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Analysis of International Capital Inflows and Institutional Quality in Emerging Markets

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Abstract: This study investigates the cointegrating and causality relationships between foreign direct investment (FDI), foreign portfolio investment (FPI) and institutional quality in a sample of 12 emerging market economies for the period from 2007 to 2017. A composite index for institutional quality composed of the Worldwide Governance Indicators was constructed using the Principal Components Analysis (PCA) method. The panel autoregressive distributed lag (ARDL) model and the error correction model (ECM) were applied to assess the cointegrating and causal relationships between the key variables. In addition to finding significant cointegrating relationships between institutional quality and the foreign capital inflows (FDI and FPI), the results confirmed unidirectional causality from FDI and FPI to institutional quality in the long run. The results further suggested that the long-run relationship between the two foreign capital inflows was more of a trade-off nature, dependent upon the dynamics of the institutional environment in the host economy. The recommendations suggested include that emerging markets should continue to open their economies in pursuit of capital inflows, which will reciprocally strengthen their domestic institutional environment. Strengthening institutions could curtail the persistence of institutional weaknesses and insulate emerging economies from the adverse effects of volatile capital flows and, over the long run, enhance capital inflows.

Keywords: international capital inflows; foreign direct investment; foreign portfolio investment; institutional quality; emerging markets

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1. Introduction

Global capital flows mainly consist of foreign direct investment (FDI), foreign portfolio investment (FPI) and other private sector capital flows such as bank lending (UNCTAD 2018). After significant reversals and plunges during the recent global financial crisis (2008–2009), international capital flows recovered, although not to levels witnessed prior to the crisis (UNCTAD 2018; Alfaro and Chauvin 2020). This study is particularly interested in the growing evidence to the effect that in addition to such factors as market liberalization, macroeconomic conditions and financial market development, institutions and institutional quality are an important determinant of capital inflows. This is both for the attraction and for the harnessing of the spillover benefits of capital inflows in the host economy (Alfaro et al. 2007; Fratzscher 2012; Agbloyor et al. 2014; Różański and Sekuła 2016; Kurul 2017; Makoni 2018; Nxumalo 2020).

Institutions are the rules that structure economic, legal, political and social interactions and transactions such as laws, regulations and codes of conduct, as well as the mechanisms that enforce these rules (North 1991; World Bank 2002). Laws and regulations constitute formal rules, while behavioural norms or codes of conduct make up the informal rules. Institutions determine the costs and risks of transacting in an economy and therefore the level of productive and economic activity (North 1990; Alfaro et al. 2008). The types of economic activities that take place in an economy reflect the existing institutional framework, and the incentives and opportunities it offers (North 1990).

Empirical studies that have examined the behaviour of international capital flows such as Fratzscher (2012) and Ghosh et al. (2014) reveal that despite global factors, domestic institutional quality strongly accounts for the heterogeneity and allocation of capital flows across emerging markets. Moreover, some of the studies have concluded that some developing countries fail to attract capital inflows because of the weak quality of their institutions (Masron and Abdullah 2010; Kurul and Yalta 2017; Peres et al. 2018; Nxumalo 2020; Makoni 2021).

The existence of a relationship between FDI and institutional quality and the impact of the latter on the former, across developed and developing countries, is well-established in literature and corroborated by numerous empirical studies including those by Asiedu and Lien (2011), Buchanan et al. (2012), Różański and Sekuła (2016), Kurul and Yalta (2017) and Peres et al. (2018). In comparison, there is relatively minimal research on the impact of institutions on foreign portfolio investment inflows. Furthermore, international scholarly research on the relationships between the three variables (i.e., institutional quality, FDI and FPI) is even more scant, although Makoni (2018) did provide some insights into the nexus between FDI, FPI and institutional quality from an African perspective.

This study made emerging markets a case study because, on the one hand, their role and influence in the global economy has accelerated with the growth of globalization (Jara 2018). Their rapidly expanding economies and financial market liberalization have, on a large scale, attracted multinational corporations (MNCs) and international investors seeking to expand and diversify into new markets. On the other hand, the characteristics of institutional development and institutional change in emerging markets are different from those in developed countries. Many emerging countries democratized and began liberalizing their economies just three decades ago. The recent democratization and market liberalization places emerging countries at a different stage of institutional development relative to developed countries (Iyer 2016; Puffer et al. 2016).

Some emerging countries are still characterized by inadequate institutional development, with inefficient regulatory and property rights structures, political risk, as well as institutional instability in relation to the regulation of foreign investment and trade (Rottig 2016). Emerging markets also grapple with the phenomenon of institutional persistence, where political institutions that are characterized by concentrated political power and economic institutions designed to extract resources and distribute them to a few politically connected groups persist even after political and economic transition (Acemoglu 2003; Acemoglu and Robinson 2019).

These institutional voids and inadequacies create uncertainty, greater risks and higher transaction costs for multinational companies and international investors (Rottig 2016). Furthermore, the persistence of extractive political and economic institutions creates inequalities that often lead to political and social unrests, which in turn may impact adversely on the business environment (Acemoglu 2003; Iyer 2016). It was therefore the intention of this study to examine the interrelationships between the key variables of FDI, FPI and institutional quality in emerging markets.

