

Beirne, John; Panthi, Pradeep

**Working Paper**

## Institutional quality and macrofinancial resilience in Asia

ADB Working Paper, No. 1336

**Provided in Cooperation with:**

Asian Development Bank Institute (ADBI), Tokyo

*Suggested Citation:* Beirne, John; Panthi, Pradeep (2022) : Institutional quality and macrofinancial resilience in Asia, ADB Working Paper, No. 1336, Asian Development Bank Institute (ADBI), Tokyo, <https://doi.org/10.56506/YVOO4040>

This Version is available at:

<https://hdl.handle.net/10419/267769>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by-nc-nd/3.0/igo/>



**ADB Working Paper Series**

**INSTITUTIONAL QUALITY  
AND MACROFINANCIAL  
RESILIENCE IN ASIA**

---

**John Beirne and Pradeep Panthi**

No. 1336  
August 2022

**Asian Development Bank Institute**

John Beirne is Vice-Chair of Research and Senior Research Fellow, and Pradeep Panthi is a Research Associate, both at the Asian Development Bank Institute, Tokyo, Japan.

The views expressed in this paper are the views of the author and do not necessarily reflect the views or policies of ADBI, ADB, its Board of Directors, or the governments they represent. ADBI does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use. Terminology used may not necessarily be consistent with ADB official terms.

Working papers are subject to formal revision and correction before they are finalized and considered published.

The Working Paper series is a continuation of the formerly named Discussion Paper series; the numbering of the papers continued without interruption or change. ADBI's working papers reflect initial ideas on a topic and are posted online for discussion. Some working papers may develop into other forms of publication.

The views expressed in this paper are the views of the authors and do not necessarily reflect the views or policies of ADBI, ADB, its Board of Directors, or the governments they represent.

Suggested citation:

Beirne, J. and P. Panthi. 2022. Institutional Quality and Macroeconomic Resilience in Asia. ADBI Working Paper 1336. Tokyo: Asian Development Bank Institute. Available: <https://doi.org/10.56506/YVOO4040>

Please contact the authors for information about this paper.

Email: [jbeirne@adbi.org](mailto:jbeirne@adbi.org), [ppanthi@adbi.org](mailto:ppanthi@adbi.org)

The authors are grateful for comments received on the paper at the 86th annual meeting of the Midwest Economics Association (MEA) in the United States on 25–27 March 2022; and the Singapore Economic Review Conference on 1–3 August 2022.

Asian Development Bank Institute  
Kasumigaseki Building, 8th Floor  
3-2-5 Kasumigaseki, Chiyoda-ku  
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500  
Fax: +81-3-3593-5571  
URL: [www.adbi.org](http://www.adbi.org)  
E-mail: [info@adbi.org](mailto:info@adbi.org)

© 2022 Asian Development Bank Institute

**Abstract**

This paper examines the effect of institutions on macrofinancial resilience in Asia. Focusing on a panel of 12 Asian economies from 1996Q1 to 2020Q4, we find that institutions for economies with high levels of institutional quality support the resilience of real GDP per capita and net FDI inflows during periods of elevated financial stress. In addition, our results suggest resilience due to institutions for these economies regarding net equity and debt inflows in crisis times, also reflecting portfolio rebalancing effects. For economies with lower levels of institutional quality, institutions may help to stabilize portfolio debt during crisis times, although the magnitude of the effects are small. As well as pointing towards resilience thresholds in institutional quality, our paper provides insights on critical sub-components of overall institutional quality, notably rule of law, political stability, and regulatory quality. The findings help to inform the direction of policy efforts towards strengthening institutional capacity, and structural reforms for enhancing economic development and resilience to shocks.

**Keywords:** institutional quality, economic development, international capital flows, Asia

**JEL Classification:** F32, F41, F43, O43

# Contents

1.	INTRODUCTION.....	1
2.	STYLIZED FACTS ON INSTITUTIONAL QUALITY IN ASIA .....	2
3.	RELATED LITERATURE .....	4
4.	DATA .....	5
5.	METHODOLOGY .....	7
6.	EMPIRICAL RESULTS .....	8
6.1	Institutional Quality and the Resilience of GDP per Capita .....	8
6.2	Institutional Quality and the Resilience of International Capital Flows .....	10
6.3	Comparing Total Marginal Effects with and without Elevated Financial Stress .....	14
6.4	Sensitivity Analysis .....	15
6.5	Heterogeneity in the Marginal Impact across Sub-components of Institutional Quality .....	16
7.	CONCLUSIONS .....	17
	REFERENCES .....	18
	APPENDIXES	
1	Graphical Representations of Institutional Quality, Capital Flows and Financial Stress Index .....	22
2	Descriptive Statistics and Correlation Matrix.....	24
3	Eigen Values, Eigen Vectors and Correlations of Institutional Components..	25
4	Estimation Results for Net Portfolio Flows .....	26
5	Estimation Results for GDP Per Capita (LnGDPPC) .....	27
6	Estimation Results for Net Direct Investment (DI) .....	30
7	Estimation Results for Net Portfolio Equity Investment (PIEQUITY) .....	33
8	Estimation Results for Net Portfolio Debt Investment (PIDEBT) .....	36
9	Estimation Results for Net Other Investment (OI).....	39
10	Variables, Definition, Scale and Sources .....	42

# 1. INTRODUCTION

This paper empirically examines the role of institutions in Asian economies in supporting macrofinancial resilience, specifically as a buffer to the adverse effects of elevated financial stress on GDP per capita and capital flow dynamics over the period 1996 to 2020. In recent decades, institutional quality has emerged as a critical mechanism to achieve and sustain economic development. Institutions can be described as integrated social systems or rules that underpin social, political, and economic interaction frameworks, reducing economic uncertainty and mitigating economic risk (North 1990; Rodrik 1997). Institutional quality components such as the control of corruption, law and order, political stability, and regulatory quality are essential for driving economic growth, productivity, sustainability, and overall macroeconomic stability (Hall and Jones 1999; Mo 2001; Abed and Gupta 2002; Lambsdorff 2003a; Aidt 2011). Institutions can be broadly categorized into political, legal, and economic institutions. Political institutions reduce uncertainty by developing laws, rules, and regulations, protecting property rights, and promoting society's welfare. Economic institutions help to enhance the effective allocation of resources through human capital, physical capital, technology, and innovation. Legal institutions help to enforce laws, rules, and regulations set by political institutions. If institutions are weak, there could be negative repercussions for effective policymaking, with an inefficient allocation of resources and poor law enforcement, which may worsen the outlook for economic development (Asghar, Qureshi, and Nadeem 2015).

Institutions also have important implications for international capital flows (ICFs), helping to encourage more stable and long-term flows of capital while also potentially limiting excessive capital outflows in times of financial crisis. While several studies have been carried out on the impact of institutions on economic growth, productivity, and economic development (e.g., Knack and Keefer 1995; Mauro 1995; Hall and Jones 1999; Acemoglu, Johnson, and Robinson 2001, 2005; Rodrik, Subramanian, and Trebbi 2004), there is little empirical work on the effect of institutions as a buffer for macrofinancial resilience. Focusing on a sample of 12 advanced and emerging Asian economies from 1996Q1 to 2020Q4, broadly split between economies with high and low institutional quality levels, we examine the effect of institutions on the resilience of GDP per capita and international capital flows to heightened financial stress. Overall, we find that for economies with higher levels of institutional quality, institutions support the resilience of real GDP per capita, net FDI inflows, and net equity and debt investment during periods of elevated financial stress. Our findings for portfolio investment flows also suggest portfolio rebalancing by investors during periods of crisis, notably whereby substantial net equity inflows are apparent and driven by institutions. For economies with lower levels of institutional quality, the empirical evidence indicates that institutions may help to stabilize portfolio debt flows during crisis times, albeit with small magnitudes. We also find that the volatile nature of other investment makes it particularly vulnerable to capital outflows in crisis times, with a limited role for institutions.

Our paper highlights threshold effects in the role of institutions on macrofinancial resilience, and also provides insights on the critical sub-components of overall institutional quality, notably rule of law, political stability, and regulatory quality. The findings help to inform the direction of policy efforts towards strengthening institutional capacity, and structural reforms for enhancing economic development and resilience to shocks. This paper contributes to the literature on the influence of institutions on GDP per capita and capital flow dynamics by empirically examining the role of institutions on macrofinancial resilience in Asian economies. Asian economies have developed strongly from an institutional standpoint since the mid-1990s, when our sample period begins,

albeit with some cross-country heterogeneity. Moreover, the region has been subject to several large external shocks, such as the Asian financial crisis of 1997–98, the global financial crisis of 2007–09, and the COVID-19 pandemic of 2020–22. Our paper, therefore, deepens the literature in this field, with new findings on the relative importance of institutions for absorbing the extent of adverse shocks in the real and financial sectors for panels of economies with high and low levels of institutional quality.

The remainder of this paper is structured as follows: Section 2 outlines stylized facts on institutional quality in Asia and its relationship with economic development, capital flows, and financial stress. Section 3 describes the related literature on the topic. Section 4 explains the data and proxy measures used in the analysis. Section 5 explains the methodology and empirical models. Section 6 presents estimation results, and finally, Section 7 highlights the conclusions and policy implications.

## 2. STYLIZED FACTS ON INSTITUTIONAL QUALITY IN ASIA

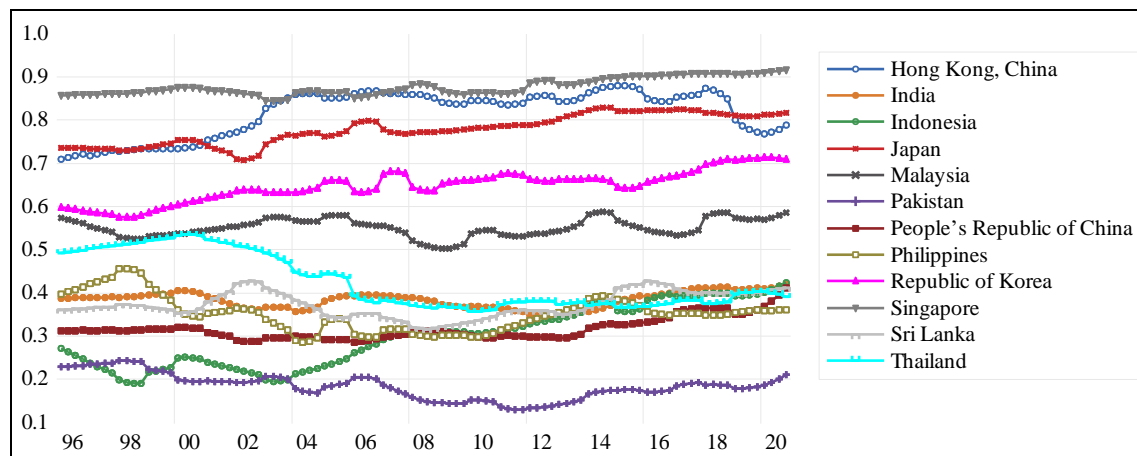
Asia has undergone considerable progress in economic development over the last 25 years. According to the World Bank, GDP per capita has grown by around 3.8% annually across the Asian region from 1996 to 2020. The political and legal institutional quality of Asian economies is closely linked with capital accumulation, productivity growth, and improved economic development (World Bank 1993; Haggard 2004; Asghar, Qureshi, and Nadeem 2015; Khan 2018; Eslamloueyan and Jafari 2019). Moreover, as a by-product of higher institutional quality, particularly since the mid-1990s, many Asian economies have become more highly integrated through trade and financial channels with improved institutional quality.

Figure 1 shows the level of institutional quality over the period since 1996 for the Asian economies in our sample. This measure is based on a principal component analysis (PCA) of six components of institutions, namely control of corruption, government effectiveness, voice and accountability, political stability and absence of violence, the rule of law, and regulatory quality. The data show that Asian economies have significant variations in institutional quality components over the period. It can be observed that advanced Asian economies such as Japan; Singapore; the Republic of Korea; and Hong Kong, China have higher institutional quality levels than emerging Asian economies such as the People's Republic of China, India, Indonesia, and the Philippines. The series is normally distributed as per its original database (+2.5 to –2.5). The sub-components of this institutional quality index are reported in Figure A1.1 in Appendix 1.

Various studies have documented the role of institutions on economic growth, productivity, trade, and financial development, human capital and infrastructure development, as well as micro-level industrial policies in Asia (Zhuang, de Dios, and Lagman-Martin 2010; Haggard and Tiede 2011; Asghar, Qureshi, and Nadeem 2015; Le, Kim, and Lee 2016). The level of institutional quality in Asia has improved substantially since the early 1990s, with positive ramifications for economic and financial stability and the long-run productive capacities of economies. Since the Asian financial crisis of 1997–98, many political, legal, and economic institutional components of Asian economies have become relatively more stable compared to other regions. That said, wide variation in institutions is one of the factors contributing to financial vulnerability in some Asian economies at the regional level (Hamilton-Hart and Wai-Chung Yeung 2019). Further progress on enhancing institutional quality also has positive ramifications for the financial sector (Le, Kim, and Lee 2016). Advanced

economies with higher levels of institutional quality have more liquid financial markets, with less vulnerability to sharp reversals of capital flows during crisis times.

**Figure 1: Institutional Quality Index of Asian Economies**



Source: World Bank and Authors' Calculations.

Moreover, related to this, advanced economies tend to attract global capital flows that are less short-term and less volatile in nature, such as foreign direct investment (FDI) and portfolio equity investment (Broos et al. 2016). In addition, economies with high levels of institutional quality in Asia are characterized broadly as having less external debt exposure, more export-oriented FDI policies, and more liberalized trade and capital accounts (Bekaert, Harvey, and Lundblad 2005; Chanda 2005; W. Klein 2005; Alfaro, Kalemli-Ozcan, and Volosovych 2008; M. W. Klein and Olivei 2008). Economic growth in these economies, driven by capital inflows, is underpinned by robust total factor productivity and institutional quality (Arya, Banerjee, and Cavoli 2019).

Many studies have noted that international capital flows deepen financial development and expose economies to systemic financial stability risks (Obstfeld 2012; Koepke 2019). Surges of capital inflows can lead to abrupt exchange rate appreciation, domestic credit expansion, deteriorating competitiveness, and financial vulnerability, while sudden stops in capital flows can lead to sharp exchange rate depreciation, domestic credit contractions, and financial instability. International capital flows are influenced by both global (or push) and country-specific (or pull) factors and vary over time according to their types (Hannan and Cubeddu 2018). In addition, the dynamics and volatility of capital flows are strongly linked with episodes of financial market stress (Gelos et al. 2021). An important pull factor is the country's institutional quality and macroeconomic and macroprudential policy mix (Alfaro, Kalemli-Ozcan, and Volosovych 2007; Okada 2013; Slesman, Baharumshah, and Wohar 2015; Hannan and Kaufman 2017; Pagliari, Hannan, and Kaufman 2017). In particular, political, legal, and economic institutional quality plays a significant role in driving the dynamics of capital flows (Osina 2021). Figure A1.2 and Figure A1.3 in Appendix 1 illustrate dynamics of international capital flows (ICFs) and the financial stress index (FSI) for the Asian economies in our sample. We can observe heterogeneity in the dynamics and volatility of capital flows in these economies, with notable sensitivity to heightened financial stress in crisis periods. Our empirical analysis seeks to understand the role of institutions as a buffer to financial stress and disturbances.

### 3. RELATED LITERATURE

Several empirical studies have been carried out on the impact of institutions on economic development (Knack and Keefer 1995; Hall and Jones 1999; Acemoglu, Johnson, and Robinson 2001; Nelson and Sampat 2001; Berkowitz, Pistor, and Richard 2003; Rodrik, Subramanian, and Trebbi 2004). In addition, institutional quality from a political standpoint has been shown to shape the characteristics of economic and financial institutions, thereby supporting long-run sustainable growth (Acemoglu and Robinson 2008). Other channels through which institutions contribute to economic development include the control of corruption, whereby a high level of corruption may hamper economic growth given the negative implications for foreign investment flows (Mauro 1995). Institutional quality also reduces uncertainty and encourages domestic and international investment via the stabilizing impact on markets (Law, Kutan, and Naseem 2018). Overall, the literature suggests that better institutional quality and associated structural public policies help to determine the magnitude and nature of capital flows by improving productivity and economic efficiency (Hall and Jones 1999). Institutional strengths such as political stability, low corruption, effective bureaucracy, and desirable and enforceable law and order underpin macroeconomic fundamentals, laying the foundation for a path toward rising economic development and prosperity levels. Institutional quality has also been a critical factor in explaining heterogeneity in cross-country income levels (Rodrik, Subramanian, and Trebbi 2002).

Institutional quality is also an essential factor for determining the extent to which an economy may be affected by a financial crisis. For example, economies of East Asia, where institutions are comparatively stronger relative to other parts of Asia, were less prone to the adverse effects of financial crises on foreign investment (Eslamloueyan and Jafari 2019). Other studies have shown that thresholds in legal development can be important factors driving the effect of financial openness on financial development and economic growth (Chinn and Ito 2006). However, if the institutional framework of an economy is weak, international capital flows and financial openness itself can lead to financial crises (Prasad et al. 2003). Previous work has shown that foreign portfolio investment is sensitive to institutions linked to government behavior, while foreign direct investment can be more sensitive to socio-political institutions (Ahlquist 2006). Overall, the literature shows that stable macroeconomic fundamentals, efficient institutions, and sufficiently developed financial markets supported by trade openness are crucial for the effective management of capital flows. Moreover, high-quality institutions can contribute to insulating the economy from adverse external demand shocks (Broos et al. 2016).

