SPOUDAI Journal of Economics and Business, Vol. 72 (2022), Issue 1-2, pp. 11-33.

University of Piraeus

SPOUDAI
Journal of Economics and Business
Σπουδαί
http://spoudai.unipi.gr

Fiscal and non-fiscal institutional context effects and foreign direct investment: empirical evidence in developing countries

Dimitra Mitsi[a], Constantina Kottaridi[b]

[a]*Postdoctoral Researcher, Department of Economics, University of Piraeus, Greece*
Email: mitsidimitra2@gmail.com
[b]*Associate Professor, Department of Economics, University of Piraeus*
Bioeconomy, Circular Economy and Sustainable Development Laboratory, Department of Economics, University of Piraeus, Greece
Hellenic Open University, Greece
Email: kottarid@unipi.gr

Abstract

In this paper, we examine the impact of different types of institutions including fiscal rules to the conventional institutional framework on FDI in 24 developing countries from 1996 to 2018. No study to date explores the role of fiscal rules on FDI given that fiscal discipline came to the forefront after the 2008 financial crisis. Our findings support a significant negative effect of expenditure rules on FDI, indicating that such fiscal rules act as a signal of fiscal indiscipline. We also provide strong evidence that political stability, regulatory quality and rule of law have a positive effect on FDI. Interestingly, we find an asymmetric impact of political stability and regulatory quality on FDI when we adopt expenditure rules in developing countries in contrast to those not adopting expenditure rules.

JEL classification:C33, E62, F21
Keywords: fiscal policy, fiscal rules, foreign direct investment, institutional context

1. Introduction

Foreign direct investment (FDI) is a global phenomenon and an important factor of economic development (Buchanan et. al, 2012). According to the OECD and IMF definitions, foreign direct investment is an investment that shows an interest by a resident in one country in an enterprise resident in another country. FDI can be either export-oriented or market-oriented. Export-oriented FDI mainly examines cost-competitiveness of the host country whereas market-oriented FDI mainly examines market size and growth. There are also determinants that affect both types of FDI (OECD, 2000). FDI often facilitates sustainable development and economic growth, it creates new jobs, it brings innovations, it develops new skills etc. As a result, exploring the significant factors of FDI inflows are of particular interest to both policymakers and analysts.

Reviewing the existing literature, institutional variables like political stability (Quazi,1997; Tuman & Emmert,1999; Wei, 2000; Mauro,1995) , rule of law (Sethi et al., 2002, Loree & Guisinger, 1995) democratic institutions (Wei,1997; Schneider and Frey, 1985; Jensen,2003; Li and Resnick,2003) corruption and taxation (Coelho and Lehmann, 2012; Forsyth, 1971;

Loree & Guisinger, 1995; Castanaga et al., 1998) are some important explanatory variables of FDI which receive the most significant attention.

The 2008 financial crisis had a major impact on all economies and each country has applied several policy measures in favor of fiscal discipline in order to improve economic conditions and increase investment, both domestic and from abroad. One of them was the establishment of fiscal rules. Since then, fiscal rules play an important role in fiscal framework and in the adoption of fiscal discipline. Besides, fiscal indiscipline means tax increases in the future and creation of an environment with macroeconomic instability that might cause negative effects of FDI due to the negative perceptions of investors that might have (Strat, Davidescu & Paul, 2015; Cambazoglu & Günes, 2016; Blonigen, 2005). Therefore, foreign investors may decide to invest in countries committed to fiscal discipline.

This paper adds to the existing literature by exploring the effects of fiscal rules on foreign direct investment in developing countries. We use 2 estimations methods: a) the Random Effects (RE), b) the Generalized Two Least Squares (G2SLS). Such methods are commonly used to evaluate the impact of institutions on FDI in the related literature. However, there isn't any study, to the best of our knowledge, that examines the impact of fiscal rules on FDI. As a result, with this paper, we are trying to answer the following questions: do fiscal rules improve FDI? Does the impact on FDI vary among fiscal rules (debt rules, budget balance rules, expenditure rules? Does the impact on FDI vary when fiscal rules are examined with other types of institutions? The rest of the paper is structured as follows: Section 2 describes a comprehensive analysis of the related research; section 3 reports the data and the econometric methodology employed in order to examine the contribution of Fiscal Rules and different types of Fiscal Rules on Foreign Direct Investment; section 4 presents the results of 2 estimation methods; section 5 concludes, providing useful remarks.

2. Literature review

Several theoretical and empirical frameworks have tried to capture the factors of a country's FDI attractiveness (Asiedu, 2002; Azam and Lukman, 2010; Hoang and Goujon, 2014, Quazi, 2007; Onyeiwu and Shrestha, 2004). The most well-known framework is the OLI paradigm developed by Dunning (1980). According to this framework, FDI is explained by 3 advantages (ownership advantages, location advantages and internalization advantages). Traditionally, many researchers focused on economic factors like market size, trade openness, gross fixed capital formation and inflation as the important factors in attracting or deterring FDI (Bevan & Estrin, 2004; Asiedu, 2004; Caetano & Galego, 2009).

Beginning with the market size, it is well-known that market size as measured by the gross domestic product (GDP) or the gross domestic product per capita (GDPCA) of a country is the most accepted determinant of FDI inflows. A number of both theoretical and empirical studies have proved that market size affects FDI positively (Bnadera & White, 1968; Tsai,1994; Billington, 1999; Bevan & Estring, 2004; Omri & Kahouli, 2014) supporting the statement that economies with an environment of macroeconomic stability (higher-growth economies) can attract FDI (Iamsiraroj & Doucouliagos, 2015). In the same vein, trade openness may influence FDI inflows. According to many scholars, trade openness, as measured by the sum of exports plus imports as a percentage of GDP (Janicki et al., 2004), affects positively FDI (Kakar and Khilji, 2011; Liargovas et al., 2012) indicating that accessibility to international markets is an important factor for FDI (Maasron & Abdullah, 2010). As concerns gross fixed capital formation as a proxy of infrastructure is expected to affect FDI positively (Ashah & Ahmed, 2003). In general, well-developed infrastructure

reduces the cost of doing business and attracts FDI (Asiedu, 2004). On the other hand, market instability, as measured by inflation rate, functions as a destabilized factor of the economy and hence it has a negative impact on FDI (Kok & Ersoy, 2009 & Walch & Worz, 2012).

Institutions, as a valuable location factor, play a more prominent role on FDI in the more recent literature (Wei, 1997; Buchanan et al., 2012; Bevan, Estrin and Meyer, 2004). Many researchers have examined the effect of institutions on FDI concluding that countries with strong institutions can attract more FDI inflows (Globerman and Shapiro, 2002; La Porta et al., 1998) whereas countries with weak governance cannot protect the investments (Gastanaga et al., 1998; Asiedu, 2006; Daude and Stein, 2007). All the idea comes from the costs that institutional factors can create when a country invests in another country. For example, in a liberal environment where the costs are less and the political environment is stable, the host countries can attract FDI (Globerman & Shapiro, 2003; Meyer & Nguyen,2005). Conversely, an unreliable political environment (where institutional factors increase costs) creates uncertainty and market inefficiencies and hence deter FDI (Globerman & Shapiro, 2003). As a result, good governance can attract more FDI.

In our analysis, we explore 2 types of institutions. The first category refers to the worldwide governance indicators (Kaufman et al., 1998), and the second category regards a new dimension of institutions, namely fiscal rules (debt rules, expenditure rules, budget balanced rules and revenue rules).

