Relationship between Foreign Direct Investment, Institutional Quality and Macroeconomic Variables

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Abstract

Using a comprehensive panel data analysis of 110 countries over the time span 2002-2012, this study investigates the impact of institutional quality on foreign direct investment (FDI) by categorizing the countries into 'developed' and 'developing'.The result findings related to developed countries show that a single standard deviation change in institutional quality raises FDI by a factor of 0.297 when legal origins are used as instruments. On the other hand, the results for the developing countries demonstrate that institutions do not work endogenously with other types of law that govern a country due to an exogeneity issue associated with weak structure of institutions.

Keywords: Foreign Direct Investment; Institutions; Developed and Developing Countries

JEL Classification numbers : C23, F21, F23, O10

1. Introduction

Foreign direct investment (FDI) is a global reality and broadly understood to be one of the major determinants of economic growth. Since the 1980s, worldwide inflows have increased at a rate of 6% annually, faster than world GDP and trade in real terms (Ju and Wei, 2007). The average rate of growth of real GDP in the time span 2005-2012 was 1.2% for developed countries, 4.3% for transition economies and 6.1% for developing countries. For 2013, partially estimated figures are 1.0% for developed countries, 2.0% for transition economies and 4.6% for developing countries (UN, World Economic Situation and Prospects, 2014). Total trade in goods and services over the time span 2002-2012 fluctuated unevenly. The financial crisis of 2008-2009 broke an upward trend in both developed and developing countries. These trends highlight the vulnerability of developing countries, which are directly influenced by economic activity in the developed countries (UN, Trade and Development Report, 2013). The Global Vulnerability Monitor provides a decomposition analysis that measures the size of trade shocks relative to world GDP. The impact of trade shocks was 1.9% during the boom period 2004-2007. The financial crisis sent a negative shock (-2.7%) in 2009. In the next period, 2010-2011, it was 2.5% (UN, World Economic Situation and Prospects, 2014).

Three main factors have increased the importance of the relationship between FDI and institutions. First, the study of North (1990) has revealed the increased importance of institutions in boosting investment and economic development. Second, with the strong growth in FDI inflows during the last two decades, the transition and developed nations have become interested in using institutional reforms to attract more FDI. Third, foreign investors are showing more interest in institutional quality when determining which country to invest in (Bevan et al., 2004). This paper adds to the existing literature by addressing the following questions:

(1) Are institutions as a determinant of FDI equally important for both developed and developing countries?
(2) How important are institutions as a determinant of FDI?
(3) What is the importance of institutions relative to other determinants of FDI?

Many previous papers and findings have researched the impact of institutional quality on FDI in developing and transition economies. We bridge a shortcoming in the literature by comparing the results of both developed and developing countries to measure more accurately the importance of institutions in attracting FDI. Many previous findings on FDI have been obtained using cross-country studies. Consequently, we have selected a large number of countries employing a panel dataset. The dataset includes 110 countries from 2002 to 2012, an 11-year time span.

Our paper is compiled and synchronized as follows: In the next section, we briefly summarize the literature on the variables that affect FDI, highlighting the importance of institutional quality; in Section 3, we describe our research methodology; in Section 4, we concentrate on analyzing results; Section 5 concludes our paper.

2. Literature Review

2.1. Why the institutional aspect matters for FDI

Ali et al. (2010) explain that the institutional framework consists of all kinds of humanly devised constraints that shape human interactions, including economic exchanges. Institutions can be formal[1] or informal[2] and are formulated to reduce uncertainty associated with human interaction and exchange. Therefore, institutions reduce uncertainty in a society desiring a predictable framework for economic and human interaction.

North (1990) explains that institutions affect economic activity via production and transaction costs: Good institutions lower the cost of doing business and enhance profitability. Parties at one end of an economic exchange may have inadequate information about their counterparts' true intentions, which might be to decide to renege on an agreement. Due to asymmetric information and uncertainty, transactions costs include a risk premium.

Good institutions formulate relationships between foreign and domestic firms and, as a result, generate spillover effects. Good and strong institutions promote technology transfer and productivity growth as well as crowding-in effects on domestic investment. Uncertainty related to inefficient law enforcement, expropriation risk or very weak investor's protection deter advanced technology investments, which have the highest potential for generating knowledge spillovers (Jude and Levieuge, 2013). Bad institutional quality is most likely to attract less advanced technology and foreign direct investment, leading to slow economic growth (Blomstrom and Kokko, 2003).

