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Determinants of FDI inflow in Asia

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Abstract

The research analyses the determinants of FDI inflow in Asia for the period 1993-2013 and is based on the fixed effect model. The macroeconomic factors included are lending rate, GDP per capita, trade openness, debt, exchange rate, money supply and unemployment rate. The country specific factors included are adult literacy rate, gross fixed capital formation, domestic credit provided by the financial sector, environmental pollution and natural resources rents. The study applies panel unit root tests, panel cointegration analysis and panel regression analysis based on the fixed effect model to ascertain the significance of macroeconomic and country specific factors on FDI inflow in Asia. The study found that lending rate, trade openness and money supply have a positive significance to FDI per capita whereas debt, unemployment rate and environmental pollution have a negative significance to FDI per capita.

Keywords: foreign direct investment; macro-economic factors; country specific factors; developing country

1. Introduction

The flow of FDI in Asia has been volatile for the past decades. Therefore a better understanding on the factors that attracts FDI into the Asian region is much required. This research uses panel data for the period 1993-2013 covering 8 Asian developing countries (China, Hong Kong, India, Kuwait, Malaysia, Pakistan, Philippines, and Thailand). The main aim of this paper is to determine the factors that influence the flow of FDI in these 8 developing countries. The need for FDI in Asia stems from the slow internal development and therefore FDI is required to expedite the economic growth in developing countries in Asia. Importance and benefits of FDI to the host country includes increase in trade, business cycle synchronization, employment, technology diffusion and transfers, knowledge transfers, quality managerial and labor skills, more equality and social welfare.

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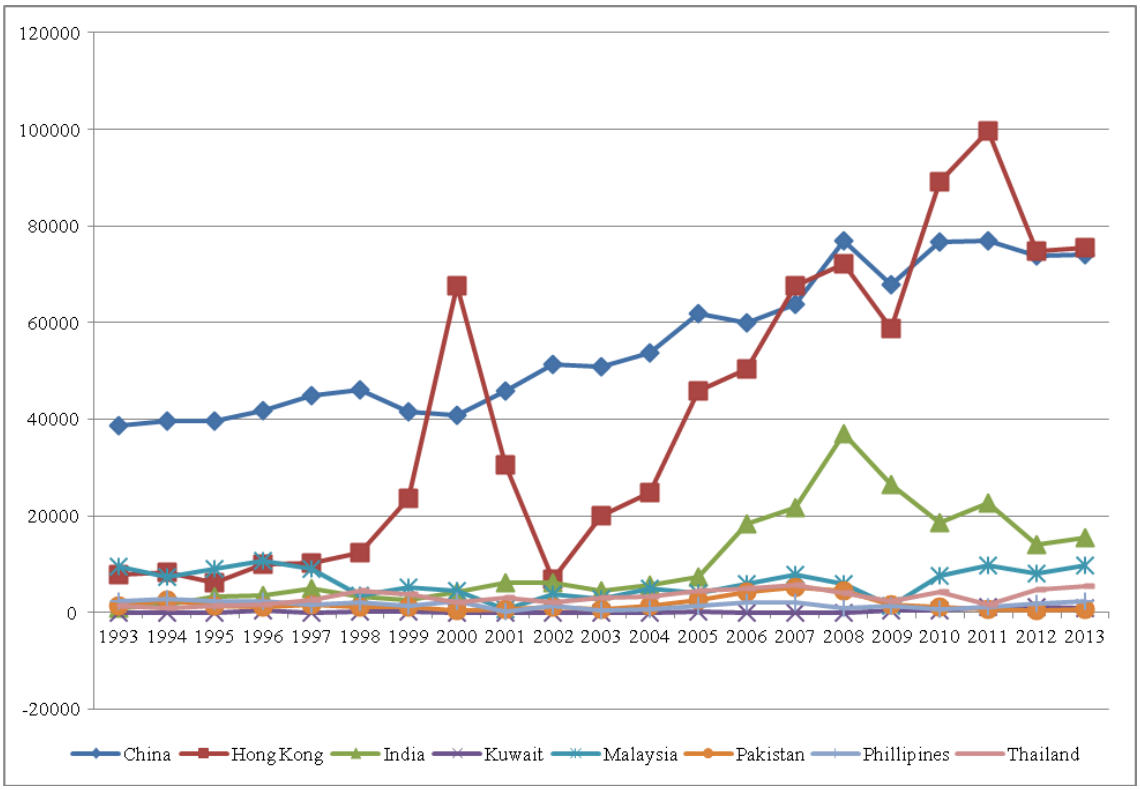
Also, it promotes innovation and financial development which are important elements for developing countries to possess. FDI is a catalyst to development of local industries in terms of efficiency, rise in productivity and competition leading to an increase in economic growth. Developing countries, where investment demand is higher compared to their domestic savings rate, may be able to invest in their priority sectors and thus achieve faster economic growth by importing capital from abroad in the form of FDI (Mottaleb and Kalirajan, 2010). In the long run, FDI is an essential fund for developing countries to be at par with the developed countries. Developing countries need FDI to convert to a developed country for e.g. Malaysia (Vision 2020). Also, FDI is an alternative form of financing as compared to country borrowings. The Figure 1 below depicts the trend of FDI in this region which shows the inconsistency of the FDI flow in Asia. Figure 1 shows the instability and irregularity of FDI flow in these 8 developing countries in Asia.