Worldwide governance indicators have been examined by many scholars (Asiedu, 2002; Globerman & Shapiro, 2003; Kolstad et al., 2008). One of the first institutions to be examined at this regard was the impact of political stability. In general, countries with political stability characterized by a stable environment that has the ability to attract investments both internal and from abroad. Hence, political instability will have negative effects on productivity and economic growth (North,1981; Alesina and Perotti,1994; Feng, 2001). For example, Quazi (2007) and Tuman and Emmert (1999) focused on the role of political stability on FDI. They found that a political stability is positively associated with FDI as a percentage of GDP. However, this evidence is not universal and some studies like Asiedu (2002) and Kolstad et al. (2008) fail to establish a significant link between political stability and FDI.

An effective legal system is another prerequisite for FDI (Sethi et al., 2002, 2003, Loree & Guisinger, 1995). Strong legal institutions where citizens abide by property rights, rule of law and contract enforcement decrease uncertainty and encourage FDI into a given country (Globerman & Shapiro, 2003). Ali et al. (2010) found that property rights are a significant factor for FDI since other institutions have an indirect impact on FDI through property rights. Drabek and Payne (2002) considered that the law of order is the more important determinant of FDI as it becomes a severe threat for M.N.C.s when the government intervenes in court decisions or courts do not enforce contracts. Moreover, the economic growth literature concludes that legal institutions like rule of law and property rights play an important role in attracting FDI as they improve the allocation of resources (Acemoglu et al., 2005; Rodrik et al., 2004).

Analyzing the role of corruption for FDI, we found that empirical results are mixed. On the one hand, many studies found that corruption is not a stimulus to FDI as it increases the cost of doing business and uncertainty (Wei, 2000; Mauro, 1995); on the other hand, Egger et al. (2005) found a positive impact of corruption on FDI. In general though, the literature is ot affirmative about a negative or a positive link between corruption and FDI (Wheeler and Mody, 1992).

Recent studies have directed their attention on the effects of composite measures of worldwide governance indicators on FDI (Wheeler and Mody, 1992; Globerman and Shapiro, 2002; Pantelidis and Nikolopoulos, 2008; Groh and Wich, 2009; Buchanan et al, 2012; Asiedu, 2013). For example, Buchanan et al. (2012) by using a composite index composed of control of corruption, rule of law, regulatory quality and political stability conclude that the index of governance as developed by Kaufman et al. (1999) has a positive effect on FDI. Similar results are reported by Globerman and Shapiro (2002) and Gani (2007). On the other side, Wheeler and Mody (1992) - by using approximately the same dimension of institutions like Globerman and Shapiro (2002) - found no correlation between these 2 variables.

Moreover, except from conventional institutions, fiscal policy (e.g., tax rates, tax incentives and public expenditures) plays a prominent role on FDI. For instance, empirical research on the impact of tax incentives on FDI has been inconclusive (Coelho and Lehmann, 2012). Several scholars find a negative and significant relationship between tax rates and FDI (Forsyth, 1971; Moore et al., 1987; Loree & Guisinger, 1995; Castanaga et al., 1998) while others find tax rates to be a significant factor for FDI (Boskin & Gale, 1986; He & Guisinger, 1993; Swenson, 1994). In addition, Wheeler & Mody (1992) find no significant relationship between these two variables. One explanation for these mixed results may be explained as a difference in tax measurements applied in these studies. For example, some studies use the statutory tax rate to measure the impact of taxes on FDI (Grubert and Mutti's,1991) while others rely on different types of effective tax rates (Boskin and Gale,1987; Newlon, 1987; Slemrod, 1990; Swenson, 1994; Grubert and Mutti, 2000).

Furthermore, many scholars have examined the role of public expenditures on economic growth and found that the public expenses are an important factor both for economic growth and FDI inflows (Le & Suruga, 2005; Verma &Arora, 2010). Theoretically, public expenses are used to support the education system, the health system, the infrastructure system etc. of a country and a result to create an environment suitable for attracting FDI (Chen & Lee, 2005; He and Sun, 2014).

Following the recent economic crisis, the EU strengthened its fiscal governance through many ways. One of them was the development of national fiscal rules. Kopits and Symanski (1998) gave a potential definition of fiscal rules. They defined rules as a permanent constraint on fiscal policy and they categorized them in 4 sub-groups (budget balance rules, debt rules, revenue rules and expenditure rules) (European Commission 2006, p. 149). For instance, in European Countries, the debt and the deficit must not exceed 60% and 3% respectively. As a result, policy makers will always prefer to follow a fully discretionary policy.

Examining the existing literature to date, we find that the association between fiscal rules and FDI has received no attention. Instead, the majority of literature investigates the impact of fiscal rules on fiscal balance and the adoption of fiscal rules on fiscal outcomes (Alesina and Bayoumi, 1996; Alesina et al., 1999; Gleich, 2003; Fabrizio and Mody, 2006; Debrun et al., 2008; Perotti and Kontopoulos, 2002; Badinger & Reuter, 2017; Caselli & Reynaurd, 2020; Mitsi, 2021). For example, Debrun et al. (2008), in a dataset of 25 European countries, find a positive relationship between fiscal rules and cyclically adjusted primary balance. In addition, Caselli and Reynaud (2020), in a dataset of 142 countries, report the same results highlighting the significance of well-designed fiscal rules on fiscal balances. Finally, Badinger and Reuter (2017), in a dataset of 74 countries find that higher fiscal balances are linked with stringent fiscal rules.

It is very difficult to find a link between fiscal rules and budget outcomes without taking into account the endogeneity problem. Many empirical studies address the endogeneity issue by using the estimation method of Generalized methods of moments (GMM) or IV regressions

(Reuter, 2019). Others, use treatment effects methods to address the endogeneity problem. For example, Grembi and Nannicini (2016) adopt the quasi-experimental method, Guerguil et al. (2017) adopt the method of propensity score matching while Caselli and Wingender (2018) use the method of inverse probability weighting.

3. Theoretical Framework

Dunning' s eclectic paradigm (1981) and the updated version of Dunning and Lundan (2008), the so-called OLI framework, provides a comprehensive analysis of Multinational Enterprises' (ME) investments abroad. According to this framework, FDI is explained by 3 advantages: (the ownership advantage, which is the competitive advantage of the firm, the location advantage which is the comparative advantage of the host country and the internalization advantage, which refers to the advantage of the firm to use its advantages in the foreign market internally). However, most of the papers use the OLI framework to explain the location factors (e.g., institutions) on FDI due to the data unavailability of the rest of the 2 factors.

Reviewing the previous literature on how different types of institutions impact on FDI, we can conclude that all institutional factors do not exert the same impact and some affect FDI inflows negatively while others positively. However, significant fiscal institutional factors are missing in FDI analysis. In this context, it is of particular significance to address the role of fiscal rules on FDI.

Fiscal policy plays a prominent role in government decisions as it provides all necessary tools to bring higher income, prosperity and sustainable economic growth (Summers, 2014) but, at the same time, it is also a significant determinant for foreign direct investments (IMF, 2003). For instance, taxes (public revenues) and public expenditures are examples of fiscal policy tools as they are used from governments to make investments in public goods and services, to finance operations and to create an appropriate environment to attract more investments from abroad (tax incentives). However, fiscal policy and fiscal indiscipline do not coexist.