Institutions are an important “pull factor” for capital flows, with some previous work finding that government effectiveness, political stability, the rule of law, and regulatory quality are the critical institutional indicators that determine the capital flow dynamics (Osina 2021). Portfolio investment may be subject to sharp reversals during crises in economies that are less transparent in their institutional arrangements (Gelos and Wei 2005). In addition, corruption has been shown to strongly impact net capital inflows (Wei 2000; Wei and Wu 2002; Lambsdorff 2003b). The effective control of corruption is essential for determining the scale of foreign direct investment flows and its composition (Cuervo-Cazurra 2006). Overall, a sound institutional framework attracts foreign investors due to the more favorable outlook for those economies regarding productivity and technological advancement (Meyer and Sinani 2009).

## 4. DATA

Quarterly and annual time series data from 1996 to 2020 are obtained for 12 Asian economies from various secondary sources. The economies are as follows: the People's Republic of China (PRC); Hong Kong, China; India; Indonesia; Japan; the Republic of Korea; Malaysia; Pakistan; the Philippines; Singapore; Sri Lanka; and Thailand. The selection of economies largely depends on the availability of data, notably the financial stress index (FSI). The primary data sources are International Financial Statistics (IFS) and the World Economic Outlook (WEO) of the International Monetary Fund (IMF). First, we obtain quarterly series of international capital flows and other control variables from IFS. The data for specific periods are obtained and interpolated from WEO and merged with IFS quarterly series. Six components of institutions and a few other control variables are obtained from the annual series from the Worldwide Governance Indicators (WGI) and World Development Indicators (WDI) of the World Bank. They are also interpolated into a quarterly average. We obtain monthly statistics of the FSI from the Asia Regional Integration Center (ARIC) of the Asian Development Bank (ADB) and transform them into a quarterly average. The panel of 12 economies is split into two sub-panels of five economies with high levels of institutional development and seven with lower levels of institutional development. The separation of these countries into high and low institutional quality panels is made by comparing the periodic mean score of six components of institutions for the selected period, as shown in Table 1. If a country has a periodic average score of the institution and its sub-components higher than the group means, that country is considered to have high quality institutions; otherwise, it is placed in the group with low quality institutions. More details on the specific variables used are provided in the following paragraphs.

**Institutions (INS):** Following Demetriades and Law (2006) and Asghar, Qureshi, and Nadeem (2015), we use six indicators from the WGI of the World Bank to measure the institutional quality of Asian economies. These are: (i) Control of corruption (CC), which measures the corruption within a political system; (ii) Government effectiveness (GE), which reflects the government's ability to implement its policies and programs, as well as its stability; (iii) Regulatory quality (RQ), which denotes the ability to regulate the economy through policies and institutional set-ups; (iv) The rule of law (RL), which assesses the strength and ability to govern society through law enforcement with an efficient legal system; (v) Voice and accountability (VA), which reflects the response of government institutions to public voices; and (vi) Political stability and absence of violence/terrorism (PSAV), which reflects the strength of peace and stability. Figure A1.1 in Appendix 1 presents the plots of these indicators for each country in our sample. Our core specification comprises a composite measure of institutional quality across these six components. To that end, we construct an index scaled from 0 to 1 using principal component factor analysis (PCA). Appendix 3 presents the eigenvectors and correlation of six components of the institutional index obtained from the PCA. The results indicate that all components other than voice and accountability (48%) have a high degree (>84%) of correlation with each other. This implies that the institutional index obtained from PCA is a robust representation of all six institutional quality components.<sup>1</sup> A comparison of the periodic average of institutions and their sub-components with the group means is reported in Table 1. Hong Kong, China; Japan; the Republic of Korea; and Singapore from high-income economies, and Malaysia from

---

<sup>1</sup> Observations for 1997, 1999, and 2001 on the WGI database are not available. A linear average interpolation was carried out for all six components, then interpolated to a quarterly average series to fulfill the missing observations.

upper-middle-income economies have a higher institutional quality and components than their group means. The other seven economies have lower levels.

**Table 1: Comparison of Institutions and their Sub-components**

Economies	CC	GE	PAV	RQ	RL	VA	INS	Institutional Quality Level
Group Mean	0.33	0.62	-0.19	0.51	0.43	0.03	0.00	
1 People's Republic of China	-0.38	0.07	-0.40	-0.26	-0.46	-1.55	-2.07	Low
2 Hong Kong, China	1.66	1.61	0.87	1.91	1.40	0.37	2.72	High
3 India	-0.37	-0.03	-1.09	-0.35	0.10	0.41	-1.37	Low
4 Indonesia	-0.74	-0.29	-1.11	-0.31	-0.60	-0.20	-2.23	Low
5 Japan	1.35	1.39	1.05	1.03	1.36	1.00	2.36	High
6 Republic of Korea	0.48	0.95	0.37	0.81	0.96	0.69	1.10	High
7 Malaysia	0.25	0.98	0.22	0.61	0.46	-0.37	0.20	High
8 Pakistan	-0.94	-0.59	-1.96	-0.62	-0.79	-0.85	-3.28	Low
9 Philippines	-0.53	-0.03	-1.13	-0.04	-0.34	0.10	-1.65	Low
1 Singapore	2.17	2.14	1.20	2.00	1.58	-0.05	3.27	High
1 Sri Lanka	-0.24	-0.17	-0.99	-0.05	0.07	-0.28	-1.50	Low
1 Thailand	-0.31	0.28	-0.52	0.22	0.12	-0.26	-0.96	Low

Note: CC: Control of Corruption; GE: Government Effectiveness; VA: Voice and Accountability; PAV: Political Stability and Absence of Violence and Terrorism; RL: Rule of Law; RQ: Regulatory Quality; INS: Overall Institutional Index.

**Economic Development (GDPPC):** We used the natural logarithm of real GDP per capita to measure economic development. GDP per capita at constant 2010 US dollars is interpolated to a quarterly frequency. In previous studies on the effect of institutions on the macroeconomy, GDP per capita has been used as a key macroeconomic variable of interest (Acemoglu, Johnson, and Robinson 2005; Barro 1991, 1996; Butkiewicz and Yanikkaya 2006; Demetriades and Law 2006; Flachaire, García-Peñalosa, and Konte 2014; Knack and Keefer 1995).

**International Capital Inflows (ICF):** Four main categories of international capital flows are used, ranging from the most stable to the most volatile, namely: a) Net direct investment (DI); b) Net portfolio equity investment (PIEQUITY); c) Net portfolio debt investment (PIDEBT); and d) Other investment (OI).<sup>2</sup> We use the below-listed formulas to calculate these indicators.

$$DINET = \frac{\text{Direct Investment Liabilities} - \text{Direct Investment Assets}}{\text{Gross Domestic Product, Nominal}}$$

$$PIEQUITY = \frac{\text{Portfolio Equity Investment Liabilities} - \text{Portfolio Equity Investment Assets}}{\text{Gross Domestic Product, Nominal}}$$

$$PIDEBT = \frac{\text{Portfolio Debt Investment Liabilities} - \text{Portfolio Debt Investment Assets}}{\text{Gross Domestic Product, Nominal}}$$

<sup>2</sup> The direct investment assets and liabilities consist of debt instruments and equity fund shares.

$$OI = \frac{\text{Other Investment Liabilities} - \text{Other Investment Assets}}{\text{Gross Domestic Product, Nominal}}$$

First, we obtained quarterly series of these four indicators of international capital flows from the IMF's IFS to the extent available. We interpolated the annual series of IFS where necessary using the quarterly average interpolation method, i.e., where a quarterly frequency was not available. All series are measured in USD volumes. Nominal GDP is obtained from the IMF's WEO database and interpolated into quarterly. We divided this series by the periodic average exchange rate of domestic currency per US Dollar and converted it into USD millions to calculate the above ratios.

**Financial Stress Index (FSI):** This paper uses the financial stress index developed by Park and Mercado (2014) to capture the effect of financial shocks. It quantifies the degree of financial stress based on the vulnerabilities across banks, foreign exchange markets, equity markets, and bond markets. We obtained the monthly series of the FSI from the ADB's Asia Regional Integration Center (ARIC) and interpolated them into a quarterly average. A dummy variable is created for levels of the index (DUMF) higher than 3 to reflect high stress episodes, which is a level greater than the long-run historical average and also matches against well-documented crisis events.

**Other Control Variables:** We use trade openness (TRD), comprising the sum of exports and imports, gross domestic savings (GDS), domestic credit to the private sector (DCP), general government final consumption expenditure (GOV) as control variables in our estimations. These are denoted as ratios to GDP. They are obtained from WDI and interpolated into a quarterly average. The consumer price index (CPI) and real effective exchange rate (REER) obtained from the IFS are also used as control variables depending on their relevance to the model specification.

The descriptive statistics and correlation matrix of these selected variables are presented in Appendix 2. Definitions, measurement scales and sources are shown in Appendix 10.

## 5. METHODOLOGY

The methodology employed is a fixed-effects panel regression model. In this set-up, we construct panel settings of 12 cross-sections (N) and 100 quarterly time observations (T) i.e.,  $(N \times T) = (12 \times 100)$ . The analysis also classifies the panel settings of 12 cross-sections into categories of economies with high and low institutional quality. The first part of the analysis focuses on the impact of institutions on real GDP per capita. The baseline equation is provided in (1), while equation (2) contains an interaction of institutions and elevated financial stress.

$$\text{LnY}_{i,t} = \alpha_{i,t} + \beta_1 \text{DUMF}_{i,t} + \beta_2 \text{INS}_{i,t-1} + \gamma_{i,t-1} + \delta_{i,t} + e_{i,t} \quad (1)$$

$$\text{LnY}_{i,t} = \alpha_{i,t} + \beta_1 \text{DUMF}_{i,t} + \beta_2 \text{INS}_{i,t-1} + \beta_3 (\text{DUMF}_{i,t} \times \text{INS}_{i,t-1}) + \gamma_{i,t-1} + \delta_{i,t} + e_{i,t} \quad (2)$$

where,  $\text{LnY}_{i,t}$  is the natural logarithm of GDP per capita at constant 2010 US dollars. DUMF is a dummy variable equal to 1 where the financial stress index exceeds the level of 3, and INS denotes overall institutional quality. Institutional quality are represented by six components of the worldwide governance indicators (WGI), individually, and as a PCA index as the core specification.  $\delta_{i,t}$  represents country fixed effects, and  $\gamma$  represents a vector of control variables. They are trade (TRD), gross domestic savings (GDS), domestic credit to the private sector (DCP), general government final consumption expenditure (GOV). All are represented as ratios to GDP. Other control

variables are the consumer price index (LnCPI) and the natural logarithm of the real effective exchange rate at market price (LnREER).  $\varepsilon_{i,t}$  represents the error term. Institutions and other controls are lagged by one period to mitigate against endogeneity concerns.

The second part of the empirical analysis examines the effect of institutions on capital flows during crisis periods. The dependent variable from equations (1) and (2) is replaced, in turn, with four alternative measures of international capital flows. The baseline equation is provided in (3), while equation (4) includes an interaction term of institutions and elevated financial stress.

$$ICF_{i,t} = \alpha_{i,t} + \beta_1 DUMF_{i,t} + \beta_2 INS_{i,t-1} + \gamma_{i,t-1} + \delta_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$ICF_{i,t} = \alpha_{i,t} + \beta_1 DUMF_{i,t} + \beta_2 INS_{i,t-1} + \beta_3 (DUMF_{i,t} \times INS_{i,t-1}) + \gamma_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

where ICF represents four types of net international capital flows in turn, as measured by net direct investment (DI), net portfolio equity investment (PIEQUITY), net portfolio debt investment (PIDEBT), and net other investment (OI). All are ratios to GDP. DUMF is a dummy variable equal to 1 where the financial stress index exceeds the level of 3, and INS represents the overall institutional quality.  $\delta_{i,t}$  represents country fixed effects, and  $\gamma$  represents a vector of control variables. They comprise trade (TRD), gross domestic savings (GDS), domestic credit to the private sector (DCP), and general government final consumption expenditure (GOV). All are represented as ratios to GDP. Other control variables are the natural logarithm of a consumer price index (LnCPI) and the natural logarithm of the real effective exchange rate (LnREER) at market prices.  $\varepsilon_{i,t}$  represents the error term. Institutions and other controls are lagged by one period to mitigate against endogeneity concerns.

For the analysis of the effects on real GDP per capita and capital flows, we are primarily interested in three key hypotheses. The first hypothesis of interest tests the partial marginal effect of institutional quality, in turn, on real GDP per capita and capital flows, i.e., H1:  $\beta_2=0$ . The second hypothesis tests the significance of the interaction term between institutional quality and heightened financial stress on real GDP per capita, and then on capital flows, i.e., H2:  $\beta_3=0$ . This provides an indication on whether the impact of institutional quality depends on whether financial stress is elevated. Finally, the third hypothesis tests the joint significance of the partial marginal effects of institutions and the interaction term on real GDP per capita, and then on capital flows, i.e., H3:  $\beta_2+\beta_3=0$ . In total, there are 15 hypotheses of interest: three for GDP per capita and 12 for capital flows (three for each capital flow measure). Through assessing the marginal effects of institutions on real GDP per capita and capital flows in periods of elevated financial stress compared to tranquil periods, an inference can be made on the effect of institutions on the resilience of these factors to financial shocks.

## 6. EMPIRICAL RESULTS

### 6.1 Institutional Quality and the Resilience of GDP per Capita

The estimation results of equations (1) and (2) are reported in Table 2 where the dependent variable is the log of real GDP per capita (LnGDPPC). Results are presented for the full sample and sub-panels of economies with high institutional quality levels and those with low levels of institutional quality.

**Table 2: Estimation Results for Real GDP per Capita**

Dependent Variable	Log of Real GDP Per Capita (LnGDPPC)					
Groups	Full Sample		High Institutional Quality		Low Institutional Quality	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	−0.068*** (0.013)	0.035 (0.035)	−0.088*** (0.012)	−0.047 (0.090)	−0.021 (0.017)	0.086 (0.053)
H1: INS(−1)	1.798*** (0.108)	1.783*** (0.108)	0.809*** (0.132)	0.819*** (0.134)	0.313** (0.133)	0.392*** (0.137)
H2: DUMF×INS(−1)		−0.178*** (0.056)		−0.053 (0.116)		−0.340** (0.159)
TRD(−1)	−0.099*** (0.012)	−0.101*** (0.012)	−0.091*** (0.009)	−0.091*** (0.009)	−0.213*** (0.038)	−0.187*** (0.040)
GDS(−1)	0.974*** (0.107)	0.954*** (0.106)	0.928*** (0.095)	0.922*** (0.096)	1.312*** (0.152)	1.311*** (0.152)
DCP(−1)	0.232*** (0.020)	0.230*** (0.020)	−0.109*** (0.020)	−0.110*** (0.020)	0.834*** (0.036)	0.823*** (0.037)
GOV(−1)	0.758*** (0.250)	0.703*** (0.249)	1.490*** (0.308)	1.504*** (0.310)	−0.031 (0.274)	0.018 (0.274)
LnCPI(−1)	0.552*** (0.011)	0.554*** (0.011)	1.074*** (0.031)	1.073*** (0.031)	0.446*** (0.010)	0.447*** (0.010)
LnREER(−1)	−0.003 (0.033)	0.004 (0.033)	−0.136*** (0.035)	−0.132*** (0.036)	0.131*** (0.045)	0.139*** (0.045)
Constant	4.941*** (0.155)	4.930*** (0.155)	5.116*** (0.189)	5.094*** (0.196)	4.320*** (0.192)	4.236*** (0.196)
Observations	1,016	1,016	471	471	545	545
Adj. r-squared	0.815	0.817	0.883	0.883	0.912	0.912
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		167.78***		22.38***		0.08
Prob.		0.000		0.000		0.776

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; GDS: Gross Domestic Savings; DCP: Domestic Credit to Private Sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

The partial marginal effect of institutional quality on real GDP per capita is positive and significant for all economy groups, thereby rejecting the null hypothesis for H1. This indicates that a country's institutional quality is an important factor for strengthening economic development. The effect is higher by a factor of around two for economies with high institutional quality, indicating a threshold effect whereby higher quality institutions yield greater relative economic development returns. For high institutional quality economies, the impact of institutions on GDP per capita is not affected by elevated financial stress, as shown by the lack of significance in the interaction term of institutional quality and financial stress, and a failure to reject H2 for this set of economies. This may point to higher resilience for these economies in the face of financial disturbances. For economies with lower quality institutions, the interaction term is significant, showing that financial stress matters for the impact of institutions on GDP per capita. In particular, a negative premium on the effect of institutions on GDP per capita is found during periods of elevated financial stress. As the joint significance test for H3 is rejected for all economies, a comparison of the total marginal effects of institutions in periods of elevated financial stress for high versus low institutional quality economies can be made. These results highlight the substantially stronger resilience of economies with high institutional development. A deeper analysis of the sub-components

of institutions reveals that political stability and the rule of law are important factors driving the resilience of GDP per capita for economies with high institutional quality.<sup>3</sup>

## 6.2 Institutional Quality and the Resilience of International Capital Flows

The estimation results of equations (3) and (4) for international capital flows are reported in Tables 3 to 6.<sup>4</sup> Table 3 presents the estimation results for net direct investment (DI).