North (1990) explains that institutional quality defines the market rules and structure as well as ensuring that economic actions strictly follow these rules. Meyer and Sinani (2009) explain that bad institutions are associated with increased risk in long term trade agreements and, as a result, a loosening of ties between foreign and domestic firms. Furthermore, technology transfers of multinationals depend upon the host country's institutional environment. In the case of share leakage of technology, multinationals prefer to transfer low technology with little spillover potential.

When reviewing the previous literature on the impact of institutional quality on foreign direct investment, one finds mixed evidence of a role for institutional quality in attracting foreign direct investment, suggesting, though not confirming, that countries with strong institutions attract more foreign direct investment. Ali et al. (2010) find that institutional quality has a positive impact on FDI. They conclude that property rights are important determinants of FDI; other institutional factors only impact FDI indirectly through property rights.

The mixed results regarding the impact of instutional quality on FDI in the previous literature arise from the fact that different measures of institutional quality are used in different parts of the literature. Ali et al. (2010) find that institution-based measures of property rights have a very high, positive and statistically significant impact on FDI. Globerman and Shapiro (2002) focus on the impact of governance on FDI and find that returns to good governance are great for developing economies, relative to other countries in their sample. Rule of law, control of corruption, regulatory quality, effectiveness of governance and political stability are highly and positively correlated with FDI (Gani, 2007). Acemoglu and Verdier (1998) show that there exists a positive relationship between governance and economic growth in a society.

2.2. Trade

There is a strong and positive correlation between both FDI and trade and economic growth in 66 developing countries (Makki and Somwaru, 2004). Trade is considered to be one of the most important variables in much of the literature concerning FDI. A trade surplus is thought to be indicative of a healthy economy, and, as a result, attracts FDI (Torissi, 1985).

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[1] Constitutions and laws etc
[2] Conventions and customs

2.3. Inflation

Another important variable is inflation, which measures the internal economic problems and inabilities of a government to restrict the money supply and balance its budget. Generally, in most of the literature, it is concluded that higher inflation deters FDI (Buchanan et al., 2012). We are using inflation as a proxy for macroeconomic stability. A country which has greater macroeconomic stability and high growth rates will attract more FDI inflows than an unstable economy.

2.4. Infrastructure

Rehman et al., (2011) explain that very few researchers have found that infrastructure contributes significantly to attracting foreign direct investment. Those that have include Morrisset (2000), Wheeler and Mody (1992), Asiedu (2002) and Kok and Ersoy (2009). Infrastructure consists of railways, roads, highways, telephone lines and communication systems, etc. Khadaroo and Seetanah (2010) research mainly the transport infrastructure system, along with other important control variables, and find a significant and positive impact of infrastructure on FDI. Khadaroo and Seetanah (2010) and Asiedu (2006) explain that infrastructure has different impacts on FDI in developed and developing countries. Infrastructure has a significant and positive impact on FDI inflows in developing economies. Bae (2008) explains findings from research on developed countries that infrastructure is not only a stimulator, but also a good indicator of inflows of FDI.

2.5. Population

Billington (1999) was the first author to include population as a variable considering population density as an important determinant of FDI inflows. Using data for 1970–2005, Oladipo (2008) found that market size, human capital, infrastructure and macroeconomic stability are the most important determinants of FDI inflows. Using a panel of developing countries, Singh and Jun (1995) found that market size, political risk and economic growth significantly determine variations in FDI inflows as a share of GDP.

3. Research Methodology

3.1. Data

Our sample consists of panel data covering the time period 2002-2012 and 110 countries. We separated the countries into 'developing' and 'developed' according to criteria from *World Economic Situation and Prospects, 2014*. Out of 110 countries, there are 69 developing countries (including developing and least developed countries and small island developing states) and 41 developed countries (including developed countries and economies in transition) which are used separately in our statistical analysis to measure the impact of institutional quality on FDI. We end our sample in 2012 because of availability of data in the World Development Indicator Database. A list of countries, summary statistics and correlation matrices for all the variables of the developed and developing countries are available in Appendix 1 and Tables 1, 2, 3 and 4, respectively.