Figure 1: Flow of FDI for 1993-2013 (Billion USD)



Source: UNCTAD 2014

2. Literature Review

The findings of the existing literature on the determinants of FDI inflow in developing countries have been mixed and inconsistent. As yet there is inconclusive evidence on the determinants of FDI inflow in Asia as the dynamism of the region is ever changing.

2.1 Macroeconomic Factors

Jiang, Liping and Sharma (2013) conducted a study on China by using data from 1985 until 2006 and employed regression analysis based on the pooled least squares method. The study found that openness had a positive significance to FDI. Peltonen, Sousa and Vansteenkiste (2012) conducted a study on 31 emerging countries using a quarterly panel data set for the period 1990 until 2008. The study employed: (i) the pooled OLS (dynamic OLS) estimator, (ii) the pooled OLS estimator with time effects, (iii) the pooled OLS with both time and country effects, (iv) the fixed estimator, (v) the random effect estimator and (vi) the IV/GMM estimator. The study found that interest rate had a negative significance to FDI. Schmerer (2012) conducted a study on 19 OECD countries for the period 1980 until 2003 by employing the difference generalized methods of moment (GMM) method. The study found that FDI had a negative significance to unemployment implying that an increase in FDI reduces unemployment. Ho and Rashid (2011) conducted a study on Indonesia, Malaysia, the Philippines, Singapore and Thailand for the period 1975 until 2009 by employing the regression analysis. The study found that degree of openness, economic growth and exchange rate had a positive significance to FDI inflow. Hayakawa, Kimura and Lee (2011) conducted a study on the effect of political risk and financial risk on foreign direct investment. The study applied the GMM estimator on 93 countries (including 60 developing countries) for the period 1985-2007.They found that foreign debt as a percentage of GDP had a negative significance on FDI. Vogiatzoglou (2007) investigated the investments of 10 home countries (United States, Japan, United Kingdom, Germany, France, Netherlands, Switzerland, Austria, Canada, Australia) in 9 host countries (China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand) from 1994-2003. The degree of openness had a positive significance to inward FDI in South East Asia. Vita and Kyaw (2007) conducted a study on Brazil, Mexico, Korea, the Philippines and South Africa by using quarterly data for the period 1976 until 2001. The objective was to determine the effect of macroeconomic variables on capital flows by employing impulse response and variance decomposition analyses. The study found that in the short run, money supply had a positive significance to capital flows which includes FDI.