**Table 3: Estimation Results for Net Direct Investment**

Dependent Variable Groups	Net Direct Investment Ratio to GDP (DI)					
	Full Sample		High Institutional Quality		Low Institutional Quality	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	−0.002 (0.021)	0.120** (0.058)	0.007 (0.032)	0.881*** (0.244)	−0.001 (0.008)	0.051** (0.023)
H1:INS(−1)	0.738*** (0.168)	0.745*** (0.168)	2.137*** (0.311)	2.301*** (0.310)	−0.188*** (0.060)	−0.169*** (0.060)
H2: DUMF×INS(−1)		−0.204** (0.091)		−1.168*** (0.323)		−0.177** (0.073)
TRD(−1)	−0.167*** (0.017)	−0.167*** (0.017)	−0.253*** (0.023)	−0.256*** (0.022)	0.178*** (0.019)	0.183*** (0.019)
GDS(−1)	0.958*** (0.146)	0.949*** (0.146)	1.421*** (0.228)	1.332*** (0.226)	−0.019 (0.066)	−0.006 (0.066)
DCP(−1)	0.099*** (0.027)	0.094*** (0.027)	0.152*** (0.050)	0.136*** (0.049)	−0.103*** (0.014)	−0.107*** (0.014)
GOV(−1)	−2.729*** (0.457)	−2.721*** (0.456)	−4.563*** (0.729)	−4.215*** (0.725)	0.660*** (0.191)	0.687*** (0.190)
LnCPI(−1)	0.038* (0.020)	0.039* (0.020)	0.092 (0.076)	0.079 (0.075)	0.013** (0.005)	0.013*** (0.005)
LnREER(−1)	0.165*** (0.048)	0.179*** (0.049)	0.323*** (0.081)	0.414*** (0.084)	0.009 (0.021)	0.011 (0.021)
Constant	−1.029*** (0.230)	−1.094*** (0.232)	−2.940*** (0.453)	−3.405*** (0.465)	−0.014 (0.094)	−0.042 (0.095)
Observations	894	894	443	443	451	451
Adj. r-squared	0.206	0.210	0.394	0.410	0.390	0.396
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		8.19***		7.49***		15.38***
Prob.		0.004		0.006		0.001

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; GDS: Gross Domestic Savings; DCP: Domestic Credit to Private Sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

Our results show that the partial marginal effect of institutions on FDI when is positive and significant overall and for economies with high quality institutions, thereby rejecting H1 for FDI. For lower quality institutions, the effect of institutions on FDI is negative and significant. We find that heightened financial stress matters for the effect of institutions on FDI, both for economies with high and low levels of institutional quality, shown by a significant interaction term which rejects H2 for FDI. This term is negative in sign, indicating that the effect of institutions on FDI is dampened due to high financial stress. The negative premium is greater in magnitude for economies with high institutional quality. However, the marginal effect of institutions on FDI in the presence of elevated

<sup>3</sup> See Appendix 5.

<sup>4</sup> See Appendix 6 to 9 for additional analysis using the sub-components of institutions.

financial stress is positive and substantially higher for economies with high institutional quality. We also reject H3 for FDI for all economy groups, indicating joint significance in the individual effect of institutions and the interaction term. The results for FDI provide evidence in favor of stronger resilience in FDI due to institutions in economies with high quality institutions. The results for net portfolio equity investment (PIEQUITY) are provided in Table 4.

**Table 4: Estimation Results for Net Portfolio Equity Investment**

Dependent Variable	Net Portfolio Equity Investment Ratio to GDP(PIEQUITY)					
Groups	Full Sample		High Institutional Quality		Low Institutional Quality	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	0.008 (0.036)	-0.137 (0.099)	0.048 (0.051)	-1.305*** (0.387)	-0.018** (0.008)	0.032 (0.024)
H1:INS(-1)	-0.786*** (0.286)	-0.794*** (0.285)	0.738 (0.494)	0.483 (0.493)	-0.107* (0.062)	-0.089 (0.062)
H2: DUMF×INS(-1)		0.242 (0.154)		1.810*** (0.513)		-0.168** (0.076)
TRD(-1)	0.021 (0.028)	0.022 (0.028)	0.152*** (0.036)	0.158*** (0.035)	0.050** (0.020)	0.054*** (0.020)
GDS(-1)	1.212*** (0.248)	1.223*** (0.248)	-0.363 (0.362)	-0.225 (0.359)	0.272*** (0.069)	0.284*** (0.069)
DCP(-1)	-0.606*** (0.046)	-0.600*** (0.046)	-0.077 (0.079)	-0.052 (0.078)	-0.046*** (0.014)	-0.051*** (0.014)
GOV(-1)	5.770*** (0.776)	5.759*** (0.776)	5.761*** (1.157)	5.221*** (1.152)	0.652*** (0.198)	0.679*** (0.198)
LnCPI(-1)	-0.160*** (0.035)	-0.161*** (0.035)	-1.654*** (0.121)	-1.634*** (0.120)	0.014*** (0.005)	0.015*** (0.005)
LnREER(-1)	0.280*** (0.082)	0.263*** (0.083)	0.298** (0.129)	0.157 (0.133)	0.103*** (0.022)	0.106*** (0.022)
Constant	-0.711* (0.391)	-0.634 (0.394)	4.617*** (0.719)	5.338*** (0.739)	-0.581*** (0.098)	-0.608*** (0.099)
Observations	894	894	443	443	451	451
Adj. r-squared	0.283	0.284	0.532	0.544	0.146	0.154
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		0.18		6.16**		0.12
Prob.		0.672		0.013		0.728

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. DUMF: Financial Stress Index dummy; INS: Institutional Index; LnGDPPC: Log of Real GDP Per Capita; TRD: Trade; GDS: Gross Domestic Savings; DCP: domestic credit to the private sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

For net portfolio equity, we find that the individual effect of institutional quality has a positive but not significant impact for economies with high levels of institutional quality (i.e., H1 is not rejected for portfolio equity). The interaction of institutions and elevated financial stress is positive and significant, however, indicating that stronger institutions in the face of financial tensions are positively related to equity investment (H2 is rejected). Even though the individual effect is not significant, the joint test H3 reveals a statistically significant outcome. For economies with lower levels of institutional quality, we also find an insignificant individual effect of institutions on equity investment, while the interaction term of institutions and elevated stress is negative and significant. Thus, there is some evidence to suggest that the effect of institutions depends on whether financial stress is elevated or not. Where it is elevated, the institutions of economies with low levels of institutional quality are associated with a reduction in net equity inflows. These results are nuanced against the fact that the joint test of the individual effect and interaction term is not rejected, unlike the case of economies with high institutional development. These

results suggest overall that institutions in economies with high levels of institutional quality support the resilience of equity investment in episodes of heightened financial tensions. However, it is also important to consider the role of portfolio rebalancing in crisis times, which can be an additional factor explaining much stronger positive net equity flows whereby investors seek safe havens. Table 5 presents the estimation results for net portfolio debt investment (PIDEBT).

**Table 5: Estimation Results for Net Portfolio Debt Investment**

Dependent Variable	Net Portfolio Debt Investment Ratio to GDP (PIDEBT)					
Groups	Full Sample		High Institutional Quality		Low Institutional Quality	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	0.000 (0.022)	-0.077 (0.059)	0.003 (0.032)	-0.660*** (0.246)	-0.011 (0.007)	-0.008 (0.020)
H1:INS(-1)	-1.063*** (0.171)	-1.068*** (0.171)	-1.269*** (0.312)	-1.394*** (0.313)	0.264*** (0.052)	0.266*** (0.053)
H2:(DUMF×INS)(-1)		0.128 (0.092)		0.887*** (0.327)		-0.011 (0.064)
TRD(-1)	-0.123*** (0.017)	-0.123*** (0.017)	-0.033 (0.023)	-0.030 (0.022)	-0.045*** (0.017)	-0.045*** (0.017)
GDS(-1)	0.084 (0.149)	0.089 (0.148)	-0.493** (0.229)	-0.426* (0.229)	-0.208*** (0.058)	-0.207*** (0.058)
DCP(-1)	-0.108*** (0.027)	-0.105*** (0.027)	0.115** (0.050)	0.127** (0.050)	0.124*** (0.012)	0.124*** (0.012)
GOV(-1)	1.177** (0.465)	1.171** (0.465)	1.509** (0.732)	1.244* (0.733)	-0.954*** (0.167)	-0.952*** (0.167)
LnCPI(-1)	-0.053** (0.021)	-0.053** (0.021)	-0.667*** (0.077)	-0.658*** (0.076)	0.014*** (0.004)	0.014*** (0.004)
LnREER(-1)	-0.139*** (0.049)	-0.148*** (0.050)	-0.246*** (0.081)	-0.315*** (0.085)	-0.138*** (0.018)	-0.138*** (0.018)
Constant	1.323*** (0.234)	1.364*** (0.236)	4.524*** (0.455)	4.877*** (0.470)	0.647*** (0.083)	0.645*** (0.083)
Observations	894	894	443	443	451	451
Adj. r-squared	0.217	0.217	0.423	0.431	0.326	0.324
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		2.48		0.51		9.76***
Prob.		0.115		0.477		0.002

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; GDS: Gross Domestic Savings; DCP: Domestic Credit to Private Sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

On portfolio debt, we find that the marginal individual effect of institutions is negative and significant for economies with high levels of institutional quality, thereby rejecting H1 for debt flows. This implies that higher levels of institutions are associated with lower net portfolio debt inflows. The intuition may be that as institutional quality improves when it is already at a high level, economies in this group are more likely to attract investment flows that are more stable and long-term in nature, such as FDI and equity investment. Incremental levels of institutions may be associated with lower net portfolio debt flows as a result. We find that elevated stress matters only for the effect of institutions in relation to economies with high levels of institutional quality, rejecting H2. During periods of elevated stress, a positive institutions premium is evident for these economies. Overall, however, the total marginal effect of institutions on net portfolio debt in the presence of elevated financial stress is negative and significant, but also less negative than in non-crisis times. The institutions of economies with lower levels of institutional quality have a positive and significant effect on net portfolio debt. This is in line with earlier work by Wei and Wu (2002) who find that higher corruption can be associated with a changing capital inflow composition towards short-term and more volatile capital flows. For economies

with lower quality institutions, while the interaction term is not significant, which would indicate that these economies are invariant to elevated financial stress in respect of the impact of institutions on debt flows, the joint test H3 is rejected. The findings may suggest some resilience by economies with low quality institutions in respect of the impact of institutions on debt investment flows in episodes of amplified financial stress. Turning to net other investment (OI), the regression results are provided in Table 6.

**Table 6: Estimation Results for Net Other Investment**

Dependent Variable	Net Other Investment Ratio to GDP (OI)					
Groups	Full Sample		High Institutional Quality		Low Institutional Quality	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	-0.034*	0.047	-0.033	0.795***	-0.020*	-0.024
	(0.018)	(0.051)	(0.030)	(0.226)	(0.012)	(0.035)
H1:INS(-1)	-0.138	-0.133	0.178	0.334	-0.099	-0.101
	(0.146)	(0.146)	(0.289)	(0.288)	(0.092)	(0.093)
H2: DUMF×INS(-1)		-0.135*		-1.108***		0.014
		(0.079)		(0.300)		(0.113)
TRD(-1)	0.141***	0.141***	0.105***	0.101***	0.137***	0.137***
	(0.015)	(0.015)	(0.021)	(0.021)	(0.030)	(0.030)
GDS(-1)	-1.213***	-1.219***	-1.224***	-1.308***	-0.223**	-0.224**
	(0.126)	(0.126)	(0.212)	(0.210)	(0.102)	(0.103)
DCP(-1)	0.364***	0.361***	0.364***	0.349***	0.058***	0.058***
	(0.023)	(0.023)	(0.046)	(0.046)	(0.021)	(0.021)
GOV(-1)	-3.096***	-3.090***	-3.832***	-3.502***	0.295	0.293
	(0.396)	(0.396)	(0.677)	(0.673)	(0.294)	(0.294)
LnCPI(-1)	-0.033*	-0.033*	0.075	0.062	-0.044***	-0.044***
	(0.018)	(0.018)	(0.071)	(0.070)	(0.008)	(0.008)
LnREER(-1)	-0.180***	-0.170***	-0.119	-0.033	-0.250***	-0.250***
	(0.042)	(0.042)	(0.075)	(0.078)	(0.032)	(0.032)
Constant	1.350***	1.307***	0.297	-0.145	1.446***	1.449***
	(0.199)	(0.201)	(0.421)	(0.432)	(0.145)	(0.147)
Observations	894	894	443	443	451	451
Adj. r-squared	0.380	0.382	0.433	0.449	0.369	0.368
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		1.64		4.24**		6.81***
Prob.		0.201		0.040		0.009

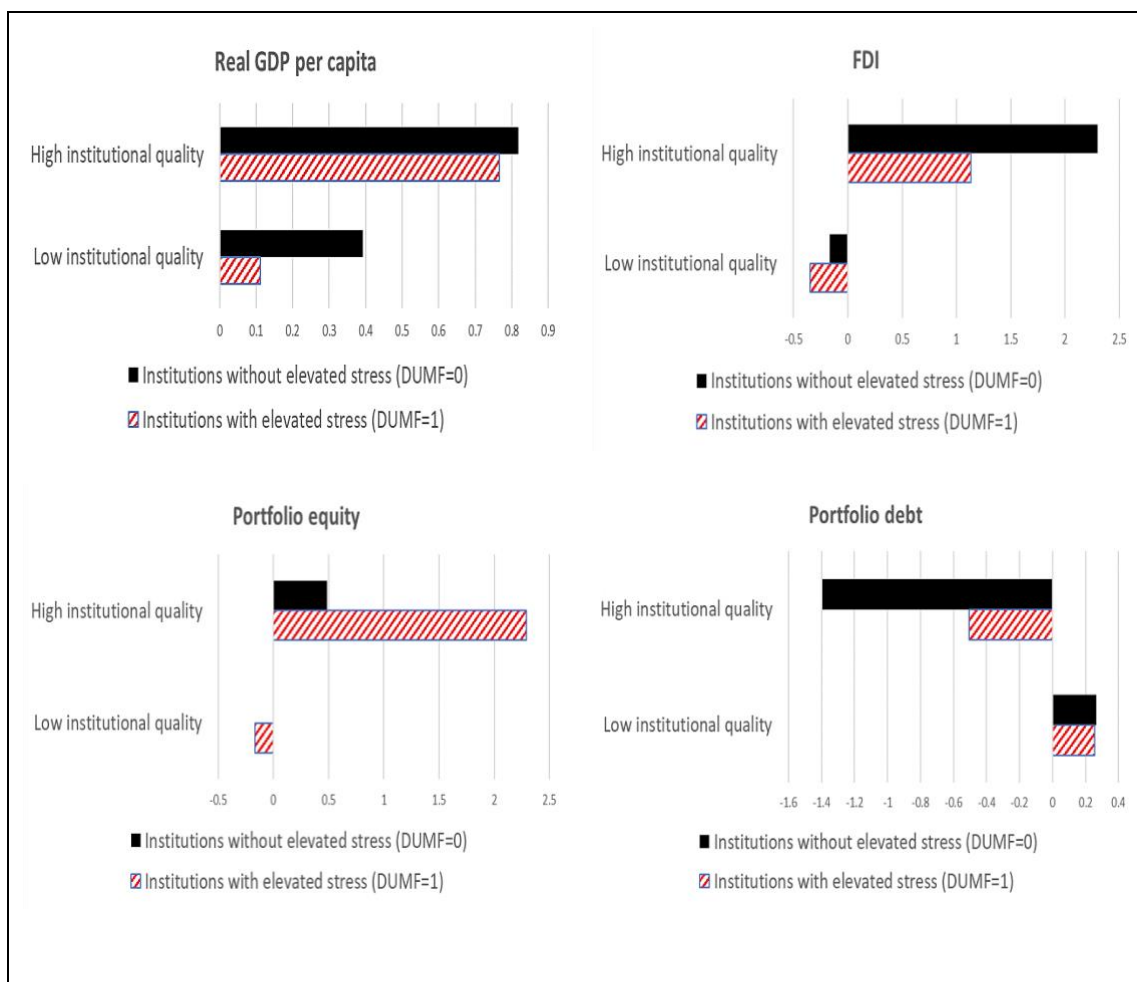
Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. DUMF: Financial Stress Index dummy; INS: Institutional Index; LnGDPPC: Log of Real GDP Per Capita; TRD: Trade; GDS: Gross Domestic Savings; DCP: domestic credit to the private sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

For other investment, typically bank flows and other highly volatile forms of capital flows, we find no significant individual effect of institutional quality across all economy groups, thereby failing to reject H1. There is some evidence to suggest that financial tensions affect the impact of institutions for economies with highly developed institutions. As in the case of debt investment, the effect is negative and significant, with H2 rejected. The implication is that elevated financial stress may trigger outflows of other investment from this highly volatile type of capital. Overall, the role of institutions on other investment is limited.