The GDP deflator is a price index used to measure inflation in an economy and formulated as the ratio of the no minal GDP in a given year to real GDP (multiplied by 100) (McTaggart et al.,1999;   McTaggart et al.,1996 ; Dornbusch et al., 1995). In this paper, we use a GDP deflator with 2002 as its base[1] year for all our countries. The main criterion for selection of base[2] year is that it should be normal or average and not subject to any major economic change. We selected 2002 as base year according to this criterion. Nominal net inflows of FDI are measured as balance of payments in current US$. Real, inflation-adjusted inflows of FDI are calculated by dividing nominal inflows of FDI by the GDP deflator.

We use a governance variable as a proxy for institutional quality. The dataset is taken from World Governance Indicators (WGI), which reports indicators for different countries over the time span 2002-2012. There are six dimensions of governance: Control of Corruption; Government Effectiveness; Political Stability; Absence of Violence; Regulatory Quality; Rule of Law; and Voice and Accountability (Kaufmann et al., 2007). Indicators that measure public trust in politicians, diversion of public funds, irregular payments in export and import, irregular payments in public contracts etc. are included in the Control of Corruption index. The Rule of

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[1] According to the World Bank, the base year varies by country.
[2] Data and Metadata Reporting and presentation handbook - ISBN92-64-03032-8-OECD, 2007, p.116.

Law index measures the extent to which agents have confidence in and follow the rule of law; specifically, the quality of contracts and enforcement, property rights, the courts, and the police, as well as the likelihood of crime and violence. The Regulatory Quality index measures the ability of government to formulate and implement sound policies and regulations that promote and permit private sector employment. The Political Stability and Absence of Violence indices measure the probability that government will be destabilized or overthrown in an unconstitutional way; i.e., through politically motivated violence or terrorism. The Government Effectiveness index measures the quality of public and civil services, the degree of their independence from political pressure, the quality of policy formulation and implementation, as well as the credibility of the government's commitment to such policies. The Voice and Accountability index measures political rights, civil liberties and independence of the media, etc. (World Governance Indicators, 2013).

Buchanan et al. (2012) explains that governance indicators are highly correlated with one another. Therefore, it is not possible to use all of these indicators in a single regression equation. Also, in our case, governance indicators are highly correlated with one other for both developed and developing countries. Appendix 2 reports the very high correlations among the six governance indicators for both developed and developing countries. The correlations between pairs of governance indicators in the case of developing countries are lower than those observed in the case of developed countries. The correlations are almost the same as those observed in Buchanan et al. in the case of developed countries. In the case of developing countries, the correlations between governance indicators have comparatively little similarity to those in Buchanan et al.

As a result, we follow Buchanan et al. (2012) by extracting the first principal component of the six governance indicators, double checking the result with Monte Carlo PCA for Parallel Analysis. Applying this methodology for both developing and developed countries separately, we put all six governance indicators into one aggregate measure: Gov. By comparing the descriptive statistics, we can see that the mean for developed countries is $1.77e^{-07}$, and the range is [-1.986, 1.323]. For the developing countries, the mean is $2.69e^{-08}$ and the range is [-2.103, 2.633]. By splitting the countries in two categories, we reduce the range and compare it with the results of Buchanan et al., who estimate it to be [-2.421, 2.192]. For developed countries, a mean value of zero and standard deviation of 1.0 is similar to the results of Buchanan et al (2012).

The literature on FDI tests a large number of variables as its potential determinants. Choosing the set of control variables is problematic because the empirical literature suggests dozens of potentially important ones. Some of these variables are proposed in various theories of FDI, while others are included because they can be linked intuitively (Moosa and Cardak, 2006). Moosa and Cardak (2006) and Chakrabarti (2001) explain that trade openness, infrastructure quality and market size are some of the most important determinants of FDI. All our macroeconomic variables are taken from the 2013 World Development Indicators Database. We initially collected data for approximately 15 macroeconomic variables, including multilateral trade agreement (e.g. GATT/WTO) membership, (total) population as a proxy for market size, natural resources, GDP growth rate, tariffs and taxes, total number of wage and salaried workers (% of total employed), official exchange rate (LCU per US$, period average) etc. Using the literature on FDI determinants and checking the availability of data, we chose the most important explanatory variables.

