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On the Role of Projected FDI Inflows in Shaping Institutions: The Longer-Term Plan for Post-Pandemic Investment Reboot*

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Capital inflows have a strong presence that influences destination countries' development of institutions, which can in turn help resuscitate a stopped economy and re-attract capital that was lost during crises such as the recent public health crisis. While the previous literature emphasizes the mechanism that foreign investors press or even threaten the local government for change, this paper explores empirically whether institutional improvement can be achieved through the channel that host countries voluntarily reform institutions in anticipation of potential investments predicted by the exogenous geographical and cultural

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characteristics of the recipient countries. Given that countries with better institutional quality can accumulate larger FDI stocks, we still find that the need for more FDI, in contrast to FPI and debt, gives higher incentives to host countries to strategically improve their institutions before seeking capital overseas. Moreover, the predicted FDI exerts more prominent impacts on institutions on constraining elite than those involved in launching a business, enforcing contracts, and protecting properties. The results imply that a long-run plan for upgrading elite constraint institutions is crucial for a post-pandemic FDI reboot.

Keywords: Foreign Direct Investment, Foreign Portfolio Investment, Debt Investment, Legal Institutions, Contract Enforcement, Executive Constraints, Property Rights

JEL Classification: E02, F21, F34, F40, P48

I. INTRODUCTION

Regarding the consequences of foreign direct investment (FDI), the determinants of quality institutions, as well as the interactions between capital flows and institutions, the extant literature has established several important results. First, FDI inflows contribute to the host country's subsequent economic performance (Moran et al., 2005), and play key roles in improving the quality of local institutions (e.g., Ahlquist and Prakash, 2010; Ali et al., 2011; Long et al., 2015) that are crucial to long-run growth (Acemoglu et al., 2005). Second, besides FDI, other international activities such as foreign portfolio investment (FPI), debt financing, trade, and even social globalization can also have a profound impact on the development of local institutions (Bhattacharyya, 2012; Akoto, 2013; Levchenko, 2013; Bergh et al., 2014). Finally, countries with superior institutions are often rewarded with an increasing amount of foreign investment (Alfaro et al., 2008; Ali et al., 2010). However, these results provide fewer policy implications for resuscitating the stopped global economy (Cakmakli et al., 2020) and re-attracting lost capital flows (Singh, 2020) after the COVID-19 pandemic. Long-run institutional improvement measures can help as complement to short-run monetary or fiscal tools as examined in Beirne et al. (2020).[1]

[1] According to recent statistics provided by the Organization for Economic Co-operation and Development (OECD), in addition to health problems, the COVID-19 outbreak has triggered major economic and financial consequences: GDP is expected to contract by 6% globally in 2020, and FDI flows are expected to fall by around 40%.

Therefore, since the pandemic is still in progress, we rely on pre-pandemic data to ask a related but slightly different question. Given that a country expects itself to receive more FDI based on favorable characteristics of its economy (i.e., the actual amount of FDI is currently at low levels due to external shocks like the recent COVID-19 public health shock), whether there exists a strong incentive for that country to strategically improve its institutions before seeking foreign capital? If the answer to this question is yes, then two follow-up questions naturally emerge. For one, as different types of institutions are involved in the whole process of FDI, which type of them will be affected most by FDI? For another, do FPI and debt inflows exhibit similar traits?

This paper hence explores the impact of forecasted foreign investment on foreign-investment-related institutions. This is an important issue because it is widely hoped that more foreign funds can improve the quality of many sets of institutions in the local country, including starting a business, contract enforcement, constraining elites, and protecting property rights, through a variety of channels, including providing financial resources, delivering advanced technological or managerial expertise, and creating an environment that engenders institutional reforms. We argue that the benefits of FDI may well function not through the traditional channels listed above but through a new mechanism of host countries catering to investors' needs for better institutions ex-ante. More importantly, greater governance efforts would be devoted to areas of institutions that are most valued by foreign investors.

To test these predictions empirically, we must first identify which countries are more likely to attract a larger size of FDI inflows in the future. Specifically, we have constructed a measure of predicted FDI following a strategy similar to Kleinert and Toubal (2010). The key idea is to use non-institutional non-economic variables specific to each country to predict its inward investment, by expanding the gravity model of Frankel and Romer (1999) used to forecast trade. A country's predicted FDI inflow is shown to be a robust determinant of institutions in a pool of 139 countries for more than a decade. We find that countries that due to their past investment and geography have the potential to attract more FDI will strive for better institutions, particularly much better executive constraint institutions, holding all else equal. FPI and debt, however, have smaller institution-building effects. These results are robust to the inclusion of a collection of controls, the use of an instrumental variable (IV) approach, and various subsamples.

This paper contributes to the following three strands of literature. The first stand investigates whether actual FDI activities that occurred and other alternative international investment vehicles utilized by foreign investors are associated with the advancement of local institutions. For example, Long et al. (2015) employ cross-sectional firm-level data in China to study how FDI can positively affect regional institutional quality, which is measured by firms' ratings of the degree of the tax burden and the strength of creditor right protection in a survey conducted by the World Bank. Their proposed underlying mechanism is that existing foreign investors improve regional institutions via lobbying collectively and threatening to leave. In contrast, our paper adopts a panel dataset at the country level to emphasize the following mechanism: host-country governments are more eager to upgrade the elite constraint institution voluntarily, among other institutions, before attracting foreign investments. Ahlquist and Prakash (2010) study the effects of FDI on the quality of contracting institutions, which is proxied by several indicators taken from the World Bank Doing Business dataset. Their empirical methodology is to apply ordinary least square (OLS) to a cross-section of variables averaged over several years. Like Long et al. (2015), these authors also believe that their results are driven by multinational corporations wishing for a better contracting environment and legislative bodies responding to their wishes, especially in more indebted countries.

Complementary to the institution-building effects from existing foreign investors, Bhattacharyya (2012) hypothesizes that trade openness could also lead to lower expropriation and contract repudiation risks. The author relies on Fuller modified Limited Information Maximum Likelihood to test this hypothesis with panel data of four five-year averages calculated over the period from 1980 to 2000. The underlying mechanism is that variations in institutions can be explained by trade liberalization tools like reducing tariffs or quantitative restrictions and setting up export processing zones. In addition, Bergh et al. (2014) find a strong correlation between the institutional quality index from the World Governance Indicators (WGI) and the lagged economic and social globalization index from the KOF Swiss Economic Institute, using a panel data of five four-year averages during 1992-2010. Further, this effect of globalization on institutions is found to be much stronger for the sample of high-income countries. The current paper is thus a part of this growing literature. Compared to all previous studies, we examine the role played by predicted capital flows in incentivizing the improvement of different sets of institutions.

Since the first strand of literature fails to identify the host country's intention to improve institutions, we resort to the second strand of literature that attempts to solve this problem by exploring how projected levels of cross-border economic activities can foreshadow future developments in local institutions. Concerning debt financing, Akoto (2013) studies how the projected shift of global debt relief architecture affects the motivation of politicians in debtor countries to strategically improve institutions prior to seeking debt relief, where the institutional quality is measured by WGI indices on government effectiveness, regulatory capability, and social freedom. As for trade, Levchenko (2013) shows both theoretically and empirically that countries having a predisposition to export in contract-intensive products tend to have better equilibrium institutions. Following their perspectives, this paper attributes a noticeable part of institutional development to the predicted equity capital flows in addition to predicted debt relief and trade volumes.