The outburst of the crisis brought to the surface the weaknesses of countries and the budgetary outcomes of fiscal indiscipline and forced most of them to apply several institutional reforms to stabilize their economy. One of the most known institutional reform was the adoption of expenditure rules. In general, expenditure rules set quantitative limits to expenditures. For example, in European countries the deficit should not surpass the 3% as a percentage of GDP. As a result, expenditure rules are important tools for fiscal policy and major determinants of budgetary outcomes both in European and Developing countries (Debrun, 2008; Ayuso-i-Casalo, 2007; Badinger and Reuter, 2015; Caselli & Reynard, 2020) but at the same time it is a sign of fiscal indiscipline in a country. Besides fiscal indiscipline means tax increases in the future and creation of an environment with macroeconomic instability that might cause negative effects of FDI due to the negative perceptions of investors that might have (Strat, Davidescu & Paul, 2015; Cambazoglu & Günes, 2016; Blonigen, 2005). Therefore, foreign investors may decide to invest in countries committed to fiscal discipline. Accordingly,

H_1. *Expenditure rules of the host country are negatively and statistically significant factors for FDI in developing countries.*

The majority of the researches examine more generally the impact of specific types of institutions like worldwide indicators or economic freedom index on FDI. Thus, there is little examination among different types of institutions that could give more results for FDI attractiveness. For example, Quazi (2007) investigated the role of political stability on FDI by

using the Kaufman et al. (1998) indicator while Julio et al. (2013) used the Economic freedom Index. However, there is no article that examine the asymmetric impact of political stability or regulatory quality when we have adopted expenditure rules or not. For example, political stability impact positively on FDI (Quazi, 2007; Tuman & Emmert,1999) but at the same time the adoption of expenditure rules means that there is an absence of fiscal discipline over the past years as well as absence of political commitment for sustainable budgetary policies which in turn threatens the political stability of the country. Thus, FDI must be sensitive to this combination of institutions. Accordingly,

H_2. *There is an asymmetric impact of political stability on FDI in developing counties that adopt expenditure rules in contrast to those that don't.*

The same can be assumed for regulatory quality and expenditure rules. On the one hand regulatory quality impacts positively on FDI as evidenced by many scholars (Globerman & Shapiro, 2003; Ali et al., 2010). Nevertheless, in a country where there are strong institutions and property rights, the adoption of expenditure rules is even more attractive to FDI as it shows a positive domestic investment climate. On this context, the impact of having expenditure rules in a sound regulatory environment is greater than in a weaker regulatory environment. Accordingly,

H_3. *There is a greater impact of regulatory quality on FDI in developing countries that adopt expenditure rules in contrast to those that don't.*

4. Methodology

4.1 Data

In our analysis, we use a number of macroeconomic and institutional variables to examine the FDI determinants in 24 developing countries from 1996 to 2018 (Table A1- all the countries). The countries and time period are selected based on data availability while the dataset was derived from several sources (Table A2-variables and sources). For the analysis, we have used foreign direct investment inflows (fdi) and gross domestic product in millions of $ at current prices (gdp), gross fixed capital formation (gfcf), trade openness (sum of imports plus exports) (to) as a percentage of gdp and inflation (inf) as annual change of prices.

Regarding institutional quality, we also use two categories of institutional variables. The first category regards the worldwide governance indicators (Kaufman et al., 1999). These indicators are: i) political stability (pst), ii) government effectiveness (gef), iii) rule of law (rlw), regulatory quality (rql), iv) control of corruption (ccr) and voice and accountability (voca). All these indicators range between -2.5 to +2.5. +2.5 represents high quality of institutions while -2.5 represents low quality of institutions. The second category concerns a new dimension of institutions, the so-called fiscal rules. Fiscal rules are categorized in 4 subgroups (debt rules (drl), expenditure rules (erl), budget balanced rules (brl) and revenue rules (rrl)) and set quantitative limits on fiscal aggregates like debt and deficit. For example, according to the Stability and Growth Pact of Maastricht Treaty, EU Member States should keep their debt under 60% and their deficit below 3%. European Commission have constructed a fiscal rule index by taking into account 5 criteria: i) the statutory base of the rule, ii) the binding character of the rule, iii) the existence correction mechanisms in case of deviation from rules, iv) escapes clauses in case of shocks and v) independent bodies for monitoring policymakers' compliance with the rules. However, there is no fiscal rule index for developing countries and as a result we will measure the impact of fiscal rules on fdi by creating 4 dummy variables for each type of fiscal rule. More precisely, each dummy it will take value 1 if there is a fiscal rule or debt rule or expenditure rule or budget balanced rule or

revenue rule and 0 if there is no fiscal rule or debt rule or expenditure rule or budget balanced rule or revenue rule.

Table 1: Descriptive Statistics (1996-2018)

Variables	Obs	Mean	St. Dev	Min	Max
logfdi	545	2.4381	1.0091	-1.5004	4.6730
loggdp	552	10.2054	0.7727	8.3148	12.4335
gfcf	537	21.4349	7.1346	2.7811	59.7231
To	551	59.9944	26.3024	20.7225	144.6145
Inf	552	6.9706	7.8953	-8.9748	80.3255
pst	552	-0.7260	0.7885	-2.8100	1.1716
gef	552	-0.6301	0.4266	-1.7668	0.6146
rql	552	-0.4724	0.4036	-1.6415	1.1258
rlw	552	-0.6340	0.4775	-1.8023	0.3837
ccr	552	-0.6968	0.4562	-1.5629	0.7859
voca	552	-0.4548	0.5164	-1.6583	0.5595
institutions	552	0.5053	0.2977	0	1
fr	552	0.423913	0.4946	0	1
erl	552	0.01812	0.1335	0	1
rrl	552	0.25	0.4334	0	1
brl	552	0.3967	0.4896	0	1
drl	552	0.3641	0.4816	0	1

Table 1 presents the descriptive statistics of the dataset from 1996 to 2018. Taking into account the governance indicators of Kaufman et al. (1999), it is evident in Table 2 that there is a strong correlation among them and each of the governance indicators must be used separately in our model (Globerman et al., 2002; Buchanan et al., 2012). For instance, rule of law index and government effectiveness index display a correlation equal to 0.7937. Similarly, high correlation presented between control of corruption and government effectiveness. Low correlations are presented between political stability and government effectiveness (0.2769) and between rule of law and political stability (0.3781). In this context, we have constructed an overall index (is called institutions) which includes the above 6 sub-indices to overcome the problem of multicollinearity, by using the Principal Component Analysis.

Table 2: Correlation matrix of worldwide governance indicators

Variables	pst	gef	rql	rlw	ccr	voca
pst	1.0000					
gef	0.2769	1.0000				
rql	0.3828	0.7356	1.0000			
rlw	0.3781	0.7937	0.6952	1.0000		
ccr	0.4459	0.7900	0.7720	0.7189	1.0000	
voca	0.4442	0.5552	0.4382	0.5078	0.6459	1.0000

Fiscal rules are expressed through dummies and the average score is equal to 0.4239 while the average score for budget balanced rules and debt rules is 0.3967 and 0.3641, respectively.

Fixed or random effects model is a common method that is used for examining the determinants of FDI. Based on Hausman's specification test (1978), the appropriate model is the random effects model (REM). Moreover, we use the technique of robust standard error to overcome the problem of heteroscedasticity. Regarding multicollinearity we use the variance

inflation factor (VIF).

4.2 Empirical methodology

To evaluate the impact of different types of institutions on FDI, we adopt two models:

The first model includes Kaufman's indicators and it is structured as follows:

$$logfdi_{it}=\alpha_i + \beta_1 loggdp_{it}+ \beta_2 gfcf_{it} + \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 institutions_{it} + u_{it.} \quad (1)$$

where $logfdi_{it}$ is the dependent variable and expresses the log value of inward FDI, $loggdp_{it}$ expresses the log value of current GDP, $gfcf_{it}$ expresses the gross fixed capital formation as a percentage of GDP, to_{it} expresses the sum of exports and imports as a percentage of GDP, infit expresses the annual change of prices, $institutions_{it}$ expresses the overall governance index which includes six sub-indices of governance indicators and u_{it}, is the error term. Moreover, $_i$ expresses the specific country and t expresses the time.

According to the literature, market size as measured by GDP, gross fixed capital formation and trade openness are expected to affect FDI positively (Asiedu, 2004; Bevan and Estrin, 2004; Kok and Ersoy, 2009; Gabriel et al., 2016) while inflation measuring macroeconomic stability is expected to have a negative sign (Chakrabarti, 2001; Waqas, 2016; Siklar et al., 2018).