We took into consideration total trade[1], adjusted for inflation using the GDP deflator[2], to measure trade openness in an economy. The inflation rate is measured as the annual percentage change in the consumer price index and is used as a proxy for macroeconomic stability. The "Tele" variable is defined as the number of telephone lines per 100 inhabitants, and it is used to proxy for the quality of infrastructure in a host country (Moosa and Cardak, 2006). Tele is expected to be positively correlated with FDI, as good infrastructure attracts FDI.

4. Regressions and Results

4.1. Regression Model

We estimate the following model describing the determinants of FDI:

$$\text{FDI} = \alpha + a_1 \text{ Gov} + a_2 \text{ Trade} + a_3 \text{ Inflation} + a_4 \text{ Tele} + a_5 \text{ Pop} + e \qquad (1)$$

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[1] Exports plus imports of good and services (current US $).
[2] GDP deflator data is obtained from World Bank, WDI, 2013.

The differences in the legal protection of investors provided by destination countries might help in understanding why firms are financed and owned so differently. Buchanan and English (2007) argue that investors seeking to gain benefits from market returns must choose their investments on the basis of the legal foundations of the countries in which they invest. La Porta *et al.* (1997, 1998, 2000) developed a relationship between financial markets and legal environments known as LLSV in which the origin of the legal code is an important determinant of governance, and financial markets attract FDI through security of property rights. David and Brierley (1985) state that legal foundations can be categorized into different families, i.e. English, French, Scandinavian and German, and two primary legal systems, i.e. civil and common. The same classification is also applied by Shleifer *et al.* (2000). Legal codes are classified according to their origins as follows: English (ENGLAW); French (FRELAW); Scandinavian (SCANLAW); German (GERLAW); and Socialist (SOCLAW). Socialist law has the disadvantage that all formerly communist countries are included in this category, so the role of the legal system may be vitiated by other factors (Globerman and Shapiro, 2003). Using an instrumental variable (IV) methodology, in our first model, IV[a], we, therefore, measure governance using the dataset "The Quality of Government" (La Porta *et al.*, 1999), but excluding the SOCLAW category.

For IV[b], we took into consideration common law, civil law, using data from the Faculty of Law at the University of Ottawa[1], and lagged values of the independent variables. Pure common law has its origins in English law. Civil law derives from Roman law and applies to all those countries with their legal origins in French, German and Scandinavian law. French, German and common (English) law have spread around the world through all kinds of combinations of conquest, imperialism and other means. Civil law gives investors weaker legal rights and a lower quality of law enforcement, with French civil law providing the least protection. German and Scandinavian civil law provide the highest quality of law enforcement, but an average degree of protection. Common law (English origin) provides the next highest quality of law enforcement and also the highest protection (La Porta *et al.*, 1998).

Using the IV methodology, we employ all four of the legal origin(legor_uk, legor_fr, legor_ge, legor_sc) as instruments for governance. For developed countries, all four instruments were highly significant in first stage regressions. When applied to the developing countries, only three instruments were highly significant in first stage regressions, and the Scandinavian origin was omitted due to collinearity. For this reason, we employed only three legal origin instruments (legor_uk, legor_fr, legor_ge) for both developed and developing countries.

4.2. Results for Developed Countries

In Table 5, we report results of an OLS regression with FDI as the dependent variable in Column (1). In accordance with the literature on endogeneity, we have a potential bias within our OLS results (Buchanan et al., 2012; Benassy-Quere et al., 2007; Daude and Stein, 2007; Hall and Jones, 1999; Mauro, 1995). Countries are not exogenously gifted with the institutions that promote good governance. In fact, governance is determined endogenously, depending on the type of law that governs the country, the legal origins, and the level of economic development (Buchanan et al., 2012). According to Wooldridge (2000, p. 472), IV methods are intended to correct for such endogeneity. Buchanan et al. (2012), Mauro (1995), Hall and Jones (1999), and Daud and Stein (2007), all used instrumental variables in their analyses. Furthermore, the Durbin-Wu-Hausman test for endogeneity showed a significant *p*-value (0.0551), indicating endogeneity of governance and supporting the use of legal origins as instruments for it.

