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Regime Durability and Foreign Direct Investment – Growth nexus in Developing Countries

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ABSTRACT

This study examines the role of regime durability in moderating the economic growth-effect of FDI inflows in 67 developing countries over the 1984-2016 period. The results based on the generalized method-of-moments panel estimation technique reveal that countries with durable regime benefit more from FDI inflows. The empirical results are robust to two alternative indicators of regime durability and FDI. The finding is consistent with the growing view that FDI spillovers depends on the capacity of host countries to absorb and internalize new technology associated with FDI inflows. In this respect, policymakers should weigh the cost of policies aimed at attracting FDI versus those that seek to improve regime durability.

JEL Classification: E02, F21, F41, O43

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INTRODUCTION

Foreign direct investment (FDI) by multinational corporations (MNCs) is highly regarded as one of the important elements for development strategy and productive capacity building in many developing countries. FDI is viewed as a channel for local firms to improve their productivity and efficiency because it allows them to absorb and internalize new technologies developed by MNCs. Given that knowledge cannot be completely internalised, some of the positive externalities may spill over to local firms once MNCs has established their presence in the host countries. MNCs are known to be among the most technologically advanced firms as they invest substantially in research and development activities (R&D) (Borensztein et al., 1998). They also recruit a large number of technical and professional workers (Markusen, 1995) and provide extensive trainings for their workforce (Fosfuri et al., 2001). Besides new technology, FDI may also contribute to the host country by creating new employment opportunities, improving tax revenue, developing human capital, enhancing trade and complementing domestic investment (Jenkins and Thomas, 2002).

Based on the expectations of massive positive externalities, many countries (including the developing ones) have lifted restrictions imposed on foreign capital flows. They offer various types of incentives to entice MNCs to invest in their countries which include fiscal incentives (i.e. tax and tariff exemption and low corporate tax rates), financial incentives (i.e. loan and land subsidies) and other incentives (i.e. special economic zones, infrastructure subsidies, R&D subsidies and reducing bureaucracy). According to UNCTAD (2017), an average of 57 countries per year have made changes to their foreign investment policy (i.e. both liberalization and restrictive) over the past 25 years. It was also reported that the policy changes directed towards investment liberalization are far greater than the number of restrictive policies. Precisely, an average of 112 regulatory changes were reported per year with 82% of the changes were made to accommodate foreign investments. Interestingly, recent data for the year 2016 reveals that the competition to attract foreign capital has intensified as 124 regulatory changes were reported, exceeding the 25 years' average.

Because of these policy changes, global FDI inflows increased from $13.3 billion in 1970 to $1.4 trillion in 2017 with the highest volume was recorded at $1.9 trillion in 2007. This increasing trend can be observed in both developing and developed countries. Interestingly, global FDI grows at a faster rate compared to the growth of export and GDP. According to UNCTAD (2018), the global FDI inflows has increased sevenfold as compared to the world export and GDP which grew by less than quadruple over the 1990-2015 period. The report also reveals that for the first time in 2012, developing countries received more FDI than developed countries with the highest proportion was recorded at 55% (of global FDI flows) in 2014.

Although several models predict that FDI is able to deliver positive externalities (Findlay, 1978; Wang, 1990; Wang and Blomstrom, 1992), empirical literature reveals that the relationship between FDI and output growth is far from conclusive. Some studies in this literature find that FDI exerts a direct positive effect on output growth (Ayub et al., 2019; De Mello, 1999; Chong et al., 2010), while others find no such evidence (Ericsson and Irandoust, 2001, Aitken et al., 1997; Adams, 2009) or even a negative effect on growth (Moran, 1998). In a survey on firm-level FDI spillovers on productivity, Gorg and Greenaway (2004) show that only six out of 25 studies find some positive evidence of spillovers running from foreign to domestic firms. In recent literature, several studies have explored the reasons behind this mixed or weak results and find absorptive capacity of the host country as one of the key explanations.[1] Specifically, they find that FDI spillovers are not automatic but require the host countries to have certain quality which allows them to reap the positive externalities associated with FDI inflows. World Bank (2001) points out that only countries with the greatest absorptive capacity will benefit from foreign capital inflows while in countries with low absorptive capacity the benefits is muted (or non-existence). In the earlier literature, several factors have been identified as important elements of absorptive capacity such as trade policy, level of economic development, human capital, financial market development, and institutional quality, among many others.