Supposing that countries with strong institutions can attract more FDI inflows whereas countries with weak governance are less attractive, a positive relationship between governance indicators (Kaufman et al., 1998) and FDI inflows is expected. However, each of the six sub-indices must be examined separately because of the problem of multicollinearity (highly correlated). As a result, equation 1 is expressed as follows:

$$logfdi_{it}=\alpha_i + \beta_1 loggdp_{it}+ \beta_2 gfcf_{it} + \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 X_{it} + u_{it}. \quad (2)$$

where X_{it} represents a number of 6 individual governance indicators. These are: political stability (pst), government effectiveness (gef), regulatory quality (rql), rule of law (rlw), control of corruption (ccr) and voice and accountability (voca).

With regards to these institutional variables, Quazi (2007) and Tuman and Emmert (1999) focus on the role of political stability on FDI. They find that a political stability is positively associated with FDI as a percentage of GDP. Moreover, analyzing the role of corruption for FDI, we find that empirical results are mixed. On the one hand, many studies find corruption not to be stimulus for FDI as it increases the cost of doing business and uncertainty (Wei, 2000; Mauro, 1995) but on the other hand Egger et al. (2005) find a positive impact of corruption on FDI. An effective legal system is another prerequisite for FDI (Sethi et al., 2002, 2003, Loree & Guisinger, 1995). Strong legal institutions where citizens abide by property rights, rule of law and contract enforcement decrease uncertainty and encourage FDI into a given country (Globerman & Shapiro, 2003).

The second model concerns fiscal rules as expressed by dummies and it is structured as follows:

$$logfdi_{it}=\alpha_i + \beta_1 loggdp_{it}+ \beta_2 gfcf_{it}+ \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 fr_{it}+u_{it}. \quad (3)$$

where fr_{it} expresses the existence of fiscal rule or not. It takes the value 1 if fiscal rules have been adopted and 0 otherwise.

$$logfdi_{it}=\alpha_t + \beta_1 loggdp_{it}+ \beta_2 gfcf_{it} + \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 F_{it} + u_{it}. \quad (4)$$

where Fit represents a number of 4 types of fiscal rules. These are: expenditure rules (erl),

debt rules (drl), budget balanced rules (brl) and revenue rules (rrl).

The economic effects of fiscal policy are multiple. A growing strand of literature has found that different factors such as tax, labor costs, e.t.c affect both positively and negatively. However, a survey of Le & Suruga (2005) reported that excess public expenditure impact on FDI negatively. On the ground that fiscal rules set quantitative limits to fiscal aggregates and oblige governments to follow more prudent fiscal policies, a negative relationship between FDI and fiscal rules components is expected.

Furthermore, we examine the interactions effects of fiscal rules and different types of institutions on FDI. In particular, equations 1 and 3 are structured as follows:

$$logfdi_{it}=\alpha_i + \beta_1 loggdp_{it} + \beta_2 gfcf_{it} + \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 institutions_{it} + \beta_6 fr_{it} + u_{it} \quad (5)$$

Finally, we examine the possibility of asymmetric impact of different kind of institutions on FDI by testing the impact of existence of fiscal rules or not.

$$logfdi_{it}=\alpha_i + \beta_1 loggdp_{it} + \beta_2 gfcf_{it} + \beta_3 to_{it} + \beta_4 inf_{it} + \beta_5 institutions_{it} fr_{it} + \beta_6 institutions_{it} (1-fr_{it}) + u_{it} \quad (6)$$

4.3 Empirical Results

Table 3 summarizes the empirical results of Equation 1. According to the literature GDP, gross fixed capital formation and trade openness have a positive effect on FDI while on the other hand inflation and overall index of institutions show a no significant impact on FDI.

Table 3: The impact of institutions as measured by an overall index on FDI by using the approach of random effects

Variables	(1)
loggdp	1.14828***
	(0.09343)
gfcf	0.01925**
	(0.00814)
to	0.00664***
	(0.00234)
inf	0.00065
	(0.00310)
institutions	0.17025
	(0.13143)
Constant	-10.22887***
	(1.00835)
R^2 within	0.4426
R^2 between	0.8705
R^2 overall	0.7351
Wald X^2	231.73
	(0.0000)
Observations	530
Number of countries	28

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table 4 provides the empirical results of Equation 2. More precisely, political stability,

regulatory quality and rule of law impact positively on fdi while government effectiveness, control of corruption and voice and accountability show an insignificant effect on FDI.

Table 4: The impact of individual worldwide governance sub-indicators on FDI by using the approach of random effects

Variables	(1)	(2)	(3)	(4)	(5)	(6)
loggdp	1.16792***	1.11488***	1.11029***	1.11455***	1.12906***	1.13124***
	(0.10252)	(0.09764)	(0.09604)	(0.09731)	(0.09822)	(0.10013)
gfcf	0.01765**	0.01978**	0.02144***	0.01968**	0.01977**	0.01994**
	(0.00862)	(0.00834)	(0.00824)	(0.00815)	(0.00828)	(0.00803)
to	0.00627***	0.00632***	0.00513**	0.00633***	0.00614**	0.00650**
	(0.00235)	(0.00228)	(0.00258)	(0.00234)	(0.00245)	(0.00255)
inf	0.00156	0.00045	0.00063	0.00049	0.00027	-0.00023
	(0.00339)	(0.00322)	(0.00326)	(0.00303)	(0.00297)	(0.00305)
pst	0.13665**					
	(0.06892)					
gef		0.26646				
		(0.19075)				
rql			0.32429**			
			(0.14272)			
rlw				0.21118*		
				(0.12839)		
ccr					0.15911	
					(0.12736)	
voca						0.07087
						(0.13203)
Constant	-10.19007***	-9.62880***	-9.55919***	-9.65442***	-9.81340***	-9.93674***
	(1.07396)	(1.07083)	(1.03960)	(1.04382)	(1.04926)	(1.09206)
R^2 within	0.4448	0.4494	0.4515	0.4474	0.4416	0.4367
R^2 between	0.8798	0.8704	0.8788	0.8642	0.8699	0.8725
R^2 overall	0.7412	0.7360	0.7413	0.7318	0.7316	0.7327
Wald X^2	216.11	216.55	237.05	210.47	218.07	220.29
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations	530	530	530	530	530	530
Number of countries	28	28	28	28	28	28

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table 5 provides the empirical results of Equations 3 and 4. It indicates the impact of fiscal rules on FDI. Of the four types of fiscal rules, only expenditure rules show a negative and statistically significant impact on fdi (these results support the H_1) while others do not have any impact on FDI.

Table 5: The impact of different types of fiscal rules on FDI by using the approach of random effects

Variables	(1)	(2)	(3)	(4)	(5)
loggdp	1.12709***	1.15442***	1.11980***	1.11866***	1.13427***
	(0.08472)	(0.09995)	(0.08978)	(0.08089)	(0.09727)
gfcf	0.02052***	0.01970**	0.02086***	0.02065***	0.02099**
	(0.00790)	(0.00799)	(0.00761)	(0.00790)	(0.00843)
to	0.00658***	0.00676***	0.00636***	0.00654***	0.00654***
	(0.00243)	(0.00258)	(0.00237)	(0.00246)	(0.00250)
inf	0.00003	-0.00054	0.00041	0.00028	0.00039
	(0.00309)	(0.00299)	(0.00317)	(0.00315)	(0.00297)
fr	0.03080				
	(0.07224)				
erl		-0.28902*			
		(0.17315)			
drl			0.08345		
			(0.09596)		
brl				0.05302	
				(0.07239)	
rrl					0.10280
					(0.11212)
Constant	-9.95720***	-10.20894***	-9.89689***	-9.88144***	-10.05388***
	(0.94117)	(1.08830)	(0.99471)	(0.90927)	(1.03820)
R^2 within	0.4356	0.4402	0.4381	0.4359	0.4376
R^2 between	0.8723	0.8703	0.8695	0.8726	0.8702
R^2 overall	0.7317	0.7314	0.7301	0.7320	0.7297
Wald X^2	249.26	214.69	217.18	298.44	218.24
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations	530	530	530	530	530
Number of countries	28	28	28	28	28

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table 6 shows the empirical results of Equation 5. This table is similar to table 4 but we have added the dummy variable of expenditure rule. As we can see, expenditure rule reveals a negative and statistically effect on FDI while individual governance indicators show a positive impact on FDI which is in accordance with previous results (with higher coefficients, see Table 4). Finally, in Table 7 we examine the possibility of asymmetric impact of different kind of institutions on FDI by testing the impact of existence of fiscal rules or not. According to this Table there is asymmetric impact of political stability and regulatory quality on FDI when we adopt expenditure rules in contrast to not adopting expenditure rules (these results support the H_2 and H_3).

