

# Chapter 2

## Does Institutional Quality Affect Foreign Direct Investment? A Panel Data Analysis

Girijasankar Mallik and Mamta Chowdhury

**Abstract** This study investigates the effects of the institutional quality along with socio-economic factors on foreign direct investment (FDI) of 156 countries using Ordinary Least Square (OLS) and Fixed Effect (FE) method. The findings of the study suggest that while corruption lowers FDI significantly, democracy, government stability, law and order, civil liberty and political rights have significant positive effects on FDI inflows. Results of the study also indicate that increased levels of educational attainment and openness in a trade regime lead to a higher level of FDI. Thus the policy prescription to attract higher FDI requires focussing on ensuring better institutional quality with a lower level of corruption along with raising the skill-base of the labour force in an outward looking external trade regime.

**Keywords** Corruption · Institutional quality · Foreign direct investment  
Fixed effect

**JEL Classification** F23 · R38 · C23

### 2.1 Introduction

Foreign direct investment (FDI) is one of the prominent features of globalisation and a major source of capital in augmenting domestic investment and rapid economic growth. The era of financial liberalisation commencing from the early 1980s significantly increased the flow of FDI to the developing countries. However, com-

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petition to attract FDI is observed to be strong as both advanced and developing countries are equally opting for faster economic growth. Globally, the total value of FDI increased from \$80 billion in 1985 to \$1.24 trillion in 2010 and expected to rise to \$1.9 trillion in 2013. The flow of FDI increased to developing countries by 12% due to their stronger economic growth led by vibrant domestic demand over the last decade. South, East and Southeast Asia experienced the highest growth in FDI compared to other developing nations in recent years (UNCTAD 2011). In 2010, FDI inflow to this region accounted for \$300 billion with a growth of 24% from its previous year. This growth in FDI inflow is particularly experienced by Southeast and East Asia. A strong growth of FDI is also experienced by Latin America and Caribbean countries spurred by high commodity prices, strong domestic demand and economic growth and good macroeconomic policies. Manufacturing sector shows a strong growth of FDI in recent years, which accounted for more than half of the total inflows in 2010 (UNCTAD 2011). However, FDI inflows to Africa, West-Asia, Southeast Europe and developed countries depict a downward trend in 2010.

FDI plays an important role in economic development and growth. The forces behind the movement of FDI have long been a subject of international trade and business literature. Most of the recent literature concentrates on the effect of corruption on economic growth following pioneering work by Mauro (1995, 1998). According to Shleifer and Vishny (1993), corruption is detrimental for investment and therefore reduces economic growth. However, Leff (1964) and Lui (1985) suggest that corruption may be beneficial to growth up to a certain level, because it may 'grease the wheel'.

Rampant corruption may negatively affect the perception of socio-economic stability and investment environment of a host country and thus reduce the FDI inflow. In the presence of corruption, foreign investors have to pay extra payments to get licenses or government permits. This, in turn, increases the cost of production and decreases profit margins and may be viewed as a tax on profits (Bardhan 1997). Many researchers also argued that at an initial stage corruption may increase FDI; however, in the long-run the effect of corruption on FDI should be negative. Therefore, the effect of corruption on FDI is still not clear and researchers are divided on this issue. There are also many methodological issues. For example, many researchers have used OLS to estimate the determinants of corruption, which is not appropriate. Al-Sadig (2009) argued that the negative impact of corruption disappears once the quality of institutions is considered in a cross-country model. However, there are limited studies in recent literature focussing on the influence of institutional quality, along with other economic and business factors determining the FDI inflows. Although studies on the effects of institutional quality and governance on FDI indicate mixed results, a large number of recent studies (Mathur and Singh 2013; Busse and Hefeker 2007; Wei 2000; Habib and Zurawicki 2002) find a positive relationship between institutional quality and FDI inflows. However, a few studies suggest that under specific circumstances, corruption and bribe may facilitate FDI inflows (Olson 1993; Egger and Winner 2005).