In an effort to improve our understanding about the nature of the FDI–growth relationship, this paper draws from recent literature which emphasizes the importance of institutions in economic development[2]. Specifically, this study proposes that regime durability plays an important role in moderating the effect of FDI

[1] Cohen and Levinthal (1990) define absorptive capacity as a firm's "ability to recognize the value of new information, assimilate it, and apply it to commercial ends."

[2] See for instance Rodrik et al. (2004), Easterly and Levine (1997), Knack and Keefer (1995) on the role of institution in explaining income. Several other authors have investigated the role of institution in enhancing capital inflows (Sabir et al., 2019, Tun et al. 2012) and financial development, which are crucial for growth (Law et al., 2015; Law et al., 2012)

on output growth. Marshall et al. (2014) states that higher values of regime durability signify political stability and lower values represent political instability. Since political institutions are the core component of institutional matrix, this paper argues that under political institutional structures where abrupt policy changes are less likely, local firms face less uncertainty and therefore they are more likely to engage in risky investments such as the acquisition of new technology associated with FDI inflows. Minimizing political risks through improvement in regime durability can improve the growth dividend due to FDI inflows. Earlier, Waguespack et al. (2005) reveal that political stability is positively related to technology development in Latin America and the Caribbean nations.

The rest of the paper is organized as follows: Section 2 reviews some of the related literature. Section 3 elaborates the methodology and data employed in this study. Section 4 presents the estimation results and their interpretations. The final section concludes and suggests some recommendations for policy formulation.

LITERATURE REVIEW

One of the earliest models that emphasizes the important role of FDI in economic development was proposed by Findlay (1978). The author develops a simple dynamic model based on Solow's framework which accommodates technology diffusion from FDI inflows. In this model, MNCs is viewed as an important source of technical progress through technology transfer to local firms. The model also predicts that the scale of technology spillovers depends on technology gap between MNCs and local firms such that the latter may not benefit from MNCs presence if the gap is too big. Meanwhile, Wang (1990) develops a model which proposes that knowledge used in production process is assumed to be a function of FDI. With increasing movement of capital across borders, more technology spillovers are expected and therefore the gap between developed and developing countries could be reduced. Wang and Blomstrom (1992) develop a model using game theoretical framework and show that international technology spillovers emerges from strategic interaction between MNCs' subsidiaries and local firms. The model also emphasizes the importance of the learning efforts of local firms in increasing the rate of technology transfer from MNCs to local firms.

A huge body of literature exists on the impact of FDI inflows on economic growth. The views have evolved from the earlier capital accumulation arguments to recent support for the role of FDI in technology transfer. Although there are strong theoretical arguments in favour of FDI, empirical findings on the growth-effect of FDI is inconclusive (Gorg and Greenaway, 2004). Several recent papers show that the positive effect of FDI is not an automatic consequence of MNCs presence but depends on the absorptive capacity of the host countries. They reveal several factors which contribute to the absorptive capacity of the host countries. For instance, Blomstrom et al. (1994) show that the positive impact of FDI on growth is contingent on the level of economic development such that more developed countries benefit more from FDI inflows. Meanwhile, Balasubramanyam et al. (1996) investigate the role trade policy has on FDI spillovers and they find that the effect is stronger in countries that pursue export promotion policies than in countries that pursue import substitutions. In fact, they find that FDI has no impact on growth in developing countries that follow import substitution policies.

Several authors argue that FDI spillovers depend the level of human capital in the host countries. For instance, Borensztein et al. (1998) find that FDI contribute to output growth only in countries with sufficiently high level of human capital. This finding supports the view that host countries need labor that is able to work with the new or advanced technology. However, the same effect could not be established for domestic investment. Given that developed countries usually have higher level of human capital, we may expect that they will benefit more from FDI inflows. This prediction was supported by Xu (2000) who finds that only developed countries benefit from U.S. MNCs presence but not developing countries.

Similarly, Hermes and Lensink (2003) reveal that having a well-developed financial market is an important pre-condition for the positive growth-effect of FDI. The authors argue that an increase in FDI inflows will result in lower fixed set-up costs as well as an increase in the rate of return on assets which serves as an incentive for firms to make additional investments. However, the outcome of this process is largely determined by the efficiency of local financial market (especially banks) in channeling financial resources from surplus to deficit units of the economy. In this way, FDI is expected to contribute positively to output

growth not only through capital accumulation but also via the efficient functioning of the domestic financial sector. The importance of financial market development in enhancing the growth-effect of FDI has also been reported Alfaro et al. (2004), Durham (2004) and Azman-Saini et al. (2010b), among many others.

