

THE RELATIONSHIP BETWEEN THE FOREIGN DIRECT INVESTMENT AND BANKING INDUSTRY

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ABSTRACT

This article investigates to study of causality relationship between FDI and banking industry in Asian countries. Panel unit root tests show that the variables are stationary at the first deference level. Pedroni test indicates that there is the long run relationship between FDI and banking industry. The Hausman test shows that the fixed effects model should apply. 12 countries from Asian countries have been chosen over the period 1995-2009. The results show that there is a bidirectional relationship between these variables (the feedback relationship) in the long run and short run. It means that FDI reinforce banking industry and banking industry attracts foreign direct investment. For FDI attraction governments should devote attention on banking industry.

JEL CLASSIFICATION

F21, O16.

KEYWORDS

Foreign Direct Investment; FDI; Banking Industry; Panel Data; Granger Causality.

INTRODUCTION

nowadays, attracting foreign direct investment is an economic importance for all the countries. Nearly, all the countries around the world have the programs for FDI attraction such as granting of loan, decreasing of tax, subsidies,...Therefore, it seems that the study of factors which attract FDI is very important beside these policies. One of these factors is the banking system. Foreign investment not only increases national product and employment, it also affects other macroeconomics variables indirectly by spillover of knowledge and technology. It is why the developing countries are trying like the developed countries to attract such capitals in the recent years.

Dani Rodrik (1997) considers it impossible to study the miraculous development of the East Asia without taking into account their governments' policies in private investment. He proves that there is a strong correlation between good institutions and economic growth in Eastern Asia. It is worth mentioning that before 1980's, developing countries have not had a positive attitude towards foreign investment, but during the past thirty years, foreign investment have been increased significantly among the developing countries.

In 1990s, multinational firms' outputs from abroad have been 16% from World's total industrial output (Lipsey (1998)). In this connection, the countries members of Organization Islamic Conference (OIC) in the two decade have had a rapid growth in financial market and banking systems and FDI inflow share in these countries has consistently augmented as compared with the entire World. So that, this rate in the period 1982-1987 has been 4.6 and 1996 has been 5.5 (UNCTAD 2000). Therefore, a positive relationship between financial markets and FDI was expected.

The capital flow to Asian countries initiated in 1990 with an increasing rate following a decrease in 1980. The FDI has been increased in Asian developing countries from 396 million dollars in 1980 to 102,066 million dollars in 2001. This rate is equal to 13.9% of the whole FDI in 2001 (UNCTAD 2002). The recognition of FDI attraction factors helps these countries to foreign direct investment attraction. Since, the one of these factors is financial market and banking, the purpose of this paper is to study of the relationship between FDI and banking industry in Asian countries. The search shows whether FDI is the cause of banking industry or banking industry is the cause of FDI in Asian countries.

Adam and Tweneboah (2009) have found a long run relationship between FDI and financial market in Ghana. Al Nasser and Soydemir (2010) have conducted Granger causality tests between FDI and financial market for Latin American countries. They have shown a unidirectional relationship from banking sector to FDI and not the reverse. Kholdy and Sohrabian (2008) and Dutta and Roy (2011) have shown that political risk factors can influence the relationship between FDI and Banking. Soumaré and Tchana (2011) with the various variables for financial market have indicated that some of the financial market and FDI variables have bidirectional and others unidirectional relationship.

THE BANKS AND FOREIGN DIRECT INVESTMENT

Macroeconomics theories show that investment is a function of interest rate and national income. Interest rate is the capital cost. When in host country there is a strong financial market, this means the capital cost is low then, it attracts FDI. On the other hand, FDI bring with them a large funds for host country, therefore, there is a feedback between these sectors. Desai et al (2006) and Henry (2000) believed that increasing in FDI inflows increases funds available and improve financial markets and banking sectors. When developed countries invest in host countries; they support politically financial and economic market in this country thus economic and political risks decrease. A low risk in host country attracts FDI. FDI bring the high technology in banking industry and lead to improve the banking sector.

Desai et al (2006) believed that the existent of smart financial market in an economy is a sign for openness and dynamic economy and an economy with low risk. These factors attract FDI and prepare a good environment for FDI. FDI inflow affects on banking in tow ways: direct and indirect. FDI directly bring the funds for private investment and indirectly these firms have the relationship with international finance markets that this relation strengthens financial market in the host country. Henry (2000) has shown that a strong banking increases FDI and private investment. Because improvement of financial market has a positive correlation with other changes that decrease operational risk in multinational firms.