Since comprehensive empirical studies are limited, this study attempts to contribute to the gap in the literature by analysing the effects of corruption along with other institutional qualities, educational attainment and governance factors in

addition to economic determinants, on FDI inflows for 156<sup>1</sup> countries using OLS and Fixed Effect (FE) methods for the period 1984–2009.

The remainder of the study is structured as follows: a review of the literature on the determinants of FDI inflows is discussed next. This is followed by the theoretical framework and hypothesis of the study. The empirical model and explanation of the methodology is illustrated thereafter. A discussion of the results is presented followed by a summary findings and conclusions.

## 2.2 Literature Review

A large volume of empirical literature centres on exploring the determinants of FDI inflow over the past decades. Diversifying risk and attain a higher return on capital is cited as principal reasons for FDI in the business and international trade literature. FDI flows from the capital abundant countries to capital scarce countries where its return is relatively higher (Hymer 1976; Barba Navaretti and Venables 2004; Markusen 2002). Kindleberger (1969) suggests domestic market imperfections in source countries motivate capital flights and FDI. Vernon's (1966) product cycle theory demonstrates that the main reason for FDI is the search for lower factor costs and to be more competitive. Resource-seeking and market-seeking motivations by multi-national corporations (MNC) have been considered as important factors for FDI movements from the early nineteenth century (Jones 1996). Product differentiation, economies of scale and imperfect competition are also added to the list of factors in determining FDI inflow using trade theory (Krugman 1980; Helpman 1981). Zhang and Marksen (1999) consider the size of an economy as an important factor for FDI while incorporating transport costs. However, according to Brainard (1997), MNCs decide to invest in a foreign country instead of exporting it products to that country if the cost of operation is less than gain from avoiding trade costs. Dunning (1988a, b, 2000) highlights ownership, location and internalisation (OLI) as the three key drivers of FDI, which comprise the basis of FDI. Favourable tax treatment is also alluded to as an important motive for FDI flowing to developing countries (Wei 2000; UNCTAD 2004).

Several empirical studies (Root and Ahmed 1979; Lee and Tan 2006; Wheeler and Mody 1992; Dunning and Narula 1996; UNCTAD 2006) have illustrated the effects of various economic factors on FDI. Locational or pull factors, such as the size of the markets, endowment of key resources and factor efficiency, are suggested as the principal determinants of FDI by the literature (Dunning 1998a, b; Stoian and Filippaios 2008). Market potential measured by growth of GDP, infrastructure facilities in the host country, openness and macroeconomic stability,

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<sup>1</sup>Number of countries depends on the independent variables included in the model and data availability.

quality of labour are also considered as the important determining factors of FDI in the literature (Stoian and Filippaios 2008; Tarzi 2005; Jensen 2006).

Nonetheless, the socio-political factors, especially the institutional quality and good governance, bear significant influence on the FDI in the contemporary complex global business environment. The importance of institutional qualities and other relevant policies in the host countries are increasingly acknowledged by the FDI literature (Habib and Zurawicki 2002; Resnick and Li 2003; Mathur and Singh 2013). Institutional factors, such as property rights, an efficient tax system, economic freedom, transparency, corruption and bribery have both direct and indirect effects on economic growth (Rodrik 1999; Johnson and Robinson 2004). There is a growing interest in finding the relationship between institutional quality factors and FDI inflows in conjunction with economic factors. Increasing factor productivity, lowering investment cost (due to transparency and low corruption) and well-defined property rights provided by a good institutional framework, are considered to be conducive to the business environment which may facilitate domestic and foreign investment and raise GDP growth (Daniele and Marani 2006). Numerous studies (Gupta et al. 1998; Shleifer and Vishny 1993; Wei 2000) suggest a negative relationship between corruption and the investment environment which tends to have an adverse impact on economic growth. Nonetheless, a few studies argue that corruption is not necessarily having an adverse impact on GDP growth; rather it may facilitate economic activities under the egalitarian system (Braguinsky 1996; Rashid 1981). Egger and Winner (2005), thus find a positive relationship between corruption and FDI inflow.