2. Theoretical and Empirical Literature

The scholarly literature on international capital flows (i.e., FDI and FPI) is grounded on various theoretical frameworks. The most pertinent theoretical framework in relation to FDI for this study is the eclectic paradigm theory (Dunning 1980, 2001). The eclectic paradigm theory integrated several hypotheses of FDI to construct an O-L-I paradigm that serves as a basis for firms to engage in international production (Dunning 1980, 2001). The three elements of the eclectic paradigm are ownership advantages (O), location advantages (L) and internalization advantages (I). These elements elucidate the advantages that a firm should possess in order to pursue a successful and competitive direct investment in foreign countries. Ownership advantages entail tangible and intangible assets such as relatively superior access to markets, technology and capital (Dunning 1980). These advantages should be firm-specific and exclusive to the firm so as to provide a competitive advantage over its

competitors, domestic and abroad (Nayak and Choudhury 2014). Locational advantages refer to factors that determine which country will host the MNC (Denisia 2010). Among others, these factors include natural resources, infrastructure, institutional quality and capital market development in relation to the host country (Dunning 2001). Internalization advantages, on the other hand, relate to the internalization of the ownership advantages that were highlighted above, which may be more profitable to utilize internally within the corporation than to externalize through exports or through licensing arrangements with firms situated in foreign markets (Dunning 1980).

Dunning and Dilyard (1999) would later modify the above-discussed eclectic paradigm (OLI) and extend it to the context of FPI. The purpose of the modification was to explain the choice between FDI and FPI faced by multinational firms, wherein FDI would be embarked on in order to expand existing resources and strengthen competitive advantages, whilst FPI would be utilized as a vehicle to transfer other financial resources (Dunning and Dilyard 1999). Ownership advantages, in the context of FPI, refer to those advantages that the investing MNC would possess in larger quantities than other MNCs, including greater access to investible capital and superior knowledge and expertise of the capital markets (Dunning and Dilyard 1999). Locational advantages would not differ much from those contained in the context of FDI. Host country capital market development and institutional quality would still be important locational factors but economic prospects that influence the risk and return expectations of the investor would also be an important consideration in the choice of location. Finally, the internalization advantages that were associated with FDI would now be supplanted with externalization advantages. Externalization, in essence, motivates the use of external markets, international capital markets in particular, over internal markets for the transfer of capital to foreign markets (Dunning and Dilyard 1999).

Turning to the related empirical literature, several empirical studies have explored the interrelationships between FDI, FPI and institutions, over and above investigating the drivers or determinants of these international capital flows. Slesman et al. (2015) identified a threshold level of institutional quality, above which host economies could derive significant levels of economic growth benefits from foreign direct and portfolio investment inflows in 80 emerging and developed countries over the period from 1975 to 2005. As in the study by Slesman et al. (2015), Kurul (2017) analysed the threshold effects of institutional quality on the attraction of FDI inflows in a sample of developed and developing countries over the period from 2002 to 2012. Applying the Worldwide Governance Indicators and a dynamic panel regression model, Kurul (2017) found that there was a threshold level of institutional quality that divides two regimes. The regime below the threshold level represents low institutional quality. No significant association was found between the two variables at this level of institutional quality. However, the regime above the threshold value, with high institutional quality, revealed a significantly positive correlation between FDI inflows and institutions, suggesting that improvements in institutional quality led to considerable increases in FDI inflows.

Shah et al. (2016) examined the causal relationships between institutions, and total and sectoral FDI inflows in Pakistan for the period from 1980 to 2012. Applying the autoregressive distributed lag (ARDL) model and the International Country Risk Guide (ICRG) data for institutions, Shah et al. (2016) found long-run bidirectional causal relationships between institutions and total FDI, as well as between services and manufacturing sectors FDI. The authors further found short-run bidirectional causality between institutional quality and manufacturing sector FDI inflows. No significant causality could be found between institutions and FDI inflows in the primary sectors, such as mining. This finding meant that FDI inflows aimed at extracting mineral resources were not affected by or depended on the country's institutional environment (Shah et al. 2016). In another study, Makoni (2021), using the Kunčič (2014) institutional quality dataset, studied the inter-relationships between FDI, stock market development and institutional quality in nine African countries over the period from 2009 to 2016. The results of that study confirmed a statistically significant posi-

tive relationship between FDI and stock market development, while institutional quality yielded a negative impact on inward FDI flows. Based on Makoni's (2021) findings, it can be concluded that low institutional quality deters inward foreign capital flows to emerging market economies, hence policymakers should aim to improve nation branding and image, in line with financial market development.

This study builds on and extends this strand of literature by examining the long-run relationships and causal relationships between institutional quality and both the inflows of FDI and FPI in emerging markets.

3. Methodology

3.1. Population and Sample

Our sampling strategy consisted of a hybrid of purposive sampling and stratified sampling techniques. We deemed this sampling strategy as the most appropriate for this study as our purpose was to conduct a case study on selected emerging markets. Our sample was based on the International Monetary Fund's (IMF 2018) World Economic Outlook. Of the 155 emerging market economies in the IMF's (2018) World Economic Outlook, three economies from each of the Asian, African, Latin American and European clusters were selected. The resultant sample size was then 12 emerging countries, which was regarded as adequate for the purposes of this study. The sample of emerging markets included Egypt, Nigeria, South Africa, China, India, Indonesia, Argentina, Brazil, Mexico, Hungary, Poland and Russia. According to the IMF's (2018) World Economic Outlook, these emerging market economies are some of the largest in terms of GDP and population size across the four regions of Africa, Asia, Latin America and Europe. Moreover, these emerging markets receive the largest inflows of foreign investment in their respective regions. The choice of these markets was also determined by the availability of data.