Column (2) reports IV results using European legal origins as instruments. The results for the Gov variable in Column (2) show that a one standard deviation change in institutional quality improves FDI by a factor of 0.297, using English, French, and German legal origins as instruments. Furthermore, the Durbin-Wu-Hausman test for endogeneity of Gov showed a significant *p*-value (0.0009), supporting the use of legal origins as instruments. The coefficient on Trade is positive and significant; countries more open to trade attract more inflows of FDI. The coefficient on Tele, a proxy for infrastructure, is significant but negative, implying that if infrastructure is under developed, low FDI inflows can result. The coefficient on inflation, a proxy for macroeconomic stability, is significant and positive, implying that a more stable macroeconomic environment can attract FDI. The coefficient on Pop, a proxy for market size, is positive but insignificant. The relationship between governance and the instrumental variables is explained in Appendix 3: Correlation between governance and instrumental variables – developed countries.

Column (3) reports IV results using common law, commercial law and lagged values of the independent variables as instruments. Results for developed countries show that a one standard deviation change in institutional quality decreases FDI by a factor of 0.105. The coefficient on Trade is significant and positive. The coefficients on Tele and Pop are significant, but with negative signs. The coefficient on inflation is insignificant

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[1] http://www.juriglobe.ca/eng/

with a positive sign. When using lagged values of independent variables as instruments along with common law and civil law, we find a negative relationship between Gov and FDI because our control variables (Tele and Pop) are significant with negative signs. Thus, to have a positive and significant relationship between institutional quality and FDI, the behavior of important macroeconomic variables also plays a pivotal role.

4.3. Results For Developing Countries

In Table 6, the simple OLS regression with FDI as the dependent variable in Column (1) shows that Gov has a positive and significant effect on FDI. The statistical results imply that good institutions tend to attract foreign direct investment. The coefficient on Trade is positive and highly significant. Countries that are open to trade and investment opportunities can attract FDI inflows. The coefficient on Tele, used as a proxy for measuring infrastructure, is also highly significant and positive, which implies that if infrastructure is more developed, FDI inflows will increase. The coefficient on Pop, a proxy for market size, is positive but insignificant

In accordance with the literature on endogeneity, we have a potential bias within our OLS results (Buchanan et al., 2012; Benassy-Quere et al., 2007; Daude and Stein, 2007; Hall and Jones, 1999; Mauro, 1995). Furthermore, the Durbin-Wu-Hausman test for endogeneity of the governance variable has an insignificant p-value (0.1143) and does not reject the null hypothesis of consistent OLS estimates. The results are reported in Column (2) in Table 6. On the other hand, Gov can also be treated as exogenous using common law, commercial law and lagged values of independent variables as instruments because the Durbin-Wu-Hausman test for endogeneity of governance has an insignificant p-value (0.1668), suggesting that Gov is not working endogenously with other types of law that govern a country due to weak institutional quality. One may infer from statistical findings that institutions in developing countries are not strong enough to work endogenously with other types of laws to attract foreign direct investment. Institutions need to be strong enough to work well with other types of laws and macroeconomic factors to attract foreign direct investment. The correlation between governance and instrumental variables is explained in Appendix 4: Correlation between governance and instrumental variables – developing countries.

5. Conclusion

Using panel data for 110 countries covering 2002-2012, we examine the impact of institutional quality on foreign direct investment by categorizing the countries into 'developed' and 'developing'. We find that institutional quality has a significant and positive effect on foreign direct investment inflows in the case of developed countries, using legal origins as instruments (a one standard deviation change in institutional quality raises FDI by a factor of 0.297). Using lagged values of independent variables as instruments, along with common law and civil law, we find a negative relationship between institutional quality and FDI, since our proxies for infrastructure and market size are significant with negative signs. Thus, the behavior of important macroeconomic variables also plays a pivotal role in determining the relationship between FDI and institutional quality. In contrast, our findings for developing countries provide partial or little support for the hypothesis that institutional quality impacts foreign direct investment in the presence of poor and weakly-structured institutions. One may infer from the overall results that policies intended to attract foreign direct investment inflows by providing a better and more stable macroeconomic environment will be futile without strong and efficient institutions.