In line with the growing emphasis on the role of institution in economic development, several authors investigate the role institution plays in strengthening the FDI-growth link.[3] For instance, Durham (2004) also investigate whether countries with better quality of institution will benefit more from MNCs presence. Based on the data from 80 countries, the author reveals that that there is no direct effect from capital flows (i.e. FDI and portfolio investment) but the effect is conditional on the quality of institution. Recently, Azman-saini et al. (2010a) look at the specific type of institution namely, economic freedom. The authors argue that countries which promote freedom of economic activity are able to benefit more from MNCs presence and contribute to host country's economic growth. Using various types of specifications, the authors find that the role of economic freedom in enhancing the growth-effect of FDI is robust. This finding was further supported by Alguacil et al. (2011), Slesman et al. (2015). More recently, Malikane and Chitambara (2017) unveil that political institutions (i.e. political stability and regime) is an important intervening factor for FDI spillovers in eight Southern African countries. Meanwhile, Adams and Opoku (2015), reveal that the growth-effect of FDI in selected 22 sub-Saharan Africa countries is conditional on the regulatory effectiveness in the host countries. In other related findings, Adams and Klobodu (2016) find that the effect of remittances on growth in 33 Sub-Saharan African countries depends on regime durability. By and large, there is ample evidence to suggest that the growth-effect of financial flows is conditional on other factors available in the host countries.

With this backdrop, this study contributes to the literature by exploring the role of regime durability in moderating the impact of FDI on growth in developing countries. This is achieved through the use of generalized method-of-moment panel estimator which is superior compared to alternative estimators in dealing with country-specific effects and endogeneity problem.

METHODOLOGY

Empirical Model

The present study hypothesizes that regime durability is able to moderate the impact of FDI on output growth. In order to test the hypothesis, this study relies on a model which is broadly similar to others (see for example Alfaro et al., 2004; Ayub et al., 2019). The baseline model can be expressed as follows:

$$y_{it} = \alpha y_{i,t-1} + \beta_1 FDI_{it} + \beta_2 RDUR_{it} + \beta_3 X_{it} + \eta_i + \nu_t + \varepsilon_{it} \quad (1)$$

where *i* is country index, *t* is time index, y is the logarithm of real GDP per capita, *FDI* is foreign direct investment, *RDUR* is regime durability, *X* is a vector of control variables which may influence output. This includes trade openness, human capital, physical capital stock, population growth and inflation. Additionally, η_i is unobserved country-specific effect term, ν_t is time effect, and ε_{it} is the usual error term.

In order to test our main hypothesis on the role regime durability plays in the FDI-growth relationship, we utilize a linear interaction model. Specifically, we extend equation (1) by adding an interaction term constructed as a product of *FDI* and regime durability (i.e. *FDI* x *RDUR*). With this modification, the new estimated model can be expressed as follows:

$$y_{it} = \alpha y_{i,t-1} + \beta_1 FDI_{it} + \beta_2 RDUR_{it} + \beta_3 (FDI \times RDUR)_{it} + \beta_4 X_{it} + \eta_i + \nu_t + \varepsilon_{it} \quad (2)$$

In this framework, we rely on β_3 to quantify the impact of regime durability on the growth-effect of FDI. If β_3 is found to be positive and significant, this would imply that the marginal effect of FDI on growth depends on regime durability such that countries which promote durable regime will benefit more from FDI inflows.

[3] North (1990) defines institutions as the humanly devised constraints or rules of the game that structure political, economic, and social interaction. Important elements of these are formal rules (e.g., constitutions, laws, and property rights sustained through courts, and the police) and informal constraints (e.g., sanctions, taboos, customs, traditions, and codes of conduct). He further states that institutions provide the incentive structure of an economy.

Econometric Methodology

In order to test the hypothesis outlined in the earlier section, we use a generalized method of moments (GMM) panel estimator. The methodology was initially developed by Holtz-Eakin et al. (1988) and then improved and extended by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). There are at least two reasons for choosing this estimator. First, the estimator is able to handle time invariant country-specific effects. Second, it is also able to address simultaneity bias. Several authors reveal that FDI is likely to be endogenous as higher income may attract more FDI that seek market expansion, leading to a reverse causality between FDI and income. This estimation procedure has been widely used in the analyses of finance-growth link (Levine et al., 2000; Beck et al., 2000), FDI-growth nexus (Azman-saini et al., 2010b; Alguacil et al 2011; Ayub et al. 2019), R&D spillovers (Chee-Lip et al., 2015), among many others.