3.2. Data and Variables

The study applied annual data pertaining to a sample of 12 selected emerging markets in various econometric models. The study and data covered the period from 2007 to 2017. The dependent variables in the study were FDI and FPI net inflows in emerging markets. The data for these inflows was sourced from the World Development Indicators of the World Bank. As in empirical studies such as Singhania and Saini (2017) and Saini and Singhania (2018), these variables are measured as FDI and FPI net inflows as a ratio of GDP, and they represent the net changes (i.e., inflows minus outflows) in the investment position of foreign investors in the country. They do not include cross-border flows of capital by domestic investors. This approach to the measurement of foreign capital inflows is preferable to others because it provides the best indication of a country's ability to attract, preserve and enhance foreign investment inflows. A country with positive net foreign investment inflows is attracting new foreign capital, while a country with negative net foreign investment inflows is experiencing outflows of foreign capital (Jensen 2003).

Institutional quality factors were the independent variables in the study. The Worldwide Governance Indicators (WGI) (Kaufmann et al. 2011) served as our measure of institutional quality. According to Kaufmann et al. (2011), institutional quality and governance are essentially concerned with the institutions and methods through which authority in a country is exercised. Institutional quality and governance are underpinned by three key themes: (a) the processes of government selection and monitoring; (b) government capacity in effective and sound policy formulation and implementation; and (c) due regard for the institutions that govern the economy and society by the state and citizens. From these three key themes, Kaufmann et al. (2011) developed six measures of governance, which include the following: government effectiveness, rule of law, political stability, regulatory quality, voice and accountability and control of corruption.

3.3. Empirical Methods

The principal components analysis (PCA) method was applied to construct a composite index for institutional quality composed of the Worldwide Governance Indicators. Prior to conducting the main econometric estimations, we conducted unit root tests to examine the properties of the data. The main econometric models that were employed in the study included the panel autoregressive distributed lag (ARDL) model approach to co-integration and the error correction model (ECM).

3.3.1. Principal Components Analysis

Similar to Kurul (2017), as well as Sabir et al. (2019), this study employed the Principal Components Analysis (PCA) method to construct a single composite index for institutional quality (INSTDEX). This was due to the significant correlations observed between the individual institutional quality factors, measured by the WGIs, and the absence of unanimity in previous empirical literature as to which of the individual indicators are the most important for foreign investment inflows in emerging markets.

The PCA is a statistical method that transforms a dataset of correlated variables into statistically independent variables called principal components (Kurul 2017; Aït-Sahalia and Xiu 2019). The PCA method reduces the dimensionality of the original variable-dataset by generating fewer components of the data that contain their maximum variance and, therefore, the most important information about the original data (Brooks 2008; Kurul 2017; Aït-Sahalia and Xiu 2019).

3.3.2. Cointegration Analysis

The panel ARDL model for dynamic heterogeneous panels, attributed to Pesaran and Smith (1995) and Pesaran et al. (1999), was employed to examine the long-run relationships between FDI, FPI and institutions. This model is a variation of the accustomed ADRL model that is most used for single time series studies. The popularity and advantage of the ADRL model over other cointegration models such as the Johansen and Engle-Granger models lies in its ability to overcome the restriction in co-integration tests that requires that all the variables to be tested must be non-stationary and of the similar order of integration (Sam et al. 2019). The ARDL model can be applied when the variables of interest are integrated of order zero [I (0)], order one [I (1)] or a combination of both (Pesaran and Shin 1999). A further advantage of this model is its ability to determine both long-run and short-run effects through the estimation of the error correction model (Shrestha and Bhatta 2018). The error correction model integrates the short-run effects with the long-run equilibrium, while retaining the long-run information (Shrestha and Bhatta 2018).

The specific panel ARDL model that was used in this study required that a suitable estimation approach be selected between the Pooled Mean Group (PMG), Mean Group (MG) and Dynamic Fixed Effects (DFE) (Pesaran et al. 1999). To that end, we applied the Hausman test to determine the most appropriate of the three estimators. This process is necessary in as far as dealing with the homogeneity or heterogeneity of short-run and long-run parameters, across individual countries, is concerned. The PMG permits short-run parameters, such as the speed of adjustment and error variances to be heterogeneous across cross-sectional units. Moreover, it produces consistent mean estimates of short-run coefficients across cross-sectional units by estimating the average of individual country coefficients. The PMG, however, imposes homogeneity in the estimation long-run coefficients (Pesaran et al. 1999). The MG, on the other hand, allows for heterogeneity across the cross-sectional units in both short- and long-run parameters (Pesaran and Smith 1995; Pesaran et al. 1999). It estimates individual equations for each cross-sectional unit and examines the average of the estimated coefficients across units. Despite consistent estimates of coefficients, the MG approach ignores the potential homogeneity of certain parameters across units in the cross-section (Pesaran and Smith 1995; Pesaran et al. 1999). Lastly, the DFE approach lies poles apart from the PMG and MG. This approach maintains homogene-

ity in the estimation of both short and long run coefficients across the entire cross-section of countries (Pesaran et al. 1999).