In a cross-section study, Lee and Mansfield (1996) indicate a positive effect of intellectual property rights on FDI inflow, whereas, a negative impact of institutional uncertainty on investment is illustrated by Brunetti and Weder (1998). Various other studies (Jun and Singh 1996; Wei 2000; Busse and Hefeker 2007) conclude that democratic rights of a country as well as less internal and external conflicts can attract a higher level of FDI inflow. However, a number of studies (Egger and Winner 2005; Jaspersen et al. 2000; Wheeler and Mody 1992) find no significant effect of political stability on FDI.

Despite some evidence of the positive influence of institutional quality, there are some studies (Olson 1993; Egger and Winner 2005) indicating inconclusive or even a negative relationship between some of institutional factors and inflow of FDI. Therefore, this study investigates the effect of major institutional quality indicators along with key economic factors, determining the flow of FDI for 156 countries between 1984 and 2009 using OLS and FE methods. This study differs from previous studies in the following manner. Firstly, this study has a relatively larger sample size and incorporates more explanatory variables such as secondary education (as a proxy for skilled labour force), democracy, government stability, law and order, civil liberty, political rights as well as corruption along with other economic indicators of the host countries. The advantage of a large number of countries spread over a 26 year period is that it provides more degrees of freedom and improves the reliability of the results. Secondly, this study uses a panel fixed

effect method, which is considered to be a better estimation procedure than OLS.<sup>2</sup> The key advantages of the panel method is that this method has more controls for unobserved heterogeneity in two dimensions and is also likely to reduce multi-collinearity in the estimations (Baltagi 2001).

## 2.3 Theory and Hypothesis

Macroeconomic indicators have received significant attention as determinants of FDI. Major economic factors including real GDP per capita, GDP growth, investment, government expenditure, inflation, as well as policy variables such as money supply and openness in trade regime have been recognised as important determinants in international trade and business literature (Habib and Zurawicki 2002; Mathur and Singh 2013; Asiedu 2002; Busse and Hefekers 2007). The pool of human capital is considered as an important socio-economic indicator in determining FDI as MNCs are always interested in investing in a country where skilled labour force is readily available (Egger and Winner 2005; Wheeler and Mody 1992; Mathur and Singh 2013). Zhang and Marksén (1999) and Dunning (1988a, b) also suggest human capital endowment as one of the crucial determinants of FDI. However, the quest and competition for resources by the modern multinational companies may face critical political and institutional barriers in expanding their global market share as trade and investment policies are not always conducive for capital flows. Institutional settings of a country, including the level of corruption, law and order condition, democracy, government stability, civil liberty and political rights, may facilitate or deter the FDI flows. Thus, the key hypothesis of our study is stated as follows:

**Hypothesis:** Institutional quality and governance influence the flow of FDI along with other socio-economic factors.

Among institutional factors, the relationship between corruption and FDI is not unanimous as corruption has been alluded to either as ‘grabbing hands’ or ‘helping hands’ in influencing the inflow of FDI (Bardhan 1997). Corruption is defined as the misuse of the public power for private gains, which is not only illegal but also improper (Tanzi 1998; Bardhan 1997; Malta Conference 1994). In general, corruption has a negative effect on FDI flow as it increases the cost of business by a

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<sup>2</sup>OLS is optimal if the error process has some variance (heteroscedasticity). Moreover, for a multiple country panel data analysis OLS ignores the country effects (Baltagi and Griffin 1997). More seriously, if the errors are not spherical, there is no guarantee that the OLS standard errors will be correct and the estimated coefficients may be incorrect sign. FE model is a much better estimation procedure and overcome most of the problems arise from OLS. Moreover, in a panel data analysis with country FE approach allows us to distinguish more systematically between the effects of the policy changes over time as well as across countries (Busse and Hefeker 2007). For OLS to be properly applied, the errors have to be independent and homoskedastic. Those conditions are so rare that is often unrealistic to expect that OLS will suffice for such models (Davidson and McKinnon 1993).