According to Arellano and Bond (1991), Equation (2) should be transformed into first-difference in order to remove country-specific effects. Then, the authors propose the use of lagged levels of the regressors as instruments to remove simultaneity bias. This type of modelling strategy is valid under the assumptions that the error term is not serially correlated and the lagged values of the explanatory variables are weakly exogenous. This estimation strategy is popularly known as difference GMM estimation (DGMM). However, Alonso-Borrego and Arellano (1999) and Blundell and Bond (1998) prove that this strategy may lead to incorrect inferences if the independent variables are persistent (i.e. move slowly over time). In order to treat the problem, Blundell and Bond (1998) has proposed a system GMM estimator (SGMM) which was shown to be more efficient than the DGMM estimator. In the SGMM estimation, both difference and level equations are combined as one system and additional moments using the lagged difference of regressors as instruments are introduced for the level equation.

The validity of the results obtained from GMM estimation relies on two types of specification tests. First, the Sargan (1958) J-test of over-identifying restrictions which evaluate the validity of the instruments used to remove simultaneity bias. Under the null of joint validity of all instruments, the empirical moments have zero expectation, so the *J* statistic is distributed as a $\chi 2$ with degrees of freedom equal to the degree of overidentification. Second, the serial correlation test is used to evaluate the null of no second-order serial correlation, assumed in the difference equation (Arellano and Bond, 1991). Failure to reject the null of both tests would imply that the model is adequately specified and the result is valid. In the literature, there are two variants of GMM estimators namely, one- and two-step GMM estimators (Arellano and Bond, 1991). The one-step estimator uses weighting matrices that are independent of the estimated parameters while the two-step GMM counterpart which is more efficient utilizes optimal weighting matrices.[4] In this paper, we employ the two-step system GMM estimator.

Data and Sample Period

This study utilizes a sample of 67 developing countries over the 1984-2016 period[5]. The data are averaged over five-year non-overlapping period except for the last observation which is averaged over 3 years (i.e. 1984-1988, 1989-1993, 1994-1998, 1999-2003, 2004-2008, 2009-2013, 2014-2016). The purpose of averaging is to smooth out the business cycle fluctuations and fulfill the requirement of small time dimension of SGMM estimator.

This study employs two measures of regime durability. The first measure, which is collected from the POLITY database, measures the number of years since the most recent regime change. In calculating the indicator, the first year during which a new regime is established is coded as the baseline "year zero" (value = 0) and each subsequent year adds one to the value of the indicator consecutively until a new regime change or transition period occurs. Hence, higher values of regime durability signify political stability and lower values represent political instability (Marshall et al., 2014: 17). The second measure is sourced from the International Country Risk Guide (ICRG) database published by the Political Risk Services (PRS). The data used is government stability which is scaled between one and twelve. For this indicator, lower values indicates lower regime durability (i.e. less government stability) and vice versa.

The data on GDP per capita and net FDI inflows are collected from the World Development Indicator database (WDI) published by the World Bank. The data on GDP per capita is adjusted for purchasing power

[4] The moment conditions are weighted by a consistent estimate of their covariance matrix.
[5] The starting period is dictated by the availability of data from the ICRG database. Appendix A provides the list of countries.

parity (PPP) and FDI inflows is expressed as a ratio to GDP. This study also includes other control variables which are normally included in growth analysis. This includes trade openness, life expectancy (i.e. a proxy for human capital), gross fixed capital formation (i.e. a proxy for physical capital investment), population growth and inflation (i.e. a measure of macroeconomic stability). Life expectancy is collected from the United Nations World Population Prospects database (UNWPP) and the rest of the data are collected from the WDI. We also utilizes data on FDI stock collected from the United Nations Conference on Trade and Development (UNCTAD) database for sensitivity analysis[6]. The summary of data is presented in Table 1.