Model Specification

To assess the relationships of interest between the key variables, three panel ARDL models—with the dependent variable alternating as FDI, FPI and institutions—were specified as follows:

$$\Delta FDI_{it} = \delta_0 + \delta_1 FDI_{it-1} + \delta_2 FPI_{it-1} + \delta_3 INSTDEX_{it-1} + \sum_{i=0}^{m} \delta_{1i} \Delta FDI_{it-1} + \sum_{i=0}^{m} \delta_{2i} \Delta FPI_{it-1} + \sum_{i=0}^{m} \delta_{3i} \Delta INSTDEX_{it-1} + \varepsilon_{it} \quad (1)$$

$$\Delta FPI_{it} = \delta_0 + \delta_1 FPI_{it-1} + \delta_2 FDI_{it-1} + \delta_3 INSTDEX_{it-1} + \sum_{i=0}^{m} \delta_{1i} \Delta FPI_{it-1} + \sum_{i=0}^{m} \delta_{2i} \Delta FDI_{it-1} + \sum_{i=0}^{m} \delta_{3i} \Delta INSTDEX_{it-1} + \varepsilon_{it} \quad (2)$$

$$\Delta INSTDEX_{it} = \delta_0 + \delta_1 INSTDEX_{it-1} + \delta_2 FDI_{it-1} + \delta_3 FPI_{it-1} + \sum_{i=0}^{m} \delta_{1i} \Delta INSTDEX_{it-1} + \sum_{i=0}^{m} \delta_{2i} \Delta FDI_{it-1} + \sum_{i=0}^{m} \delta_{3i} \Delta FPI_{it-1} + \varepsilon_{it} \quad (3)$$

where Δ was the differenced operator; FDI_{it} = FDI net inflows as a percentage of GDP into country i at time t; FDI_{it} = FPI net inflows as a percentage of GDP into country i at time t; and $INSTDEX_{it}$ = institutional quality index, composed of the Worldwide Governance Indicators. The Akaike Information Criterion (AIC) and the Schwartz Information Criterion (SIC) were applied to select appropriate lag lengths for the variables.

3.3.3. Causality Analysis

The causality analysis was based on the outputs of the error correction models (ECM) derived from the panel ARDL framework that was applied to our analysis of cointegration relationships. In a co-integration setting, the panel vector ECM becomes efficient as it captures both the short-run and long-run effects among the variables (Shrestha and Bhatta 2018). The error correction terms obtained from the cointegration relationships capture and correct the short-run deviations of series from their long-run equilibrium paths (Mahembe and Odhiambo 2019).

Causal effects in the panel vector ECM approach are inferred from the statistical significance of the long-run and short-run coefficients, as well as the statistical significance of the error correction terms (ECT). In this panel ECM approach, the causal inferences are drawn from the statistical significance of the short-run and long-run coefficients, and the statistical significance of the error correction terms. Moreover, three categories of causality can be drawn, namely long-run causality, short-run causality and strong causality. Long-run causality is inferred from the statistical significance of the long-run coefficients, while short-run causality is deduced when the coefficients of the differenced short-run explanatory variables are statistically significant. On the other hand, we infer strong causality when, in addition to statistically significant long and short run coefficients, the error correction term in negative and statistically significant. Furthermore, three directions of causality can be inferred from the panel ECM, namely, (a) bidirectional causality, indicating feedback effects between variables, (b) unidirectional causality, which implies a one-way causal effect between variables and lastly, (c) no-causality, implying neutrality. Mahembe and Odhiambo (2019) argued that this approach of causality analysis produces similar causal inferences as those of the pairwise Granger causality test and the Wald-test based Granger causality method.

4. Estimation Results

Table 1 presents a summary of the descriptive statistics pertaining to the variables that were used in this study.

Table 1. Summary of descriptive statistics.

Variable	Mean	Maximum	Minimum	Std. Dev.	Observations
FDI	3.305024	54.648730	−15.83879	7.720751	132
FPI	0.975746	7.422868	−3.550829	1.615821	132
INSTDEX	−0.000000239	4.464162	−4.046694	2.202680	132
INSTQ-GOV	−0.032438	0.827384	−1.214644	0.487776	132
INSTQ-LAW	−0.258794	0.964174	−1.18154	0.533806	132
INSTQ-REG	−0.061918	1.195643	−1.074257	0.583292	132
INSTQ-POL	−0.481324	1.072063	−2.211123	0.802598	132
INSTQ-VOA	−0.053287	1.105113	−1.72125	0.813960	132
INSTQ-COR	−0.356984	0.739105	−1.274705	0.493429	132

FDI (Foreign direct investment); FPI (Foreign portfolio investment); INSTDEX (INSTQ index). Individual INSTQ indicators: INSTQ-GOV (Government effectiveness); INSTQ-LAW (Rule of law); INSTQ-REG (Regulatory quality); INSTQ-POL (Political stability); INSTQ-VOA (Voice and Accountability); INSTQ-COR (Control of corruption). Source: Authors' own compilation.