Thirdly, an FDI-induced increase in productivity can motivate institutional improvement. On the one hand, according to models of institutional change,[2] institutions upgrade via governments' optimizing behavior to take advantage of historical productivity patterns and expected technological breakthroughs (Neyapti, 2013). On the other hand, it is well understood that FDI can positively affect productivity. For example, Javorcik (2004) finds that FDI generates positive knowledge spillovers on domestic firms' productivity across industries. Furthermore, although Fons-Rosen et al. (2013) document that the aggregated impact of foreign investment on country-level productivity growth is fairly small, Alfaro and Charlton (2009) point out that the impact becomes larger as the host country's financial system grows more mature. In sum, when local governments is anticipating an increase in productivity caused by future foreign investments, they will adjust their institutions in advance. Consequently, this paper adds to this literature by establishing a new connection between FDI and institutions through the productivity channel. As a last note to theorists, this paper fills the gap that no empirical studies have evaluated the relative importance of predicted FDI inflows in shaping a variety of institutions. We, therefore, provide implications for novel models that try to unbundle institutions.

[2] See Kingston and Caballero (2009) for a comprehensive review of competing theories on institutional change.

The rest of this paper is organized as follows. Section 2 discusses the conceptual issues related to FDI's institution-building effects, based on which we develop our hypotheses. In section 3, first of all, we specify the empirical model adopted to investigate how predicted FDI inflows can facilitate the development of different types of institutions; second, we describe the construction of measures for projected FDI inflows; third, we introduce readers to data sources; fourth, we present baseline results, followed by several robustness checks. Section 4 concludes.

II. CONCEPTUAL ISSUES

Extant empirical studies on the impact of foreign investments on institutions simply associate some measures of capital flows with selected measures of institutional quality. This association is essentially a joint effect of two distinct mechanisms. One mechanism operates through the channel of actual FDI that has already been invested in host countries, and these investors have incentives to press local governments for change or even threaten to leave. Intuitively speaking, an investor who invests in multiple countries probably would have about the same incentive to persuade all countries in his or her portfolio into building better institutions. Another mechanism functions through the incentive of the local governments themselves, i.e., improving institutional quality to attract potential FDI that should be in presence conditional on host country characteristics. In other words, countries that for some reason cannot capture productivity gains from FDI by improving their institutions would have no incentive to do so.

The potential-FDI mechanism is the focus of this paper. And it directly leads to our first hypothesis: countries with a higher probability of attracting and profiting from potential FDI will improve their institutions more. After decomposing entangled economic institutions and considering alternative investment tools, we develop our second hypothesis: the predicted FDI inflows can exert an institution-building effect that is larger in magnitude for elite constraint institutions than other institutions less relevant to FDI. Moreover, since FPI and debt are subject to less risk of properties being seized by local executives, the predicted FPI and debt inflows should not display such prominent effects as in the case of FDI.

In terms of the theoretical framework, our hypotheses are rooted in the literature on modeling the determinants of institutional change. For example, Puga and Trefler (2014) construct a model that highlights the role played by the evolution of income

distribution via trade in facilitating institutional improvements. Jiao and Wei (2017) also present a simple theory in which a country's intrinsic level of openness (such as demographic and geographic factors, and exogenous economic opportunities) affects its incentives in investing in better institutions. Following their works, our study takes a step further by providing empirical evidence that FDI serves as one of the most important practical mechanisms for the operation of such institution-building effects.

III. EMPIRICAL EVIDENCE

To test these hypotheses, this paper constructs a measure that captures the extent to which the country would have been able to attract FDI inflows and analyzes how this measure affects different types of institutions involved in the process of FDI. With the new measure, we estimate the following equation by pooled OLS in 139 countries over the period 2004-2017:

$$Institution_{it} = \beta_0 + \beta_1 Expect\_FDI_{it} + \beta_2 Stock\_FDI_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it}. \quad (1)$$

The dependent variable, *Institution*, is a chosen proxy for a set of institutions identified to be FDI-facilitating in recipient countries. As for control variables, *Stock_FDI* is the total amount of FDI accumulated until the year of observation, divided by GDP; and $\boldsymbol{X}_i$ is a vector of other controls. The independent variable of our interest, *Expect_FDI* is a measure of predicted FDI inflows over GDP. It can be interpreted as the likelihood for a country to attract FDI if the economic fundamentals and the institutional environments are considered to be ready by foreign investors. Later, we will replace *Expect_FDI* with *Expect_FPI* or *Expect_DEBT* in the robustness section. At last, $\boldsymbol{u}_t$ is a vector of year-fixed effects, and ε_{it} is the usual error term.

To mitigate the endogeneity problem caused by reverse causality[3] and the multicollinearity problem caused by high correlations among explanatory variables,

[3] It is shown by Alfaro et al. (2008) and Shi et al. (2017) that the institutional environments of the host country would attract the FDI inflows. In their arguments, institutional environments could serve as an overall indicator for the politics, governance, public security, infrastructure, and culture of a country. So, if this indicator is continuously improving, then not only will there be extra FDI flowing into the country, foreign capital that has already invested in the country will also expand the existing production capacity or make additional investments. Since our purpose is to investigate

this predicted variable is constructed without accounting for the country's real-life institutional quality, actual FDI, or actual economic growth patterns. See the next subsection for a detailed explanation. If our hypotheses hold, we should observe significantly positive β_1's for a range of institutions involved in FDI, and the magnitude of β_1 in front of the elite restraint institutions, which is cared about most by foreign investors, should be the largest.

Thus, the empirical strategy is based on the view that the current institutions are the result of government optimal choice and are subject to influence by countries' probability of receiving FDI based on non-economic non-political characteristics. A caveat in the above setup is that, although conventional country variables are included, the pooled OLS may omit unobservable factors that would be otherwise incorporated in a country-fixed-effect specification. The reason we still use OLS estimators is that a country's institutional quality is a very slow-moving variable. Hence, it is insensitive to time, and it will compromise the benefits of having country-fixed effects estimated. To deal with such an issue, papers on institutional quality often adopt cross-sectional data or time-series averages. We choose the pooled OLS specification for the longest available sample period because our main purpose is to exploit the variation in predicted FDI and to identify its effect on institutional changes over time. Nevertheless, as indirect and suggestive evidence, we find similar results in a cross-sectional way of treatment and time-series average over fixed time intervals.

1. Predicted Level of FDI Inflows

Before estimating equation (1), we need to find out the predicted amount of FDI, *Expect_FDI*, flowing into each country at each sample year. The method in this paper follows Kleinert and Toubal (2010), who modify the predictive gravity regression on bilateral trade volumes proposed by Frankel and Romer (1999) and use the modified version to predict FDI flows based on exogenous variables on geography and culture.

We begin by estimating the following:

whether high FDI inflows can motivate local governments to improve their institutions, we encounter the two-way causality problem.

$$Inflow\_FDI_{it} = \alpha_0 + \alpha_1 Distance_i + \alpha_2 Latitude_i + \boldsymbol{\alpha_3 Continental_i} + \alpha_4 Landlocked_i + \alpha_5 Language_i + \boldsymbol{u_t} + \varepsilon_{it}, \quad (2)$$

where *Inflow_FDI* denotes the actual amount of FDI inflow received by country i during year t; *Distance* is the average of the geographical distances from the capital city of country i to capital cities of all other countries in our sample; *Latitude* is the latitude of the capital city of the host country; ***Continental*** is a vector of dummies, which represent which continent the country of our interest is located in; *Landlocked* means whether the country has no seacoast; and *Language* is a dummy indicating whether the official languages of the country include English. Again, $\boldsymbol{u_t}$ is the year-fixed effect vector; ε_{it} the error term. All geographical variables are constructed from information from the CEPII database.