2.2 Country Specific Factors

Aleksynska and Havrylchyk (2013) conducted a study on the factors affecting choice of locations of investors from 60 emerging countries for the period 1996 until 2007. The study employed a regression analysis based on a panel dataset. The study found that natural resources had a positive significance on FDI. Chandran and Tang (2013) conducted a study on 5 ASEAN countries: Malaysia, Indonesia, Singapore, the Philippines and Thailand for the period 1971 until 2008 by employing multivariate cointegration analysis and Granger causality analysis. The study found that there is a long run relationship or cointegration between CO_2 and FDI in Indonesia, Malaysia and Thailand. There is also causality between CO_2 and FDI. Roy and Dutta (2011) conducted a study on a panel data set of 97 countries using regression analysis based on the ordinary least square for the years covering 1984 until 2003.The proxy for financial resources were domestic credit provided by the financial sector as a percentage of GDP and domestic credit to private sector as a percentage of GDP. The study found that financial resources had a significant positive effect on inflow of FDI. Kok and Ersoy (2009) conducted a study for 24 developing countries by employing a regression analysis based on fully modified OLS for the period 1983-2005 and cross section seemingly unrelated regression (SUR) for the period 1976-2005. The study found that telephone mainlines and gross capital formation had a positive significance to FDI. Park and Park (2008) conducted a study 24 OECD countries investing in 50 host countries for the period of 1982-1999 by employing the random effects and fixed effects models. The study found that labor quality had a positive significance to FDI.

3. Data and Method

Historical data of China, Hong Kong, India, Kuwait, Malaysia, Pakistan, Philippines and Thailand for the period 1993-2013 are collected from the International Financial Statistics (IFS) and Balance of Payment (BOP) of the International Monetary Fund (IMF), the World Bank Open Data database, the United Nations Conference on Trade and Development (UNCTAD) database and the Global Market Information Database (GMID). The macroeconomic data which comprised of macroeconomic and country specific varaibles and their proxies included are shown in Table 1 below. All data are transformed into natural logarithm (with the exception of debt and infrastructure at ratio unit) to ensure that data used in the tests are stationary. This study applied both the Levin, Lin and Chu (LLC) and Im, Pesaran and Shin(IPS) panel stationary test to ensure the robustness of the results. This procedure is essential to ensure that the regressions produced are not misspecified or spurious in nature. The regression analysis employed is based on the Fixed Effect Model. Also, the panel cointegration test based on the error-correction model (ECM) developed by Westerlund (2007) to determine the long-run relationship among integrated variables is used to determine the cointegration of the variables with FDI. The list of variables and their proxies are listed in Table 1.

Table 1. Macro Economic And Country Specific Variables

Variables	Measurement
Foreign Direct Investment (FDI)	FDI per capita(FDIPC)
Interest (INT)	Lending rate(LR)
Gross Domestic Product (GDP)	GDP per capita(GDPPC)
Trade Openness (TO)	(Export + Import)/GDP
Debt(D)	Total Debt/GDP(TDG)
Exchange Rate (ER)	Exchange Rate(ER)
Money Supply	M2/GDP (M2G)
Unemployment (UE)	Unemployment Rate (UR)
Quality of Labour (QL)	Adult Literacy Rate(ALR)
Infrastructure (I)	Gross Fixed Capital Formation/GDP (GFCG)
Financial Resources (FR)	Domestic Credit provided by the Financial Sector/GDP (DCFS)
Environment (ENV)	Environmental Pollution ($C0_2$ emission) per unit of output(ENV)
Natural Resources Rents (NRR)	Natural Resources Rents/GDP(NRR)

There is one model being examined in this study which is the macro economic factors and country specific factors influence on FDI as in the equation below :

$$FDIPC_{it} = \alpha + \beta' X_{it} + \mu_{it} + \varepsilon_i$$

where FDIPC=FDI per capita

α=the intercept

β=coefficient of the macroeconomic and country specific factors

X=vector of explanatory variables (macroeconomic variables:lending rate, gross domestic product, trade openness, debt, exchange rate, money supply, unemployment; country specific variables: adult literacy rate, infrastructure, financial resources, environmental pollution, natural resources)