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Appendix 1

List Of Developed and Transition Economies

No.	Country	Code	No.	Country	Code
1	Albania	ALB	22	Japan	JPN
2	Armenia	ARM	23	Kazakhstan	KAZ
3	Australia	AUS	24	Kyrgyz Republic	KGZ
4	Austria	AUT	25	Luxembourg	LUX
5	Azerbaijan	AZE	26	Macedonia, FYR	MKD
6	Belarus	BLR	27	Moldova	MDA
7	Belgium	BEL	28	Netherlands	NLD
8	Bulgaria	BGR	29	New Zealand	NZL
9	Canada	CAN	30	Norway	NOR
10	Croatia	HRV	31	Poland	POL
11	Czech Republic	CZE	32	Portugal	PRT
12	Denmark	DNK	33	Romania	ROM
13	Estonia	EST	34	RussianFederation	RUS
14	Finland	FIN	35	Spain	ESP
15	France	FRA	36	Sweden	SWE
16	Georgia	GEO	37	Switzerland	CHE
17	Germany	DEU	38	Tajikistan	TJK
18	Greece	GRC	39	Ukraine	UKR
19	Iceland	ISL	40	United Kingdom	GBR
20	Ireland	IRL	41	United States	USA
21	Italy	ITA			

Source: UN, World Economic Situation and Prospects, 2014

List of Developing and Least Developed Countries and Small Islands Developing States

No.	Country	Code	No.	Country	Code
1	Algeria	DZA	36	Lao PDR	LAO
2	Antigua and Barbuda	ATG	37	Lesotho	LSO
3	Bahamas, The	BHS	38	Macao SAR, China	MAC
4	Bangladesh	BGD	39	Malaysia	MYS
5	Barbados	BRB	40	Mauritania	MRT
6	Bolivia	BOL	41	Mauritius	MUS
7	Botswana	BWA	42	Mexico	MEX
8	Brazil	BRA	43	Mongolia	MNG
9	Brunei Darussalam	BRN	44	Morocco	MAR
10	Burundi	BDI	45	Mozambique	MOZ
11	Cabo Verde	CPV	46	Nicaragua	NIC
12	Cameroon	CMR	47	Niger	NER
13	China	CHN	48	Nigeria	NGA
14	Colombia	COL	49	Pakistan	PAK
15	Costa Rica	CRI	50	Panama	PAN
16	Dominica	DMA	51	Paraguay	PRY
17	Dominican Republic	DOM	52	Peru	PER
18	Ecuador	ECU	53	Philippines	PHL
19	Egypt, Arab Rep.	EGY	54	Rwanda	RWA
20	El Salvador	SLV	55	Sao Tome and Principe	STP
21	Ethiopia	ETH	56	Senegal	SEN
22	Fiji	FJI	57	Singapore	SGP
23	Gabon	GAB	58	South Africa	ZAF
24	Ghana	GHA	59	Sri Lanka	LKA
25	Grenada	GRD	60	St. Lucia	LCA
26	Guatemala	GTM	61	St. Vincent and the Grenadines	VCT
27	Guinea-Bissau	GNB	62	Sudan	SDN
28	Haiti	HTI	63	Tanzania	TZA
29	Honduras	HND	64	Thailand	THA
30	Hong Kong SAR, China	HKG	65	Tunisia	TUN
31	India	IND	66	Turkey	TUR
32	Indonesia	IDN	67	Uruguay	URY
33	Jordan	JOR	68	Vanuatu	VUT
34	Kenya	KEN	69	Vietnam	VNM
35	Korea, Rep.	KOR			

Source: UN, *World Economic Situation and Prospects, 2014.*

Appendix 2

Correlation of Governance Indicators – Developed Countries

		C. of Corruption	Gov. Effect.	Political Stability	Reg. Quality	Rule	Voice ACC
Correlation	C. of Corruption	1.000	.973	.829	.927	.977	.913
	Gov. Effect.	.973	1.000	.821	.957	.981	.934
	Political Stability	.829	.821	1.000	.795	.840	.800
	Reg. Quality	.927	.957	.795	1.000	.960	.951
	Rule	.977	.981	.840	.960	1.000	.946
	Voice ACC	.913	.934	.800	.951	.946	1.000

Notes: 'C. of Corruption' is control of corruption; 'Gov. Effect.' is government effectiveness; 'Reg. Quality' is regulatory quality; 'Rule' is rule of law; 'Voice ACC' is voice and accountability.

Correlation of Governance Indicators – Developing Countries

		C. of Corruption	Gov. Effect.	Political Stability	Reg. Quality	Rule	VoiceACC
Correlation	C. of Corruption	1.000	.893	.732	.853	.922	.646
	Gov. Effect.	.893	1.000	.635	.914	.913	.553
	Political Stability	.732	.635	1.000	.624	.743	.591
	Reg. Quality	.853	.914	.624	1.000	.856	.598
	Rule	.922	.913	.743	.856	1.000	.643
	VoiceACC	.646	.553	.591	.598	.643	1.000

Notes: 'C. of Corruption' is control of corruption; 'Gov. Effect.' is government effectiveness; 'Reg. Quality' is regulatory quality; 'Rule' is rule of law; 'Voice ACC' is voice and accountability.