Table 1 Data Description

Variables	Unit of Measurement	Source
GDP per capita (GDP)	PPP Adjusted GDP per capita	WDI
Foreign direct investment inflow (FDI)	Net FDI inflows over GDP	WDI
Population growth (POP)	Annual % growth	WDI
Trade openness (TO)	Import plus Export over GDP	WDI
Human capital (HC)	life expectancy (number of years)	UNWPP
Investment (INV)	Ratio over GDP	WDI
Inflation (INF)	Annual percentage	WDI
RDURP	Number of years	Polity IV
RDURI	Scaled from 0 to 12	ICRG
FDI stock (FDIS)	Net inflows as a ratio over GDP	UNCTAD

Notes: RDURP= regime durability from Polity IV and RDURI= government stability from ICRG.

EMPIRICAL RESULTS

There are several important steps in testing the hypothesis. In the first step, we estimate the baseline equation (1) and present the results in table 2. Two measures of regime durability are used from the POLITY and ICRG databases. The results presented in the table show that the coefficients on FDI are positive and statistically significant at the five percent level in both models. This indicates that FDI is important in stimulating the growth performance of the selected countries. The results suggest that one percentage point increase in FDI will increase output growth by 7.2 to 7.9 percentage points. Generally, the results are in line with the findings reported in Awad and Ragab (2018) and Ayub et al., (2019) who also find the direct positive effect of FDI on growth. Moreover, the results on the impact of regime durability on growth unveil mixed findings, depending on the indicators used. Specifically, a negative impact is found for the model utilising POLITY indicator and positive effect for the ICRG model. The results on the lag value of GDP per capita is positive and statistically significant at the five percent level which is consistent with the theoretical prediction. Meanwhile, the negative coefficients on human capital (i.e. life expectancy) is in line with the finding reported in Acemoglu and Johnson (2007). The authors find that increase in life expectancy led to a significant increase in population. As the birth rates did not decline sufficiently to compensate for the increase in life expectancy, this led to reduction in GDP per capita. This argument is consistent with our results which reveal the negative impacts of population growth on GDP per capita in both models. Moreover, the result for investment in physical capital (INV) is weak as the negative effect is found for the ICRG model while the result is insignificant in another model. Similarly, mixed results are found for the impact of inflation on growth. However, the results on trade openness reveal that its impacts on growth is positive which suggests that trade liberalization is good for the economy. Finally, the specification tests suggest that both models are adequately specified and the instruments are valid as we fail to reject the nulls of both Sargan and AR(2) tests.

Table 2 Results of Baseline Specification
(N = 67 countries; T = 7; Sample Period = 1984– 2016)

Variables	RDUR = POLITY	RDUR = ICRG
GDP_{t-1}	0.268^{***}	0.218^{***}
	(0.0196)	(0.0218)
FDI_{it}	0.072^{***}	0.079^{***}
	(0.008)	(0.0076)
$RDUR_{it}$	-0.370^{**}	0.210^{***}
	(0.1664)	(0.0598)
Human $capital_{it}$	-0.087^{***}	-0.035
	(0.0301)	(0.0304)

[6] Data on FDI stock on Suriname is not available.

Table 2 Cont.

Variables	RDUR = POLITY	RDUR = ICRG
Physical capital investment$_{it}$	0.029	-0.180***
	(0.0296)	(0.0199)
Population growth$_{it}$	-1.534***	-1.895***
	(0.1854)	(0.2723)
Trade openness$_{it}$	0.037***	0.039***
	(0.0051)	(0.0045)
Inflation$_{it}$	0.0004**	-0.0002***
	(0.0002)	(0.00006)
Constant	7.218***	6.721***
	(1.918)	(1.8503)
Sargan test	29.10	18.19
	(0.064)	(0.443)
AR(1)	-3.421***	-2.248**
	(0.0006)	(0.024)
AR(2)	-0.467	-1.304
	(0.64)	(0.192)
Instruments	29	28
Observations	469	469

Notes: All models are estimated using xtdpdsys command. The standard errors are reported in parentheses, except for Sargan test, AR (1) and AR (2) which are p-values. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Time dummies are included in the model specification but the results are not reported to save space.