μ_{it}=idiosyncratic term which varies across countries as well as time

ε_i=random error term

i=countries(China,Hong Kong,India,Kuwait,Malaysia, Pakistan, Philippines, Thailand)
t= year (1993-2013)

4. Findings

Table 2: Panel Unit Root Test at Level and 1st Difference

	Level	Level	Level	Level	1st Difference	1st Difference	1st Difference	1st Difference
Variable	LLC (individual intercept)	LLC (individual intercept and trend)	IPS (individual intercept)	IPS (individual intercept and trend)	LLC (individual intercept)	LLC (individual intercept and trend)	IPS (individual intercept)	IPS (individual intercept and trend)
LFDIPC	-3.12[a](4)	-2.78[a](4)	-2.91[a](4)	-3.72[a](4)	-13.80[a](4)	-11.02[a](3)	-13.15[a](4)	-10.71[a](3)
LLR	-0.87(4)	-2.05[b](4)	0.13(4)	-1.45[c](4)	-7.40[a](4)	-6.40[a](3)	-6.41[a](4)	-4.73[a](3)
LGDPPC	1.45(4)	0.41(4)	5.12(4)	2.60(4)	-4.36[a](4)	-2.09[a](3)	-3.89[a](4)	-1.48[c](3)
LTO	-0.80(4)	-1.61[c](4)	0.30(4)	0.45(4)	-11.44[a](4)	-9.80[a](3)	-9.89[a](4)	-8.26[a](3)
LTDG	-0.85(4)	-2.26[b](4)	0.46(4)	-2.02[b](4)	-8.92[a](4)	-7.79[a](3)	-7.40[a](4)	-5.91[a](3)
LER	-0.75(4)	-4.61[a](4)	-0.17(4)	-1.74[b](4)	-19.21[a](4)	-16.90[a](3)	-13.91[a](4)	-10.84[a](3)
M2G	-2.95[a](4)	-1.79[b](4)	-2.52[a](4)	-1.29[c](4)	-5.26[a](4)	-4.45[a](3)	-5.68[a](4)	-5.27[a](3)
LUR	-1.28(4)	-4.48[a](4)	-0.83(4)	-2.81[a](4)	-6.82[a](4)	-8.48[a](3)	-7.33[a](4)	-7.19[a](3)
LALR	-5.44[a](4)	-3.78[a](4)	-1.25(4)	-0.37(4)	-1.20(4)	-2.86[a](3)	-0.35(4)	-2.42[a](3)
GFCG	-1.69[b](4)	-0.76(4)	-1.87[b](4)	-1.38[c](4)	-7.41[a](4)	-4.32[a](3)	-7.44[a](4)	-5.42[a](3)
LDCS	0.66(4)	1.54(4)	2.21(4)	0.89(4)	-9.30[a](4)	-8.22[a](3)	-7.62[a](4)	-5.60[a](3)
LENV	2.41(4)	-0.35(4)	4.02(4)	1.43(4)	-9.55[a](4)	-8.75[a](3)	-7.80[a](4)	-6.23[a](3)
LNRR	-1.37[c](4)	-2.88[a](4)	-0.10(4)	-1.17(4)	-12.17[a](4)	-10.32[a](3)	-10.99[a](4)	-9.16[a](3)

Notes: LLC denotes the test developed by Levin et al.(2002) and IPS denotes the test developed by Im et al. (2003); [a]denotes the rejection of the null hypothesis of at the 1% significance level, [b]denotes the rejection of the null hypothesis at the 5% significance level, [c]denotes the rejection of the null hypothesis at the 10% significance level; the figure in the parenthesis ( ) is the lag length based on the Schwarz Info Criterion; the spectral estimation is based on the Bartlett's Kernel method and Newey-West bandwidth method.

The panel unit root tests results in Table 2 shows that at 1st difference of all the testable variables were stationary to be included in the model. The panel cointegration results in Table 3 shows that all the testable variables are cointegrated to FDI in the long run. Also, all the testable proxies are cointegrated to FDI at lag 1 and lag 2 which imply that there is a short run cointegration between all the variables and FDI inflow in Asia.