Appendix 3: Correlations between Governance and Instrument variables – Developed Countries

	gov	legor_uk	legor_fr	legor_ge	comlaw	civlaw
gov	1.0000					
legor_uk	0.3481	1.0000				
legor_fr	0.2220	-0.2039	1.0000			
legor_ge	0.2666	-0.1361	-0.1619	1.0000		
comlaw	0.3481	1.0000	-0.2039	-0.1361	1.0000	
civlaw	-0.3581	-0.9125	0.2234	-0.0693	-0.9125	1.0000

Notes: 'legor_uk' is UK legal origin; 'legor_fr' is French legal origin; 'legor_ge' is German legal origin; 'comlaw' is common law; 'civlaw' is civil law.

Appendix 4: Correlations between Governance and Instrument Variables – Developing Countries

	gov	legor_uk	legor_fr	legor_ge	comlaw	civlaw
gov	1.0000					
legor_uk	0.3510	1.0000				
legor_fr	-0.3112	-0.8609	1.0000			
legor_ge	0.1598	-0.0943	-0.1343	1.0000		
comlaw	0.3906	0.4321	-0.3720	-0.0407	1.0000	
civlaw	-0.1031	-0.4678	0.4304	-0.0830	-0.2299	1.0000

Notes: 'legor_uk' is UK legal origin; 'legor_fr' is French legal origin; 'legor_ge' is German legal origin; 'comlaw' is common law; 'civlaw' is civil law.

Table 1: Descriptive Statistics – Developed Countries

	FDI	Gov	Trade	Inflation	Tele	Pop
Mean	9.601	$1.77e^{-07}$	10.989	4.421	1.526	7.038
Maximum	11.473	1.323	12.602	59.220	1.870	8.496
Minimum	6.640	-1.986	8.974	-4.480	0.577	5.458
Std.dev.	0.9114	1	0.893	5.753	0.261	.626
No. of Obs.	451	451	451	451	451	451
No. of Countries	41	41	41	41	41	41

Note: The table summarizes the descriptive statistics for the major variables in this study for developed countries. FDI is measured as net inflows (balance of payments in current US$) divided by a GDP deflator with 2002 as base year. Real Trade – imports plus exports divided by the GDP deflator - describes the openness of the economy. Inflation - consumer prices (annual % change) - is used as a proxy for macroeconomic stability. Tele - number of telephone lines per 100 inhabitants - is used to proxy for the quality of infrastructure in the host country.
Source: World Developed Indicators (WDI), 2013 database.

Table 2: Descriptive Statistics – Developing Countries

	FDI	Gov	Trade	Inflation	Tele	Pop
Mean	8.638	$2.69e^{-08}$	10.063	6.287	0.805	6.918
Maximum	11.251	2.633	12.427	51.461	1.792	9.130
Minimum	1.031	-2.103	7.637	-3.503	-0.776	4.843
Std.dev.	1.047	1	0.944	5.896	0.637	.989
No. of Obs.	759	759	759	759	759	759
No. of Countries	69	69	69	69	69	69

Note: The table summarizes the descriptive statistics for the major variables in this study for developed countries. FDI is measured as net inflows (balance of payments in current US$) divided by a GDP deflator with 2002 as base year. Real Trade – imports plus exports divided by the GDP deflator - describes the openness of the economy. Inflation - consumer prices (annual % change) - is used as a proxy for macroeconomic stability. Tele - number of telephone lines per 100 inhabitants - is used to proxy for the quality of infrastructure in the host country.
Source: World Developed Indicators (WDI), 2013 database.