MNC. Various other studies also found a negative relationship between corruption and FDI as it creates inefficiency raises income inequality and lowers economic growth (Wei 2000; Mauro 1995; Shleifer and Vishny 1993). Employing a large number of countries' data and both OLS and PROBIT model, Habib and Zurawicki (2002) demonstrate that the different level of corruption between host and home country discourages the FDI inflow as it is considered immoral and not conducive for the healthy business environment, at least at an operational level. Corruption deters the development of a well functioning efficient market and increases the cost-price of goods and services as bribes are not valued in the market (Boatright 2000; Habib and Zurawicki 2002). However, a number of studies suggest that by increasing allocative efficiency; bribes can create Pareto optimality and increase profits of a MNC (Rashid 1981; Lui 1985; Tanzi 1998). Using a sample of 73 countries, Egger and Winner (2005) also find a positive influence of corruption on FDI over the period between 1995 and 1999. Since the effect of corruption on FDI is found to be inconclusive, the expected sign of corruption and FDI can be either positive or negative in an empirical study.

Democratic rights are regarded as one of the important aspects of institutional quality and can influence the FDI in a country. Several studies (Busse and Hefeker 2007; Jensen 2006) suggest a positive relationship between democracy and FDI inflow. However, Resnick and Li (2003) indicate that enhanced democracy may lower FDI inflow although democracy can secure property rights and indirectly encourage FDI inflows. Mathur and Singh (2013) also find more democratic countries receive less FDI where economic freedom is not prevalent. Thus, the sign between the level of democracy and FDI is ambiguous. Other institutional and governance factors included in this model, such as government stability, enhanced civil liberty and political rights and improved law and order conditions, reduce the political risk factors and in general, positively influence the FDI inflow. Therefore, the expected sign between these factors and FDI is usually positive.

Socio-economic factors, such as GDP per capita (RGDPPCY), GDP growth (RGDPgr), government expenditure as a percentage of GDP (GRAT), domestic investment as a percentage of GDP (IRAT), openness in trade regime (OPEN), money supply as a percentage of GDP (M2RAT) and human capital (EDU) are the major features of size of a market. The larger the size of a market and the resource endowment in terms of education and skilled labour force, the higher is the FDI inflows to the country. However, a higher level of inflation (INF) in the host country may reduce FDI as it increases the cost of production and uncertainty of future investment.

Increased GDP per capita, economic growth, higher investment and government expenditure indicate higher income and expansion of an economy which attracts FDI as the market-seeking MNCs intend to invest in a larger economy to expand their business. However, the relationship between these economic indicators and FDI inflow is far from undisputed and the a priori sign could be either positive or negative since the domestic economic growth and supporting economic factors can lower FDI as much as it can attract FDI inflows since a growing economy may want

to be self-sufficient and utilise their own resources to build capacity without any external support to augment domestic investment. However, the relationship between human capital and FDI inflow should be positive as MNCs require readily available skilled labour to work with imported capital and technology to ensure increased income and profit (Zhang and Marksden 1999). Greater openness in the trade regime, in general, is positively associated with FDI inflows, especially, for export-oriented MNCs as openness increases the competitiveness and exposure of a country in the global market (Edwards 1990).

## 2.4 Specification and Data

In an attempt to estimate the effect of institutional quality, education and other macroeconomic factors on FDI at the aggregate level, the versions of FDI model is specified as follows:

$$\begin{aligned} \ln \text{FDIRAT}_{it} = & \beta_0 + \beta_1 \ln \text{RGDPPCY}_{it} + \beta_2 \text{RGDPgr}_{it} + \beta_3 \text{GRAT}_{it} \\ & + \beta_4 \text{IRAT}_{it} + \beta_5 \text{INF}_{it} + \beta_6 \text{M2RAT}_{it} + \beta_7 \text{OPEN}_{it} + \beta_8 \text{EDU}_{it} \\ & + \beta_9 \text{CORRP}_{it} / \text{DEMO}_{it} / \text{GOVSTB}_{it} / \text{LAW}_{it} / \text{CIVLIB}_{it} / \text{POLRIG}_{it} + \varepsilon_{it} \dots \end{aligned} \quad (2.1)$$

Where,  $\ln \text{FDIRAT}$  is the natural logarithm of the foreign direct investment. The empirical analysis used data for 106–156<sup>3</sup> countries between 1984 and 2009 available from different sources. The detailed variable description and data sources are given in Table 2.3.