Table 3: Panel Cointegration for Asia (Cointegration with FDI)

		No Lag		Lag 1			Lag 2	Lag 3	
Variable	Statistic	Value	z-value	Value	z-value	Value	z-value	Value	z-value
LR	Gt	-2.04	-0.84	-1.80	-0.09	-1.37	1.27	-1.46	0.99
	Ga	-8.57	-0.74	-5.73	0.73	-3.06	2.11	-1.99	2.67
	Pt	-6.78[a]	-2.70[a]	-6.74[a]	-2.66[a]	-7.53[a]	-3.46[a]	-1.50	2.60
	Pa	-10.24[a]	-3.82[a]	-8.81[a]	-2.91[a]	-7.22[b]	-1.90[b]	-0.89	2.12
GDPPC	Gt	-3.01[a]	-3.89[a]	-2.21[c]	-1.36[c]	-2.18[c]	-1.29[c]	-2.85[a]	-3.40[a]
	Ga	-12.09[a]	-2.57[a]	-6.67	0.24	-5.16	1.02	-1.27	3.05
	Pt	-8.82[a]	-4.76[a]	-8.66[a]	-4.60[a]	-3.01	1.08	-3.00	1.09
	Pa	-12.58[a]	-5.32[a]	-9.29[a]	-3.22[a]	-2.96	0.80	-2.74	0.94
T0	Gt	-2.74[a]	-3.05[a]	-2.92[a]	-3.61[a]	-2.71[a]	-2.94[a]	-2.95[a]	-3.71[a]
	Ga	-11.82[a]	-2.43[a]	-10.42[b]	-1.70[b]	-6.81	0.17	-4.29	1.47