The mean value of FDI inflows was a mere 3.305024 per cent during the period from 2007–2017, which is not a significant value. The FDI maximum and minimum values of 54.648730 per cent and −15.83879 per cent, respectively, relate to one country in our sample, which was Hungary. Hungary boasted the highest average of FDI inflows (13 per cent of GDP) in the sample over the period under study. Hungary has attracted significant inflows of FDI over the years, but the inflows have been characterised by high volatility as a result of erratic institutional instabilities (and policy inconsistencies) in the country.

The mean value of FPI net inflows is even lower than that of FDI at 0.975746 per cent of GDP. The minimum value and maximum value of −3.550829 per cent and 7.422868 per cent related to Hungary and South Africa, respectively. Most emerging market economies have not adequately deregulated and developed their capital markets, and this results in inconsiderable levels of FPI inflows. Even the largest emerging economies such as China have been restrictive on FPI, even though they have liberalized substantially to FDI (Hatzvi et al. 2015).

The mean values of all indicators of institutional quality are negative, including the institutional quality index. According to the Worldwide Governance Indicators, negative values indicate weaknesses in governance and institutional structures (Kaufmann et al. 2011). The negative mean values across institutional indicators in our sample give a grim picture of institutional development in our sample of emerging markets, particularly in the areas of government and regulatory effectiveness, rule of law, control of corruption, civil liberties and political stability.

4.1. Unit Root Test Results

Several unit root tests were conducted, including the Augmented Dickey–Fuller (ADF), the Phillip–Perron (PP), Levin, Lin and Chu (LLC) and the Im, Pesaran and Shin (IPS) tests. The results of these tests are presented in Table 2. As can be noted from the table, all key variables were integrated of order zero [I (0)] and order one [I (1)]. Based on this diagnosis, the panel ARDL approach was deemed suitable to investigate the long-run, co-integrating relationships between the key variables of FDI, FPI and institutions, as per the second objective.

Table 2. ADF, PP, LLC and IPS unit root test results.

Variable	Intercept	Intercept and Trend	No Trend	Diagnosis (Order of Integration)
Augmented Dickey–Fuller (ADF) test—Fisher Chi-square				
FDI @ level	49.4240 **	44.5059 **	50.7280 **	I(0)
FPI @ level	66.7077 **	58.8080 **	68.4192 **	I(0)
INSTDEX	59.2244 **	52.4853 **	81.5170 **	I(1)
Phillips–Perron (PP) test—Fisher Chi-square				
FDI @ level	53.0314 **	50.7159 **	58.2996 **	I(0)
FPI @ level	93.8936 **	99.2092 **	77.4248 **	I(0)
INSTDEX	70.5051 **	94.5040 **	92.1458 **	I(1)
Levin, Lin and Chu (LLC) test				
FDI @ level	−6.68065 **	−7.12176 **	−4.11807 **	I(0)
FPI @ level	−5.03464 **	−9.39288 **	−4.74618 **	I(0)
INSTDEX	−5.89295 **	−8.08932 **	−7.00795 **	I(1)
Im, Pesaran and Shin (IPS) test				
FDI @ level	−3.33792 **	−2.35756 **	**	I(0)
FPI @ level	−4.84450 **	−2.67173 **	**	I(0)
INSTDEX	−3.88751 **	−1.90733 **	**	I(1)

Note: All tests are at first difference, except where indicated otherwise. ***, ** and * indicate that the null hypothesis of unit root tests is rejected at 1%, 5% and 10%, respectively. All test probabilities assume asymptotic normality, except for Fisher tests, which are estimated using the asymptotic Chi-square distribution. Variables remain as previously described. The lag length selection is based on the Schwartz Information Criterion (0 to 1). Source: Authors' own compilation.

4.2. Panel ARDL Cointegration Estimation Results

The Hausman test was applied to determine the most efficient estimator between Mean Group (MG), Pooled Mean Group (PMG) and Dynamic Fixed Effects (DFE). This process was necessary because the homogeneity or heterogeneity across individual countries, in both short-run and long-run parameters, could not be presumed. The Hausman test results are placed in Supplementary.

4.2.1. Cointegration and Error Correction Model Results with FDI as the Dependent Variable—Mean Group

According to the Hausman test, the mean group (MG) estimator was consistent and efficient for the model with FDI as the dependent variable. The MG estimator allows for both short-run and long-run coefficients to vary or to be heterogeneous across cross-sectional units. In addition, the MG provides consistent estimates of coefficients because it runs separate equations for each cross-section unit and averages the coefficients across units (Pesaran and Smith 1995; Pesaran et al. 1999; Magweva and Sibanda 2020). The FDI results based on the MG estimation are displayed in Table 3. The PMG and DFE outputs in Table 3 are merely robustness tests.

Table 3. FDI—Mean Group (MG) output.