After equation (2) is estimated, we can then use all the estimated coefficients to compute the main explanatory variable in equation (1) for each country.

$$Expect\_FDI_{it} = \widehat{Inflow\_FDI}_{it}/GDP_{it}$$

Summing up, the statistic used in this analysis, *Expect_FDI*, captures the amount of potential FDI for each country, as predicted exclusively by exogenous characteristics. Its value will be high in a country whose geography and language imply that the country is expected to receive more FDI in the future. The predicted flow of FDI is positively correlated with the actual stock of FDI, suggesting that the prediction has turned into reality to a certain degree, accumulating into actual FDI holdings.

2. Data Sources

As for the dependent variable, the quality of FDI-related institutions is proxied by four measures, each of which corresponds to one set of institutions that will influence FDI throughout its entire investment course. First of all, foreign investors who invest in a majority of equity shares would be attracted to destination countries in which launching new operations is less costly in terms of time and money. To quantify the convenience provided by institutions in this regard, we use scores on the ease of starting a business from the World Bank Doing Business dataset (Djankov et al., 2002). This score ranges from 0 to 100, with a higher rate equating to greater convenience.

We normalize the original scores by dividing by 100 and obtain our measure of starting a business (*DB_STABIZ*) with a consistent value range of [0,1].

Secondly, upon the new establishment of a foreign-invested company, the owners and managers of this company care about how private contracts are enforced by the host country's courts. The World Bank Doing Business dataset provides another score called enforcing contracts, which is based on survey responses by experts on how the local legal system performs in assuring smooth fulfillment of contractual obligations. Similarly, the ratings also have the lowest value of 0 and the highest value of 100. The larger the number of judges and lawyers and the more efficient are judicial procedures, the lower the enforcement costs, and hence the higher the score. Therefore, we construct a [0,1] proxy (*DB_ENF*) to measure the quality of contracting institutions.

Next, elites in host countries such as government officials and politicians may interfere with the operation of foreign-invested firms by participating in market activities themselves. If such interventions are not constrained institutionally in a country, then the local market is deemed to lack efficiency (Karakas, 2017). To account for this particular type of institution, we employ the index of constraint on chief executives (*PI_CONST*) from the POLITY IV database as it is also utilized similarly in studies by Gurr (1990) and Acemoglu and Johnson (2005). The original index ranges from 0 to 10, and we adjust them to [0,1] by dividing by 10. A higher value means more stringent constraints.

Last but not least, we focus on private property rights protection institutions. Following La Porta et al. (1997), Beck et al. (2003). and Djankov et al. (2003), the private property score published by the Heritage Foundation is used to measure the extent to which private properties are protected from expropriation by the central government and other public entities. As usual, a higher score implies more protection, and the original range [0,100] is divided by 100 to arrive at a measure of institutional quality on property rights (*HF_PR*) when applied to the estimation of equation (1).

Of course, these four measures might overlap with each other. But they do differ a lot in terms of timing and function from the perspective of foreign equity investors. Alfaro and Charlton (2009) find that entangled institutions play distinct roles in many decisions made by a multinational company's foreign subsidiaries, including decisions on location, ownership structure, operation activity, and production specialization. For example, when deciding where to locate and how to structure capital, foreign investors would value the institutional benefits of doing business in host countries. When deciding whether to specialize in production, owners of FDI would value property

rights protection institutions most: if it is weak, they choose to outsource; otherwise, they will choose to internalize. All in all, countries anticipating future FDI flows should improve all four types of institutions to realize such anticipations.

Concerning the main independent variables, the predicted level of FDI (*Expect_FDI*) is obtained using estimates of future FDI inflows as a share of GDP in each host country, and the actual stock of FDI (*Stock_FDI*) is constructed by accumulating historical FDI inflows. Consistent with Alfaro et al. (2008), we define actual FDI flows and associated stocks as including Greenfield investments (construction of new factories), equity capital, reinvested earnings, other capital, and financial derivatives associated with various intercompany transactions between affiliated enterprises. Moreover, we adjust the predicted and actual capital investment denominated in various nominal currencies, and make them comparable across countries by anchoring their original values to a 2010 real exchange rate set at 100. The raw FDI data are sourced from the dataset developed by the United Nations Conference on Trade and Development (UNCTAD). According to a UNCTAD report, the fluctuations in global FDI are sizable over time and across countries. On average, the FDI flow is increasing from a relatively low level in 2003 to a historically high level until the 2008 financial crisis; and then experiencing a slight drop over 2008-2009, the flow starts to rise again steadily yet more slowly since 2011, with different countries receiving FDI inflows that differ tremendously.

With respect to control variables, we first include the natural log of GDP (*LN_GDP*) and GDP per capita (*LN_GDPC*), both of which are evaluated using constant 2010 U.S. dollars. These two are used to proxy for the degree of economic development and average richness of residents in a country can lay foundations for better institutions. We also use gross capital formation as a percentage of GDP (*Capital*) and overall trade volume (*Trade*), which is calculated as the sum of imports and exports as a percentage of GDP, to control for the effects of capital structure and trade openness on institutional quality upgrading. All controls are taken from the World Bank's World Development Indicators database.

Our final sample is a panel of 139 countries (see Appendix Table 1A) spanning from 2004 to 2017 with a total of 1,866 observations. The original sample is slightly larger. But when merging different databases, we have removed a few countries whose values for FDI or institutions are missing, since retaining them would make our results subject to backfilling errors. And we have also deleted several countries that encountered a

breakup, invasion, or civil war during our sample period, as the development of their institutions was disrupted randomly, biasing our results.

Table 1 lists the information for all variables with the corresponding notation, definition, data source, and reference. Panel A of Table 2 is a correlation matrix. As can be seen, measures for capital investments are positively associated with measures of institutional quality. Specifically, the predicted FDI inflows exhibit relatively higher correlations than the actual FDI stock, implying that the expectation-induced institutional improvement initiated by local governments might be larger than the improvement in institutions led by lobby groups of existing investors. The predicted FDI inflows also have higher correlations with institutions than do the predicted FPI and debt inflows. The reason might be that FDI requires long-term financing which is much more institution-sensitive than speculative short-term investment vehicles. Nevertheless, our main explanatory variables are not strongly correlated with each other. So, there should be no worries about multicollinearity. Combining these facts, we find preliminary evidence for our hypotheses.

Panel B of Table 2 presents the summary statistics. The forecasted level of FDI inflows on average accounts for 5.3% of GDP, with the maximum proportion ranging up to 15.2%; while the average actual stock of FDI is almost half of GDP. FDI has become an increasingly important way for financing economic development. This motivates local governments to improve their institutions to further attract long-run foreign capital. For measures of institutional quality, *DB_STABIZ* has the highest median, and *HF_PR* has the highest standard deviation.[4] This suggests that starting a business seems to be easier in most host countries, but there exist wide gaps between economies on how much emphasis is put on property rights protection.