	Pt	-7.84[a]	-3.77[a]	-7.76[a]	-3.69[a]	-12.10[a]	-8.05[a]	-6.46[a]	-2.38[a]
	Pa	-11.98[a]	-4.94[a]	-10.26[a]	-3.84[a]	-10.92[a]	-4.26[a]	-2.99	0.78
	Gt	-2.56[a]	-2.46[a]	-2.43[b]	-2.08[b]	-2.07	-0.95	-5.94[a]	-13.10[a]
TDG	Ga	-11.03[b]	-2.02[b]	-8.84	-0.88	-7.45	-0.16	-2.33	2.49
	Pt	-7.89[a]	-3.82[a]	-7.88[a]	-3.80[a]	-7.57[a]	-3.50[a]	-2.16	1.93
	Pa	-12.16[a]	-5.05[a]	-10.29[a]	-3.86[a]	-6.90[b]	-1.70[b]	-2.86	0.86
ER	Gt	-2.71[a]	-2.95[a]	-2.99[a]	-3.82[a]	-1.69	0.24	-2.56[a]	-2.47[a]
	Ga	-13.36[a]	-3.23[a]	-10.31[b]	-1.64[b]	-6.00	0.59	-0.66	3.36
	Pt	-8.92[a]	-4.86[a]	-8.76[a]	-4.69[a]	-12.56[a]	-8.51[a]	-4.60	-0.51
	Pa	-14.52[a]	-6.55[a]	-12.16[a]	-5.05[a]	-11.39[a]	-4.56[a]	-4.49	-0.16
M2G	Gt	-2.72[a]	-2.97[a]	-2.31[b]	-1.68[b]	-1.70	0.21	-4.61[a]	-8.92[a]
	Ga	-12.18[a]	-2.62[a]	-8.08	-0.49	-4.21	1.52	-0.14	3.63
	Pt	-8.16[a]	-4.09[a]	-8.13[a]	-4.05[a]	-7.90[a]	-3.83[a]	-3.86	0.22
	Pa	-13.14[a]	-5.67[a]	-11.08[a]	-4.37[a]	-7.51[b]	-2.09[b]	-2.50	1.09
UR	Gt	-2.66[a]	-2.78[a]	-3.13[a]	-4.27[a]	-2.39[b]	-1.94[b]	-2.86[a]	-3.43[a]
	Ga	-10.12[c]	-1.55[c]	-8.02	-0.45	-4.25	1.50	-1.63	2.86
	Pt	-5.70[c]	-1.61[c]	-5.48[c]	-1.39[c]	-3.00	1.09	-0.58	3.52
	Pa	-7.11[b]	-1.83[b]	-5.91	-1.07	-4.43	-0.12	-0.34	2.47
ALR	Gt	-2.68[a]	-2.86[a]	-1.94	-0.53	-1.45	1.02	-0.92	2.68
	Ga	-9.22	-1.08	-3.47	1.90	-2.16	2.58	-0.08	3.66
	Pt	-8.62[a]	-4.55[a]	-8.56[a]	-4.49[a]	-6.62[a]	-2.54[a]	-1.51	2.59
	Pa	-12.47[a]	-5.25[a]	-9.75[a]	-3.51[a]	-3.81	0.26	-0.25	2.53
GFCF	Gt	-3.02[a]	-3.93[a]	-3.34[a]	-4.91[a]	-1.96	-0.59	-9.38[a]	-23.93[a]
	Ga	-13.97[a]	-3.55[a]	-11.69[a]	-2.36[a]	-7.39	-0.13	-2.00	2.67
	Pt	-8.05[a]	-3.98[a]	-8.00[a]	-3.93[a]	-11.38[a]	-7.33[a]	-3.68	0.41
	Pa	-12.45[a]	-5.24[a]	-10.91[a]	-4.25[a]	-10.04[a]	-3.70[a]	-4.13	0.06
DCFS	Gt	-2.16	-1.22	-2.03	-0.81	-1.74	0.11	-2.97[a]	-3.76[a]
	Ga	-9.20	-1.07	-6.26	0.45	-3.94	1.65	-0.93	3.22
	Pt	-7.61[a]	-3.54[a]	-7.55[a]	-3.48[a]	-8.91[a]	-4.84[a]	-3.80	0.29
	Pa	-11.93[a]	-4.90[a]	-10.02[a]	-3.69[a]	-8.22[a]	-2.54[a]	-3.82	0.25
ENV	Gt	-2.39[b]	-1.94[b]	-2.27[c]	-1.57[c]	-2.18	-1.29	-2.14	-1.14
	Ga	-9.95[c]	-1.46[c]	-7.76	-0.32	-4.08	1.58	-0.87	3.25
	Pt	-8.06[a]	-3.99[a]	-8.04[a]	-3.97[a]	-10.93[a]	-6.88[a]	-5.10	-1.01
	Pa	-12.73[a]	-5.41[a]	-10.84[a]	-4.21[a]	-10.36[a]	-3.90[a]	-3.48	0.47
NRR	Gt	-2.78[a]	-3.16[a]	-2.49[b]	-2.27[b]	-1.95	-0.56	0.40	6.87
	Ga	-10.71[b]	-1.85[b]	-7.64	-0.26	-5.20	1.00	-0.58	3.40
	Pt	-7.53[a]	-3.46[a]	-7.53[a]	-3.45[a]	-8.39[a]	-4.32[a]	-4.11	-0.01
	Pa	-11.40[a]	-4.57[a]	-9.74[a]	-3.51[a]	-7.80[b]	-2.27[b]	-2.60	1.03

Note: The Westerlund Error Correction Model (ECM) test for cointegration is employed; [a]denotes the rejection of the null hypothesis at the 1% significance level, [b]denotes the rejection of the null hypothesis at the 5% significance level, [c]denotes the rejection of the null hypothesis at the 10% significance level