	PMG	MG	DFE
	ΔFDI	**ΔFDI**	**ΔFDI**
Long run			
FPI	0.0689 **	−0.00757	−0.0307
	(2.58)	(−0.08)	(−0.90)
INSTDEX	−0.289 **	0.447	−0.0212
	(−2.89)	(1.39)	(−0.15)
ECT	−0.643 ***	−0.913 ***	−0.880 ***
	(−5.93)	(−7.63)	(−8.84)
Short run			
ΔFDI	−0.0252	−0.0118	−0.00127
	(−0.72)	(−0.31)	(−0.06)
ΔINSTDEX	0.415	0.145	0.148
	(1.54)	(0.42)	(1.02)
_cons	6.633 ***	9.551 ***	9.046 ***
	(5.85)	(7.75)	(8.82)
N	120	120	120

Note: t statistics in parentheses. *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$ are levels of statistical significance at 0.1%, 1% and 5%, respectively. Δ denotes the difference operator. ECT—error correction term. Other variables remain as previously described. Source: Authors' own compilation.

When FDI served as the dependent variable, the MG estimation revealed long-run relationships among FDI inflows, FPI inflows and institutions (INSTDEX). The impact of FPI on FDI in the long run was negative but insignificant. These cointegration results are comparable to those of Humanicki et al. (2017), who investigated the cointegrating relationship between FDI and FPI in a VECM framework, using Poland as a case study. They found that these two capital flows were cointegrated in the long run. However, this long-run relationship was of a substitutability or trade-off nature, where both capital flows were influenced by economic growth, but portfolio flows were strongly related to interest rates, whereas FDI showed a long-term dependence on unit labour costs (Humanicki et al. 2017). Thus, in the case of this study, the finding meant that foreign investors in emerging markets substituted FDI for FPI or vice versa depending on the dynamics of the institutional environment in the host economy. Therefore, improvements in institutional quality led foreign investors to pursue relatively more FDI. This was also corroborated by the positive long-run relationship found between institutions (INSTDEX) and FDI. This particular aspect of our findings corresponds with the findings of Hyun (2006) of a positive cointegrating relationship between the two variables in developing countries. Shah et al. (2016) also found a positive long-run relationship between institutions and FDI inflows in the case of Pakistan. We may also, in relation to these findings, invoke the suggestion by Wu et al. (2012) that, depending on the prevalence of informal institutions over formal institutions, foreign investors would pursue more FDI than FPI in emerging markets.

The short-run coefficients suggested similar relationships as the long-run estimation results. Pfeffer (2008) argued that, owing to the high investment costs entailed, it is not possible to adjust FDI in the short term or even regularly in response to environmental changes. For this reason, the effect of institutions on FDI inflows may, in certain cases, only be apparent over the long term and may not be noticeable immediately (Hyun 2006). The negative and statistically significant error correction term (ECT) of −0.913 meant that 91.3 per cent of the past period's equilibrium error was corrected within a year.

4.2.2. Cointegration and Error Correction Model Results with FPI as the Dependent Variable—Dynamic Fixed Effects

Based on the Hausman test, the dynamic fixed effects (DFE) estimator was considered efficient when estimating the FPI cointegration equation. The DFE approach is poles apart

from the MG estimator. The DFE approach imposes homogeneity in the estimation of both short- and long-run coefficients across the entire cross-section and only allows the individual country intercepts to vary (Pesaran et al. 1999). The DFE-based FPI results are reflected in Table 4. MG and PMG are there only for comparison and robustness purposes.

Table 4. FPI—Dynamic Fixed Effects (DFE) output.

	PMG	**MG**	**DFE**
	ΔFPI	**ΔFPI**	**ΔFPI**
Long Run			
FDI	−0.00364	−0.599 *	−0.0136
	(−0.45)	(−2.12)	(−0.53)
INSTDEX	−0.11	0.85	0.884
	(−0.87)	(0.84)	(1.61)
ECT	−1.026 ***	−1.130 ***	−1.024 ***
	(−7.01)	(−13.73)	(−9.89)
Short Run			
ΔFDI	−0.176	0.276	0.0059
	(−1.06)	(1.28)	(0.33)
ΔINSTDEX	1.131 *	−0.443	0.287
	(2.19)	(−0.39)	(0.41)
_cons	0.915 **	3.703 **	1.032 ***
	(2.93)	(3.17)	(5.61)
N	120	120	120

Note: t statistics in parentheses. *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$ are levels of statistical significance at 0.1%, 1% and 5%, respectively. Δ denotes the difference operator. ECT—error correction term. Other variables remain as previously described. Source: Authors' own compilation.

We found a cointegrating relationship between FPI and FDI, where FDI exerted a negative impact on foreign portfolio inflows in the long run. This suggested that increases in FDI inflows were crowding out FPI inflows. This finding was also in line with previous results from the FDI mean group output and the subsequent conclusion that, given the state of institutional quality, the two investment inflows could have been substitutes in this sample of emerging markets. These results contradict those of Noman et al. (2015), who found a positive link between FDI and FPI, with FPI having a greater impact on FDI in a sample of 45 developed and developing countries. Noman et al. (2015) did not take into account the effect of institutions, however, but only that of variables such as differentials in market openness, exchange rates and inflation rates.

The impact of institutions on foreign portfolio inflows, although insignificant, was positive in the in the long run, as well as in the short run. This outcome was in line with Pfeffer's (2008) postulation regarding the high flexibility of FPI flows. Owing to its lower investment and/or transaction costs relative to FDI, foreign portfolio investment would react immediately to short-term changes in the environment (Pfeffer 2008). The error correction term under the MG estimation was −1.204 and significant at 0.1 percent. This meant that the variability of FPI inflows as a result of changes in FDI and INSTDEX was corrected to its long-run equilibrium at a speed of adjustment of 120.4 per cent annually. An ECT greater than −1 (or between −1 and −2) also indicates that the error correction process does not directly converge to the equilibrium path but fluctuates, in an oscillatory manner, before rapidly converging to long-run equilibrium (Narayan and Smyth 2006).