Soumaré and Tchana (2011) in their article discuss that "Desai et al (2006) answer the following question theoretically as well as empirically: how do capital controls affect the cost of capital for foreign investors? Their theory is that because most often a considerable portion of the funding for the local affiliates of multinational investors comes from local loans, the higher interest rates that result from capital controls increase the cost of capital and can be expected to discourage FDI. Capital controls affect local investments by multinational firms because they influence local borrowing rates and increase the cost of repatriation. Furthermore, the costs associated with capital controls undoubtedly discourage many potential investors from establishing affiliates in the first

place. Supporting this theory are data from United States-based multinational firms that suggests that capital controls are accompanied by high interest rates and that firms respond to capital controls by distorting profit reports and dividend repatriation policies, incurring substantial organizational and regulatory costs in the process. Liberalizing capital controls appears to initiate periods of considerably faster growth in the local activities of multinational firms".

METHOD AND DATA

This paper applies the panel data model for estimation of the parameters for Asian countries (e.g. Bangladesh, India, Maldives, Pakistan, Sri Lanka, Turkey, China, Thailand, Kuwait, Qatar, Pakistan, and Malaysia) over the period 1995-2009. The limitation of country and period selection come from the lack of data for certain countries. Following Kolstal and Villanges (2004) in this research foreign direct investment has divided to GDP and fixed capital formation (FCF) for normalization of FDI. Of course, some of the researchers apply population for normalization (Harms (2002)). For these variables the sources are World Bank's World Development Indicators data base and UNCTAD. Therefore, our variables for FDI are the ratio of FDI to GDP (FDI/GDP) and the ratio of FDI to FCF (FDI/FCF). Other variable for banking sector is the ratio of commercial bank assets divided by central bank assets plus commercial bank assets (CBA) in Asian countries. This variable was applied for revealing of banking industry effects on foreign direct investment. The sources of data for this variable are Bankscope database, IMF and World dataBank. The average of each variable for each country was computed.

For studying of relationship between banking industry and foreign direct investment in Asian countries a Granger causality model following Arellano (2003) was applied. In this research is considered the specifications of a bivariate VAR (2) model for the FDI and CBA variables. Individual and time effects are included in both equations. The form of the model is:

$$FDI_{it} = \alpha_{1t} + \phi_1 FDI_{i(t-1)} + \phi_2 FDI_{i(t-2)} + \beta_1 CBA_{i(t-1)} + \beta_2 CBA_{i(t-2)} + \gamma_1 ECT_{t-1} + \eta_{1i} + v_{1it} \quad I$$

$$IBA_{it} = \alpha_{2t} + \delta_1 CBA_{i(t-1)} + \delta_2 CBA_{i(t-2)} + \lambda_1 FDI_{i(t-1)} + \lambda_2 FDI_{i(t-2)} + \gamma_2 ECT_{t-1} + \eta_{2i} + v_{2it} \quad II$$

Where α_{1t} and α_{2t} capture the time effect and η_{1i} and η_{2i} capture the individual effect. The hypothesis that FDI does not Granger-cause CBA,

conditional on individual and time effects imposes the restrictions $\lambda^1 = \lambda^2 = 0$. Conversely, to test whether CBA Granger-causes FDI, this research examines the

restrictions $\beta^1 = \beta^2 = 0$.

This article first estimates the VAR model including of equations (I) and (II) and then use a Wald-type test to validate these two non-causality restrictions. The research applies two-step generalized method of moments (GMM) estimator.

RESULTS

For studying the correlation of the variables the below table has been calculated.

TABLE 1: CORRELATION BETWEEN FDI AND BANKING INDUSTRY

	FDI/GDP	FDI/FCF	CBA
FDI/GDP	1		
FDI/FCF	0.89	1	
CBA	0.12	0.11	1

Table 1 indicates positive correlation between FDI/GDP, FDI/FCF and CBA. Since, the correlation between two variables of investment FDI/GDP and FDI/FCF is 0.89 thus; the variable of FDI/FCF was deleted from our model. The correlation between foreign direct investment and banking industry is positive. In the table 2, for avoid from spurious regression the unit root tests have been carried out. Our tests include LLC, IPS, ADF-F and PP-F. These tests indicate that the variables of FDI/GDP and CBA are stationary at the first difference, then it has avoided from spurious regression. For studying of long run relationship between FDI/GDP and CBA the co-integration test was run in table 3.

CO-INTEGRATION TEST

In order to study the long-run relationship between FDI/GDP and CBA Pedroni co-integration test was used. If H_0 hypothesis is rejected, there is a long-run relationship between the two variables. The maximum lag in panel co-integration model is 3 based upon SIC criterion. Based upon the statistics of table 3, there is a long run relationship between the variables. Therefore, long-run VAR model and short-run Granger causality test has been applied for the two FDI/GDP and CBA variables.