## 2.5 Estimation

First, Eq. 2.1 has been estimated using Ordinary Least Square (OLS) method in an unbalanced panel, cross-country framework. However, there are some disadvantages in using OLS estimation procedures in panel data. The coefficients obtained from the OLS method are biased and inconsistent (Egger and Merlo 2007). OLS estimation ignores country effects and suffers from omitted variable bias as the unobservable factors that are correlated with the variables are not included in the regression. Therefore, Eq. (2.1) is estimated using FE along with OLS for comparison. FE method is a better estimation procedure over OLS since it provides consistent (but not necessarily efficient) parameter estimates (Egger and Winner

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<sup>3</sup>Number of countries depends on the independent variables included in the model and data availability.

**Table 2.1** Summary statistics and correlation matrix

	lnFDIRAT	lnRGDPPCY	RGDPgr	GRAT	IRAT	INF	M2RAT	OPEN	EDU	CORRP	DEMO	GOVSTB	LAW	CIVLIB	POLRIG
lnFDIRAT	1.00														
lnRGDPPCY	0.19	1.00													
RGDPgr	0.17	0.00	1.00												
GRAT	0.06	0.23	-0.15	1.00											
IRAT	0.27	0.12	0.19	0.13	1.00										
INF	-0.03	-0.05	-0.08	-0.06	-0.06	1.00									
M2RAT	0.17	0.54	-0.04	0.21	0.20	-0.06	1.00								
OPEN	0.39	0.25	0.09	0.08	0.29	-0.03	0.35	1.00							
EDU	0.25	0.78	-0.08	0.22	0.12	-0.03	0.43	0.18	1.00						
CORRP	-0.16	-0.84	0.13	-0.44	-0.03	0.18	-0.51	-0.22	-0.63	1.00					
DEMO	0.22	0.50	-0.03	0.14	0.06	-0.04	0.28	-0.02	0.54	-0.45	1.00				
GOVSTB	0.33	0.24	0.19	0.03	0.16	-0.08	0.20	0.23	0.26	-0.11	0.18	1.00			
LAW	0.21	0.65	0.05	0.32	0.16	-0.06	0.41	0.16	0.58	-0.70	0.49	0.41	1.00		
CIVLIB	0.20	0.56	-0.03	0.10	0.04	-0.04	0.32	0.07	0.53	-0.57	0.79	0.12	0.41	1.00	
POLRIG	0.26	0.60	-0.03	0.12	0.05	-0.04	0.35	0.11	0.58	-0.63	0.77	0.16	0.46	0.93	1.00
Average	0.47	7.67	3.28	16.54	21.76	7.70	48.73	82.18	67.05	5.58	3.70	7.60	3.66	3.62	3.59
STDEV	1.77	1.60	0.05	7.04	9.01	8.86	36.74	49.44	32.51	2.53	1.66	2.25	1.50	1.91	2.22



2005). Moreover, a FE regression effectively controls for endogeneity due to time-invariant effects (Mendez and Sepulveda 2006) and if the unobservable factors are time-invariant, then fixed effects regression will eliminate omitted variable bias.

## 2.6 Results and Discussion

The summary statistics and correlation matrix of the variables used in the model are presented in Table 2.1. It can be seen that FDI is positively correlated with most of the variables except for corruption and inflation. The correlation between per-capita income and corruption is very high at  $-0.84$ , implying that corruption reduces per-capita income significantly. Interestingly, corruption is negatively correlated with all the institutional quality variables (e.g. democratic accountability, government stability, law and order, civil liberty and political rights) and the correlation coefficients between the institutional quality variables are highly positive. For example, the correlation between civil liberty and democracy is  $0.79$  and political rights and democracy is  $0.77$ , which indicates a more democratic country has higher civil liberty and political rights, as expected.<sup>4</sup> The correlation coefficient between corruption and secondary education is  $-0.63$ . Since corruption reduces education (or vice versa), institutional quality, per-capita income and FDI, it may be possible that targeting corruption through improved institutional quality can enhance the performance of an economy.