[4] Given diverse sources and methodologies, our institutional quality measures may not be comparable. We thank the editor for pointing this out. As a result, we normalize these measures by using the z-score method. The normalized measures used in all estimations have the same mean and standard deviation. By doing this, the weights of proxies for institutions in our regression will not be artificially distorted.

Table 1. Description of the Variables

Variable	Definition	Source	Reference
Dependent Variables			
DB_STABIZ	The score for the ease of starting a business, divided by 100 [0,1]	World Bank Doing Business Database	Djankov et al. (2002)
DB_ENF	The score for the strength of enforcing private contracts, divided by 100 [0,1]		
PI_CONST	The score for the degree of constraints on chief executives, divided by 10 [0,1]	POLITY IV	Acemoglu and Johnson (2005)
HF_PR	The score for how private property rights are protected, divided by 100 [0,1]	Heritage Foundation	Beck et al. (2003); Djankov et al. (2003)
Independent Variables			
Expect_FDI	Predicted FDI inflows over GDP (%)	UNCTAD Foreign Direct Investment	Kleinert and Toubal (2010)
Stock_FDI	Stocks of inward FDI over GDP (%)		
Expect_FPI	Predicted FPI inflows over GDP (%)	IMF International Financial Statistics	Alfaro et al. (2008)
Expect_DEBT	Predicted debt inflows over GDP (%)		
Control Variables			
LN_GDP	Ln of GDP	World Bank World Development Indicators Database	Alfaro et al. (2008); Levchenko (2013)
LN_GDPC	Ln of GDP per capita		
Capital	Gross capital formation over GDP (%)		
Trade	Trade over GDP (%)		
Instrumental Variables			
ND	Ln of the number of occurrences of natural disasters plus 1	The International Disasters Database	Acemoglu et al. (2001)
TD	Ln of the number of death caused by technological disasters plus 1		

Table 2. Correlations and Summary Statistics of the Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A. Variable Correlations														
(1) *Expect_FDI*	1													
(2) *Stock_FDI*	0.219	1												
(3) *DB_STABIZ*	0.307	0.274	1											
(4) *DB_ENF*	0.341	0.141	0.458	1										
(5) *PI_CONST*	0.343	0.114	0.366	0.201	1									
(6) *HF_PR*	0.395	0.251	0.522	0.505	0.465	1								
(7) *LN_GDP*	0.266	-0.0453	0.453	0.454	0.218	0.553	1							
(8) *LN_GDPC*	0.384	0.208	0.556	0.580	0.320	0.752	0.740	1						
(9) *Capital*	-0.151	0.0169	0.0735	0.138	-0.201	-0.0916	-0.0045	-0.0008	1					
(10) *Trade*	0.234	0.577	0.216	0.335	-0.0226	0.280	-0.0162	0.314	0.129	1				
(11) *ND*	-0.0459	-0.200	-0.111	-0.0923	0.0973	-0.139	0.161	-0.155	-0.0331	-0.241	1			
(12) *TD*	-0.0981	-0.202	-0.255	-0.167	-0.138	-0.242	0.123	-0.204	-0.0380	-0.266	0.234	1		
(13) *Expect_FPI*	0.389	0.129	0.245	0.310	0.374	0.265	0.0740	0.161	-0.0749	0.200	-0.0490	-0.213	1	
(14) *Expect_DEBT*	0.362	0.169	0.271	0.254	0.391	0.224	0.0462	0.103	-0.0883	0.177	-0.0327	-0.189	0.950	1
Panel B. Summary Statistics														
Mean	0.053	0.454	0.727	0.575	0.526	0.458	24.79	8.568	0.247	0.887	0.563	1.366	0.926	0.252
Median	0.051	0.304	0.774	0.583	0.600	0.400	24.60	8.579	0.237	0.775	0.693	0	0.420	0.233
Min	-0.019	0.008	0.199	0.208	0.100	0.050	20.42	5.741	0.078	0.241	0	0	-1.802	-1.135
P25	0.019	0.160	0.632	0.486	0.300	0.300	23.32	7.228	0.200	0.571	0	0	-0.426	-0.186
P75	0.083	0.510	0.868	0.662	0.700	0.608	26.25	9.836	0.282	1.087	0.693	2.944	2.094	0.702
Max	0.152	4.592	0.965	0.836	0.700	0.900	29.42	11.39	0.517	3.609	2.197	7.154	5.201	1.814
Std. Dev.	0.039	0.587	0.182	0.132	0.191	0.240	1.923	1.553	0.075	0.480	0.452	1.759	1.683	0.618

Panel A shows correlation coefficients for 14 variables constructed based on raw data from the World Bank Doing Business, POLITY IV, Heritage Foundation, UNComtrade Foreign Direct Investment, IMF International Financial Statistics, and the International Disasters Database. *Expect_FDI* is the predictor of FDI inflow divided by GDP, *Stock_FDI* is the actual stock of inward FDI divided by GDP, *DB_STABIZ* is the score of starting a business divided by 100, *DB_ENF* is the score of enforcing contracts divided by 100, *PI_CONST* is the score of constraints on executive divided by 10, *HF_PR* is the score of protecting private property divided by 100, *LN_GDP* is the natural log of GDP evaluated at 2010 constant dollars, *LN_GDPC* is the natural log of GDP per capita evaluated at 2010 constant dollars, *Capital* is the gross capital formation divided by GDP, *Trade* is the overall trade openness divided by GDP, *ND* is the natural log of 1 plus the number of occurrences of natural disasters, *TD* is the natural log of 1 plus the number of death caused by technological disasters, *Expect_FPI* is the predictor of FPI inflow divided by GDP, *Expect_DEBT* is the predictor of debt inflow divided by GDP. Panel B reports the summary statistics for all variables. The sample period spans from 2004 to 2017.

3. Results

Before estimating equations (1)-(2), all variables are winsorized at the 1% and 99% level to address problems caused by small denominators and to control for the effect of potential outliers. Table 3 summarizes our baseline results. The first four columns regress institutional quality measures on predicted FDI inflows with only actual FDI stock and year fixed effects being controlling for. The last four columns repeat these exercises by adding other controls. For each specification in Table 3, there is a positive and strong relationship between institutions and predicted FDI inflows, delivering a fairly large R^2. In the presence of additional controls, while the coefficients on *Expect_FDI* are somewhat smaller than those estimated in the absence of extra controls, they nonetheless remain significant at the 1% level. There also exist a significantly positive relationship between institutions and actual FDI stocks, implying that improvements in institutional quality driven by foreign investors' lobbying coexist with motivations of local governments to voluntarily improve institutions before seeking more FDI inflows. Besides, the effect of *Expect_FDI* is much greater than that of *Stock_FDI*, providing evidence for our first hypothesis --- countries that should have attracted more FDI will establish better quality institutions.

Recall that our measures of institutional quality correspond to institutions governing different stages of production of foreign-owned firms. At the very early stage, the institutions facilitating the launch of businesses play an important role in determining the amount of fixed costs expended. At the expansion stage, the contracting institutions affect the efficiency of operation and sales, while the elite-constraining institutions influence the competitiveness of the market. At the mature stage, property rights institutions are crucial for foreign investors who own private equities and properties in the destination countries. Therefore, before conducting FDI, foreign capitalists will carry out due diligence to rate all above institutions. So, to attract more FDI with better institutional quality, local governments have to improve their institutions from these four aspects of institutions.