4.2.3. Cointegration and Error Correction Model Results with INSTDEX as the Dependent Variable—Pooled Mean Group

The pooled mean group (PMG) estimator was consistent and efficient for the model estimating cointegration with INSTDEX as the dependent variable, in terms of the Hausman test. The PMG estimator is known for imposing homogeneity on the long-run parameters,

but as with the MG, it allows short-run parameters (including the speed of adjustment, intercept terms and error variances) to vary across countries. In addition, it generates consistent estimates of the mean of short-run coefficients across cross-sectional units by taking the average of individual country coefficients, i.e., pooling and averaging the means (Pesaran et al. 1999). Table 5 shows the PMG output. MG and DFE outputs are merely robustness checks.

Table 5. INSTDEX—Pooled Mean Group (PMG) output.

	PMG	MG	DFE
	ΔINSTDEX	**ΔINSTDEX**	**ΔINSTDEX**
Long Run			
FPI	0.0631 **	−0.601	0.135 *
	(2.67)	(−0.75)	−2.11
FDI	−0.279 ***	−0.0402	0.00466
	(−5.83)	(−0.28)	(0.41)
ECT	−0.472 ***	−0.548 **	−0.338 ***
	(−4.38)	(−3.17)	(−4.36)
Short Run			
ΔFPI	−0.0282	−0.0929	−0.02
	(−1.51)	(−1.85)	(−1.33)
ΔFDI	0.0733 ***	0.0738 *	−0.00191
	(4.01)	(2.29)	(−0.73)
_cons	0.192	−0.0628	−0.0437
	(1.19)	(−0.19)	(−1.43)
N	120	120	120

Note: t statistics in parentheses. *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$ are levels of statistical significance at 0.1%, 1% and 5%, respectively. Δ denotes the difference operator. ECT—error correction term. Other variables remain as previously described. Source: Authors' own compilation.

The PMG estimation between institutions, FDI and FPI revealed evidence of significant cointegrating relationships. In contrast to the previous finding of a positive and significant long-run impact of institutions on FDI, it appeared that FDI in turn exerted a negative significant effect on INSTDEX in the long run. In the short run, the impact of FDI on INSTDEX was otherwise positive and statistically significant. These results were inconsistent with those of Shah et al. (2016), who revealed that the positive relationship between the two variables persists from the short run to the long run. Earlier, Hyun (2006) also concluded that the presence of FDI might lead to lasting changes in institutional quality. In contrast, the findings of this study suggested that institutional quality improvements induced by the presence of FDI were merely temporary in this sample of emerging markets. The findings in this regard can also be linked to the phenomenon of institutional persistence, where certain institutional weaknesses would persist even after reforms such as market liberalisation, which permits the inflow of foreign capital (Acemoglu 2003).

Foreign portfolio investment, on the other hand, had a significant positive impact on institutions in emerging markets. This result was expected to hold for FDI as well. However, the results suggested that it was FPI that would precipitate institutional improvements in the long run. The error correction term was significant and negative, i.e., −0.472, indicating that the speed of adjustment to long-run equilibrium from previous disequilibrium was 47.2 per cent annually.

4.3. Panel Vector ECM Causality Analysis

The causality analyses between FDI, FPI and institutions were based on outputs from the error correction models (ECM) derived from the panel ARDL framework that was applied to our analysis cointegration relationships.

Table 6 summarises the outputs of the error correction models extracted from the ARDL framework applied in the earlier cointegration estimations. Causal effects are inferred from the statistical significance of the long-run and short-run coefficients, as well as the statistical significance of the error correction terms (ECT).

Table 6. Vector ECM outputs.

Dependent Variables	Independent Variables—Source of Causation						
	Long Run Coefficients			Short Run Coefficients			
	FDI	FPI	INSTDEX	ΔFDI	ΔFPI	ΔINSTDEX	ECT
ΔFDI	–	−0.00757 (−0.08)	0.447 (1.39)	–	−0.0118 (−0.31)	0.145 (0.42)	−0.913 *** (−7.63)
ΔFPI	−0.0136 (−0.53)	–	0.884 (1.61)	0.0059 (0.33)	–	0.287 (0.41)	−1.024 *** (−9.89)
ΔINSTDEX	−0.279 *** (−5.83)	0.0631 ** (2.67)	–	0.0733 *** (4.01)	−0.0282 (−1.51)	–	−0.472 *** (−4.38)

Note: t statistics in parentheses. *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$ are levels of statistical significance at 0.1%, 1% and 5%, respectively. Δ denotes the difference operator. ECT—error correction term. Other variables remain as previously described. Source: Authors' own compilation.

Table 7 summarises the causality incidences that were identified from the significant coefficients and ECTs.

Table 7. Vector ECM causality analyses.