Table 2.2 illustrates the OLS and FE results for different versions of the model. As discussed earlier that OLS estimates may be biased and FE provide relatively consistent parameter estimates, this study mainly analyses the estimates obtained using FE. OLS estimates are given for comparison only. The estimated coefficients (using FE) of the  $\ln\text{RGDPPCY}$  mostly show a positive and significant relationship with FDI as expected by the analytical model. Habib and Zurawicki (2002) and Chakrabarti (2001) also found a positive relationship between  $\text{RGDPPCY}$  and FDI inflow as it suggests that a market-seeking MNC has better prospects in a host country with higher per-capita income. The estimated coefficients of  $\text{RGDPgr}$  and majority  $\text{IRAT}$  indicate significant positive effects on FDI as higher growth rate and domestic investment are indicators of higher return on investment which also attracts foreign investment. This result conforms to existing studies (Habib and Zurawicki 2002; Busse and Hefeker 2007).  $\text{GRAT}$  indicates a significantly negative relationship with FDI in most of the equations. This result is a contrast with that of Asiedu (2002) which finds a positive relationship between  $\text{GRAT}$  and FDI but was not significant. Although the coefficient of  $\text{INF}$  indicates a negative relationship with FDI as expected by the analytical model but coefficient values are very low and insignificant for most of the cases. Egger and Winner (2005) also find a similar result but with an insignificant coefficient value.  $\text{M2RAT}$  shows the positive and

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<sup>4</sup>Please see the definition and variable construction in page 9.

Table 2.2 Regression results using ordinary least square and panel fixed effect methods

	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	Fixed effect
Constant	1.948*** (4.01)	2.528 (1.35)	1.577*** (2.89)	2.312 (1.05)	-0.984*** (-4.33)	-5.442*** (-3.81)	-1.874*** (-7.53)	-5.344*** (-3.85)	
lnRGDPPCY	-0.207*** (-4.12)	-0.571** (-2.30)	-0.259*** (-4.62)	-0.572** (1.99)	-0.180*** (-5.01)	0.223 (1.11)	-0.071** (-2.02)	0.173 (0.89)	
RGDPgr	0.850 (0.81)	0.646 (0.76)	1.094 (0.97)	0.337 (0.37)	3.615*** (4.37)	2.857*** (3.89)	2.884*** (3.46)	2.590*** (3.60)	
GRAT	-0.029*** (-3.78)	-0.010 (-0.74)	-0.027*** (-2.99)	-0.017 (-0.97)	-0.024*** (-3.92)	-0.050*** (-4.26)	-0.021*** (-3.42)	-0.035*** (-3.28)	
IRAT	0.003 (0.41)	0.035*** (4.54)	-0.001 (-0.15)	0.046*** (5.55)	0.001 (0.20)	0.033*** (5.30)	-0.001 (-0.19)	0.035*** (5.82)	
INF	-0.001 (-0.56)	0.000 (0.42)	-0.000 (-0.56)	0.000 (0.39)	-0.000 (-1.30)	-0.000 (-1.63)	-0.000 (-0.80)	-0.000 (-0.96)	
M2RAT	-0.007*** (-6.15)	0.011*** (4.18)	-0.007*** (-6.19)	0.009*** (3.28)	0.006*** (6.08)	0.007*** (3.33)	-0.006*** (-6.06)	0.007*** (3.38)	
OPEN	0.015*** (19.43)	0.017*** (6.93)	0.016*** (19.45)	0.015*** (5.64)	0.018*** (24.49)	0.013*** (7.31)	0.015*** (21.49)	0.014*** (7.85)	
EDU	0.012*** (5.65)	0.017*** (6.93)	0.010*** (4.36)	0.012*** (2.64)	0.013*** (8.07)	0.027*** (8.84)	0.014*** (8.52)	0.021*** (7.12)	
CORRP	-0.142*** (-5.46)	-0.093** (-2.22)	-0.121*** (-4.32)	-0.108** (-2.32)					
DEMO			0.173*** (5.48)	0.089* (1.84)	0.273*** (11.51)	0.183*** (5.72)			