To get a sense of the magnitude of efforts made by governments, when the predicted level of FDI rises by 1%, without additional controls, the quality of institutions on protecting private property will improve the most by 11.8%. But when controls are included, a 1% increase in the predicted level of FDI will lead to an 8.1% increase in the quality of institutions prohibiting politicians and elites from taking advantages of foreign investors, a 4.0%-5.0% improvement in the institutional quality of starting a

business and strengthening private contract enforcement, and only a 3.7% improvement in the institutions on property rights institutions. Therefore, since our institutional measures are normalized to have comparable means and variances, these results support our second hypothesis --- the institution-building effect of predicted FDI is relatively stronger for changing elite constraint institutions. Therefore, the baseline results imply that a long-run governmental plan for upgrading elite constraint institutions plays a crucial role in re-attracting FDI lost during crises such as the recent one caused by COVID-19. We continue to validate the results in what follows.

Table 3. Main Estimation Results

The table reports OLS regression results for the following model:

$$Institution_{it} = \beta_0 + \beta_1 Expect\_FDI_{it} + \beta_2 Stock\_FDI_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it},$$

where *Institution* is a measure of institutional quality of the FDI host country, *Expect_FDI* is the predicted level of FDI flowing into the country, and *Stock_FDI* is the stock of actual FDI that has already accumulated in the country. The subscript *i* denotes country and *t* denotes data year. There are four measures for different aspects of entangled institutions: the ease of starting a business (*DB_STABIZ*), the strength of enforcing contracts (*DB_ENF*), the stringency of constraining executives (*PI_CONST*), and the degree of protecting private property (*HF_PR*). All institutional quality measures are normalized using z-score so that they all have means equaling to zero and standard variance equaling to one. $\boldsymbol{X}$ is the control variable vector, which includes: the natural log of GDP (*LN_GDP*), the natural log of GDP per capita (*LN_GDPC*), capital formation (*Capital*), and trade openness (*Trade*). See Table 1 for more detailed information on variable definition and construction. All regressions include an intercept and are estimated by the OLS with White's correction of heteroscedasticity. Robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The time fixed effects are included in all regression, but not reported.

	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*
Expect_FDI	9.620***	9.366***	10.794***	11.800***	4.981***	4.038***	8.141***	3.713***
	(0.594)	(0.640)	(0.583)	(0.584)	(0.507)	(0.596)	(0.668)	(0.472)
Stock_FDI	0.222***	0.145**	0.049	0.300***	0.160***	-0.117***	0.211***	0.188***
	(0.028)	(0.065)	(0.038)	(0.046)	(0.028)	(0.037)	(0.041)	(0.029)
LN_GDP					0.043***	0.084***	-0.069***	0.019
					(0.015)	(0.017)	(0.019)	(0.014)
LN_GDPC					0.255***	0.225***	0.226***	0.420***
					(0.021)	(0.023)	(0.027)	(0.018)
Capital					1.476***	1.867***	-1.577***	-0.875***
					(0.256)	(0.271)	(0.341)	(0.221)
Trade					-0.025	0.447***	-0.532***	-0.014
					(0.040)	(0.044)	(0.054)	(0.037)
Intercept	-1.014***	-0.255***	-0.385***	-0.339***	-4.402***	-4.823***	0.275	-3.839***
	(0.100)	(0.089)	(0.096)	(0.082)	(0.295)	(0.314)	(0.341)	(0.244)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	1,688	1,688	1,688	1,688	1,688	1,688	1,688	1,688
Adjusted R^2	0.280	0.133	0.143	0.238	0.472	0.414	0.229	0.610

4. Robustness Checks

In this subsection, we check the robustness of our results in several ways. First of all, one may worry about measurement errors in our analysis. To mitigate this concern, we choose two IVs from the International Disasters Database, namely, the number of occurrences of natural disasters (*ND*) and the number of deaths caused by technological disasters (*TD*).[6] Both of them turn out to be negatively correlated with the predicted level of FDI in Panel A of Table 2, suggesting that disasters could deter the entrance of potential foreign capital inflows. We argue them to be valid IVs because, in line with the IV selection criteria stated by Acemoglu et al. (2001) and Miguel et al. (2004), the institution-building effect of predicted FDI is a gradual process with long-run economic consequences. We should choose IVs that belong to non-economic shocks and have only short-run impacts on the decision making of foreign investors. In the last three rows of Table 4, we confirm the existence of the endogeneity problem. However, our two IVs have passed the tests for weak IV and over-identification. Table 4 shows the second-stage results when *Expect_FDI* and *Stock_FDI* are instrumented in the first stage of a two-stage least square (2SLS) setup. While the coefficients before *Stock_FDI* become insignificantly negative, the IV estimated coefficients on *Expect_FDI* are still significantly positive, and they turn out to be much larger than those estimated by OLS. This tells us that the underestimation biases caused by potential measurement errors have been successfully removed.

As a second robustness check, Table 5 re-runs our baseline regressions in three subsamples: high-, middle- and low-income countries. Theoretically speaking, FDI occurs more often for foreign firms with high production efficiency and in host countries with low entering costs. Therefore, high-income countries should have fewer opportunities left for new FDI projects, and low-income countries without necessary features are less attractive to foreign investors that are capable of conducting direct investments. According to the UNCTAD statistics, among the top fifteen FDI destination countries, six of them are categorized as middle-income countries. China

[6] According to the International Disasters Database, natural disasters include incidents of natural causes such as geophysical (e.g., earthquake and volcanic activity), meteorological (e.g., storm), hydrological (e.g., flood), climatological (e.g., wildfire), biological (e.g., epidemic and animal accident) and extraterrestrial (i.e., space weather) factors; and technological disasters are industrial (e.g., chemical spill and radiation), transport (e.g., accidents happened in the air, road, rail, and water) and miscellaneous (e.g., fire and explosion) accidents.

is ranked in the 2nd place, Brazil the 3rd place, Indian the 9th place, Mexico the 11th place, Russian the 13th place, and Indonesia the 13th place. As can be seen from Table 5, our coefficients on predicted FDI for the middle-income-country subsample (the

Table 4. IV Estimation Results

The table reports IV regression results for the following 2SLS models. The first stage regressive equations are:

$$Expect\_FDI_{it} = \gamma_0 + \gamma_1 ND + \gamma_2 TD + \boldsymbol{\gamma}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \epsilon_{it};$$
$$Stock\_FDI_{it} = \delta_0 + \delta_1 ND + \delta_2 TD + \boldsymbol{\delta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \zeta_{it}.$$

The second stage regressive equation is:

$$Institution_{it} = \beta_0 + \beta_1 \widehat{Expect\_FD}_{it} + \beta_2 \widehat{Stock\_FDI}_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it},$$

where $\widehat{Expect\_FDI}$ and $\widehat{Stock\_FDI}$ are the estimators for *Expect_FDI* and *Stock_FDI*, respectively, using the occurrence of natural disasters (*ND*) and the number of death caused by technological disasters (*TD*) as IVs. The subscript *i* denotes country and *t* denotes data year. There are four measures for different aspects of entangled institutions: the ease of starting a business (*DB_STABIZ*), the strength of enforcing contracts (*DB_ENF*), the stringency of constraining executives (*PI_CONST*), and the degree of protecting private property (*HF_PR*). All institutional quality measures are normalized using z-score so that they all have means equaling to zero and standard variance equaling to one. ***X*** is the control variable vector, which includes: the natural log of GDP (*LN_GDP*), the natural log of GDP per capita (*LN_GDPC*), capital formation (*Capital*), and trade openness (*Trade*). See Table 1 for more detailed information on variable definition and construction. All regressions include an intercept and are estimated by the OLS with White's correction of heteroscedasticity. Robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The time fixed effects are included in all regression, but not reported.