Table 3: Correlation Matrix – Developed Countries

	FDI	Gov	Trade	Inflation	Tele	Pop
FDI	1.0000					
Gov	0.6174	1.0000				
Trade	0.8742	0.6902	1.0000			
Inflation	-0.3318	-0.5257	-0.3735	1.0000		
Tele	0.6199	0.7737	0.7228	-0.3087	1.0000	
Pop	0.5219	-0.0106	0.6493	-0.0333	0.1709	1.0000

Note: The table summarizes the correlations between the major variables in this study for developed countries. FDI is measured as net inflows (balance of payments in current US$) divided by a GDP deflator with 2002 as base year. Real Trade – imports plus exports divided by the GDP deflator - describes the openness of the economy. Inflation - consumer prices (annual % change) - is used as a proxy for macroeconomic stability. Tele - number of telephone lines per 100 inhabitants - is used to proxy for the quality of infrastructure in the host country.
Source: World Developed Indicators (WDI), 2013 database.

Table 4: Correlation Matrix – Developing Countries

	FDI	Gov	Trade	Inflation	Tele	Pop
FDI	1.0000					
Gov	0.2341	1.0000				
Trade	0.8587	0.1294	1.0000			
Inflation	-0.0872	-0.3107	-0.0996	1.0000		
Tele	0.4229	0.7161	0.352	-0.2665	1.0000	
Pop	0.5315	-0.4866	0.7155	0.1913	-0.2784	1.0000

Note: The table summarizes the correlation for the major variables in this study for developing countries. FDI is measured as net inflows (balance of payments in current US$) divided by a GDP deflator with 2002 as base year. Real Trade – imports plus exports divided by the GDP deflator - describes the openness of the economy. Inflation - consumer prices (annual % change) - is used as a proxy for macroeconomic stability. Tele - number of telephone lines per 100 inhabitants - is used to proxy for the quality of infrastructure in the host country.
Source: World Developed Indicators (WDI), 2013 database.

Table 5: FDI and Governance – Panel Regressions for Developed Countries

Independent variables		IV [a]	IV [b]
	OLS	2SLS	2SLS
	(1)	(2)	(3)
Constant	-.723*	1.314*	-.595
	(-1.76)	(1.70)	-1.41
Gov	-.100**	.297***	-.105*
	(-1.90)	(2.15)	-1.84
Trade	1.192***	.764***	1.185***
	(15.89)	(4.75)	13.71
Inflation	.001	.011**	.002
	(0.33)	(2.06)	0.62
Tele	-.345***	-.573***	-.331**
	(-2.51)	(-3.43)	-2.25
Pop	-.320***	.101	-.330***
	(-4.23)	(0.64)	-3.93
No. of countries	41	41	41
No. of observations (strongly balanced)	451	451	451
R²	0.774	0.747	0.774
F Statistic	271.87		
Wald chi2		1383.24	1406.75
		[0.000]	[0.000]

Notes: The dependent variable is foreign direct investment, net inflows (balance of payments in current US$) divided by GDP deflator with 2002 as base year. *t*-statistics are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. White's heteroscedasticity correction is applied to the OLS regression and fixed effects models.
[a] Instrument variables are legal origin.
[b] Instrument variables are common law and civil law. Log values are used to measure real FDI inflows, real Trade,Tele and Pop. Goodness-of-fit is not a factor; *p*-values are in the parentheses.

Table 6: FDI and Governance – Panel Regressions for Developing Countries

Independent variables		IV [a]	IV [b]
	OLS	2SLS	2SLS
	(1)	(2)	(3)
Constant	-.736**	-1.014***	-.494**
	(-2.15)	(-3.33)	(-2.11)
Gov	.072**	-.090	.083**
	(2.23)	(-0.82)	(2.46)
Trade	.929***	1.072***	.892***
	(13.18)	(9.77)	(15.41)
Inflation	.007	0.008**	0.006*
	(1.56)	(2.28)	(1.80)
Tele	.138***	.173***	.132**
	(3.15)	(2.92)	(2.57)
Pop	-.020	-.192	.004
	(-0.33)	(-1.53)	(0.07)
No. of countries	69	69	69
No. of observations (strongly balanced)	759	759	759
R²	0.757	0.750	0.785
F Statistic	437.19		
Wald chi2		2303	2533.75
	[0.000]	[0.000]	[0.000]

Notes: The dependent variable is foreign direct investment, net inflows (balance of payments in current US$) divided by GDP deflator with 2002 as base year. t-statistics are in parentheses; ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. White's heteroscedasticity correction is applied to the OLS regression and fixed effects models.

[a] Instrument variables are legal origin.

[b] Instrument variables are common law and civil law. Log values are used to measure real FDI inflows, real Trade,Tele and Pop. Goodness-of-fit is not a factor; p-values are in the parentheses.