)_t + \gamma_7 \text{log}(Cr)_t + \gamma_8 (Gc)_t + \gamma_9 \text{log} \left[ \frac{Y}{L} \right]_{t-1} + \varepsilon_t \tag{4}$$

The equation above can be derived where the lagged value of the dependent variable is added to the right hand side, which is a common practice in empirical growth models. Now, using equation 4, we can examine the impact of financial development as well as foreign direct investment on growth.

In general, there are two methods for simultaneous equation estimations: 1- limited-information approaches in which each parameter is determined separately and 2- inclusive-information approaches including simultaneous estimation of all the parameters in system equations.

In this study we employed the second approach and that of the generalized methods of moments in order to estimate equation 4. Although GMM method has been widely used in the country, most of the studies aimed at estimating a single equation or panel data. Nonetheless, this paper is one of the few domestic studies that employ the generalized method of moments in order to simultaneously estimate equations. Obviously foreign researchers master the method such as Habiaryemye and Ziesemer (2009), Bangake (2008) and Anwar and Sun (2011).

**Research Findings:**

First and foremost, a stationary test is to be run on all variables of the model. In order to do so, Augmented Dickey Fuller and Schwartz Bayesian Information Criteria were grounded. The results show that all variables are non-stationary in level and stationary in the first difference. In other words all of the variable were integrated of order 1 (I).

Since the variables were non-stationary in level and stationary in the first difference, the variable itself is to be replaced by the first difference in estimations. The level values of the variables can only be used when the variables of an equation are co-integrated or in other words there is a long-term relationship among the variables of an equation. In order to do so, Augmented Engle Granger co-integration tests were performed to determine whether the variable of each system equation are co-integrated or not. Subsequently, after estimating equation 4 using the generalized method of moments, we ran the Augmented Dickey Fuller common root on the residuals of each relation. Since the test results have indicated stationary of the residual value (error term) of each equation, the existence of co-integration between each variable can be approved. Thus variable level data can be used with no concerns about the spurious regressions (Kao, 1999).

Making sure of co-integration between variables in equation 4, table 1 shows the estimation results using GMM method.

**Table 1:** Simultaneous estimation results of equation 4 using GMM method

dependent variable	explanatory variables	coefficient	statt	probability
Log(Y/L)	C	-0.895	-6.874	0.0000
	Log(K/L)	0.568	5.274	0.0000
	Log(FL/L)	-0.028	-3.056	0.0000
	Log(HC)	0.473	4.632	0.0211
	Log(CPI)	-0.069	-2.542	0.0000
	Log(Op)	0.213	6.827	0.0000
	Log(Cr)	0.034	1.284	0.0161
	Log(Gc)	-0.073	-2.896	0.0001
	Log(Y/L) <sub>t-1</sub>	0.576	10.564	0.0000
	R <sup>2</sup> = 0.867			
Durbin h stat= 0.976				

The estimation results for equation 4 show that human capital variables and the degree of openness of the economy have positive and significant impact on Iran’s economic growth in the studied period so that a unit increase in capital stock causes a 0.56 unit raise in economic growth and each unit increase in the degree of openness of the economy raises economic growth by 0.21 unit. Also, each unit escalation in human capital raises economic growth up to 0.47 of a unit.

The variable of financial development has a positive but insignificant impact on economic growth. This represents that as a developing country, Iran’s financial sector is not sufficiently developed. The government consumption expenses have a negative and in 90 percent probability surface significant impact on economic growth. In a way that one unit increase in government expenses can decrease economic growth by 0.07 per

unit. Furthermore, the stock of foreign direct investment has a significant and negative impact on Iran's economic growth. That is a unit increase in foreign direct investment decreases economic growth up to 0.02 of a unit. As a matter of fact, it appears that the foreign direct investment neutralizes the effects of investment overflows in the country. Increasing consumer price index and eventually a rise in inflation rate causes a significant and negative impact on economic growth due to the uncertainty that it creates in the economy. One unit increase in consumer price index can decrease economic growth up to 0.06. Based on the results it is safe to conclude that Iran's economic growth is most sensitive to the stock of domestic capital and human capital.

Since the estimated value for Durbin h-statistic lies between 1.96 to -1.96 we can say that our equation does not have the problem of correlation.

### **Suggestions**

Based on the results mentioned above, the following suggestions for financial development policies can help a developing country attract foreign direct investment and achieving economic growth.

The results demonstrated that the stock of foreign direct investment has not been efficient for economic growth. In other words, foreign direct investment could not act as a proper driver to improve economic growth. That is, foreign direct investment helps an economy grow merely on the condition that appropriate funding capacities are available such as the sufficient stock of human capital and the level of financial development. Therefore, for better impacts of foreign direct investment on economic growth appropriate funding is to be provided in the stock of human capital and proper education. Also, the rights of intellectual properties of foreign direct investors are to be protected in order to increase the stock of their investments. Regarding this matter, joining global organizations, signing international agreements and educational institutions are beneficial. Also, taking outward-oriented strategies, export expansion policies in foreign trading and cooperating with Islamic countries in the region can make a sizeable contribution. Additionally, benefiting from regional integrated agreements, breaking trade barriers and joining world trade unions are highly desirable. Consistency of macroeconomic policies (monetary and financial) toward establishing states of certainty and stability in the country would be ideal such as policies to prevent fluctuating exchange rates that lead to instability and uncertainty in the economy and cause insecurity for investors. Other policies such as unifying foreign exchange rate and stabilizing it employing manageable floating rate could bring along a rational stability in foreign exchange market. Outward-oriented strategies can gradually decrease tariff and non-tariff barriers to foreign trades in the direction of liberalizing the economy and can play a major role in making domestic agencies compete and attract foreign direct investment.

Noting the inhibiting impacts of financial development on Iran's economic growth, strong regulations in the financial sector and monitoring the banking system, increasing efficiency of resource allocations, savings stocks and unraveling information asymmetry issue enhances the efficiency of the financial sector. Developed financial markets represent a dynamic economy and therefore attract more foreign direct investments, which in turn will have an indirect positive impact on Iran's economic growth and accordingly omit the inhibiting impacts of financial development on economic growth. Plus, financial liberalization balances the money market in the country and results in development of the banking system and creates competition among banks so that they provide better services for foreign investors and accordingly attract more foreign investment stocks. Regarding the positive effects of the stock of domestic investment, banks are to allocate resources properly to domestic investors in order to improve domestic productions and economic growth inside the country. Also lowering government tenancies can lead to less corruption and provide a better environment for domestic investments. Implementing article 44 of the constitution and privatization in the economy can make a major difference in the country so that private sectors invest domestically and that signals decent economic status of the economy and encourages foreign direct investors to enter the field. Government



incentives on improvements of trade environment can drastically enhance domestic investments and lead to economic growth of the country.

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