TABLE 2: PANEL UNIT ROOT TESTS

Method	FDI/GDP	Δ FDI/GDP	CBA	Δ CBA
Levin, Lin and Chu	-2.25	-8.43*	-1.41	-8.45*
Im, Pesaran and Shin	-3.12	-7.63**	-1.76	-7.56*
ADF-Fisher	41.34	98.65*	43.61	89.67**
PP-Fisher	65.26	74.87*	21.41	88.90**

*, ** indicate that the variables are stationary at 1% and 5% level respectively.

TABLE 3: PEDRONI PANEL CO-INTEGRATION TEST

Panel weighted statistics	probability
Panel V -statistic	1.21 (0.01)***
Panel ρ -statistic	0.02(0.00)***
Panel pp-statistic	-0.34(0.04)*
Panel ADF-statistic	3.25(0.01)***
Group statistic	probability
Group ρ -statistic	0.34(0.05)*
Group pp-statistic	-5.14(0.05)*
Group ADF-statistic	-4.11(0.04)*

*, *** show that the statistics are stationary in 10% and 1%.

Table 4 presents short-run and long –run results of Granger causality. This test has been performed in two phases. First, the equation $FDI/GDP = \alpha_{it} + \delta_{it} + \gamma_{it} IBA_{it} + \epsilon_{it}$ has been estimated and then, its residual has been used for estimating the coefficient of error term. According to equation 1, foreign direct investment has a positive effect on banking industry, and banking industry is the cause of FDI. The Hausman (1978) test shows the fixed effects model should apply. An examination of the sum of the lagged coefficient on the respective variables indicates that there is a bidirectional relationship in short run and long run. In general, it can be concluded that the causality relationship between banking industry and FDI is bidirectional. That means there is a feedback between these variables. It means that foreign direct investment reinforces banking industry and banking industry attracts foreign direct investment. These results are for short run and long run, because, Pedroni test has indicated that there is the long run relationship between banking industry and FDI and the coefficients of ECT are significant. Therefore, in short run and long run was expected banking industry attracts foreign direct investment. Soumaré and Tchana (2011) achieved the same results in their study and Tajgardoon, Gholamreza., Behname, Mehdi., Noormohamadi, Khosro., (2012) show the same results for Islamic banking but, Adam and Tweneboah (2009) have found a long run relationship between these variables. Al Nasser and Soydemir (2010) have conducted a unidirectional relationship from banking sector to foreign direct investment.

TABLE 4: PANEL CAUSALITY TESTS RESULT

Dependent variable	sources of causation (independent variables)		ECT
	short-run		
	Δ FDI/GDP	Δ CBA	
(2) Δ FDI/GDP	---	3.12(0.41) [0.00] ^a [0.05] ^c	-0.12 [0.00] ^a
(3) Δ CBA	2.05 (0.67) [0.00] ^a [0.03] ^b	---	-0.21 [0.02] ^a

Values in brackets are t-statistics. Values in parentheses are p-values associated with Wald test statistics. c(b,a) denotes statistical significance at the 10%, 5% and 1% levels respectively.

CONCLUSION

The aim of this article is studying of the relationship between FDI and banking industry in Asian countries. For this subject first, three variables are chosen FDI to GDP, FDI to fixed capital formation and banking industry (the commercial banks assets in Asian countries divided by central bank assets plus commercial bank assets). Since the correlation table has indicated that FDI/GDP and FDI/FCF are 0.89 correlations thus, the FDI/FCF was deleted. Unit root tests have shown that the variables are stationary in the first difference. Pedroni co-integration test reveal that there is a long run relationship between these variables. Thus, long-run VAR model for the two FDI/GDP and CBA variables have been applied in Granger causality test.

Granger causality test in short run and long run shows that there is feedback relationship between banking industry and foreign direct investment. This means banking industry reinforces FDI and FDI reinforces banking industry in Asian countries. Banking industry is a part of financial market that affects foreign direct investment. Investment requires usually to funds and bank services therefore, a strong banking could prepare the funds for firms. The existence of smart banking shows that the host country has a low risk and dynamic economy then, it is suitable environment for FDI. FDI itself brings funds in host economy because the multinational firms have the relationship with international finance markets and they spend the funds for investment. Therefore, FDI can reinforce banking systems.

Our article shows that banking industry brings FDI and FDI reinforces banking industry in Asian countries therefore, these countries could devote attention on banking industry for more FDI.

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