	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*
$\widehat{Expect\_FDI}$	63.360***	35.114**	52.456***	41.420***
	(22.204)	(13.791)	(18.734)	(14.903)
$\widehat{Stock\_FDI}$	-0.297	-0.360***	-0.135	-0.107
	(0.191)	(0.124)	(0.162)	(0.130)
LN_GDP	-0.081	0.018	-0.163***	-0.061
	(0.066)	(0.042)	(0.053)	(0.043)
LN_GDPC	-0.120	0.025	-0.059	0.177*
	(0.146)	(0.094)	(0.124)	(0.100)
Capital	7.015***	4.816***	2.628	2.704*
	(2.160)	(1.358)	(1.849)	(1.483)
Trade	-0.392**	0.252**	-0.810***	-0.250**
	(0.173)	(0.112)	(0.151)	(0.117)
Intercept	-1.035	-3.031***	2.831**	-1.664*
	(1.537)	(0.981)	(1.267)	(1.008)
Year Fixed Effect	Yes	Yes	Yes	Yes
No. of Obs.	1,688	1,688	1,688	1,688
p_Overid	0.468	0.393	0.000	0.235
p_Weak_IV	0.016	0.016	0.016	0.016
p_Endogeneity	0.000	0.000	0.000	0.000

Table 5. OLS Estimation Results with Different Subsamples Based on Income Levels

The table reports OLS regression results for the following model: $Institution_{it} = \beta_0 + \beta_1 Expect\_FDI_{it} + \beta_2 Stock\_FDI_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it}$, where *Institution* is a measure of institutional quality of the FDI host country, *Expect_FDI* is the predicted level of FDI flowing into the country, and *Stock_FDI* is the stock of actual FDI that has already accumulated in the country. The subscript *i* denotes country and *t* denotes data year. There are four measures for different aspects of entangled institutions: the ease of starting a business (*DB_STABIZ*), the strength of enforcing contracts (*DB_ENF*), the stringency of constraining executives (*PI_CONST*), and the degree of protecting private property (*HF_PR*). All institutional quality measures are normalized using z-score so that they all have means equaling to zero and standard variance equaling to one. $\boldsymbol{X}$ is the control variable vector, which includes: the natural log of GDP (*LN_GDP*), the natural log of GDP per capita (*LN_GDPC*), capital formation (*Capital*), and trade openness (*Trade*). High-, Middle- and Low-income countries are classified according to the Doing Business Report published by the World Bank. See Table 1 for more detailed information on variable definition and construction. All regressions include an intercept and are estimated by the OLS with White's correction of heteroscedasticity. Robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The time fixed effects are included in all regression, but not reported.

	High-Income Countries				Middle-Income Countries				Low-Income Countries			
	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*
Expect_FDI	4.374***	2.451*	11.302***	2.574**	4.486***	3.881***	9.704***	3.499***	5.262***	3.738**	2.061	-3.460***
	(0.938)	(1.338)	(1.431)	(1.059)	(0.636)	(0.738)	(0.823)	(0.581)	(1.597)	(1.487)	(1.362)	(0.998)
Stock_FDI	0.085***	-0.018	0.230***	0.185***	0.260***	0.153	0.568***	0.184**	0.425***	-0.273***	0.134**	0.172***
	(0.025)	(0.053)	(0.058)	(0.040)	(0.095)	(0.123)	(0.141)	(0.079)	(0.076)	(0.056)	(0.061)	(0.043)
LN_GDP	-0.022	0.137***	0.032	0.049**	0.037*	0.066***	-0.078***	-0.016	0.133*	0.385***	-0.381***	0.174***
	(0.021)	(0.033)	(0.037)	(0.024)	(0.021)	(0.023)	(0.026)	(0.019)	(0.071)	(0.046)	(0.049)	(0.038)
LN_GDPC	0.304***	0.160***	-0.231***	0.729***	0.121**	0.370***	0.072	0.193***	-0.151	-0.249***	-0.012	-0.140**
	(0.043)	(0.056)	(0.079)	(0.054)	(0.056)	(0.046)	(0.050)	(0.031)	(0.109)	(0.056)	(0.092)	(0.070)
Capital	1.009**	1.555**	-2.890***	0.080	0.604*	1.655***	-2.252***	-0.724***	1.039	0.507	1.838***	-0.084
	(0.467)	(0.687)	(0.882)	(0.571)	(0.351)	(0.392)	(0.469)	(0.280)	(0.691)	(0.577)	(0.513)	(0.382)
Trade	-0.050	0.422***	-0.473***	-0.050	0.024	0.624***	-0.664***	0.048	-0.756***	0.241	-0.796***	-0.393***
	(0.039)	(0.057)	(0.078)	(0.044)	(0.081)	(0.092)	(0.100)	(0.069)	(0.232)	(0.160)	(0.199)	(0.128)
Intercept	-2.897***	-5.457***	2.486***	-7.822***	-2.939***	-5.586***	2.018***	-1.481***	-3.781**	-8.255***	7.893***	-3.276***
	(0.476)	(0.763)	(0.681)	(0.580)	(0.480)	(0.532)	(0.616)	(0.401)	(1.564)	(0.984)	(1.020)	(0.777)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	584	584	584	584	788	788	788	788	316	316	316	316
Adjusted R^2	0.313	0.157	0.226	0.465	0.251	0.242	0.176	0.192	0.383	0.306	0.226	0.167

middle four columns) are more significant and closer to the baseline results than those estimated using either the high- or low-income subsamples (the first and last four columns).

Third, Table 6 presents the results of using alternative dependent variables including the actual inward FDI flows (*Inflow_FDI*), residuals from equation (2) (*Residual*), and predicted portfolio and debt investments (*Expect_FPI* and *Expect_DEBT*) constructed similarly as the predicted ratio of FDI over GDP. As in Alfaro et al. (2008) and Kirabaeva and Razin (2011), we classify total capital flows into FDI, FPI, and debt. FPI includes share purchases, stock participation, and equity ownership as long as only non-controlling stakes of domestic firms are delivered to foreign investors, and debt in this article means international bank loans and bonds. The FPI and debt data are sourced from the International Monetary Fund's (IMF) International Financial Statistics. Together with the UNCTAD's Foreign Direct Investment database, we can now depict a more complete picture of the capital invested into a country.

While FDI is presumed to be more stable and less prone to reversals, FPI and debt are considered more volatile. Consequently, these two alternative capital inflows might have smaller institution-building effects than FDI. Panel B of Table 6 confirms smaller effects for FPI and debt, nonetheless statistically significant. Turning back to results in the first four columns of panel A, the actual inflow of FDI is, in general, insignificant but becomes significantly positive at the 1% level when *PI_CONST* is the independent variable. This implies that new investors may overlook other types of institutions, but they do have strong incentives to urge host countries to restrain improper activities by powerful politicians that could disrupt the market economy. For the last four columns of panel A of Table 6, we try the residuals (i.e., the differences between the predicted FDI flow and the actual flow) from equation (2) as the main explanatory variable in equation (1). As expected, these residuals also have a significant explanatory power for variations of institutional quality.