### 6.3 Comparing Total Marginal Effects with and without Elevated Financial Stress

The results from the econometric analysis reveal an important role of institutions in affecting macrofinancial resilience in Asian economies, apart from other investment where the effect of institutions is much more limited. In order to understand further the findings, the total marginal effects of institutions on real GDP per capita, net FDI inflows, net equity inflows, and net debt inflows are presented in Figure 2 for the cases with and without elevated financial stress.

**Figure 2: Total Marginal Effects of Institutions on GDP per Capita and Capital Flows**



Note: The figures report the total (significant) marginal effects from the regression analysis, computed as  $d(y)/d(INS)=b1(DUMF)+b2(INS)+b3(DUMF*INS)$  differentiated with respect to INS. Capital flow measures are net inflows as a share of GDP. FDI: Net Foreign Direct Investment; DUMF: Dummy for Financial Stress Index; GDP: Gross Domestic Product.

Source: Authors' Calculations.

For real GDP per capita, a threshold effect is evident, whereby the institutions of economies with high levels of institutional quality have twice the effect on economic development in normal times than those of economies with low levels of institutional development. In times of elevated financial stress, the marginal effect of economies with

high institutional quality remains largely constant, whereas the effect declines substantially for economies with low institutional quality. This implies that institutions in the former group bolster the resilience of real GDP per capita to heightened financial tensions.

For capital flows, there is generally much more susceptibility to shifts in financial stress compared to GDP per capita. In the case of FDI, while elevated financial stress reduces the marginal effect of institutions in economies with high institutional quality by a factor of around 2, the overall effect remains positive and significant. For these economies, therefore, institutions have an important role to play in supporting the resilience of FDI. By contrast, the institutions of economies with lower levels of institutional development do not exhibit positive effects on FDI, even in normal times. Elevated financial stress reduces FDI net inflows for these economies. On portfolio equity, there is some evidence to suggest portfolio rebalancing effects and safe haven flows to economies with high institutional quality during crisis times. For these economies, while institutions positively affect equity even in normal times, the effect is magnified more than fourfold in crisis times. While supporting resilience, therefore, it also may suggest that investors rebalance their portfolios towards these economies in times of elevated financial stress. For economies with low quality institutions, there is no effect of institutions on equity in normal times whereas a reduction in net equity inflows is evident in crisis times.

Turning to the capital flows that are more volatile in nature, net portfolio debt for economies with lower levels of institutional quality can be somewhat resilient during crisis times, although the magnitudes of the effects are small. For economies with high institutional development, even in normal times, institutions are associated with a reduction in net inflows of portfolio debt. The effect is less pronounced in crisis times, i.e. the marginal effect of institutions is less negative. It also should be noted that these economies typically attract more stable and longer-term capital flows overall.

Overall, the analysis of total marginal effects reveals four main findings: (i) the institutions of economies with high levels of institutional quality are important factors for supporting the resilience of GDP per capita and FDI to elevated financial tensions; (ii) for equity flows, where institutional quality is high, institutions have strong positive effects during periods of heightened financial stress, reinforcing resilience but also suggesting portfolio rebalancing; (iii) for debt flows, the institutions of economies with high institutional quality are associated with substantially lower negative marginal effects in crisis times, which is also likely related to portfolio rebalancing effects; and (iv) for economies with low levels of institutional quality, institutions can help to stabilize debt flows in crisis times, albeit at low magnitudes.

## 6.4 Sensitivity Analysis

In order to examine the sensitivity of our main findings, we carried out an analysis based on an alternative definition of the financial stress dummy where  $D=1$  only for the periods of the Asian financial crisis, global financial crisis, and COVID-19.<sup>5</sup> These results are fully consistent with those of our baseline regressions for each cohort, albeit more pronounced, as expected. Our results underscore that there exists a critical level of institutional quality for shock absorption capacity. Across the Asian financial crisis, global financial crisis and COVID-19, the mitigating effect of institutions on negative spillovers to GDP per capita, FDI, and portfolio equity investment was notably stronger in the case of economies with higher levels of institutional quality. This is in stark contrast to economies with lower levels of institutional quality, where institutions failed to instill

---

<sup>5</sup> These results are available from the authors upon request.

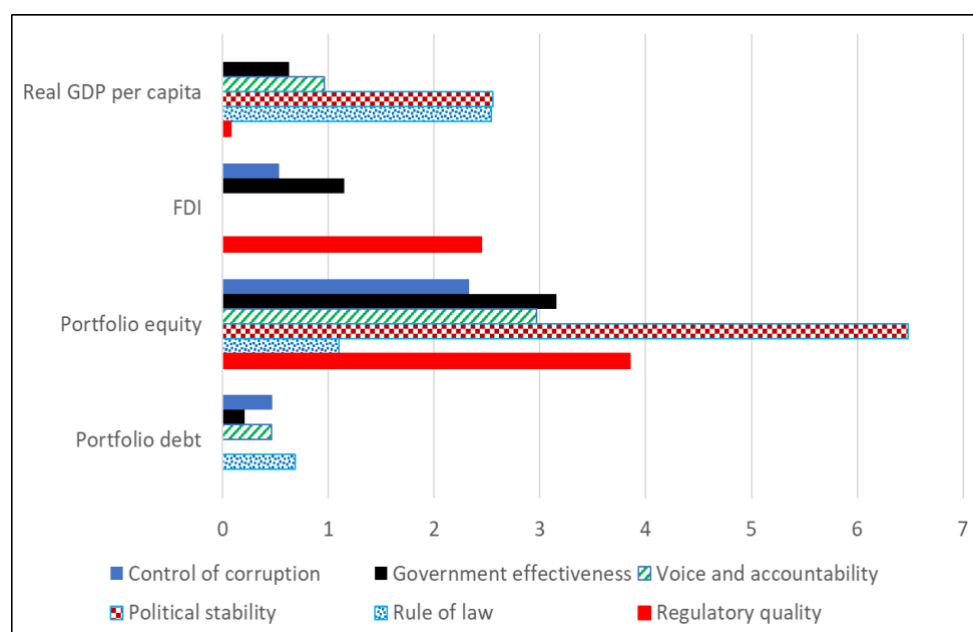
resilience in these factors. On other forms of capital flows, particularly debt and other investment, the interpretation of the findings needs to be nuanced against the fact that there exists greater susceptibility of these types of flows to fluctuations during periods of excessive global financial market volatility.

In order to understand further our findings on net equity and debt flows, an alternative specification was implemented using overall net portfolio flows (i.e., combining equity and debt) as the dependent variable (see Appendix 4). The findings indicate that for economies with high institutional quality, a positive and significant total marginal effect of institutions is found on overall portfolio flows in times of crisis. These results are consistent with our baseline analysis that institutions help to support the resilience of equity and debt flows in these economies in the face of financial shocks.

## 6.5 Heterogeneity in the Marginal Impact across Sub-components of Institutional Quality

Having found that institutions in economies with high institutional quality exhibit resilience effects for real GDP per capita, FDI, and portfolio equity in periods of heightened financial stress, this sub-section provides an overview of the types of institutions that yield the most pronounced effects (Figure 3). Also shown are the institutions sub-components in respect of portfolio debt, where economies with higher institutional quality showed less negative marginal impacts in crisis times, while those with lower levels of institutional quality exhibited signs of resilience to elevated financial stress, albeit small in magnitude.

**Figure 3: Total Marginal Effects of Institutions by Sub-component**



Note: The figure reports the total (significant) marginal effects from the regression analysis based on sub-components of institutions (see Appendix 5 to 9), computed as  $d(y)/d(x) = b_1(DUMF) + b_2(x) + b_3(DUMF \cdot x)$  differentiated with respect to  $x$ , where  $x$  represents each institutions sub-component and  $y$  denotes either GDP per capita or one of the capital flow measures (reflecting net inflows as a share of GDP). GDP: Gross Domestic Product; FDI: Net Foreign Direct Investment  
Source: Authors' Calculations.

For real GDP per capita, the main source of resilience due to institutions comes from a strong rule of law and political stability. For capital flows, political stability is also a key institutional factor for crisis resilience in respect of portfolio equity. However, we

also observe an important role for regulatory quality, both for FDI and equity. Higher regulatory quality helps to support the resilience of these types of capital flows, which are longer-term and more stable in nature. This can also be an important factor affecting the effectiveness of macroprudential policy in managing capital flows (e.g., Beirne and Friedrich 2017).

## 7. CONCLUSIONS

This paper examines the role of institutions on macroeconomic and financial resilience in a sample of 12 advanced and emerging Asian economies. Using a panel analysis over the period 1996 to 2020, we show that institutional quality is an important factor underpinning macrofinancial resilience to tensions in financial markets. For economies with high levels of institutional quality, the total marginal effect of institutions during periods of elevated financial stress is positive and significant on real GDP per capita, FDI, and portfolio equity, while the marginal effect is less negative for portfolio debt. The results are particularly striking for GDP per capita, where institutions strongly insulate these economies in periods of heightened financial stress. For capital flows in economies with high institutional development, institutions are important factors in supporting the resilience of FDI and portfolio investment to financial shocks. Portfolio debt can be more resolute due to institutions in economies with lower institutional quality, although the magnitude of the effect is small. Our results also point towards portfolio rebalancing effects during periods of high financial market volatility, notably in the case of portfolio equity flows.

Our paper also indicates that specific types of institutions are more important than others, particularly rule of law, political stability, and regulatory quality. Overall, economies with higher levels of institutional quality minimize the overall impact of financial stress on economic development and potential capital flow reversals, also providing evidence for threshold effects in institutions. While developing solid institutions is a gradual and longer-term endeavor, policymakers in emerging economies in particular, should intertwine their macroeconomic policy frameworks with measures to enhance institutional quality. This can have important implications for sustainable economic development, and reducing the exposure to financial shocks. This can also have a strong role to play in terms of enhancing the absorptive capacity of economies in the face of shocks, and accelerating the recovery speed. Institutional quality components are complex, multi-dimensional, diversified, and challenging to measure concerning their evolution. As policy makers seek to improve the resilience of their economies to macrofinancial disturbances, it follows that structural reforms aimed at improving the quality of institutions should be central to the policy agenda over the medium to long term. Going forward, national authorities and international financial institutions should work together to enhance the framework for measuring institutional quality. In particular, a more granular understanding of the sub-components of institutional quality at the global level, particularly on harmonized cross-country data available over a long time period, would provide the basis for more targeted structural policies on enhancing long-term macrofinancial resilience.

## REFERENCES

- Abed, G., and S. Gupta. 2002. The Economics of Corruption: An Overview. *Governance, Corruption, and Economic Performance*: 1–16. Washington DC: International Monetary Fund.
- Acemoglu, D., S. Johnson, and J. A. Robinson. 2005. Institutions as a Fundamental Cause of Long-Run Growth. *Handbook of Economic Growth* 1(A): 385–472.
- Acemoglu, D., S. Johnson, and J. A. Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91(5): 1369–1401.
- Acemoglu, D., and J. A. Robinson. 2008. Persistence of Power, Elites, and Institutions. *American Economic Review* 98(1): 267–293.
- Ahlquist, J. S. 2006. Economic Policy, Institutions, and Capital Flows: Portfolio and Direct Investment Flows in Developing Countries. *International Studies Quarterly* 50(3): 681–704.
- Aidt, T. S. 2011. Corruption and Sustainable Development. *International Handbook on the Economics of Corruption* 2: 3–51. Cheltenham: Edward Elgar.
- Alfaro, L., S. Kalemli-Ozcan, and V. Volosovych. 2007. Capital Flows in a Globalized World: The Role of Policies and Institutions. *Capital Controls and Capital Flows in Emerging Economies*. Chicago: University of Chicago Press. <http://www.nber.org/chapters/c0148>.
- Alfaro, L., S. Kalemli-Ozcan, and V. Volosovych. 2008. Why Doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation. *The Review of Economics and Statistics* 90(2): 347–68.
- Arya, V., R. Banerjee, and T. Cavoli. 2019. Capital Flows to Asia and Latin America: Does Institutional Quality Matter? *World Economy* 42(7): 2039–2069.
- Asghar, N., S. Qureshi, and M. Nadeem. 2015. Institutional Quality and Economic Growth: Panel ARDL Analysis for Selected Developing Economies of Asia. *South Asian Studies* 30(2): 381.
- Barro, R. J. 1991. Economic Growth in a Cross-Section of Countries. *Quarterly Journal of Economics* 106(2): 407–443.
- Barro, R. J. 1996. Determinants of Economic Growth: A Cross-Country Empirical Study. *NBER Working Paper Series*: 5698
- Beirne, J., and C. Friedrich. 2017. Macroprudential policies, capital flows, and the structure of the banking sector. *Journal of International Money and Finance* 75(C): 47–68.
- Bekaert, G., C. R. Harvey, and C. Lundblad. 2005. Does Financial Liberalization Spur Growth? *Journal of Financial Economics* 77(1): 3–55.
- Berkowitz, D., K. Pistor, and J.-F. Richard. 2003. Economic Development, Legality, and the Transplant Effect. *European Economic Review* 47(1): 165–95.
- Broos, M. et al. 2016. *Dealing with Large and Volatile Capital Flows and the Role of the IMF*. ECB Occasional Paper 180. Frankfurt: European Central Bank, <http://dx.doi.org/10.2866/017330>

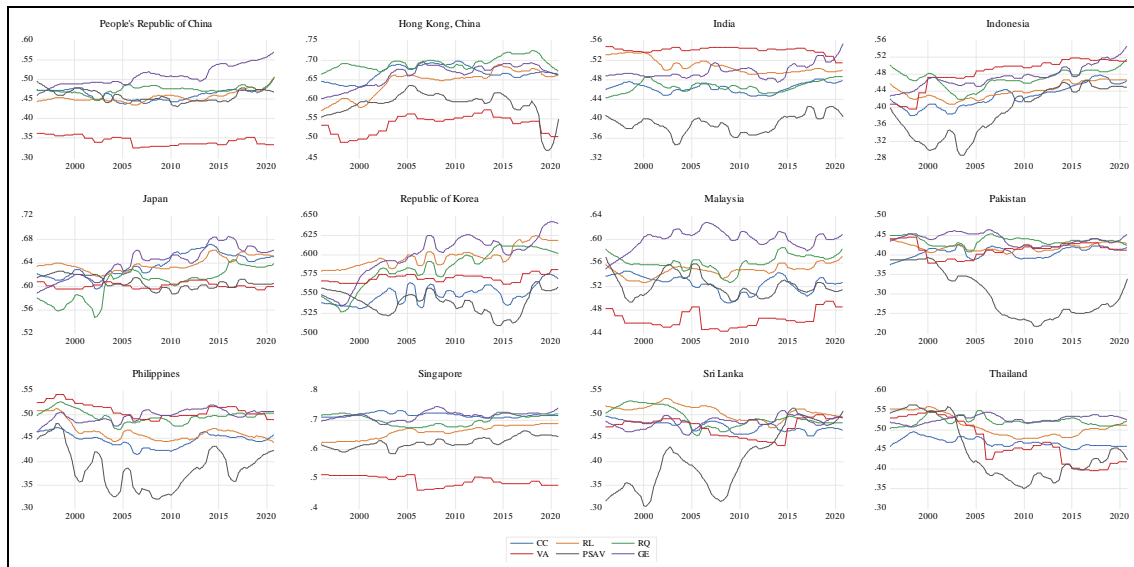
- Butkiewicz, J. L., and H. Yanikkaya. 2006. Institutional Quality and Economic Growth: Maintenance of the Rule of Law or Democratic Institutions, or Both? *Economic Modelling* 23(4): 648–661.
- Chanda, A. 2005. The Influence of Capital Controls on Long-Run Growth: Where and How Much? *Journal of Development Economics* 77(2): 441–466.
- Chinn, M. D., and Hiro I. 2006. What Matters for Financial Development? Capital Controls, Institutions, and Interactions. *Journal of Development Economics* 81(1): 163–192.
- Cuervo-Cazurra, A. 2006. Who Cares about Corruption? *Journal of International Business Studies* 37(6): 807–822.
- Demetriades, P., and S. H. Law. 2006. Finance, Institutions and Economic Development. *International Journal of Finance and Economics* 11(3): 245–260.
- Eslamloueyan, K., and M. Jafari. 2019. Do Better Institutions Offset the Adverse Effect of a Financial Crisis on Investment? Evidence from East Asia. *Economic Modelling* 79 : 154–172. <https://doi.org/10.1016/j.econmod.2018.10.011>.
- Eswar P., K. Rogoff, S.-J. Wei, and M. A. Kose. 2003. Effects on Financial Globalization on Developing Countries: Some Empirical Evidence. *Economic and Political Weekly* 38(41): 4319–4330.
- Flachaire, E., C. García-Peñalosa, and M. Konte. 2014. Political versus Economic Institutions in the Growth Process. *Journal of Comparative Economics* 42(1): 212–229. <http://dx.doi.org/10.1016/j.jce.2013.05.001>.
- Gelos, G., L. Gornicka, R. Koepke, R. Sahay, and S. Sgherri. 2021. Capital Flows at Risk: Taming the Ebbs and Flows. *Journal of International Economics* 134: 103555. <https://doi.org/10.1016/j.jinteco.2021.103555>.
- Gelos, G. R., and S.-J. Wei. 2005. Transparency and International Portfolio Holdings. *Journal of Finance* LX(6): 514–547.
- Haggard, S.. 2004. Institutions and Growth in East Asia. *Studies in Comparative International Development* 38(4): 53–81.
- Haggard, S., and L. Tiede. 2011. The Rule of Law and Economic Growth: Where Are We? *World Development* 39(5): 673–685. <http://dx.doi.org/10.1016/j.worlddev.2010.10.007>.
- Hall, R. E., and C. I. Jones. 1999. Why Do Some Countries Produce so Much More Output per Worker than Others? *The Quarterly Journal of Economics* 114(1): 83–116.
- Hamilton-Hart, N., and H. Wai-Chung Yeung. 2019. Institutions under Pressure: East Asian States, Global Markets and National Firms. *Review of International Political Economy* 28(1):11-35
- Hannan, S.A., and Cubeddu, L. M. 2018. Revisiting the Determinants of Capital Flows to Emerging Markets: A Survey of the Evolving Literature. *IMF Working Paper* 18(214): 2–13.
- Hannan, S. A., and M. D. Kaufman. 2017. *The Drivers of Capital Flows in Emerging Markets Post Global Financial Crisis*. Washington, DC: Informa UK Limited.
- Khan, M. H. 2018. Institutions and Asia's Development The Role of Norms and Organizational Power. *WIDER Working Papers* 132.