(continued)

Table 2.2 (continued)

	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect
GOVSTB									0.163*** (10.78)	0.153*** (10.83)
LAW										
CIVLIB										
POLRIG										
R <sup>2</sup>	0.312	0.175	0.344	0.199	0.331	0.175	0.325	0.215		
Groups/Observations	1098	122/1098	979	106/979	2026	122/2026	2036	122/2036		
F-test	54.77***	17.75***	50.67***	14.55***	110.95***	72.89***	108.55***	85.62***		
	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect
Constant	-1.874*** (-7.53)	-6.044*** (-4.29)	0.740*** (2.86)	-4.913*** (-4.31)	0.039 (0.16)	-5.781*** (-5.16)				
lnRGDPPCY	-0.071** (-2.02)	0.286 (1.44)	-0.223*** (-6.62)	0.327** (2.01)	-0.189*** (-5.56)	0.396** (2.44)				
RGDPgr	2.884*** (3.46)	2.762*** (3.77)	3.177*** (4.53)	2.888*** (4.80)	3.117*** (4.40)	2.880*** (4.77)				
GRAT	-0.021*** (-3.42)	-0.047*** (-4.32)	-0.014*** (-2.91)	-0.017** (-2.30)	-0.013** (-2.56)	-0.016** (-2.28)				
IRAT	-0.001 (-0.19)	0.035*** (5.63)	0.016*** (4.42)	0.025*** (5.51)	0.015*** (4.12)	0.025*** (5.51)				
INF	-0.000 (-0.80)	-0.000 (-1.30)	-0.000* (-1.74)	-0.000** (-2.44)	-0.000** (-2.06)	-0.000** (-2.59)				
M2RAT	-0.006*** (-6.06)	0.007*** (3.29)	-0.003*** (-3.42)	0.007*** (3.79)	-0.003*** (-3.31)	0.008*** (3.88)				
OPEN	0.015*** (21.49)	0.014*** (8.01)	0.017*** (24.41)	0.012*** (8.32)	0.017*** (24.48)	0.012*** (8.52)				

(continued)

Table 2.2 (continued)

	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect	OLS	Fixed effect
EDU	0.015*** (8.52)	0.027*** (8.89)	0.014*** (9.44)	0.026*** (9.76)	0.015*** (10.23)	0.027*** (10.08)		
CORRP								
DEMO								
GOVSTB								
LAW	0.163*** (10.78)	0.197*** (5.98)						
CIVLIB			0.246*** (11.49)	0.184*** (5.30)				
POLRIG					0.148*** (8.55)	0.115*** (4.22)		
R <sup>2</sup>	0.325	0.168	0.329	0.166	0.314	0.155		
Groups/Observations	2036	122/2037	2526	156/2526	2526	156/2526		
F-test	108.55***	73.84***	137.08***	81.72***	127.79***	80.25***		

Note *t*-values are reported in parentheses and \*, \*\* and \*\*\* indicate significant at 10, 5 and 1% levels respectively

significant effect on FDI in FE estimation as expected by the analytical model and in line with the result found by Asiedu (2002). OPEN has a highly significant positive impact on FDI as expected by the analytical framework for both OLS and FE estimations. These results are consistent with the notable literature (Asiedu 2002; Egger and Winner 2005; Busse and Hefeker 2007; Mathur and Singh 2013) as both market-seeking and export-oriented MNCs will likely incur reduced transaction costs in a more open trade regime. One of the key determinants of FDI is the human capital or skilled labour force as proxied by secondary education level (EDU) in this study. MNCs are not only interested in investing in countries with cheap labour but also with a skilled workforce which is conducive to higher return on investment. Results indicate a highly significant positive effect of EDU on FDI in all equations and consistent with the various existing studies (Zhang and Marksen 1999; Wheeler and Mody 1992; Masron and Abdullah 2010; Mathur and Singh 2013) but in contrast with Egger and Winner (2005).