Table 4: Results of Panel Data Models for Asia

Variable	Pooled OLS	LSDV	Fixed Effect (within)	FE, LSDV (vce, robust)	FE (absorb)	Random Effects
Lending rate	0.896 (0.431)[b]	0.345 (0.418)	0.345 (0.418)	0.345 (0.430)	0.345 (0.430)	0.896 (0.431)[b]
GDP per capita	-0.359 (0.471)	0.418 (0.458)	0.418 (0.458)	0.418 (0.708)	0.418 (0.708)	-0.359 (0.471)
Trade Openness	1.268 (0.476)[a]	2.438 (0.497)[a]	2.438 (0.498)[a]	2.438 (0.487)[a]	2.438 (0.487)[a]	1.268 (0.476)[a]
Total debt/GDP	-0.925 (0.264)[a]	0.537 (0.408)	0.537 (0.409)	0.537 (0.490)	0.537 (0.490)	-0.925 (0.264)[a]
Exchange rate	0.026 (0.285)	1.506 (0.695)[b]	1.506 (0.695)[b]	1.506 (0.900)[c]	1.506 (0.900)[c]	0.026 (0.285)
M2/GDP	1.923 (0.404)[a]	0.088 (0.543)	0.088 (0.543)	0.0882 (0.586)	0.088 (0.586)	1.923 (0.404)[a]
Unemployment rate	-0.565	-0.739	-0.739	-0.739	-0.739	-0.565

	(0.211)[a]	(0.236)[a]	(0.236)[a]	(0.525)	(0.525)	(0.211)[a]
Adult literacy rate	-0.577 (0.934)	4.168 (2.055)[b]	4.168 (2.055)[b]	4.168 (2.640)	4.168 (2.640)	-0.577 (0.934)
GFCF/GDP	-2.696 (1.692)	-5.208 (2.951)[c]	-5.208 (2.951)[c]	-5.208 (2.632)[c]	-5.208 (2.632)[c]	-2.696 (1.692)
DCFS/GDP	-0.118 (0.481)	-1.959 (0.666)[a]	-1.959 (0.666)[a]	-1.959 (0.952)[b]	-1.959 (0.952)[b]	-0.118 (0.481)
Environmental Pollution	-0.914 (0.428)[b]	-1.040 (0.420)[b]	-1.040 (0.420)[b]	-1.040 (0.506)[b]	-1.040 (0.506)[b]	-0.914 (0.428)[b]
Natural resources Rents/GDP	-0.072 (0.079)	-0.356 (0.269)	-0.356 (0.269)	-0.356 (0.304)	-0.356 (0.304)	-0.072 (0.079)
Country	2	-7.073 (3.201)[b]		-7.073 (4.264)[c]		
	3	1.279 (1.884)		1.279 (2.015)		
	4	-12.160 (2.818)[a]		-12.160 (3.475)[a]		
	5	-6.568 (1.860)[a]		-6.568 (1.972)[a]		
	6	1.273 (2.603)		1.273 (2.734)		
	7	-4.387 (1.709)[b]		-4.387 (2.114)[b]		
	8	-2.501 (1.293)[c]		-2.501 (1.708)		
Constant	16.865 (10.220)	5.565 (12.370)	1.797 (11.850)	5.565 (16.244)	1.797 (16.133)	16.865 (10.220)[c]
F-test(model) or Wald Test (model)	51.10[a]	49.06[a]	8.43[a]	124.98[a]	8.59[a]	613.18[a]
Degree of Freedom (DF)	155	148	148	148	148	-
SSM(Model) = e(mss)	675.136	729.911	79.231	Na	Na	Na
SSE = e(rss)	170.662	115.886	115.886	Na	Na	Na
SEE = sqrt(e(rss)/e(df_r))	1.049	0.884	0.884	0.884	0.884	0.884
R^2 = e(r2)	0.798	0.862	0.406	0.863	0.863	0.194
Adjusted R^2 = e(r2_a)	0.782	0.845	0.329	Na	0.845	Na
rho(ρ)			0.996			0.00
Effect Test (Wald test, Hausman; BPLM test)	613.18[a]		67.73[a]			1.32
N	168	168	168	168	168	168
CD test (Pr)			0.640			
Modified Wald Test (χ^2)			199.76[a]			