- Klein, M. W., and G. P. Olivei. 2008. Capital Account Liberalization, Financial Depth, and Economic Growth. *Journal of International Money and Finance* 27(6): 861–875.
- Klein, W. 2005. Capital Account Liberalization, Institutional Quality, and Economic Growth : Theory and Evidence Michael. *NBER Working Paper 11112*. <http://www.nber.org/papers/w11112>.
- Knack, S., and P. Keefer. 1995. Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures. *Economics and Politics* 7(3): 207–227.
- Koepke, R. 2019. What Drives Capital Flows To Emerging Markets? A Survey of the Empirical Literature. *Journal of Economic Surveys* 33(2): 516–540.
- Lambsdorff, J. G. 2003a. How Corruption Affects Productivity. *Kyklos* 56(4): 457–474.
- Lambsdorff, J. G. 2003b. How Corruption Affects Persistent Capital Flows. *Economics of Governance* 4(3): 229–243.
- Law, S. H., A. M. Kutan, and N. A. M. Naseem. 2018. The Role of Institutions in Finance Curse: Evidence from International Data.” *Journal of Comparative Economics* 46(1): 174–191.
- Le, T. H., J. Kim, and M. Lee. 2016. Institutional Quality, Trade Openness, and Financial Sector Development in Asia: An Empirical Investigation. *Emerging Markets Finance and Trade* 52(5): 1047–1059.
- Mauro, P. 1995. Corruption and Growth. *Quarterly Journal of Economics* 110(3): 681–712.
- Meyer, K. E., and E. Sinani. 2009. When and Where Does Foreign Direct Investment Generate Positive Spillovers? A Meta-Analysis. *Journal of International Business Studies* 40(7): 1075–1094.
- Mo, P. H. 2001. Corruption and Economic Growth. *Journal of Comparative Economics* 29(1): 66–79.
- Nelson, R. R., and B. N. Sampat. 2001. Making Sense of Institutions as a Factor Shaping Economic Performance. *Journal of Economic Behavior and Organization* 44(1): 31–54.
- North, D. C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Obstfeld, M. 2012. Financial Flows, Financial Crises, and Global Imbalances. *Journal of International Money and Finance* 31(3): 469–480. <http://dx.doi.org/10.1016/j.jimonfin.2011.10.003>.
- Okada, K. 2013. The Interaction Effects of Financial Openness and Institutions on International Capital Flows. *Journal of Macroeconomics* 35(1): 131–143. <http://dx.doi.org/10.1016/j.jmacro.2012.11.003>.
- Osina, N. 2021. Global Governance and Gross Capital Flows Dynamics. *Review of World Economics* 157: 463–493. Springer Berlin Heidelberg. <https://doi.org/10.1007/s10290-020-00404-z>.
- Pagliari, M. S., S. A. Hannan, and M. D Kaufman. 2017. *The Volatility of Capital Flows in Emerging Markets*. Washington, DC: International Monetary Fund.

- Park, C. Y., and R. V. Mercado. 2014. Determinants of Financial Stress in Emerging Market Economies. *Journal of Banking and Finance* 45(1): 199–224.  
<http://dx.doi.org/10.1016/j.jbankfin.2013.09.018>.
- Prasad, E., Rogoff, K., Wei, S.-J., & Kose, M. A. (2003). Effects on Financial Globalization on Developing Countries: Some Empirical Evidence. *Economic and Political Weekly* 38(41): 4319–4330.  
<https://doi.org/10.5089/9787504933096.084>
- Rodrik, D. 1997. FPG Controversies, Institutions and Economic Performance in East Asia. *NBER Working Paper Series*: No. 5914.
- Rodrik, D., A. Subramanian, and F. Trebbi. 2002. Institutions Rule: The Primacy of Institutions Over Geography. *NBER Working Paper Series* (No. 9305).
- Rodrik, D., A. Subramanian, and F. Trebbi. 2004. Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development. *Journal of Economic Growth* 9(2): 131–165.
- Slesman, L., A. Z. Baharumshah, and M. E. Wohar. 2015. Capital Inflows and Economic Growth: Does the Role of Institutions Matter? *International Journal of Finance and Economics* 20(3): 253–275.
- Wei, S. J. 2000. Local Corruption and Global Capital Flows. *Brookings Papers on Economic Activity* 2000(2): 303–354.
- Wei, S.-J., and Y. Wu. 2002. Negative Alchemy? Corruption, Composition of Capital Flows, and Currency Crises. NBER Chapters in *Preventing Currency Crises in Emerging Markets*: 461–506.
- Zhuang, J., E. de Dios, and A. Lagman-Martin. 2010. Governance and Institutional Quality and the Links with Growth and Inequality: With Special Reference to Developing Asia. *ADB Economics Working Paper Series* (193): 268–320.

# APPENDIX 1: GRAPHICAL REPRESENTATIONS OF INSTITUTIONAL QUALITY, CAPITAL FLOWS AND FINANCIAL STRESS INDEX

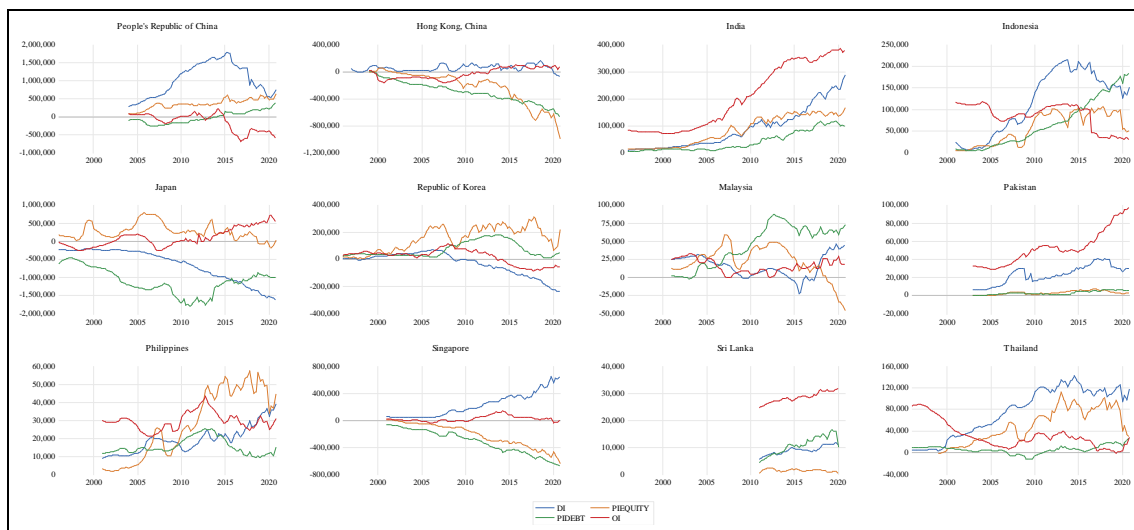
**Figure A1.1: Institutional Quality Components in Asian Economies**



Note: CC: Control of Corruption; GE: Government Effectiveness; VA: Voice and Accountability; PSAV: Political Stability and Absence of Violence and Terrorism; RL: Rule of Law; RQ: Regulatory Quality.

Source: Authors.

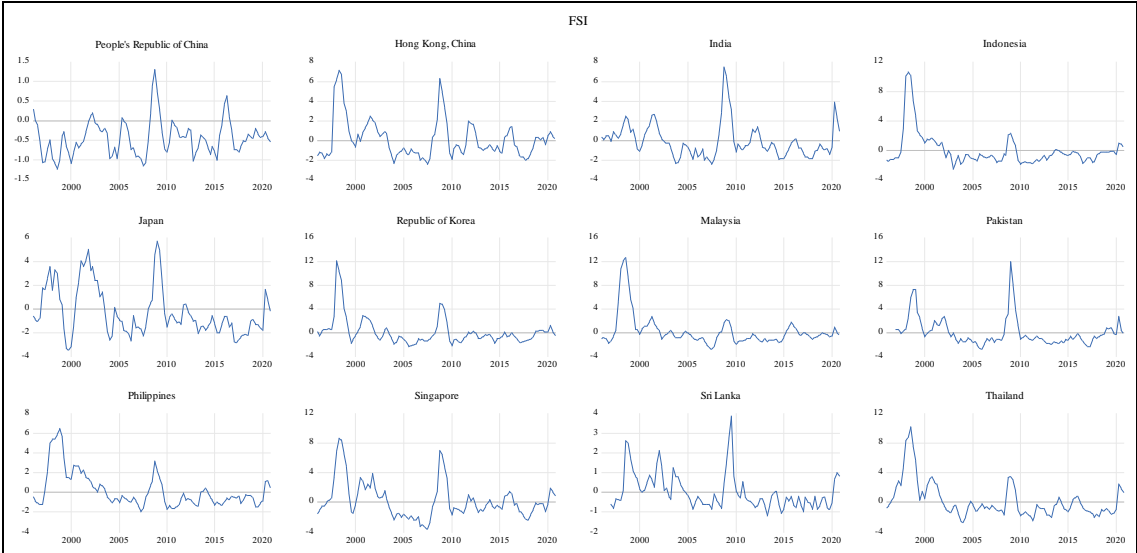
**Figure A1.2: International Capital Flows in Asian Economies**



Note: DI: Net Direct Investment; PIEQUITY: Net Portfolio Equity Investment; PIDEBT: Net Portfolio Debt Investment; OI: Net Other Investment. Figures are in million USD

Source: Authors.

Figure A1.3: Financial Stress Index in Asian Economies



Source: Authors.

## APPENDIX 2: DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

**Table A2.1: Descriptive Statistics**

	GDPPC	DI	PIEQUITY	PIDEBT	OI	FSI	INS
Mean	14,026.90	0.15	-0.06	-0.19	0.09	0.01	0.50
Median	4,524.98	0.10	0.05	0.02	0.09	-0.52	0.40
Maximum	59,822.25	1.98	0.31	0.27	0.69	12.62	0.92
Minimum	709.71	-0.32	-2.95	-2.09	-0.94	-3.59	0.13
Std. Dev.	16,502.06	0.26	0.40	0.50	0.20	2.07	0.22
Observations	1,200	993	973	985	985	1,192	1,200
	TRD	DCP	GDS	GOV	CPI	REER	
Mean	1.15	0.96	0.30	0.12	94.73	97.87	
Median	0.62	1.05	0.31	0.11	97.80	98.23	
Maximum	4.72	2.67	0.56	0.20	208.72	132.00	
Minimum	0.18	0.15	0.05	0.06	20.77	36.00	
Std. Dev.	1.15	0.59	0.12	0.03	31.06	12.60	
Observations	1,140	1,104	1,200	1,200	1,200	1,184	

Note: GDPPC: Gross Domestic Product Constant 2010 USD; DINET: Net Direct Investment; PIEQUITY: Net Portfolio Equity Investment; PIDEBT: Net Portfolio Debt Investment; OI: Net Other Investment; FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; DCP: Domestic Credit to Private Sector; GDS: Gross Domestic Savings; CPI: Consumer Price Index; REER: Real Effective Exchange Rate.

**Table A2.2: Correlation Matrix**

Variables	Dependent Variables								
	LnGDPPC	DI	PIDEBT	PIEQUITY	OI				
LnGDPPC	1.00								
DINET	0.21	1.00							
PIDEBT	-0.61	-0.62	1.00						
PIEQUITY	-0.45	-0.59	0.87	1.00					
OINET	-0.41	0.00	0.29	0.00	1.00				
FSI	0.01	0.02	0.00	-0.02	-0.01				
INS	0.93	0.27	-0.73	-0.55	-0.41				
TRD	0.53	0.61	-0.86	-0.73	-0.30				
DCP	0.78	0.00	-0.45	-0.37	-0.39				
GDS	0.37	0.52	-0.31	-0.21	-0.25				
GOV	0.35	-0.37	0.22	0.29	-0.15				
LnCPI	0.07	0.04	0.03	-0.13	0.24				
LnREER	0.07	0.16	0.00	-0.02	0.06				
Variables	Regressors								
	FSI	INS	TRD	DCP	GDS	GOV	LnCPI	LnREER	
LnGDPPC									
DINET									
PIDEBT									
PIEQUITY									
OINET									
FSI	1.00								
INS	0.01	1.00							
TRD	-0.02	0.66	1.00						
DCP	0.01	0.67	0.38	1.00					
GDS	-0.03	0.32	0.38	0.22	1.00				
GOV	-0.01	0.15	-0.36	0.57	0.05	1.00			
LnCPI	-0.12	-0.05	-0.08	0.11	0.05	0.14	1.00		
LnREER	-0.03	-0.05	-0.02	0.13	0.21	0.06	0.24	1.00	

Note: GDPPC: Gross Domestic Product Constant 2010 USD; DINET: Net Direct Investment; PIEQUITY: Net Portfolio Equity Investment; PIDEBT: Net Portfolio Debt Investment; OI: Net Other Investment; FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; DCP: Domestic Credit to Private Sector; GDS: Gross Domestic Savings; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate.

## APPENDIX 3: EIGEN VALUES, EIGEN VECTORS AND CORRELATIONS OF INSTITUTIONAL COMPONENTS

Eigen Values: (Sum = 6, Average = 1)				Observations: 1,200	
Number	Value	Difference	Proportion	Cumulative Value	Cumulative Proportion
1	4.96	4.23	0.83	4.96	0.83
2	0.73	0.55	0.12	5.69	0.95
3	0.18	0.13	0.03	5.86	0.98
4	0.05	0.01	0.01	5.92	0.99
5	0.05	0.01	0.01	5.96	0.99
6	0.04	–	0.01	6.00	1.00

Eigen Vectors (loadings):						
Variable	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
CC	0.44	-0.15	-0.25	-0.38	0.23	0.73
GE	0.43	-0.21	-0.11	0.30	-0.81	0.07
PSAV	0.41	-0.13	0.87	0.13	0.19	0.03
RL	0.44	0.07	-0.06	-0.66	-0.07	-0.59
RQ	0.43	-0.17	-0.41	0.52	0.50	-0.31
VA	0.27	0.94	-0.01	0.17	-0.02	0.12

Ordinary Correlations:						
	CC	GE	PSAV	RL	RQ	VA
CC	1.00					
GE	0.95	1.00				
PSAV	0.87	0.89	1.00			
RL	0.94	0.93	0.88	1.00		
RQ	0.95	0.95	0.84	0.92	1.00	
VA	0.48	0.44	0.46	0.62	0.46	1.00

Note: CC: Control of Corruption; GE: Government Effectiveness; VA: Voice and Accountability; PSAV: Political Stability and Absence of Violence and Terrorism; RL: Rule of Law; RQ: Regulatory Quality.