In order to formally test our hypothesis that regime durability will alter the ways FDI affect output growth, we rely on a linear interaction model (i.e. Equation (2)). The results of estimating the equation are presented in table 3. The results reveal that the interaction terms appear with positive signs and statistically significant at the usual level in both models. This implies that regime durability is important in enhancing the growth-effect of FDI. This finding is consistent with the growing view that the impact of FDI on growth depends on other factors in the host countries (see for example Alfaro et al., 2004, Azman-saini et al., 2010, Ayub et al., 2019). Moreover, the result on other control variables are mostly similar as before. More importantly, the results of both specification tests show that the estimated models are correctly specified and the instruments used are valid. Then, we compute the marginal effects of FDI on growth and their standard errors to test the statistical significance following Brambor et al. (2006). In both models, the results of marginal effects analysis show that the effects of FDI on growth increase monotonically with regime durability such that as regime becomes more durable the impacts of FDI on growth improve. It is worth noting that the results based on POLITY indicator suggest that if the level of regime durability is sufficiently low, FDI will actually exert a negative effect on output growth. For example, at the mean value of regime durability (measured by POLITY), one percent increase in regime durability tends to enhance the growth effect of FDI by 0.0653 percent. Nevertheless, if the regime durability is at maximum level, the impact of FDI on economic growth is greater (i.e. 0.5640 percent).

Table 3 Results of Interaction Specification
(N = 67 countries; T = 7; Sample Period = 1984– 2016)

Variables	RDUR = POLITY	RDUR = ICRG
GDP$_{it-1}$	0.265***	0.234***
	(0.0216)	(0.0212)
FDI$_{it}$	0.032***	-0.035*
	(0.01)	(0.0183)
RDUR$_{it}$	-0.542***	0.248***
	(0.1804)	(0.0590)
FDI$_{it}$ x RDUR$_{it}$	0.061***	0.006***
	(0.0157)	(0.0017)
Human capital$_{it}$	-0.075**	-0.042
	(0.0314)	(0.0305)
Physical capital investment$_{it}$	0.025	-0.173***
	(0.0297)	(0.0208)
Population growth$_{it}$	-0.149***	-0.191***
	(0.0189)	(0.0281)
Trade openness$_{it}$	0.036***	0.035***
	(0.0051)	(0.0053)
Inflation$_{it}$	0.0003*	-0.0002***
	(0.0002)	(0.00006)
Constant	6.557**	7.273***
	(2.0146)	(1.8663)
Sargan test	27.98	21.02
	(0.08)	(0.28)

Table 3 Cont.

Variables	RDUR = POLITY	RDUR = ICRG
AR(1)	-3.268***	-2.311**
	(0.001)	(0.02)
AR(2)	-0.564	-1.295
	(0.572)	(0.195)
Instruments	30	29
Observations	469	469
Marginal Effects		
Mean	0.0653***	0.0807***
Minimum	-0.0325***	0.0446**
Maximum	0.5640***	0.1051***

Notes: All models are estimated using the Blundell and Bond (1998) dynamic panel system GMM estimations (Stata xtdpdsys command). The standard errors are reported in parentheses, except for Sargan test, AR (1) and AR (2) which are p-values. ∗∗∗, ∗∗ and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. Time dummies are included in the model specification but the results are not reported to save space.

In order to evaluate the robustness of results documented earlier, we perform two sensitivity checks. The first sensitivity check uses FDI stock as an alternative measure of FDI inflows and the results are presented in table 4[7]. Interestingly, the finding remains intact as the coefficients on the interaction terms are positive and statistically significant in both models. This finding suggests that the role of regime durability in enhancing the impact of FDI on growth cannot be disputed. More importantly, both specification tests yield p-values of more than 0.05 which suggest the all models are adequately specified and the instruments are valid. Additionally, the results of marginal effect analysis show that the impact of FDI on growth increases monotonically with regime durability.

Table 4 Robustness checks using FDI stock
(N = 66 countries; T = 7; Sample Period = 1984–2016)

Variables	RDUR = POLITY	RDUR = ICRG
GDP_{it-1}	0.190***	0.257***
	(0.0230)	(0.0243)
FDI_{it}	0.0085***	-0.0099***
	(0.0033)	(0.0025)
$RDUR_{it}$	-0.332**	0.200***
	(0.1408)	(0.0566)
FDI_{it} x $RDUR_{it}$	0.004**	0.0014***
	(0.0014)	(0.0003)
Human $capital_{it}$	-0.0822**	-0.131***
	(0.0344)	(0.0316)
Physical capital $investment_{it}$	-0.173***	0.0812***
	(0.0250)	(0.0316)
Population $growth_{it}$	-0.140***	-0.165***
	(0.0278)	(0.0249)
Trade $openness_{it}$	0.0046*	0.0246***
	(0.0028)	(0.006)
$Inflation_{it}$	-0.00002	-0.0002**
	(0.0002)	(0.0001)
Constant	13.12***	8.179***
	(2.3087)	(1.9386)
Sargan test	24.88	26.88
	(0.1646)	(0.0811)
AR(1)	-3.0218***	-2.128**
	(0.0025)	(0.0333)
AR(2)	-.42559	-1.7892
	(0.6704)	(0.0736)
Instruments	31	29
Observations	469	469
Marginal Effects		
Mean	-0.0028	0.0204***
Minimum	-0.0085***	0.0121**
Maximum	0.0261*	0.026***