Table 6: Examining the effect of expenditure rules by using the individual worldwide governance sub-indicators (random effect approach)

Variables	(1)	(2)	(3)
loggdp	1.18948***	1.13136***	1.13249***
	(0.10670)	(0.09952)	(0.10272)
gfcf	0.01689**	0.02084***	0.01914**
	(0.00841)	(0.00806)	(0.00800)
to	0.00638***	0.00512*	0.00641***
	(0.00245)	(0.00266)	(0.00243)
inf	0.00131	0.00032	0.00021
	(0.00335)	(0.00319)	(0.00300)
erl	-0.33689*	-0.36705***	-0.29506**
	(0.17466)	(0.11811)	(0.13214)
pst	0.14285**		
	(0.06746)		
rql		0.34518**	
		(0.13835)	
rlw			0.21442*
			(0.13010)
Constant	-10.38899***	-9.74415***	-9.82249***
	(1.13260)	(1.09020)	(1.11475)
R^2 within	0.4505	0.4588	0.4523
R^2 between	0.8776	0.8753	0.8620
R^2 overall	0.7411	0.7404	0.7313
Wald X^2	234.26	295.74	262.53
	(0.0000)	(0.0000)	(0.0000)
Observations	530	530	530
Number of countries	28	28	28

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

4.4 Robustness checks

For robustness checks, except from the method of random effects, we also use an instrumental variable approach, the so called generalized two stages least squares (G2SLS). According to this method, we eliminate the problem of endogeneity by using the lagged values of endogenous variables. In our sample, there is one endogenous variable (the GDP variable). The appropriate number of lags that we use for the endogenous variable is determined by using the Sargan -Hansen statistic. According to the Sargan-Hansen statistic

we include at least t-2 lagged values.

The empirical results of G2SLS support the results that are reported in the previous econometric analysis. More precisely, the results in Table A3 confirm the positive impact of GDP, Trade Openness and Gross Fixed Capital Formation on FDI and show no significant impact of inflation and institutions on FDI.

Furthermore, in Table A7 the asymmetric impact of political stability on FDI is reaffirmed when the countries adopt expenditure rules in contrast to those with no expenditure rules (support the H_2). Finally, A7 supports the H_3 where there is a greater impact of regulatory quality on FDI in developing countries when we adopt expenditure rules in developing countries in contrast to not adopting expenditures.

Table 7: Examining the asymmetric impact of the individual worldwide governance sub-indicators (random effects approach)

Variables	(1)	(2)	(3)
loggdp	1.18583***	1.11022***	1.12486***
	(0.10470)	(0.09609)	(0.10002)
gfcf	0.01660**	0.02144***	0.01967**
	(0.00831)	(0.00827)	(0.00808)
to	0.00627***	0.00513**	0.00621***
	(0.00236)	(0.00257)	(0.00237)
inf	0.00124	0.00063	0.00031
	(0.00334)	(0.00326)	(0.00304)
erlps	-0.52058***		
	(0.14890)		
nerlps	0.14164**		
	(0.06772)		
erlrq		0.34114	
		(0.22215)	
nerlrq		0.32336**	
		(0.14682)	
erlrl			0.82050***
			(0.27029)
nerlrl			0.20117
			(0.13479)
Constant	-10.34109***	-9.55897***	-9.75584***
	(1.11183)	(1.04119)	(1.08340)
R^2 within	0.4523	0.4515	0.4492
R^2 between	0.8807	0.8788	0.8643
R^2 overall	0.7441	0.7413	0.7321
Wald X^2	211.43	237.93	(254.29)
	(0.0000)	(0.0000)	(0.0000)
Observations	530	530	530
Number of countries	28	28	28

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively

5. Conclusion

During the last decades, many scholars have examined the direct and indirect effects of institutions on FDI inflows. This paper contributes to the literature by examining the impact of the most well-known types of institutions like worldwide governance indicators on FDI in a new country group including a new type of institutions namely fiscal rules.

Our research focuses on 24 developing countries from 1996 to 2018 and provides useful results for both policy makers and researchers. The empirical analysis confirms that GDP, Trade Openness and Gross Fixed Capital Formation impact positively on FDI. Regarding the impact of worldwide governance indicators on FDI, we conclude that political stability, regulatory quality, and rule of law affect FDI. Positively. Among the four types of fiscal rules, expenditure rules are found to exert a negative and statistically significant effect on FDI in this country group.

Finally, examining the impact of adopting expenditure rules in a country with sound political stability and /or regulatory quality, we find that FDI reacts asymmetrically. This practically means that the effect of political stability and regulatory quality is not the same when developing countries adopt expenditure rules in contrast to not adopting expenditure rules.

This work lays the ground for more research on the link between fiscal rules and FDI to understand the consequences of fiscal rules adoption to foreign investors. Of course, this research comes with a number of limitations: first, we examine the particular questions on a limited number of countries; it would be interesting to expand the country sample on the one hand and discriminate among country groups. Secondly, it would be of interest to examine more institutional variables and check for more moderating effects with fiscal rules. Despite the limitations, these findings are significant, according to our belief, to national and international policy makers as to policy design.

References

Acemoglu, D., & Verdier, T. (1998). Property rights, corruption and the allocation of talent: A general equilibrium approach. ,108, 1381–1403.

Ahmed MH, Aslam S, Butt MS 2003. The Foreign Direct Investment, Exports, and Domestic Output in Pakistan. Pak Dev Rev, 42: 714-727

Alesina, A., Bayoumi, T. (1996). The costs and benefits of fiscal rules: Evidence from U.S. states. NBER Working Paper 5614.

Alesina, A., Hausman, R., Hommes, R., & Stein, E. (1999). Budget Institutions and Fiscal Performance in Latin America. Journal of Development Economics, 59, 253-273.

Ali, F.A., Fiess, N. & MacDonald, R. (2010). Do Institutions Matter for Foreign Direct Investment. The Journal of Politics, 70(4), 1040-1052.

Asiedu, E. (2002). On the determinants of foreign direct investment to developing countries: Is Africa different? World Development, 30, 107–19.

Asiedu, E. (2004). Policy reform and foreign direct investment to Africa. Absolute progress but relative decline. Development Policy Review, 22(1), 41-48.

Asiedu, E. 2006. Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. The World Economy 29, 63–77.

Azam, M., & Lukman, L. (2010). Determinants of Foreign Direct Investment in India, Indonesia and Pakistan. A QuantitativeApproach. Journal of Managerial Sciences, 4(1).

Bandera, V.N., & White, J.T. (1968). U.S Direct Investment and Domestic Markets in Europe. Economia Internationale, 21.

Badinger, H., & Reuter, W.H. (2015). Measurementof fiscal rules. Introducing the application of partially. Ordered set (POSET) theory. Journal of Macroeconomics, 45 (C), 108-123.