Note: [a] denotes the rejection of the null hypothesis of at the 1% significance level, [b] denotes the rejection of the null hypothesis at the 5% significance level, [c] denotes the rejection of the null hypothesis at the 10% significance level; LSDV=Least Square Dummy Variable; Hausman= Hausman's test to determine the selection of the appropriate model i.e. between FEM and REM; CD=Pesaran's cross-sectional dependence test for panels to determine the presence of auto-correlation between the residuals; Modified Wald test= Heteroscedasticity Test to determine the presence of unequal variance among the residuals; BPLM=Bruesch–Pagan Lagrange Multiplier test; the POLS uses a t-statistics; the REM uses a z-statistics; Na=not available

The fixed effects model (FEM) and random effects model (REM) is used to estimate the static model which includes the macroeconomic factors and country specific factors.The Hausman specification test is applied to choose between the FEM and REM. The results in Table 4 indicate that the FEM is appropriate to estimate the equation. A feasible generalized least (FGLS) method is employed to correct for the heteroscedasticity in the FEM model.

Table 5: Feasible Generalized Least Square Results for Asia

Variable	FGLS (Heteroscedastic)	Standard Error	FGLS (Homocedastic)	Standard Error
Lending rate	0.6376[a]	0.1958	0.8962[b]	0.4148
GDP per capita	0.2762	0.2532	-0.3599	0.4532
Trade Openness	0.6822[a]	0.2046	1.2682[a]	0.4573
Total debt/GDP	-0.2905[b]	0.1395	-0.9256[a]	0.2536
Exchange rate	0.1567	0.1664	0.0268	0.2738
M2/GDP	1.1385[a]	0.1522	1.9231[a]	0.3886
Unemployment rate	-0.1695[c]	0.0922	-0.5651[a]	0.2032
Adult literacy rate	0.4188	0.5527	-0.5770	0.8971
GFCF/GDP	-2.5570[a]	0.8582	-2.6962[c]	1.6258
DCFS/GDP	0.0281	0.2320	-0.1184	0.4629
Environmental Pollution	0.1701	0.2564	-0.9147[b]	0.4118
Natural resources Rents/GDP	-0.1852[a]	0.0237	-0.0722	0.0767
Wald Test(Model)	2782.83[a]		664.6[a]	
Effect Test(LR)			156.36	
N	168		168	

Notes: [a],[b] and [c] denotes significance at 1% level ,5% level and 10% level respectively; LR=Likelihood-ratio; Na=not available

The results of the regression show that lending rate has a positive significance to FDI per capita at the 5 percent significance level. Trade openness has a positive significance to FDI per capita at the 1 percent significance level. Total debt/GDP has a negative significance to FDI per capita at the 1 percent significance level. Money Supply/GDP has a positive significance to FDI per capita at the 1 percent significance level. However, unemployment has a negative significance to the FDI per capita at the 1 percent significance level while environmental pollution has a negative significance to FDI per capita at the 5 percent significance level. The results of the adjusted R-square (within) shows that 32.98 percent of the fluctuations or variations in the FDI per capita are influenced by the internal factors and 67.02 percent of the factors are external to the model. Therefore, there are other factors not included in the model that could possibly affect FDI per capita. The F-statistics is significant at the 1 percent level and therefore the factors jointly influence the FDI per capita.

5. Conclusion

The results show that an open economy, low country debt, a liberal money supply policy, low unemployment rate and low environmental pollution seems to attract FDI in Asia's developing countries. Asia is in need of foreign capital for its infrastructure system such as roads and power lines (electricity) in order to connect rural to urban areas in each developing country. In addition, the external capital funds can be utilized to improve infrastructure so as to connect common borders which will enable communication and inevitably accelerate economic development. The liberalization policies in existence should be maintained and monitored to ensure a continuous and consistent flow of FDI in Asia. However, there are uncertainties such as political risk which could also affect the inflow of FDI in Asia. Further research in incorporating political risk as testable variable could possibly lead to more insights on factors that could influence FDI inflow in Asia.

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