Notes: All models are estimated xtdpdsys command. The standard errors are reported in parentheses, except for Sargan test, AR (1) and AR (2) which are p-values. ∗∗∗, ∗∗ and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. Time dummies are included in the model specification but the results are not reported to save space.

Our second sensitivity check is carried out using alternative measure of regime durability. Specifically, a new measure of regime durability is constructed using principal component analysis. The

[7]Using data from 66 countries excluding Suriname.

results of estimating equation (2) using a new measure of regime durability is presented in Table 5. As reported in the table, the result is similar to the ones documented earlier as the coefficient on the interaction term remains positive and significant at the usual level. Therefore, we can safely conclude that countries with durable regime benefit more from FDI inflows in terms of better growth performance.

Table 5 Robustness checks using Principal Component Analysis

(N = 67 countries; T = 7; Sample Period = 1984– 2016)

Variables	RDUR = Principal component of regime durability
GDP_{it-1}	0.226***
	(0.0210)
FDI_{it}	0.0813***
	(0.0130)
$RDUR_{it}$	0.451***
	(0.1567)
FDI_{it} x $RDUR_{it}$	0.0598*
	(0.0321)
Human $capital_{it}$	-0.102***
	(0.0262)
Physical capital $investment_{it}$	0.0425
	(0.0305)
Population $growth_{it}$	-1.740***
	(0.2710)
Trade $openness_{it}$	0.0179***
	(0.0046)
$Inflation_{it}$	0.0002*
	(0.0001)
Constant	9.068***
	(1.8690)
Sargan test	24.87
	(0.1649)
AR(1)	-3.3665***
	(0.0008)
AR(2)	-0.6266
	(0.5309)
Instruments	31
Observations	469
Marginal Effects	
Mean	-0.0813***
Minimum	-0.274***
Maximum	0.0488

Notes: All models are estimated using the Blundell and Bond (1998) dynamic panel system GMM estimations (Stata xtdpdsys command). The standard errors are reported in parentheses, except for Sargan test, AR (1) and AR (2) which are p-values. ∗∗∗, ∗∗ and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. Time dummies are included in the model specification but the results are not reported to save space.

CONCLUSIONS

The purpose of this study is to examine the role of regime durability in enhancing the growth-effect of FDI in developing countries. In testing the hypothesis, it employs data from 67 developing countries from 1984 to 2016. The finding based on the generalized method of moment panel estimator reveals that the economic growth-effect of FDI depends on regime durability in the host countries such that countries with durable regime are able to benefit more from MNCs presence. More importantly, the finding is robust to different measures of regime durability and FDI. This finding is consistent with the popular view that FDI spillovers is not an automatic consequence of MNCs presence but depending on the quality of various conditions in the host countries. In terms of policy implications, developing countries should improve the institutional reforms policy agenda to benefit more from MNCs presence. Policymakers should weigh the cost of policies that focus on attracting FDI inflows versus those that seek to promote regime durability.

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APPENDIX

LIST OF COUNTRIES

Albania	Egypt	Malaysia	Senegal
Algeria	El Salvador	Mali	Sierra Leone
Angola	Gabon	Mexico	South Africa
Armenia	Gambia, The	Mongolia	Sri Lanka
Bangladesh	Guatemala	Morocco	Sudan
Bolivia	Guinea-Bissau	Mozambique	Suriname
Botswana	Guyana	Namibia	Tanzania
Brazil	Honduras	Nicaragua	Thailand
Bulgaria	India	Niger	Togo
Burkina Faso	Indonesia	Nigeria	Tunisia
Cameroon	Iran, Islamic Rep.	Pakistan	Turkey
China	Jamaica	Papua New Guinea	Uganda
Colombia	Jordan	Paraguay	Venezuela
Congo, Dem. Rep.	Kenya	Peru	Vietnam
Costa Rica	Liberia	Philippines	Zambia
Dominican Rep.	Madagascar	Romania	Zimbabwe
Ecuador	Malawi	Russian Federation	