Bevan, A., Estrin, S. & Meyer, K. (2004). Foreign investment location and institutional development in transition economies. International Business Review 13 (1), 43–64.

Billington, N. (1999). The location of Foreign Direct Investment: An Empirical Analysis. Applied Economics, 31(1), 68-76.

Blonigen, B. A., (2005). A review of the empirical literature on FDI determinants. Atlantic Economic Journal, 33(4), 383-403.

Boskin, M.J. & Gale, W.G. (1986). New results of the effects of tax policy on the international location of investment. National Bureau of Economic Research, Working paper series No 1862.

Boskin, M. J. & Gale, W. (1987). New Results on the Effects of Tax Policy on the International Location of Investment. National Bureau of Economic Research, Inc. Chapter in the Effects of Taxation on capital Accumulation, 201-222.

Buchanan, B. G., Quan V. L., & Rishi, M. (2012). Foreign direct investment and institutional quality: Some empirical evidence. International Review of Financial Analysis 21, 81–89.

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. European Journal of Political Economy, 23, 397–415.

Caetano, J., & Caleiro, A. (2009). Economic Freedom and Foreign Direct Investment: How different are the MENA Countries from the EU, iBusiness, 1(2),65-74.

Cambazoglu, B., & Gunes, S. (2016). The Relatioship between foreign exchange rate and foreign direct investment in Turkey. Economics, Management and Financial Markets, 11(1), 284-293.

Chakrabarti, A. (2001). The Determinants Foreign Direct Investment Sensitivity Analyses of Cross-Country Regressions, Kyklos, 54(1), 89-113.

Caselli, S. & Wingender, P. (2018). Bunching at 3 Percent: The Maastricht Fiscal Criterion and Governments Deficits. IMF, Working Papers No 18/182.

Caselli, F. & Reynard, J. (2020). Do fiscal rules cause better fiscal balances? A new instrumental variable strategy. European Journal of Political Economy, 63(C), 1-16

Chen, S.T. & Lee, C.C. (2005). Government size and economic growth in Taiwan: A threshold regression approach. Journal of Policy Modelling, 27 (9), 1051-1066.

Daude, C., & Stein, E. (2007). The quality of institutions and foreign direct investment. Economics & Politics 19, 317–344.

Debrun et al. (2008). Tied to the mast? National fiscal rules in the European Union. Economic Policy, 23 (54), 298-362.

Debrun X., Kinda, T., Curristine, T., Eyraud, L., Harris, J., & Seiwald, J. (2013). The Functions and Impact of Fiscal Councils. IMF Policy Paper.

Dellis, K. & Vansteenkiste, I. (2017). Determinants of FDI inflows in advanced economies. Does the economic structures matter? OECD, Working paper.

Drabek, Z., & Payne, W. (2002), The impact of transparency on foreign direct investment. Journal of Economic Integration, 17(4), 777-810.

Dunning, J.H. (1980). Towardsan electic theory of international production. Journal of International Business Studies, 11(1).

Dunning, J.H. (1981). International production and the multinational enterprise: London: Allen & Unwin.

Dunning, J.H., & Lundan, S.M. (2008). Institutions and OLI paradigm of the multinational enterprise Asia Pacific. Journal of Management, 25, 573-593.

Egger, P., & Winner, H. (2005). Evidence on corruption as an incentive foreign direct investment. European Journal of Political Economy, 21(4), 932-952.

Fabrizio, S., & Mody, A. (2006). Can Budget Institutions Counteract Political Indiscipline? Economic Policy 21,689-739.

Feng, Y. (2001). Political Freedom, Political Instability and Policy Uncertainty. A Study of Political Institutions and Private Investment in Developing Countries. International Studies Quarterly, 45(2), 271-294.

Forsyth, D. J. C., & Docherty, K. (1972). US Investment in Scotland, London: Praeger.

Gabriel et al. (2016). Foreign Direct Investment in Nigeria: Reassessing the Role of Market Size. International Journal of Academic Research in Business and Social Sciences, 6(2), 95-104.

Gani, A. (2007). Governance and Foreign Direct Investment Links: Evidence from Panel Data Estimations. Applied Economic Letters, 14, 753-756.

Gastanaga, V.M., Jeffrey B., Nugent, & Pashamova B. (1998). Host country reforms and FDI inflows: How much difference do they make? World Development 26,1299–314.

Ghosh, A. R., Mahvash S., Qureshi, J.I.K., & Zalduendo, J. (2014). Surges. Journal of International Economics, 92, 266–85.

Gleich, H., (2003). Budget institutions and fiscal performance in Central and Eastern European countries. ECB Working Paper 215.

Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows: The role of governance infrastructure. World Development, 30,1899–1919.

Globerman, S., & Shapiro, D. M. (2003). Governance infrastructure and US foreign direct investment. Journal of International Business Studies, 34(1), 19–39.

Grubert, H., & Mutti, J. (1991). Taxes, tariffs and transfer pricing in multinational corporate decision making. Review of Economics and Statistics 73, 285-293.

Guerguil, M. Mandon, P. & Tapsoba, R. (2017). Flexible Fiscal Rules and countercyclical fiscal policy. Journal of Macroeconomics, 52(C), 189-220.

Grembi, V. Nannicini, T. & Troiano, U. (2016). Do Fiscal Rules Matter? American Economics Journal: Applied Economics, 8(3), 1-30.

Groh, A. P., Wich, M. A., (2009). Composite Measure to Determine a Host Country's Attractiveness for Foreign Direct Investment, IESE Business School Working Paper No. 833

Grubert, H., & Mutti, J. (1991). Taxes and Tariffs and Transfer Pricing in Multinational Corporate Decision Making. The Review of Economic and Statistics, 73(2), 285-293.

Grubert, H., & Mutti, J. (2000). Do Taxes Influence Where U.S Corporations Invest? National Tax Journal, 53(4), 825-840.

Hausman, J. (1978). Specification Tests in Econometrics. Econometrica, 46(6), 1251-1271.

He, X., & Guisinger, S.E. (1993). Taxation of U.S foreign direct investment abroad. Effective tax rates and tax policy competitions in developed and developing xountries. Journal of International Auditing and Taxation, 2(2), 215-229.

He, O. & Sun, M. (2014). Does fiscal decentralization promote the inflow of FDI in China? Economic Modelling, 43 (C), 361-371.

Heritage Foundation (Washington, D.C), & Wall Street Journal (Firm). (1995). The index of Economic Freedom. Washington, D.C., Heritage Foundation.

Hoang, H.H., & Goujon, M. (2014). Determinants of foreign direct investments in Vietnamese provinces: a spatial econometric analysis. Post-Communist Economies, 26(1).

Iamsiraroj, S., & Doucouliagos, H. (2015). Does growth attract FDI? Economics-E-journal, 9 (2015-2019).

IMF (2003). Foreign Direct Investment, Trends and Statistics: A Summary. Statistics, Department,

International Monetary Fund.

Janicki, H., & Wunnava, P. (2004). Determinants of foreign direct investment: empirical evidence from EU accessing candidates. Applied Economics, 36(5), 505-509.

Julio, P., Alves, R. & Tavares, J. (2013). Foreign direct investment and institutional reform evidence and an application to Portugal. Portuguese Economic Journal, 12, 215-250.

Jensen, N. M. (2003). Democratic governance and multinational corporations: Political regimes and inflows of foreign direct investment. International Organization, 57, 587–616

Kakar, Z.K. & Khilji, B.A. (2011). Impact of FDI and Trade Openess on Economic Growth: A comparative study of Pakistan and Malaysia. Theoretical and Applied Economics, 11(564), 53-58.

Kaufmann, D., Kraay, A., & Lobaton P. Z. (1999). Governance Matters. World Bank Policy Research Working Paper No 2196.