Dependent Variables	Independent Variables—Source of Causation						
	Long-Run Causality			Short-Run Causality			
	FDI	FPI	INSTDEX	ΔFDI	ΔFPI	ΔINSTDEX	ECT
ΔFDI	–	No Causality (−0.08)	No Causality (1.39)	–	No Causality (−0.31)	No Causality (0.42)	Causality *** (−7.63)
ΔFPI	No Causality (−0.53)	–	No Causality (1.61)	No Causality (0.33)	–	No Causality (0.41)	Causality *** (−9.89)
ΔINSTDEX	Causality *** (−5.83)	Causality ** (2.67)	–	Causality *** (4.01)	No Causality (−1.51)	–	Causality *** (−4.38)

Note: t statistics in parentheses. *** $p < 0.001$, ** $p < 0.01$ and * $p < 0.05$ are levels of statistical significance at 0.1%, 1% and 5%, respectively. Δ denotes the difference operator. ECT—error correction term. Other variables remain as previously described. Source: Authors' own compilation.

Unidirectional causal effects from FDI to institutions (INSTDEX) were discovered in both the long run and the short run. Similarly, a unidirectional causal link was observed from FPI to institutions in the long run. In the short term, however, no causality was observed between INSTDEX and FPI. These particular findings suggested that the inflows of foreign investment led to significant improvements in the domestic institutional environment over the long-run period. Alfaro et al. (2007) had earlier, correspondingly, found that institutional quality was a significant determinant of capital flow volatility, subject to the state of existing capital controls. Over the past three decades, many emerging markets have pursued financial liberalisation and have, as a result, received huge capital inflows. However, the liberalisation of capital markets in these emerging markets has led to severe financial crises and subsequent abrupt capital reversals when not coupled with efficient institutional and regulatory frameworks. The results in this study of long-run unidirectional causality from FDI and FPI to institutions would, therefore, imply that emerging markets

have learnt the lesson that effective institutional measures must be established in order to insulate their economies from potential adverse ramifications of volatile capital flows.

Fratzscher (2012) also observed that those emerging market economies who could embolden their institutional quality (and macroeconomic fundamentals) were able to insulate their capital markets and economies from adverse effects of portfolio capital flow reversals even amidst the 2008/9 global financial crisis. The ease with which long run portfolio flows can be withdrawn compels governments to improve institutional stability to prevent capital flight (Pfeffer 2008). These results were indicative of the positive spillovers of FPI on the institutional quality of emerging markets. This outcome also pointed to the lessons emerging markets have learned from their previous experiences with financial crises and capital flights.

We further observed that over the long run, FDI and FPI exerted joint causal effects on institutions. Amplifying the causal relationships suggested by this analysis was the fact that the long-run and short-run coefficients were accompanied by negative and statistically significant error correction terms (ECTs) in the overall panel VECM framework. On the one hand, the negative and significant ECTs signify strong causality among the variables and imply convergence of the system to long-run equilibrium. On the other hand, the generated ECTs imply correction of short-run disequilibria at 91.3 per cent, 120.4 per cent and 47.2 per cent speed of adjustment for FDI, FPI and INSTDEX, respectively. The causal relationships uncovered in the panel VECM framework are summarised in Table 8.

Table 8. Summary of panel vector ECM-based causal relationships.

Long-Run Causal Effects
FDI → INSTDEX FPI → INSTDEX
Short-Run Causal Effects
FDI → INSTDEX

Note: → unidirectional causality. Source: Authors' own compilation.

5. Conclusions and Recommendations

In summary and conclusion, this study found, in addition to significant cointegrating relationships between institutions and foreign capital inflows (FDI and FPI), unidirectional causal effects from FDI inflows and FPI inflows to institutional quality in the long run. Despite the latter-mentioned findings, our results further suggested that the long-run relationship between the two foreign capital inflows was more of a substitutability or trade-off nature, dependent upon the dynamics of the institutional environment in the host economy.

This study contributes to knowledge in that it adds to the scarce empirical literature that extends the empirical analysis of the impact of institutions on foreign capital inflows by studying institutional effects on both foreign direct investment and foreign portfolio investment. It further contributes to the scant literature that investigates the long-run and causality relationships between institutions and both FDI and FPI inflows into emerging markets.

For policymakers and governments in emerging markets, the study provides empirical evidence of how institutions interact with foreign direct and portfolio investment inflows in the host economy. As a policy implication, it is recommended that continued liberalisation of the capital account and capital markets in pursuit of capital inflows would be beneficial for emerging markets in strengthening the formal institutions and the general institutional environment. Strengthening the qualitative characteristics of institutions, such as government effectiveness, regulatory quality, rule of law, control of corruption, voice and accountability and political stability, could curtail the persistence of institutional weaknesses and insulate their economies from the adverse effects of volatile capital flows and, over the long run, enhance and preserve foreign capital inflows.

In order to further the understanding of the relationship between institutions and international capital inflows beyond what existing literature and this study have found, future research studies might examine empirically the threshold levels of institutional quality at or above which significant inflows of foreign investment can be attracted by emerging markets. Kurul (2017) determined the threshold level of institutional quality that must be exceeded if developing countries are to attract more FDI inflows. Thus, future research could add to this literature by extending the analysis to include FPI inflows.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/economies9040179/s1. Table S1: Hausman test results: FDI—ADRL model, Table S2: Hausman test results: FPI—ADRL model, Table S3: Hausman test results: INSTDEX—ADRL model

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