Finally, we validate our results in two other ways, making sure that they are not driven by lagged institutional quality measures or particular subsamples divided using features other than the national income level. We include the five-period lagged institutional variable in level as control in a system GMM and an OLS specification. Table 7 presents the corresponding results, which basically conform to the baseline results. It merits a note that expected FDI seems to have an insignificant effect on the annual change of institutions or when an institutional quality variable lagged less than five periods are included. The reason is that, while FDI flow is volatile depending on

Table 6. OLS Estimation Results with Different Types of Capital Inflows

The table reports OLS regression results for the following model:

$$Institution_{it} = \beta_0 + \beta_1 Flow_{it} + \beta_2 Stock\_FDI_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it},$$
$$Flow_{it} \in \{Inflow\_FDI_{it}, Residual_{it}, Expect\_FPI_{it}, Expect\_DEBT_{it}\},$$

where *Inflow_FDI* is the actual FDI flowing into a country, *Residual* is calculated as the predicted FDI inflow minus the actual FDI inflow, and *Expect_FPI* and *Expect_DEBT*, respectively, are the predicted levels of FPI and debt inflow. See Table 1 for more detailed information on variable definition and construction. All regressions include an intercept and are estimated by the OLS with White's correction of heteroscedasticity. Robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The time fixed effects are included in all regression, but not reported.

Panel A. Actual FDI Flows and Residuals

	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*
Inflow_FDI	0.036	-0.252	1.426***	0.162				
	(0.444)	(0.419)	(0.490)	(0.331)				
Residual					0.658***	0.444*	0.566*	0.405**
					(0.215)	(0.267)	(0.343)	(0.188)
Stock_FDI	0.196***	-0.070*	0.190***	0.207***	0.245***	-0.054	0.315***	0.245***
	(0.041)	(0.042)	(0.047)	(0.034)	(0.038)	(0.042)	(0.051)	(0.033)
LN_GDP	0.054***	0.093***	-0.050**	0.027*	0.052***	0.091***	-0.054***	0.025*
	(0.015)	(0.017)	(0.021)	(0.014)	(0.015)	(0.017)	(0.021)	(0.014)
LN_GDPC	0.288***	0.249***	0.288***	0.445***	0.279***	0.245***	0.271***	0.439***
	(0.021)	(0.023)	(0.028)	(0.018)	(0.021)	(0.023)	(0.028)	(0.018)
Capital	0.998***	1.517***	-2.542***	-1.249***	1.142***	1.577***	-2.231***	-1.141***
	(0.265)	(0.283)	(0.335)	(0.226)	(0.262)	(0.279)	(0.345)	(0.225)
Trade	0.006	0.476***	-0.501***	0.008	0.013	0.477***	-0.475***	0.014
	(0.041)	(0.045)	(0.055)	(0.038)	(0.042)	(0.045)	(0.056)	(0.038)
Intercept	-4.691***	-5.044***	-0.264	-4.061***	-4.620***	-5.010***	-0.135	-4.011***
	(0.306)	(0.308)	(0.357)	(0.245)	(0.305)	(0.309)	(0.359)	(0.245)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	1,688	1,688	1,688	1,688	1,688	1,688	1,688	1,688
Adjusted R^2	0.448	0.398	0.170	0.597	0.452	0.400	0.170	0.598

Table 6. Continued

Panel B. Predicted FPI and Debt Flows

	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*
Expect_FPI	0.091***	0.130***	0.207***	0.083***				
	(0.011)	(0.010)	(0.014)	(0.009)				
Expect_DEBT					0.236***	0.376***	0.665***	0.273***
					(0.031)	(0.028)	(0.037)	(0.025)
Stock_FDI	0.201***	-0.081**	0.281***	0.219***	0.199***	-0.085**	0.275***	0.217***
	(0.033)	(0.034)	(0.040)	(0.028)	(0.032)	(0.033)	(0.039)	(0.027)
LN_GDP	0.054***	0.093***	-0.051***	0.027**	0.053***	0.092***	-0.053***	0.026*
	(0.015)	(0.017)	(0.019)	(0.014)	(0.015)	(0.017)	(0.019)	(0.013)
LN_GDPC	0.277***	0.236***	0.255***	0.434***	0.284***	0.245***	0.268***	0.440***
	(0.020)	(0.021)	(0.025)	(0.017)	(0.020)	(0.021)	(0.024)	(0.017)
Capital	1.204***	1.770***	-1.892***	-1.043***	1.213***	1.819***	-1.756***	-0.983***
	(0.252)	(0.258)	(0.312)	(0.216)	(0.254)	(0.258)	(0.304)	(0.214)
Trade	-0.052	0.389***	-0.614***	-0.043	-0.046	0.389***	-0.627***	-0.050
	(0.044)	(0.045)	(0.046)	(0.039)	(0.044)	(0.045)	(0.045)	(0.039)
Intercept	-4.664***	-5.021***	-0.138	-4.031***	-4.657***	-5.004***	-0.103	-4.016***
	(0.298)	(0.306)	(0.340)	(0.239)	(0.299)	(0.305)	(0.334)	(0.236)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	1,688	1,688	1,688	1,688	1,688	1,688	1,688	1,688
Adjusted R^2	0.471	0.443	0.282	0.615	0.467	0.445	0.314	0.621

business cycles, the institution is a political and economic system that runs in the long term. As a result, our estimation captures the long-term trends of institutional improvement, not contemporaneous changes. Furthermore, our results are also robust to dropping OECD countries that have already possessed quality institutions, sub-Saharan African countries that had been colonized, Asian tigers that witnessed the fastest institutional improvement in the post-war period, and Latin American and the Caribbean countries that rely heavily on exporting natural and agricultural resources. These subsamples generate quite similar results as before; thus, they are not reported.

Table 7. System GMM and OLS Estimation Results with Lagged Institution

The table reports system GMM and OLS regression results for the following model:

$$Institution_{it} = \beta_0 + \beta_1 Expect\_FDI_{it} + \alpha Institution_{it-5} + \beta_2 Stock\_FDI_{it} + \boldsymbol{\beta}_3 \boldsymbol{X}_{it} + \boldsymbol{u}_t + \varepsilon_{it},$$

where *Institution*$_{it-5}$ is the 5-period lagged institutional quality of the FDI host country, *Expect_FDI* is the predicted level of FDI flowing into the country, and *Stock_FDI* is the stock of actual FDI that has already accumulated in the country. See Table 1 for more detailed information on variable definition and construction. All regressions include an intercept and are estimated by either system GMM or OLS with White's correction of heteroscedasticity. Robust standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The time fixed effects in system GMM regressions are included in difference equations.