Kim, H., 2010. Political stability and foreign direct investment. International Journal of Economics and Finance, 2(3), 59-71.

Kok, R. & Ersoy, B.A. (2009). Analyses of FDI determinants in developing countries. International Journal of Social Economics, 36(1/2), 105-123.

Kolstad, I.&, Villanger, E. (2008). Determinants of Foreign Direct Investment in Services. European Journal of Political Economy, 24, 514-533.

Kopits, G., & Symansky, S.A. (1998). Fiscal Policy Rules. International Monetary Fund, Occasional Papers No162.

La Porta, R., Lopez-de Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. Journal of Political Economy, 106, 1113–1155.

Le, M.V., & Suruga, T. (2005). Foreign direct investment, public expenditure and economic growh: the empirical evidence for the period 1970-2001, Applied Economics ,12, 9-45.

Liargovas, P., & Skandalis, K. S. (2012). Foreign Direct Investment and Trade Openess: The Case of Developing Economies. Social Indicators Research, 106 (2), 323-331.

Loree, D.W & Guisinger, S.E. (1995). Policy and Non-Policy Determinants of U.S Equity Foreign Direct Investment, Journal of International Business Studies, 26(2), 281-299.

Masron, Tajul Ariffin and Abdullah, Hussin (2010) Institutional quality as a determinant for FDI Inflows: Evidence from ASEAN. World Journal of Management, 2 (3). pp. 115-128.

Mauro, P. (1995). Corruption & Growth. The Quarterly Journal of Economics, 110(3), 681-712.

Mitsi, D. (2021). Does the Quality of Fiscal Institutions Matter for Fiscal Performance? A Panel Data Analysis of European Countries. International Journal of Economics & Finance, 13(1), 33-44.

Moore, M.L., Steece, B.M., & Swenson, C.W (1987). An Analysis of the Impact of State Income Tax Rates and Bases on Foreign Investment. The Accounting Revies, 62(4), 671-685.

Newlon, T. S. (1987). “Tax Policy and Multinational Firms' Financial Policy and Investment Decisions,” Ph.D. dissertation, Princeton University.

North, D. (1981). Institutions and economic growth: An histotical introduction. World Development, 17(9), 1319-1332.

Omri, A., & Kahouli, B. (2014). Causal relationship between energy consumption, foreign direct investment and economic growth: Fresh evidence from dynamic simultaneous equations models. MPRA paper, University Library of Munich, Germany.

Onyeiwu, S., & Shrestha, H. (2004). Determinants of Foreign Direct Investment in Africa. Journal of Developing Societies, 20(1-2), 89-106.

OECD (2000). Main Determinants and Impacts of Foreign Direct Investment on China’s Economy. OECD Working Papers on International Investment, OECD Publishing.

Pantelidis, P., Nikolopoulos, E. (2008). FDI Attractiveness in Greece. International Advances in

Economic Research, 14(1), 90-101

Perotti, R., & Kontopoulos, Y. (2002). Fragmented Fiscal Policy. Journal of Public Economics, 86 (2), 191-222.

Quazi, A.M. (1997). Corporate Social Responsibility in Diverse Environments: A Comparative Study of Managerial Attitudes in Australia and Bangladesh. Business and Professional Ethics Journal, 16, 67-84.

Quazi, R. (2007). Economic Freedom and Foreign Direct Investment in East Asia. Journal of the Asia Pacific Economy, 12(3), 329-344.

Reuter, W.H. (2017), 'When and why do countries break their national fiscal rules?' German Council of Economic Experts, Wiesbaden.

Reuter, W.H. (2019), When and why do countries break their national fiscal rules?, European Journal of Political Economy, Vol. 57, pp.125–141 .

Robinson, J.A., Acemoglu, D., & Johnson, S. (2005). Institutions as a Fundamental Caue of Long-Run Growth. Handbook of Economic Growth, 1(A), 386-472.

Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutions over Geography and Integration in Economic Development. Journal of Economic Growth, 9(2), 131-165.

Saini, N., & Singhania, M.(2018). Determinants of FDI in developed and developing countries: a quantitative analysis using GMM. Journal of Economic Studies, 45(2), 348-382.

Sambrarya, R.R., & Rasheed, A.A. (2015). Does economic freedom in host countries lead to increased foreign direct investment. Journal of Global Competitiveness, 25(1), 2-24.

Schneider, F., & Frey, B.S., (1985). Economic and political determinants of foreign direct investment. World Development, 3(2), 161-175.

Sethi, D., Guisinger, S. E., Ford, D. L., & Phelan, S. E. (2002). Seeking greener pastures: A theoretical and empirical investigation into the changing trend of foreign direct investment flows in response to institutional and strategic factors. International Business Review, 11(6), 685–705.

Sethi, D., Guisinger, S.E., Phelan, S.E., & Berg, D.M. (2003). Trends in foreign direct investment flows: a theoretical and empirical analysis. Journal of International Business Studies,34(4), 315-326.

Siklar, I., & Merve, K. (2018). FDI and macroeconomic stability: The Turkish case. European, Financial and Accounting Journal, 13(1), 19-40.

Slemrod, J. (1990). Tax Effects on Foreign Direct Investment in the United States. Evidence from a Cross -Country Comparisons. National Bureau of Economic Research. Chapter in Taxation in the Global Economy, 79-122.

Strat, V. A., Davidescu, A., & Paul, A. M. (2015). FDI and the unemployment - A causality analysis for the latest EU members. Procedia Economics & Finance, 23, 635-643.

Summers, L.H. (2014). Reflections on the new secular stagnation hypothesis. Sec. Stagnation Causes, 27-38.

Swenson, D. (1994). The impact of U.S tax reform on foreign direct investment in the United States. Journal of Public Economics, 54(2), 243-266.

Tsai, P. L. (1994). Determinants of Foreign Direct Investment and its Impact on Economic Growth. Journal of Economic Development, 19, 137-163.

Tuman, J., & Emmert, C. (1999). Explaining Japanese Foreign Direct Investment in Latin America. Social Science Quarterly, 80 (3). 539-541.

Verma, S., & Arora R. (2010). Does the Indian Economy Support Wagner's Law? An Econometric Analysis. Eurasian Journal of Business and Economics, 3 (5), 77-91.

Waqas, J. (2017). Impact of Foreign Direct Investment on Economic Growth of Pakistan-An ARDL-ECM Approach, Dissertation, Sodetorn University, School of Social Sciences.

Walch, N., & Worz, J. (2012). The impact of Country Risk Ratings and of the Status of EU Integration

on FDI inflows in CESEE Countries. Focus on European integration, 3, 8-26.

Wei, S. J. (1997). Why is corruption so much more taxing than tax? Arbitrariness kills. NBER, Working paper 6255.

Wei, S.J. (2000). How taxing is corruption on international investors? Review of Economics and Statistics, 82, 1–11.

Wheeler, D., & Mody, A. (1992). International investment location decisions: The case of U.S firms. Journal of International Economics, 33(1-2), 57-76.

Appendix

Table A1: Countries

Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Chad, Georgia, Guatemala, Guinea Bissau, India, Kenya, Mali, Mongolia, Morocco, Nigeria, Pakistan, Rwanda, Senegal, Sri Lanka, Tanzania, Togo, Uganda, Ukraine, Zambia.