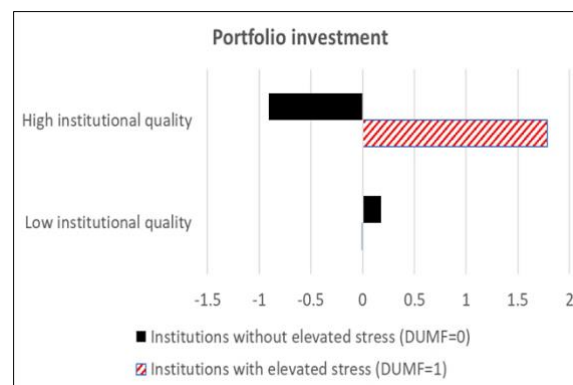
## APPENDIX 4: ESTIMATION RESULTS FOR NET PORTFOLIO FLOWS

Table A4.1: Estimation Results for Net Portfolio Flows

Dependent Variable	Portfolio Investment Ratio to GDP (PI)					
Groups	Full Sample		High Institutions		Low Institutions	
Variables	(1)	(2)	(3)	(4)	(5)	(6)
DUMF	0.008 (0.055)	-0.214 (0.149)	0.051 (0.078)	-1.965*** (0.587)	-0.028*** (0.008)	0.024 (0.023)
H1: INS(-1)	-1.849*** (0.430)	-1.862*** (0.430)	-0.531 (0.749)	-0.911 (0.748)	0.158*** (0.059)	0.176*** (0.059)
H2: DUMF×INS(-1)		0.371 (0.232)		2.697*** (0.779)		-0.179** (0.073)
TRD(-1)	-0.101** (0.043)	-0.101** (0.043)	0.120** (0.054)	0.128** (0.054)	0.005 (0.019)	0.009 (0.019)
GDS(-1)	1.296*** (0.374)	1.312*** (0.373)	-0.856 (0.549)	-0.650 (0.546)	0.064 (0.066)	0.077 (0.066)
DCP(-1)	-0.714*** (0.069)	-0.705*** (0.069)	0.038 (0.120)	0.075 (0.119)	0.078*** (0.013)	0.073*** (0.013)
GOV(-1)	6.946*** (1.170)	6.931*** (1.169)	7.269*** (1.755)	6.465*** (1.749)	-0.302 (0.189)	-0.274 (0.189)
LnCPI(-1)	-0.213*** (0.052)	-0.214*** (0.052)	-2.321*** (0.184)	-2.292*** (0.182)	0.028*** (0.005)	0.028*** (0.005)
LnREER(-1)	0.141 (0.124)	0.115 (0.125)	0.051 (0.195)	-0.158 (0.202)	-0.035* (0.021)	-0.032 (0.021)
Constant	0.613 (0.589)	0.730 (0.593)	9.140*** (1.092)	10.215*** (1.122)	0.066 (0.094)	0.037 (0.094)
Observations	898	898	445	445	453	453
Adj. r-squared	0.268	0.270	0.521	0.533	0.267	0.277
Number of CS	12	12	5	5	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test		9.45***		3.20*		0.00
Prob.		0.002		0.074		0.977

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Standard errors in parentheses. FSI: Financial Stress Index; INS: Institutional Index; TRD: Trade; GDS: Gross Domestic Savings; DCP: Domestic Credit to Private Sector; GOV: General Government Final Consumption Expenditure, all are ratios to GDP; LnCPI: Log of Consumer Price Index; LnREER: Log of Real Effective Exchange Rate; CS: Cross-Sections.

Figure A4.1: Total Marginal Effect of Institutions on Net Portfolio Flows



Note: The figures report the total (significant) marginal effects from the regression analysis, computed as  $d(y)/d(INS)=b_1(DUMF)+b_2(INS)+b_3(DUMF*INS)$  differentiated with respect to INS. DUMF: Dummy of Financial Stress Index.

Source: Authors' Calculations.

## APPENDIX 5: ESTIMATION RESULTS FOR GDP PER CAPITA (LnGDPPPC)

Table A5.1: Full Sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.072*** (0.015)	-0.055*** (0.013)	-0.075*** (0.015)	-0.080*** (0.014)	-0.064*** (0.015)	-0.070*** (0.015)	0.200*** (0.074)	0.370*** (0.078)	0.171 (0.140)	0.137*** (0.062)	0.224** (0.099)	0.293*** (0.092)
CC(-1)	2.166*** (0.266)						2.179*** (0.264)					
GE(-1)		3.515*** (0.191)						3.618*** (0.189)				
VA(-1)			0.064 (0.248)						0.053 (0.247)			
PSAV(-1)				1.262*** (0.109)						1.268*** (0.109)		
RL(-1)					2.359*** (0.243)						2.328*** (0.243)	
RQ(-1)						1.560*** (0.229)						1.598*** (0.227)
DUMFxCC(-1)							-0.488*** (0.130)					
DUMF×GE(-1)								-0.735*** (0.133)				
DUMF×VA(-1)									-0.472* (0.266)			
DUMF×PSAV(-1)										-0.433*** (0.119)		
DUMF×RL(-1)											-0.516*** (0.175)	
DUMF×RQ(-1)												-0.641*** (0.161)
TRD(-1)	-0.084*** (0.013)	-0.107*** (0.012)	-0.059*** (0.014)	-0.052*** (0.013)	-0.090*** (0.013)	-0.056*** (0.013)	-0.087*** (0.013)	-0.112*** (0.012)	-0.059*** (0.014)	-0.054*** (0.013)	-0.091*** (0.013)	-0.059*** (0.013)
GDS(-1)	1.084*** (0.117)	0.646*** (0.106)	1.026*** (0.127)	0.701*** (0.116)	1.147*** (0.116)	1.066*** (0.118)	1.056*** (0.116)	0.603*** (0.105)	1.022*** (0.127)	0.684*** (0.116)	1.128*** (0.116)	1.032*** (0.117)
DCP(-1)	0.306*** (0.021)	0.242*** (0.019)	0.294*** (0.022)	0.274*** (0.021)	0.235*** (0.022)	0.258*** (0.022)	0.301*** (0.021)	0.235*** (0.019)	0.294*** (0.022)	0.270*** (0.021)	0.233*** (0.022)	0.251*** (0.022)
GOV(-1)	1.125*** (0.276)	0.408 (0.248)	1.705*** (0.275)	1.785*** (0.258)	1.103*** (0.270)	1.333*** (0.274)	1.036*** (0.275)	0.269 (0.246)	1.676*** (0.275)	1.720*** (0.257)	1.043*** (0.270)	1.251*** (0.273)
LnGPI(-1)	0.535*** (0.012)	0.494*** (0.011)	0.541*** (0.013)	0.567*** (0.012)	0.562*** (0.012)	0.538*** (0.012)	0.538*** (0.012)	0.497*** (0.011)	0.541*** (0.013)	0.567*** (0.012)	0.564*** (0.012)	0.540*** (0.012)
LnREER(-1)	0.052 (0.036)	0.088*** (0.033)	0.054 (0.038)	-0.064* (0.037)	0.049 (0.036)	0.093** (0.037)	0.060 (0.036)	0.097*** (0.032)	0.055 (0.038)	-0.055 (0.037)	0.054 (0.036)	0.102*** (0.037)
Constant	4.394*** (0.210)	3.887*** (0.171)	5.400*** (0.205)	5.351*** (0.162)	4.213*** (0.207)	4.474*** (0.219)	4.367*** (0.209)	3.819*** (0.169)	5.400*** (0.204)	5.323*** (0.161)	4.217*** (0.206)	4.433*** (0.218)
Observations	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016	1,016
Adjusted R-squared	0.779	0.824	0.764	0.792	0.784	0.775	0.782	0.829	0.764	0.794	0.786	0.778
Number of CS	12	12	12	12	12	12	12	12	12	12	12	12
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							33.25***	171.16***	1.30	27.22***	35.17***	12.30***
Prob							0.000	0.000	0.255	0.000	0.000	0.001

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A5.2: High Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.098*** (0.013)	-0.096*** (0.013)	-0.099*** (0.013)	-0.092*** (0.011)	-0.085*** (0.012)	-0.095*** (0.013)	-0.046 (0.121)	0.006 (0.140)	-0.461*** (0.150)	-0.653*** (0.207)	-0.669** (0.267)	0.156 (0.119)
CC(-1)	0.214 (0.264)						0.223 (0.265)					
GE(-1)		0.712*** (0.226)						0.783*** (0.246)				
VA(-1)			0.281 (0.245)						0.299 (0.244)			
PSAV(-1)				1.620*** (0.163)						1.607*** (0.162)		
RL(-1)					1.626*** (0.291)						1.606*** (0.290)	
RQ(-1)						0.327 (0.204)						0.475** (0.215)
DUMF×CC(-1)							-0.081 (0.188)					
DUMF×GE(-1)								-0.156 (0.214)				
DUMF×VA(-1)									0.663** (0.274)			
DUMF×PSAV(-1)										0.945*** (0.349)		
DUMF×RL(-1)											0.937** (0.427)	
DUMF×RQ(-1)												-0.399** (0.188)
TRD(-1)	-0.078*** (0.010)	-0.087*** (0.010)	-0.078*** (0.010)	-0.079*** (0.009)	-0.084*** (0.009)	-0.073*** (0.009)	-0.078*** (0.010)	-0.088*** (0.010)	-0.077*** (0.010)	-0.079*** (0.008)	-0.083*** (0.009)	-0.072*** (0.009)
GDS(-1)	1.059*** (0.096)	0.957*** (0.101)	1.097*** (0.102)	0.713*** (0.094)	0.889*** (0.098)	1.052*** (0.096)	1.055*** (0.097)	0.940*** (0.103)	1.094*** (0.101)	0.733*** (0.094)	0.906*** (0.098)	1.029*** (0.096)
DCP(-1)	-0.134*** (0.020)	-0.124*** (0.020)	-0.135*** (0.020)	-0.102*** (0.018)	-0.121*** (0.019)	-0.138*** (0.020)	-0.134*** (0.020)	-0.124*** (0.020)	-0.133*** (0.020)	-0.096*** (0.018)	-0.114*** (0.020)	-0.141*** (0.020)
GOV(-1)	2.112*** (0.327)	1.708*** (0.335)	2.237*** (0.295)	2.094*** (0.268)	2.080*** (0.287)	2.056*** (0.314)	2.129*** (0.330)	1.697*** (0.336)	2.268*** (0.294)	2.001*** (0.269)	1.990*** (0.289)	2.078*** (0.313)
LnCPI(-1)	1.155*** (0.029)	1.114*** (0.031)	1.155*** (0.029)	1.143*** (0.026)	1.023*** (0.037)	1.142*** (0.030)	1.155*** (0.029)	1.109*** (0.032)	1.150*** (0.029)	1.141*** (0.026)	1.020*** (0.036)	1.134*** (0.030)
LnREER(-1)	-0.147*** (0.036)	-0.129*** (0.036)	-0.155*** (0.037)	-0.203*** (0.033)	-0.106*** (0.035)	-0.140*** (0.036)	-0.143*** (0.037)	-0.121*** (0.037)	-0.160*** (0.036)	-0.230*** (0.034)	-0.127*** (0.037)	-0.123*** (0.037)
Constant	5.146*** (0.240)	5.013*** (0.209)	5.137*** (0.222)	4.736*** (0.185)	4.742*** (0.211)	5.107*** (0.217)	5.124*** (0.245)	4.963*** (0.219)	5.162*** (0.221)	4.875*** (0.191)	4.860*** (0.217)	4.979*** (0.224)
Observations	471	471	471	471	471	471	471	471	471	471	471	471
Adjusted R-squared	0.874	0.877	0.874	0.896	0.882	0.875	0.874	0.876	0.876	0.898	0.883	0.876
Number of CS	5	5	5	5	5	5	5	5	5	5	5	5
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							0.20	6.08**	6.68**	45.00***	24.97***	0.10
Prob							0.652	0.014	0.010	0.000	0.000	0.747

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A5.3: Low Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.018 (0.016)	-0.029* (0.015)	-0.015 (0.017)	-0.013 (0.017)	-0.013 (0.017)	-0.018 (0.017)	0.296 (0.232)	0.232 (0.212)	0.376** (0.149)	0.142 (0.087)	0.113 (0.189)	0.095 (0.238)
CC(-1)	1.260*** (0.279)						1.315*** (0.282)					
GE(-1)		2.712*** (0.240)						2.764*** (0.244)				
VA(-1)			-0.136 (0.230)						-0.147 (0.228)			
PSAV(-1)				-0.126 (0.099)						-0.066 (0.104)		
RL(-1)					-0.651** (0.282)						-0.608** (0.290)	
RQ(-1)						0.408 (0.285)						0.416 (0.286)
DUMFxCC(-1)							-0.715 (0.526)					
DUMF×GE(-1)								-0.546 (0.441)				
DUMF×VA(-1)									-0.806*** (0.306)			
DUMF×PSAV(-1)										-0.420* (0.230)		
DUMF×RL(-1)											-0.270 (0.404)	
DUMF×RQ(-1)												-0.237 (0.496)
TRD(-1)	-0.221*** (0.037)	-0.086** (0.036)	-0.202*** (0.040)	-0.214*** (0.038)	-0.208*** (0.038)	-0.223*** (0.039)	-0.206*** (0.039)	-0.075** (0.037)	-0.178*** (0.041)	-0.191*** (0.040)	-0.200*** (0.039)	-0.216*** (0.041)
GDS(-1)	1.445*** (0.154)	1.073*** (0.135)	1.206*** (0.159)	1.265*** (0.151)	1.092*** (0.162)	1.291*** (0.154)	1.437*** (0.154)	1.067*** (0.135)	1.195*** (0.158)	1.251*** (0.151)	1.098*** (0.162)	1.281*** (0.155)
DCP(-1)	0.826*** (0.034)	0.744*** (0.032)	0.870*** (0.033)	0.885*** (0.035)	0.894*** (0.035)	0.863*** (0.034)	0.823*** (0.034)	0.738*** (0.032)	0.875*** (0.033)	0.876*** (0.035)	0.892*** (0.035)	0.862*** (0.034)
GOV(-1)	-0.053 (0.268)	-0.051 (0.245)	-0.127 (0.273)	-0.176 (0.276)	-0.103 (0.272)	-0.081 (0.274)	-0.041 (0.268)	-0.041 (0.245)	-0.104 (0.272)	-0.097 (0.279)	-0.092 (0.272)	-0.084 (0.274)
LnCPI(-1)	0.440*** (0.009)	0.431*** (0.009)	0.436*** (0.010)	0.432*** (0.010)	0.425*** (0.011)	0.439*** (0.010)	0.440*** (0.009)	0.432*** (0.009)	0.435*** (0.010)	0.432*** (0.010)	0.425*** (0.011)	0.439*** (0.010)
LnREER(-1)	0.150*** (0.043)	0.153*** (0.039)	0.166*** (0.044)	0.178*** (0.045)	0.175*** (0.044)	0.154*** (0.044)	0.156*** (0.043)	0.158*** (0.039)	0.176*** (0.044)	0.188*** (0.046)	0.178*** (0.044)	0.158*** (0.044)
Constant	3.773*** (0.227)	3.096*** (0.205)	4.378*** (0.208)	4.317*** (0.193)	4.651*** (0.237)	4.155*** (0.229)	3.713*** (0.231)	3.045*** (0.209)	4.327*** (0.208)	4.233*** (0.198)	4.608*** (0.245)	4.133*** (0.234)
Observations	545	545	545	545	545	545	545	545	545	545	545	545
Adjusted R-squared	0.914	0.928	0.911	0.911	0.912	0.911	0.914	0.928	0.912	0.911	0.9125	0.911
Number of CS	7	7	7	7	7	7	7	7	7	7	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							1.15	22.69***	6.14**	4.85**	3.95**	0.10
Prob							0.284	0.000	0.014	0.028	0.047	0.748

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

## APPENDIX 6: ESTIMATION RESULTS FOR NET DIRECT INVESTMENT (DI)

Table A6.1: Full Sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.015 (0.021)	-0.014 (0.021)	-0.013 (0.021)	-0.014 (0.021)	-0.008 (0.021)	0.021 (0.021)	0.274** (0.118)	0.300** (0.139)	0.046 (0.188)	0.145* (0.085)	0.303** (0.149)	0.347** (0.141)
CC(-1)	-0.123 (0.350)						-0.104 (0.349)					
GE(-1)		0.112 (0.276)						0.183 (0.277)				
VA(-1)			1.064*** (0.322)						1.065*** (0.322)			
PSAV(-1)				0.269 (0.189)						0.309 (0.189)		
RL(-1)					1.010*** (0.337)						1.028*** (0.336)	
RQ(-1)						2.965*** (0.315)						2.955*** (0.314)
DUMFxCC(-1)							-0.511** (0.206)					
DUMF×GE(-1)								-0.536** (0.235)				
DUMF×VA(-1)									-0.109 (0.349)			
DUMF×PSAV(-1)										-0.313* (0.161)		
DUMF×RL(-1)											-0.542** (0.257)	
DUMF×RQ(-1)												-0.581** (0.249)
TRD(-1)	-0.148*** (0.017)	-0.151*** (0.017)	-0.164*** (0.017)	-0.148*** (0.016)	-0.158*** (0.017)	-0.151*** (0.016)	-0.148*** (0.017)	-0.152*** (0.017)	-0.164*** (0.017)	-0.149*** (0.016)	-0.159*** (0.017)	-0.150*** (0.016)
GDS(-1)	0.990*** (0.148)	0.980*** (0.150)	1.152*** (0.154)	0.934*** (0.153)	1.034*** (0.147)	0.992*** (0.140)	0.976*** (0.147)	0.960*** (0.150)	1.154*** (0.154)	0.921*** (0.153)	1.031*** (0.147)	0.976*** (0.140)
DCP(-1)	0.108*** (0.028)	0.108*** (0.027)	0.121*** (0.027)	0.109*** (0.027)	0.089*** (0.028)	0.069*** (0.026)	0.102*** (0.028)	0.102*** (0.027)	0.121*** (0.027)	0.105*** (0.027)	0.085*** (0.028)	0.062** (0.026)
GOV(-1)	-1.997*** (0.469)	-2.128*** (0.468)	-1.984*** (0.434)	-2.112*** (0.437)	-2.234*** (0.437)	-3.475*** (0.442)	-1.976*** (0.467)	-2.132*** (0.467)	-1.987*** (0.434)	-2.131*** (0.436)	-2.233*** (0.437)	-3.432*** (0.441)
LnGPI(-1)	0.047** (0.021)	0.045** (0.021)	0.041** (0.021)	0.049** (0.021)	0.046** (0.020)	0.015 (0.020)	0.047** (0.021)	0.045** (0.021)	0.041** (0.021)	0.050** (0.021)	0.047** (0.020)	0.016 (0.020)
LnREER(-1)	0.176*** (0.049)	0.175*** (0.049)	0.155*** (0.049)	0.161*** (0.050)	0.174*** (0.049)	0.262*** (0.048)	0.194*** (0.049)	0.190*** (0.049)	0.156*** (0.049)	0.170*** (0.050)	0.187*** (0.049)	0.276*** (0.048)
Constant	-0.793*** (0.270)	-0.890*** (0.255)	-1.310*** (0.268)	-0.896*** (0.232)	-1.352*** (0.284)	-2.520*** (0.282)	-0.877*** (0.271)	-0.984*** (0.258)	-1.316*** (0.269)	-0.951*** (0.233)	-1.415*** (0.285)	-2.576*** (0.282)
Observations	898	898	898	898	898	898	898	898	898	898	898	898
Adjusted R-squared	0.189	0.189	0.190	0.191	0.197	0.263	0.194	0.193	0.198	0.193	0.200	0.267
Number of CS	12	12	12	12	12	12	12	12	12	12	12	12
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							2.35	1.06	4.07**	0.00	1.35	34.59***
Prob							0.1259	0.3038	0.0439	0.9858	0.2458	0.0000