	DB_STABIZ	*DB_ENF*	*PI_CONST*	*HF_PR*	*DB_STABIZ*	*DB_ENF*	*PI_CONST*	*HF_PR*
	System GMM				*OLS*			
Expect_FDI	0.813**	1.567***	0.190	0.090	-0.014	0.561	0.815**	0.999***
	(0.366)	(0.258)	(0.248)	(0.253)	(0.514)	(0.464)	(0.408)	(0.333)
L5.DB_STABIZ	0.660***				0.642***			
	(0.020)				(0.020)			
L5.DB_ENF		0.844***				0.823***		
		(0.053)				(0.019)		
L5.PI_CONST			0.939***				0.891***	
			(0.031)				(0.014)	
L5.HF_PR				0.847***				0.891***
				(0.050)				(0.016)
Stock_FDI	-0.006	-0.131***	0.036**	-0.011	0.005	-0.096***	0.035	-0.047**
	(0.016)	(0.016)	(0.015)	(0.022)	(0.036)	(0.033)	(0.028)	(0.024)
LN_GDP	0.007	0.025***	-0.014**	0.024***	0.009	0.031**	-0.019*	0.017*
	(0.006)	(0.007)	(0.005)	(0.007)	(0.014)	(0.013)	(0.011)	(0.009)
LN_GDPC	-0.002	0.023	-0.013	0.063***	0.011	0.033*	-0.002	0.041***
	(0.011)	(0.015)	(0.011)	(0.023)	(0.019)	(0.017)	(0.014)	(0.013)
Capital	0.212**	0.407***	-0.290***	-0.111	0.214	0.223	-0.433***	0.085
	(0.088)	(0.125)	(0.101)	(0.117)	(0.210)	(0.194)	(0.166)	(0.138)
Trade	0.052***	0.107***	-0.026	0.062***	0.055	0.110***	-0.051	0.067**
	(0.018)	(0.030)	(0.023)	(0.022)	(0.044)	(0.041)	(0.036)	(0.029)
Intercept	0.122	-1.100***	0.558***	-1.171***	-0.017	-1.128***	0.559***	-0.976***
	(0.147)	(0.276)	(0.089)	(0.238)	(0.276)	(0.250)	(0.201)	(0.179)
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,023	1,023	1,023	1,023	1,023	1,023	1,023	1,023
Adjusted R^2	-	-	-	-	0.680	0.804	0.855	0.905

IV. CONCLUSION

Academia has long recognized the key role played by international activities in stimulating economic growth. Consider a small open economy with the output produced using capital, labor, and other factors via a constant-return-to-scale production function. This country itself can provide labor, human capital, and land. Its growth will not be hindered as long as international trade can provide the rest of the inputs (e.g., natural resources and intermediate goods), and global capital flows can provide financial capital or financing for physical capital. What is more, cross-border activities also affect the economy's production through the channel of total factor productivity (TFP) indirectly. In this article, we assume that TFP contains technology as well as institutions. Acemoglu and Johnson (2005) deem the institution that matters most for economic outcomes is the one preventing state and elite expropriation.

While trade can improve technology (Alvarez et al., 2014) and institutions (Levchenko, 2013) simultaneously, the previous literature provides sparse evidence on the technology spillover effect of capital flows (Fons-Rosen et al., 2013). We contribute to the literature by proving that capital projection improves the quality of elite constraint institutions so that the weak technology-advancing effect of FDI can be partly remedied. Hence, institutional improvement induced by expected capital inflows may serve as a stimulus for post-pandemic investment reboot in the domestic economy. Particularly, our exercises answer the following questions. Which types of international capital have the most significant effect on what institutions? And how does this institution-building effect function?

We demonstrate that there exist at least two competing mechanisms for the most significant effect of FDI imposing on executive constraints. One mechanism works through existing FDI programs. Lobbyists representing investors that have already invested in the host country will (i) provide information on laws and regulations implemented in the developed world; and (ii) coerce policy-makers by threatening to leave if there is no improvement in institutional quality. Another mechanism works through potential FDI projects. Consider lobbyists representing domestic interest groups that will benefit from future higher FDI flows. Since countries with better institutions can often accumulate larger international capital stocks, the need for capital flows gives an incentive for domestic interest groups to strategically influence policymakers by urging them to improve institutions before seeking investment from overseas. Despite the lobbying actions, policymakers do have the concern that larger

capital flows may cause centralized default on debt, reliance on FDI, and hot money outflow for FPI, all of which will lead to stagnant institutional improvement. Without formal analysis, it is hard to tell whether potential FDI will facilitate or hinder institutional change. All in all, this paper demonstrates it is a facilitative effect and this institution-building effect of predicted FDI inflows dominates that of actual FDI stocks. Consider countries lacking attractive characteristics or staying in uncertainty because of suffering from financial or pandemic crises. In the eye of foreign investors, to break the vicious cycle of poor institutional quality and less capital inflow expected and then even worse institutions, our implication is that their governments need to incentivize institutional improvement from other non-FDI aspects inside the country.

APPENDIX

Table 1A. 139 Economies in the Sample

ID	Country	ID	Country	ID	Country	ID	Country
1	Afghanistan	36	Czech Republic	71	Kenya	106	Qatar
2	Albania	37	Denmark	72	Kuwait	107	Romania
3	Algeria	38	Dominican Republic	73	Kyrgyz Republic	108	Russia
4	Angola	39	Ecuador	74	Laos	109	Rwanda
5	Argentina	40	Egypt	75	Latvia	110	Saudi Arabia
6	Armenia	41	El Salvador	76	Lebanon	111	Senegal
7	Australia	42	Equatorial Guinea	77	Lesotho	112	Serbia
8	Austria	43	Eritrea	78	Liberia	113	Sierra Leone
9	Azerbaijan	44	Estonia	79	Lithuania	114	Singapore
10	Bahrain	45	Ethiopia	80	Luxembourg	115	Slovakia
11	Bangladesh	46	Fiji	81	Madagascar	116	Slovenia
12	Belarus	47	Finland	82	Malawi	117	South Africa
13	Belgium	48	France	83	Malaysia	118	South Korea
14	Benin	49	Gabon	84	Mali	119	Spain
15	Bolivia	50	Germany	85	Mauritania	120	Sri Lanka
16	Botswana	51	Ghana	86	Mexico	121	Sudan
17	Brazil	52	Greece	87	Mongolia	122	Sweden
18	Bulgaria	53	Guatemala	88	Morocco	123	Switzerland
19	Burkina Faso	54	Guinea	89	Mozambique	124	Tanzania
20	Burundi	55	Guinea-Bissau	90	Namibia	125	Thailand
21	Cambodia	56	Guyana	91	Nepal	126	Togo
22	Cameroon	57	Haiti	92	Netherlands	127	Tunisia
23	Canada	58	Honduras	93	New Zealand	128	Turkey
24	Cape Verde	59	Hungary	94	Nicaragua	129	Uganda
25	Central African Republic	60	India	95	Niger	130	Ukraine
26	Chile	61	Indonesia	96	Nigeria	131	United Arab Emirates
27	China	62	Iran	97	Norway	132	United Kingdom
28	Colombia	63	Iraq	98	Oman	133	United States
29	Comoros	64	Ireland	99	Pakistan	134	Uruguay
30	Congo	65	Israel	100	Panama	135	Uzbekistan
31	Congo, DR	66	Italy	101	Paraguay	136	Venezuela
32	Costa Rica	67	Jamaica	102	Peru	137	Vietnam
33	Cote d'Ivoire	68	Japan	103	Philippines	138	Zambia
34	Croatia	69	Jordan	104	Poland	139	Zimbabwe
35	Cyprus	70	Kazakhstan	105	Portugal		

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