Table A2: Variables and Definitions

Variable	Description	Source	period
Log Fdi inflows (logfdi)	Log of fdi net inflows per year (in current us dollars)	UNCTAD	1996-2018
Log Gdp per capita (loggdp)	Log of GDP in millions of $ at current prices	WDI	1996-2018
Inflation rate (INF)	Annual percentage of change of consumer price index	UNCTAD	1996-2018
Trade Openess (TO)	Sum of exports and imports of goods and services as a percentage of GDP	WDI	1996-2018
Gross fixed capital formation (gfcf)	Gross capital formation as percentage of gdp	WDI	1996-2018
Worldwide Governance indicators (institutions)	There are 6 sub-indicators. i)Political Stability(pst), ii) government effectiveness (gef), iii) regulatory quality (rql), iv) rule of law (rlw), v) control of corruption (ccr) and vi) voice and accountability (voca).	WDI	1996-2018
Fiscal rule (fr)	Dummy for fiscal rule (value 1 if there is an expenditure rule and 0 otherwise)	IMF dataset	1996-2018
Expenditure rule (erl)	Dummy for expenditure rule (value 1 if there is an expenditure rule and 0 otherwise)	IMF dataset	1996-2018
Budget balance rule (brl)	Dummy for budget balance rule (value 1 if there is a budget balance rule and 0 otherwise)	IMF dataset	1996-2018
Debt rule (drl)	Dummy for debt rule (value 1 if there is an expenditure rule and 0 otherwise)	IMF dataset	1996-2018

Table A3: The impact of institutions as measured by an overall index on FDI by using the approach of G2SLS random effects

Variables	(1)
loggdp	1.13049***
	(0.10351)
gfcf	0.02158**
	(0.01006)
to	0.00538**
	(0.00262)
inf	0.01084***
	(0.00376)
institutions	0.19521
	(0.12962)
Constant	-10.08913***
	(1.09763)
R^2 within	0.4055
R^2 between	0.8603
R^2 overall	0.7275
Wald X^2	217.05
p-value	(0.0000)
Sargan statistic	0.142
p-value	(0.7065)
Observations	475
Number of countries	24

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table A4: The impact of individual worldwide governance sub-indicators on FDI by using the approach of G2SLS random effects

Variables	(1)	(2)	(3)	(4)	(5)	(6)
loggdp	1.14994***	1.09718***	1.08062***	1.09636***	1.11139***	1.11396***
	(0.11356)	(0.10338)	(0.10314)	(0.10567)	(0.10826)	(0.10919)
gfcf	0.01996*	0.02180**	0.02446**	0.02181**	0.02264**	0.02290**
	(0.01094)	(0.01013)	(0.01000)	(0.01026)	(0.01028)	(0.00990)
to	0.00474*	0.00507*	0.00400	0.00479*	0.00478*	0.00494*
	(0.00267)	(0.00261)	(0.00288)	(0.00277)	(0.00286)	(0.00296)
inf	0.01264***	0.01062**	0.01173***	0.01077***	0.01023***	0.00953***
	(0.00400)	(0.00418)	(0.00426)	(0.00389)	(0.00374)	(0.00363)
pst	0.17351**					
	(0.06834)					
gef		0.27761				
		(0.19497)				
rql			0.37966**			
			(0.15944)			
rlw				0.22993		
				(0.14188)		
ccr					0.14436	
					(0.13636)	
voca						0.05179
						(0.13910)

Constant	-9.99910***	-9.45825***	-9.28323***	-9.46104***	-9.67366***	-9.78886***
	(1.15855)	(1.09196)	(1.08849)	(1.09452)	(1.12210)	(1.15303)
R^2 within	0.4107	0.4896	0.4156	0.4078	0.4013	0.3981
R^2 between	0.8765	0.8665	0.8743	0.856	0.8593	0.8584
R^2 overall	0.7386	0.7296	0.7366	0.7223	0.7237	0.72732
Wald X^2	193.04	193.32	211.37	196.94	200.89	232.54
p-value	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Sargan statistic	0.208	0.104	0.024	0.0078	0.0057	0.132
p-value	(0.6481)	(0.7465)	(0.8775)	(0.7794)	(0.7555)	(0.7162)
Observations	475	475	475	475	475	475
Number of countries	24	24	24	24	24	24

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table A5: The impact of different types of fiscal rules on FDI by using the approach of G2SLS random effects

Variables	(1)	(2)	(3)	(4)	(5)
loggdp	1.11347***	1.13660***	1.10139***	1.09873***	1.11698***
	(0.09629)	(0.10923)	(0.10152)	(0.08957)	(0.10690)
gfcf	0.02338**	0.02251**	0.02381**	0.02358**	0.02364**
	(0.01010)	(0.01019)	(0.00963)	(0.01009)	(0.01048)
to	0.00507*	0.00526*	0.00492*	0.00503*	0.00504*
	(0.00287)	(0.00298)	(0.00278)	(0.00292)	(0.00290)
inf	0.00963***	0.00908***	0.00991***	0.01012***	0.00977***
	(0.00354)	(0.00340)	(0.00363)	(0.00363)	(0.00348)
fr	0.00944				
	(0.08357)				
erl		-0.27191			
		(0.17877)			
drl			0.07333		
			(0.11083)		
brl				0.04857	
				(0.07858)	
rrl					0.05850
					(0.16025)
Constant	-9.82962***	-10.04677***	-9.73278***	-9.70009***	-9.88238***
	(1.02896)	(1.16261)	(1.08728)	(0.97186)	(1.11094)
R^2 within	0.3977	0.4025	0.3998	0.3892	0.3982
R^2 between	0.8564	0.8541	0.8525	0.8552	0.8550
R^2 overall	0.7223	0.7217	0.7203	0.7219	0.7213
Wald X^2	283.02	101.52	200.26	261.74	203.93
p-value	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Sargan statistic	0.138	0.225	0.152	0.131	0.161
p-value	(0.7106)	(0.6349)	(0.6971)	(0.7172)	(0.6881)
Observations	475	475	475	475	475
Number of countries	24	24	24	24	24

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table A6: Examining the effect of expenditure rules by using the individual worldwide governance sub-indicators (G2SLS random effect approach)

Variables	(1)	(2)
loggdp	1.17644***	1.10695***
	(0.11731)	(0.10558)
gfcf	0.01887*	0.02356**
	(0.01086)	(0.00992)
to	0.00490*	0.00406
	(0.00276)	(0.00295)
inf	0.01226***	0.01136***
	(0.00391)	(0.00415)
erl	-0.32930*	-0.36530***
	(0.18429)	(0.12069)
pst	0.18089***	
	(0.06686)	
rql		0.40656***
		(0.15520)
Constant	-10.24333***	-9.51569***
	(1.21480)	(1.13105)
R^2 within	0.4164	0.4236
R^2 between	0.8749	0.8719
R^2 overall	0.7390	0.7363
Wald X^2	204.73	242.73
p-value	(0.0000)	(0.0000)
Sargan statistic	0.344	0.074
p-value	(0.5573)	(0.7859)
Observations	475	475
Number of countries	24	24

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of statistical significance at 10%,5% and 1% level, respectively.

Table A7: Examining the asymmetric impact of the individual worldwide governance sub-indicators (G2SLS random effects approach)

Variables	(1)	(2)
loggdp	1.17504***	1.08207***
	(0.11625)	(0.10392)
gfcf	0.01850*	0.02455**
	(0.01083)	(0.01007)
to	0.00466*	0.00392
	(0.00269)	(0.00289)
inf	0.01238***	0.01178***
	(0.00388)	(0.00428)
erlpst	-0.50462***	
	(0.14104)	
nerlpst	0.17982***	
	(0.06714)	
erlrql		0.40294*
		(0.23609)
nerlrql		0.37849**
		(0.16508)
Constant	-10.20979***	-9.29582***
	(1.20443)	(1.09699)
R^2 within	0.4197	0.4158
R^2 between	0.8778	0.8737

R^2 overall	0.7419	0.7362
Wald X^2	181.48	209.98
p-value	(0.0000)	(0.0000)
Sargan statistic	0.356	0.024
p-value	(0.5507)	(0.8763)
Observations	475	475
Number of countries	24	24

Table illustrates the coefficient of the estimated model and the p-values are on parentheses. *,** and *** refer to the levels of stiatistical significance at 10%,5% and 1% level, respectively.