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A6.2: High Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.028 (0.033)	-0.012 (0.033)	-0.031 (0.033)	-0.044 (0.032)	-0.023 (0.034)	0.039 (0.033)	0.829** (0.327)	1.258*** (0.359)	-0.239 (0.433)	1.527** (0.607)	2.295*** (0.785)	1.175*** (0.326)
CC(-1)	1.781*** (0.645)						1.901*** (0.642)					
GE(-1)		2.387*** (0.553)						3.137*** (0.586)				
VA(-1)			1.005* (0.605)						0.983 (0.607)			
PSAV(-1)				2.497*** (0.433)						2.466*** (0.430)		
RL(-1)					1.707** (0.751)						1.807** (0.745)	
RQ(-1)						3.960*** (0.521)						4.315*** (0.524)
DUMFxCC(-1)							-1.365*** (0.518)					
DUMFxGE(-1)								-1.990*** (0.561)				
DUMFxVA(-1)									0.372 (0.772)			
DUMFxPSAV(-1)										-2.632*** (1.016)		
DUMFxRL(-1)											-3.705*** (1.253)	
DUMFxRQ(-1)												-1.865*** (0.532)
TRD(-1)	-0.232*** (0.024)	-0.253*** (0.024)	-0.220*** (0.024)	-0.217*** (0.022)	-0.218*** (0.023)	-0.186*** (0.022)	-0.234*** (0.024)	-0.264*** (0.024)	-0.219*** (0.024)	-0.218*** (0.022)	-0.220*** (0.023)	-0.182*** (0.021)
GDS(-1)	1.825*** (0.232)	1.413*** (0.245)	1.908*** (0.244)	1.233*** (0.245)	1.634*** (0.242)	1.646*** (0.220)	1.778*** (0.231)	1.227*** (0.247)	1.900*** (0.245)	1.213*** (0.243)	1.596*** (0.240)	1.572*** (0.218)
DCP(-1)	0.112** (0.053)	0.119** (0.051)	0.076 (0.051)	0.082* (0.049)	0.073 (0.051)	0.106** (0.048)	0.097* (0.053)	0.118** (0.051)	0.074 (0.051)	0.074 (0.049)	0.058 (0.050)	0.084* (0.048)
GOV(-1)	-3.563*** (0.791)	-4.354*** (0.807)	-2.520*** (0.699)	-2.563*** (0.676)	-2.622*** (0.698)	-4.871*** (0.727)	-3.288*** (0.792)	-4.428*** (0.797)	-2.505*** (0.700)	-2.302*** (0.679)	-2.267*** (0.702)	-4.636*** (0.721)
LnCPI(-1)	0.306*** (0.072)	0.171** (0.079)	0.319*** (0.072)	0.358*** (0.069)	0.206** (0.090)	0.085 (0.075)	0.308*** (0.071)	0.123 (0.079)	0.319*** (0.072)	0.354*** (0.069)	0.204** (0.089)	0.073 (0.074)
LnREER(-1)	0.281*** (0.085)	0.357*** (0.085)	0.268*** (0.087)	0.220*** (0.083)	0.336*** (0.087)	0.377*** (0.081)	0.341*** (0.087)	0.445*** (0.087)	0.267*** (0.087)	0.293*** (0.087)	0.414*** (0.090)	0.443*** (0.082)
Constant	-3.501*** (0.557)	-3.399*** (0.495)	-3.081*** (0.532)	-3.712*** (0.492)	-3.288*** (0.543)	-4.161*** (0.488)	-3.859*** (0.570)	-3.969*** (0.514)	-3.066*** (0.533)	-4.027*** (0.504)	-3.709*** (0.557)	-4.615*** (0.498)
Observations	445	445	445	445	445	445	445	445	445	445	445	445
Adjusted R-squared	0.339	0.355	0.332	0.376	0.336	0.407	0.348	0.372	0.331	0.384	0.347	0.422
Number of CS	5	5	5	5	5	5	5	5	5	5	5	5
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							0.45	3.13*	2.05	0.02	1.76	13.34***
Prob							0.5007	0.0777	0.1529	0.8817	0.1849	0.0003

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A6.3: Low Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	0.000 (0.008)	0.001 (0.008)	0.000 (0.008)	-0.002 (0.008)	-0.002 (0.007)	-0.001 (0.008)	0.307*** (0.118)	0.205** (0.090)	0.103 (0.066)	0.091** (0.040)	0.147* (0.081)	0.390*** (0.130)
CC(-1)	-0.103 (0.113)						-0.075 (0.112)					
GE(-1)		-0.349*** (0.105)						-0.309*** (0.106)				
VA(-1)			0.054 (0.097)						0.061 (0.097)			
PSAV(-1)				-0.119** (0.051)						-0.105** (0.051)		
RL(-1)					-0.779*** (0.121)						-0.744*** (0.122)	
RQ(-1)						0.296** (0.138)						0.302*** (0.137)
DUMF×CC(-1)							-0.698*** (0.269)					
DUMF×GE(-1)								-0.425** (0.187)				
DUMF×VA(-1)									-0.213 (0.137)			
DUMF×PSAV(-1)										-0.282** (0.118)		
DUMF×RL(-1)											-0.320* (0.174)	
DUMF×RQ(-1)												-0.832*** (0.276)
TRD(-1)	0.188*** (0.019)	0.173*** (0.019)	0.187*** (0.020)	0.182*** (0.019)	0.140*** (0.020)	0.188*** (0.019)	0.193*** (0.019)	0.179*** (0.020)	0.187*** (0.020)	0.187*** (0.019)	0.145*** (0.020)	0.193*** (0.019)
GDS(-1)	0.001 (0.067)	0.010 (0.066)	0.024 (0.072)	0.032 (0.067)	-0.085 (0.065)	0.018 (0.066)	0.013 (0.067)	0.014 (0.065)	0.040 (0.073)	0.039 (0.067)	-0.069 (0.066)	0.008 (0.066)
DCP(-1)	-0.115*** (0.013)	-0.100*** (0.014)	-0.117*** (0.013)	-0.108*** (0.013)	-0.101*** (0.013)	-0.118*** (0.013)	-0.119*** (0.013)	-0.106*** (0.014)	-0.117*** (0.013)	-0.112*** (0.013)	-0.103*** (0.013)	-0.124*** (0.013)
GOV(-1)	0.691*** (0.192)	0.545*** (0.195)	0.704*** (0.193)	0.713*** (0.192)	0.601*** (0.185)	0.633*** (0.194)	0.722*** (0.192)	0.569*** (0.195)	0.738*** (0.194)	0.738*** (0.191)	0.637*** (0.185)	0.596*** (0.192)
LnCPI(-1)	0.013** (0.005)	0.015*** (0.005)	0.012** (0.005)	0.011** (0.005)	0.009* (0.005)	0.011** (0.005)	0.013** (0.005)	0.015*** (0.005)	0.012** (0.005)	0.012** (0.005)	0.009* (0.005)	0.012** (0.005)
LnREER(-1)	0.006 (0.021)	0.014 (0.021)	0.002 (0.021)	0.002 (0.021)	-0.005 (0.020)	0.004 (0.021)	0.009 (0.021)	0.017 (0.021)	0.002 (0.021)	0.005 (0.021)	-0.003 (0.021)	0.012 (0.021)
Constant	-0.024 (0.104)	0.070 (0.101)	-0.084 (0.100)	-0.013 (0.096)	0.416*** (0.117)	-0.192* (0.111)	-0.059 (0.104)	0.031 (0.102)	-0.093 (0.100)	-0.043 (0.096)	0.377*** (0.118)	-0.227** (0.110)
Observations	453	453	453	453	453	453	453	453	453	453	453	453
Adjusted R-squared	0.377	0.391	0.376	0.383	0.430	0.382	0.385	0.397	0.378	0.390	0.433	0.394
Number of CS	7	7	7	7	7	7	7	7	7	7	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F3: F-test							7.56***	13.63***	0.87	9.86***	29.39***	2.99*
Prob							0.0062	0.0003	0.3516	0.0018	0.0000	0.0842

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

# APPENDIX 7: ESTIMATION RESULTS FOR NET PORTFOLIO EQUITY INVESTMENT (PIEQUITY)

Table A7.1: Full Sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	0.022 (0.036)	0.013 (0.036)	0.025 (0.036)	0.024 (0.036)	-0.022 (0.033)	-0.005 (0.036)	-0.371* (0.200)	-0.554** (0.234)	0.278 (0.316)	-0.044 (0.142)	-0.382 (0.233)	-0.496** (0.248)
CC(-1)	0.222 (0.590)						0.196 (0.590)					
GE(-1)		-1.110** (0.464)						-1.238*** (0.466)				
VA(-1)			1.972*** (0.543)						1.976*** (0.543)			
PSAV(-1)				1.191*** (0.316)						1.174*** (0.318)		
RL(-1)					-6.503*** (0.527)						-6.523*** (0.527)	
RQ(-1)						-2.171*** (0.552)						-2.156*** (0.551)
DUMFxCC(-1)							0.695** (0.347)					
DUMFxGE(-1)								0.968** (0.395)				
DUMFxVA(-1)									-0.474 (0.588)			
DUMFxPSAV(-1)										0.134 (0.270)		
DUMFxRL(-1)											0.628 (0.403)	
DUMFxRQ(-1)												0.876** (0.438)
TRD(-1)	0.000 (0.029)	0.024 (0.029)	-0.025 (0.029)	0.006 (0.028)	0.061** (0.026)	0.004 (0.028)	0.000 (0.029)	0.025 (0.029)	-0.026 (0.029)	0.006 (0.028)	0.062** (0.026)	0.002 (0.027)
GDS(-1)	1.180*** (0.249)	1.296*** (0.253)	1.472*** (0.260)	0.920*** (0.256)	0.907*** (0.230)	1.176*** (0.246)	1.198*** (0.249)	1.332*** (0.252)	1.481*** (0.260)	0.925*** (0.256)	0.911*** (0.230)	1.200*** (0.246)
DCP(-1)	-0.614*** (0.046)	-0.605*** (0.046)	-0.595*** (0.046)	-0.619*** (0.045)	-0.484*** (0.044)	-0.588*** (0.046)	-0.606*** (0.047)	-0.594*** (0.046)	-0.595*** (0.046)	-0.617*** (0.045)	-0.479*** (0.044)	-0.577*** (0.046)
GOV(-1)	4.946*** (0.790)	5.743*** (0.787)	5.192*** (0.730)	4.814*** (0.732)	6.189*** (0.684)	6.093*** (0.775)	4.917*** (0.789)	5.751*** (0.784)	5.178*** (0.731)	4.822*** (0.732)	6.187*** (0.684)	6.027*** (0.774)
LnCPI(-1)	-0.169*** (0.035)	-0.157*** (0.035)	-0.179*** (0.035)	-0.159*** (0.034)	-0.167*** (0.032)	-0.146*** (0.035)	-0.169*** (0.035)	-0.156*** (0.035)	-0.179*** (0.035)	-0.160*** (0.035)	-0.168*** (0.032)	-0.146*** (0.035)
LnREER(-1)	0.267*** (0.083)	0.261*** (0.082)	0.233*** (0.082)	0.209*** (0.083)	0.269*** (0.076)	0.205*** (0.083)	0.243*** (0.083)	0.234*** (0.083)	0.238*** (0.083)	0.206*** (0.084)	0.255*** (0.077)	0.184*** (0.084)
Constant	-0.999** (0.455)	-0.451 (0.429)	-1.774*** (0.451)	-1.144*** (0.388)	2.366*** (0.444)	0.320 (0.494)	-0.885* (0.458)	-0.282 (0.434)	-1.798*** (0.452)	-1.120*** (0.391)	2.439*** (0.446)	0.403 (0.495)
Observations	898	898	898	898	898	898	898	898	898	898	898	898
Adjusted R-squared	0.277	0.281	0.287	0.288	0.383	0.289	0.279	0.385	0.287	0.287	0.384	0.291
Number of CS	12	12	12	12	12	12	12	12	12	12	12	12
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							1.73	0.22	3.55*	11.01***	80.85***	3.26*
Prob							0.1891	0.6383	0.0598	0.0009	0.0000	0.0711

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table A7.2: High Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	0.032 (0.050)	0.040 (0.051)	0.053 (0.049)	0.026 (0.050)	-0.008 (0.049)	0.066 (0.052)	-1.690*** (0.495)	-1.780*** (0.555)	1.340** (0.629)	-2.677*** (0.941)	-4.562*** (1.145)	-1.512*** (0.523)
CC(-1)	-0.172 (0.983)						-0.415 (0.973)					
GE(-1)		0.768 (0.853)						-0.306 (0.904)				
VA(-1)			5.136*** (0.883)						5.269*** (0.882)			
PSAV(-1)				1.899*** (0.672)						1.951*** (0.667)		
RL(-1)					-5.983*** (1.104)						-6.179*** (1.087)	
RQ(-1)						1.758** (0.834)						1.265 (0.842)
DUMFxCC(-1)							2.743*** (0.784)					
DUMF×GE(-1)								2.852*** (0.866)				
DUMF×VA(-1)									-2.300** (1.121)			
DUMF×PSAV(-1)										4.531*** (1.575)		
DUMF×RL(-1)											7.280*** (1.828)	
DUMF×RQ(-1)												2.589*** (0.854)
TRD(-1)	0.170*** (0.037)	0.153*** (0.038)	0.110*** (0.034)	0.162*** (0.034)	0.199*** (0.034)	0.178*** (0.034)	0.174*** (0.036)	0.170*** (0.038)	0.104*** (0.034)	0.164*** (0.034)	0.203*** (0.033)	0.172*** (0.034)
GDS(-1)	-0.240 (0.354)	-0.357 (0.377)	0.385 (0.356)	-0.658* (0.380)	0.299 (0.355)	-0.299 (0.352)	-0.144 (0.350)	-0.090 (0.381)	0.437 (0.356)	-0.623* (0.377)	0.373 (0.350)	-0.197 (0.351)
DCP(-1)	-0.113 (0.081)	-0.090 (0.079)	-0.034 (0.075)	-0.093 (0.076)	-0.146* (0.074)	-0.088 (0.077)	-0.082 (0.081)	-0.088 (0.078)	-0.021 (0.075)	-0.079 (0.075)	-0.117 (0.073)	-0.057 (0.077)
GOV(-1)	6.566*** (1.205)	5.876*** (1.244)	6.479*** (1.020)	6.435*** (1.049)	6.814*** (1.027)	5.423*** (1.164)	6.013*** (1.200)	5.982*** (1.230)	6.385*** (1.017)	5.986*** (1.052)	6.116*** (1.025)	5.097*** (1.158)
LnCPI(-1)	-1.569*** (0.109)	-1.623*** (0.122)	-1.635*** (0.105)	-1.551*** (0.107)	-1.132*** (0.132)	-1.681*** (0.119)	-1.575*** (0.108)	-1.554*** (0.123)	-1.640*** (0.104)	-1.546*** (0.107)	-1.129*** (0.130)	-1.664*** (0.118)
LnREER(-1)	0.290** (0.129)	0.308** (0.131)	0.148 (0.127)	0.231* (0.129)	0.147 (0.128)	0.324** (0.129)	0.169 (0.132)	0.182 (0.135)	0.155 (0.126)	0.105 (0.136)	-0.006 (0.131)	0.232* (0.132)
Constant	4.785*** (0.849)	4.475*** (0.762)	2.670*** (0.776)	3.923*** (0.764)	6.828*** (0.798)	4.049*** (0.780)	5.504*** (0.863)	5.291*** (0.794)	2.573*** (0.774)	4.466*** (0.781)	7.654*** (0.812)	4.680*** (0.800)
Observations	445	445	445	445	445	445	445	445	445	445	445	445
Adjusted R-squared	0.529	0.530	0.563	0.538	0.559	0.534	0.541	0.541	0.567	0.545	0.574	0.543
Number of CS	5	5	5	5	5	5	5	5	5	5	5	5
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							3.73*	6.47**	4.66**	14.09***	0.28	12.80***
Prob							0.0541	0.0113	0.0314	0.0002	0.5976	0.0004