Among the institutional and governance factors likely to influence FDI, corruption is considered as one of the important factors and the empirical results of the study suggest a significant negative effect of corruption on FDI inflow. Since corruption is contemplated by MNCs as a stumbling block for the expansion and cost of doing business, thus it discourages them to invest in a country with high level of corruption. In this study, the higher corruption index is assumed to be associated with higher corruption level and the result is consistent with several notable existing studies (Habib and Zurawicki 2002; Mathur and Singh 2013; Busse and Hefeker 2001; Wei 2000; Egger and Winner 2005). It is interesting to note that the coefficient of corruption has a significant negative impact on FDI even in the presence of democracy. It is also found that the absolute value of the coefficient of corruption in this study is lower than that of other institutional quality factors which are in line with the findings of Al-Sadig (2009). Other institutional qualities used in the model, such as DEMO, GOVSTB, LAW are having positive and significant effects on FDI as expected in the model and is in line with several existing studies (Masron and Abdullah 2010; Habib and Zurawicki 2002; Busse and Hefeker 2007). However, it is in contrast with Mathur and Singh (2013) which find that FDI is lower in a more democratic country. CIVLIB and POLRIG have significant positive effect on FDI indicating that in countries where citizens possess higher political rights and participation in the public decision-making process, they may choose to have lower foreign investment. Furthermore, CIVLIB and POLRIG may not necessarily ensure economic independence, which is a more attractive factor for MNCs to invest in a foreign country. Thus, a country with higher CIVLIB and POLRIG but lower economic status may not have higher FDI inflows (Mathur and Singh 2013) (Table 2.3).

**Table 2.3** Description of the variables

Name of the variables	Description	Source
lnFDIRAT	Natural logarithm of the foreign direct investment, net inflows (% of GDP)	The World Bank
GRAT	Government expenditure as a percentage of GDP	The World Bank
RGDPPCY	Per-capita RGDP	The World Bank
RGDPgr	Percentage change of RGDP	The World Bank
IRAT	Gross fixed capital formation as a percentage of GDP;	The World Bank
INF	Percentage change in CPI	The World Bank
M2RAT	Money supply as a percentage of GDP	The World Bank
OPEN	Export plus Import as a percentage of GDP	The World Bank
EDU	School enrolment, secondary (% net)	The World Bank
CORRP	Corruption 1–10, where 1 is the least corrupt and 10 is the most corrupt <sup>a</sup>	Corruption Perception Index (Transparency International data)
DEMO	Democratic accountability (0–6) 0 = least democratic and 6 = most democratic	International Country Risk Guide (ICRG), Published by the PRS Group
GOVSTB	Government stability (0–12) 0 = least stable and 12 = most stable)	ICRG
LAW	Law and order (0–6) 0 = least law and order and 6 = highest law and order)	ICRG
CIVLIB	civil liberty (1–7) 7 = highest liberty and 1 = lowest liberty (converted from original data)	Freedom House
POLRIG	political rights (1–7) 7 = highest right and 1 = lowest right (converted from original data)	Freedom House

<sup>a</sup>This series constructed using corruption data ICRG using the formula:  $CORRP = 10 - (3/2)corrpicrg$

## 2.7 Conclusion

Financial and economic liberalisation from the early 1980s has encouraged global flows of FDI both in developing and advanced countries. However, it is found that healthier institutional qualities are important drivers of FDI along with market factors of an economy. This study examined the effects of institutional qualities along with economic factors in attracting FDI inflow using panel FE and OLS estimates. The results of the study indicate that corruption has a negative effect on FDI even in a more democratic environment. Other institutional factors such as government stability, better law and order condition and democratic rights facilitate and encourage the inflow of FDI in a host country. Market size, openness in the

trade regime and quality of workers are found to be major socio-economic determinants and positively influence FDI inflows. Thus, policy prescriptions in terms of attracting FDI should focus more on enhancing institutional quality, controlling corruption as well as raising the skill-base of the labour force in a more open external trade environment.

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