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A7.3: Low Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.017** (0.008)	-0.017** (0.008)	-0.017** (0.008)	-0.018** (0.008)	-0.018** (0.008)	-0.017** (0.008)	0.197 (0.122)	0.277*** (0.094)	-0.010 (0.068)	0.071* (0.041)	0.112 (0.087)	0.555*** (0.133)
CC(-1)	-0.210* (0.116)						-0.191 (0.116)					
GE(-1)		0.018 (0.109)						0.075 (0.110)				
VA(-1)			-0.106 (0.100)						-0.106 (0.100)			
PSAV(-1)				-0.052 (0.053)						-0.039 (0.053)		
RL(-1)					-0.322** (0.129)						-0.291** (0.131)	
RQ(-1)						0.096 (0.143)						0.105 (0.140)
DUMFxCC(-1)							-0.487* (0.278)					
DUMF×GE(-1)								-0.613*** (0.194)				
DUMF×VA(-1)												
DUMF×PSAV(-1)									-0.013 (0.141)			
DUMF×RL(-1)										-0.269** (0.123)		
DUMF×RQ(-1)											-0.279 (0.187)	
TRD(-1)	0.052*** (0.020)	0.058*** (0.020)	0.064*** (0.021)	0.053*** (0.020)	0.036* (0.021)	0.056*** (0.020)	0.056*** (0.020)	0.066*** (0.020)	0.064*** (0.021)	0.057*** (0.020)	0.040* (0.021)	-1.218*** (0.283)
GDS(-1)	0.272*** (0.069)	0.287*** (0.069)	0.257*** (0.074)	0.298*** (0.069)	0.249*** (0.070)	0.291*** (0.069)	0.280*** (0.069)	0.294*** (0.068)	0.258*** (0.075)	0.305*** (0.069)	0.263*** (0.070)	0.064*** (0.019)
DCP(-1)	-0.050*** (0.013)	-0.056*** (0.014)	-0.056*** (0.013)	-0.050*** (0.014)	-0.048*** (0.013)	-0.055*** (0.013)	-0.052*** (0.013)	-0.064*** (0.014)	-0.056*** (0.013)	-0.054*** (0.014)	-0.050*** (0.014)	0.275*** (0.068)
GOV(-1)	0.667*** (0.198)	0.679*** (0.204)	0.651*** (0.199)	0.680*** (0.199)	0.633*** (0.198)	0.652*** (0.201)	0.688*** (0.198)	0.714*** (0.202)	0.653*** (0.201)	0.704*** (0.198)	0.665*** (0.199)	-0.064*** (0.013)
LnCPI(-1)	0.015*** (0.005)	0.014*** (0.005)	0.014*** (0.005)	0.013*** (0.005)	0.012*** (0.005)	0.013*** (0.005)	0.015*** (0.005)	0.014*** (0.005)	0.014*** (0.005)	0.014*** (0.005)	0.013** (0.005)	0.598*** (0.197)
LnREER(-1)	0.104*** (0.022)	0.101*** (0.022)	0.105*** (0.022)	0.100*** (0.022)	0.097*** (0.022)	0.101*** (0.022)	0.106*** (0.022)	0.105*** (0.022)	0.105*** (0.022)	0.103*** (0.022)	0.099*** (0.022)	0.015*** (0.005)
Constant	-0.526*** (0.107)	-0.617*** (0.106)	-0.572*** (0.103)	-0.587*** (0.100)	-0.411*** (0.125)	-0.651*** (0.115)	-0.551*** (0.108)	-0.673*** (0.106)	-0.573*** (0.104)	-0.616*** (0.100)	-0.445*** (0.127)	0.112*** (0.022)
Observations	453	453	453	453	453	453	453	453	453	453	453	453
Adjusted R-squared	0.147	0.141	0.143	0.142	0.152	0.141	0.151	0.158	0.141	0.150	0.155	0.174
Number of CS	7	7	7	7	7	7	7	7	7	7	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							5.44** 0.0202	6.77*** 0.0096	0.50 0.4817	5.81** 0.0163	7.32*** 0.0071	12.54*** 0.0004
Prob												

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

# APPENDIX 8: ESTIMATION RESULTS FOR NET PORTFOLIO DEBT INVESTMENT (PIDEBT)

Table A8.1: Full Sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	0.014 (0.022)	0.010 (0.022)	0.018 (0.022)	0.019 (0.022)	-0.010 (0.020)	-0.002 (0.022)	-0.160 (0.121)	-0.264* (0.142)	0.010 (0.194)	-0.075 (0.087)	-0.232* (0.140)	-0.144 (0.151)
CC(-1)	-1.145*** (0.358)						-1.156*** (0.358)					
GE(-1)		-1.128*** (0.281)						-1.190*** (0.283)				
VA(-1)			0.019 (0.333)						0.019 (0.334)			
PSAV(-1)				0.347* (0.194)						0.324* (0.195)		
RL(-1)					-4.329*** (0.316)						-4.341*** (0.316)	
RQ(-1)						-1.693*** (0.335)						-1.688*** (0.335)
DUMFxCC(-1)							0.309 (0.211)					
DUMFxGE(-1)								0.467* (0.240)				
DUMFxVA(-1)									0.016 (0.362)	0.184 (0.166)		
DUMFxPSAV(-1)												
DUMFxRL(-1)											0.387 (0.242)	
DUMFxRQ(-1)												0.253 (0.266)
TRD(-1)	-0.135*** (0.017)	-0.127*** (0.018)	-0.148*** (0.018)	-0.147*** (0.017)	-0.109*** (0.016)	-0.147*** (0.017)	-0.135*** (0.017)	-0.126*** (0.018)	-0.148*** (0.018)	-0.147*** (0.017)	-0.109*** (0.016)	-0.148*** (0.017)
GDS(-1)	0.010 (0.151)	0.156 (0.153)	0.037 (0.160)	-0.041 (0.157)	-0.144 (0.138)	0.034 (0.149)	0.018 (0.151)	0.173 (0.153)	0.037 (0.160)	-0.033 (0.157)	-0.142 (0.138)	0.041 (0.150)
DCP(-1)	-0.139*** (0.028)	-0.110*** (0.028)	-0.123*** (0.028)	-0.123*** (0.028)	-0.034 (0.026)	-0.100*** (0.028)	-0.135*** (0.028)	-0.105*** (0.028)	-0.123*** (0.028)	-0.121*** (0.028)	-0.031 (0.026)	-0.097*** (0.028)
GOV(-1)	0.774 (0.479)	0.908* (0.477)	0.211 (0.449)	0.139 (0.449)	0.964** (0.410)	1.019** (0.470)	0.761 (0.479)	0.913* (0.476)	0.211 (0.449)	0.150 (0.449)	0.963** (0.410)	1.000** (0.470)
LnCPI(-1)	-0.061*** (0.021)	-0.053*** (0.021)	-0.065*** (0.021)	-0.062*** (0.021)	-0.063*** (0.019)	-0.047** (0.021)	-0.060*** (0.021)	-0.053** (0.021)	-0.065*** (0.021)	-0.062*** (0.021)	-0.064*** (0.019)	-0.047** (0.021)
LnREER(-1)	-0.139*** (0.050)	-0.161*** (0.050)	-0.153*** (0.051)	-0.171*** (0.051)	-0.154*** (0.046)	-0.203*** (0.051)	-0.150*** (0.051)	-0.174*** (0.050)	-0.153*** (0.051)	-0.176*** (0.051)	-0.162*** (0.046)	-0.209*** (0.051)
Constant	1.522*** (0.276)	1.520*** (0.260)	1.047*** (0.277)	0.987*** (0.238)	3.235*** (0.266)	2.013*** (0.299)	1.573*** (0.278)	1.602*** (0.263)	1.048*** (0.278)	1.019*** (0.240)	3.280*** (0.268)	2.037*** (0.301)
Observations	898	898	898	898	898	898	898	898	898	898	898	898
Adjusted R-squared	0.192		0.182	0.185	0.326	0.205	0.193	0.199	0.181	0.185	0.327	0.205
Number of CS	12	12	12	12	12	12	12	12	12	12	12	12
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F3: F-test							4.25**	4.28**	0.01	4.41**	101.22***	11.12***
Prob							0.0395	0.0387	0.9435	0.0360	0.0000	0.0009

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table A8.2: High Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	0.015 (0.032)	0.019 (0.033)	0.028 (0.032)	0.028 (0.032)	-0.018 (0.029)	0.030 (0.034)	-0.710** (0.311)	-0.914** (0.358)	0.355 (0.422)	-1.593*** (0.611)	-1.960*** (0.690)	-0.439 (0.341)
CC(-1)	-3.163*** (0.614)						-3.265*** (0.612)					
GE(-1)		-0.965* (0.547)						-1.515*** (0.583)				
VA(-1)			0.083 (0.590)						0.117 (0.592)			
PSAV(-1)				-0.140 (0.436)						-0.108 (0.433)		
RL(-1)					-6.684*** (0.660)						-6.768*** (0.655)	-0.035 (0.549)
RQ(-1)						0.111 (0.539)						
DUMF×CC(-1)							1.155** (0.493)					
DUMF×GE(-1)								1.462*** (0.558)				
DUMF×VA(-1)									-0.584 (0.752)			
DUMF×PSAV(-1)										2.718*** (1.023)		
DUMF×RL(-1)											3.105*** (1.102)	0.771 (0.556)
DUMF×RQ(-1)												-0.060*** (0.022)
TRD(-1)	-0.017 (0.023)	-0.041* (0.024)	-0.060*** (0.023)	-0.058*** (0.022)	-0.024 (0.020)	-0.058*** (0.022)	-0.015 (0.023)	-0.033 (0.024)	-0.061*** (0.023)	-0.057** (0.022)	-0.022 (0.020)	-0.684*** (0.229)
GDS(-1)	-0.780*** (0.221)	-0.560*** (0.242)	-0.701*** (0.238)	-0.680*** (0.247)	-0.113 (0.212)	-0.715*** (0.228)	-0.739*** (0.220)	-0.423* (0.246)	-0.688*** (0.239)	-0.659*** (0.245)	-0.081 (0.211)	0.179*** (0.050)
DCP(-1)	0.080 (0.051)	0.145*** (0.051)	0.169*** (0.050)	0.167*** (0.049)	0.126*** (0.044)	0.169*** (0.049)	0.093* (0.051)	0.146*** (0.050)	0.173*** (0.050)	0.175*** (0.049)	0.138*** (0.044)	0.133 (0.050)
GOV(-1)	2.144*** (0.752)	1.036 (0.798)	0.296 (0.681)	0.298 (0.681)	0.685 (0.613)	0.230 (0.752)	1.911** (0.755)	1.090 (0.793)	0.272 (0.682)	0.029 (0.684)	0.387 (0.617)	0.179*** (0.755)
LnCPI(-1)	-0.764*** (0.068)	-0.745*** (0.078)	-0.810*** (0.070)	-0.811*** (0.070)	-0.319*** (0.079)	-0.816*** (0.077)	-0.767*** (0.068)	-0.709*** (0.079)	-0.812*** (0.070)	-0.808*** (0.069)	-0.317*** (0.078)	-0.811*** (0.077)
LnREER(-1)	-0.204** (0.081)	-0.255*** (0.084)	-0.233*** (0.085)	-0.226*** (0.084)	-0.389*** (0.076)	-0.228*** (0.084)	-0.255*** (0.083)	-0.320*** (0.087)	-0.231*** (0.085)	-0.302*** (0.088)	-0.454*** (0.079)	-0.256*** (0.086)
Constant	5.824*** (0.530)	4.660*** (0.489)	4.338*** (0.518)	4.428*** (0.496)	6.741*** (0.477)	4.329*** (0.504)	6.127*** (0.543)	5.079*** (0.511)	4.313*** (0.519)	4.754*** (0.508)	7.094*** (0.489)	4.517*** (0.522)
Observations	445	445	445	445	445	445	445	445	445	445	445	445
Adjusted R-squared	0.436	0.405	0.401	0.401	0.517	0.401	0.442	0.413	0.400	0.409	0.524	0.402
Number of CS	5	5	5	5	5	5	5	5	5	5	5	5
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F3: F-test							7.75***	0.01	0.26	5.41**	8.51***	1.10
Prob							0.0056	0.9339	0.6128	0.0205	0.0037	0.2954

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A8.3: Low Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.012* (0.007)	-0.013* (0.007)	-0.013* (0.007)	-0.012* (0.007)	-0.010 (0.007)	-0.013* (0.007)	-0.001 (0.103)	-0.018 (0.081)	-0.016 (0.057)	-0.031 (0.036)	0.026 (0.072)	-0.036 (0.117)
CC(-1)	0.497*** (0.097)						0.498*** (0.098)					
GE(-1)		0.209** (0.094)						0.208** (0.095)				
VA(-1)			0.456*** (0.083)						0.456*** (0.083)			
PSAV(-1)				0.012 (0.046)						0.010 (0.046)		
RL(-1)					0.755*** (0.107)						0.764*** (0.108)	
RQ(-1)						0.163 (0.123)						0.163 (0.124)
DUMFxCC(-1)							-0.026 (0.235)					
DUMF×GE(-1)								0.012 (0.169)				
DUMF×VA(-1)									0.006 (0.118)			
DUMF×PSAV(-1)										0.057 (0.106)		
DUMF×RL(-1)											-0.078 (0.154)	
DUMF×RQ(-1)												0.050 (0.249)
TRD(-1)	-0.052*** (0.017)	-0.052*** (0.017)	-0.092*** (0.017)	-0.062*** (0.017)	-0.014 (0.017)	-0.065*** (0.017)	-0.052*** (0.017)	-0.053*** (0.018)	-0.092*** (0.017)	-0.063*** (0.017)	-0.013 (0.018)	-0.065*** (0.017)
GDS(-1)	-0.209*** (0.058)	-0.247*** (0.059)	-0.115* (0.062)	-0.249*** (0.060)	-0.156*** (0.058)	-0.242*** (0.059)	-0.209*** (0.058)	-0.248*** (0.059)	-0.115* (0.063)	-0.251*** (0.060)	-0.153*** (0.058)	-0.241*** (0.059)
DCP(-1)	0.134*** (0.011)	0.135*** (0.012)	0.149*** (0.011)	0.144*** (0.012)	0.129*** (0.011)	0.145*** (0.011)	0.134*** (0.011)	0.135*** (0.012)	0.149*** (0.011)	0.145*** (0.012)	0.128*** (0.011)	0.145*** (0.012)
GOV(-1)	-0.991*** (0.167)	-0.913*** (0.175)	-0.913*** (0.167)	-1.004*** (0.172)	-0.911*** (0.163)	-1.035*** (0.173)	-0.990*** (0.167)	-0.913*** (0.176)	-0.914*** (0.168)	-1.009*** (0.172)	-0.903*** (0.164)	-1.033*** (0.174)
LnCPI(-1)	0.012*** (0.004)	0.013*** (0.005)	0.013*** (0.004)	0.014*** (0.005)	0.017*** (0.004)	0.013*** (0.005)	0.012*** (0.004)	0.013*** (0.005)	0.013*** (0.004)	0.014*** (0.005)	0.018*** (0.004)	0.013*** (0.005)
LnREER(-1)	-0.139*** (0.018)	-0.138*** (0.019)	-0.149*** (0.018)	-0.132*** (0.019)	-0.123*** (0.018)	-0.133*** (0.019)	-0.138*** (0.018)	-0.138*** (0.019)	-0.149*** (0.018)	-0.133*** (0.019)	-0.122*** (0.018)	-0.133*** (0.019)
Constant	0.521*** (0.090)	0.638*** (0.091)	0.557*** (0.086)	0.714*** (0.086)	0.253** (0.103)	0.649*** (0.099)	0.520*** (0.091)	0.639*** (0.092)	0.557*** (0.087)	0.720*** (0.087)	0.244** (0.105)	0.651*** (0.100)
Observations	453	453	453	453	453	453	453	453	453	453	453	453
Adjusted R-squared	0.326	0.294	0.332	0.287	0.360	0.289	0.325	0.293	0.331	0.285	0.359	0.288
Number of CS	7	7	7	7	7	7	7	7	7	7	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F3: F-test							3.71*	1.49	10.73***	0.36	15.58***	0.59
Prob							0.0547	0.2224	0.0011	0.5502	0.0001	0.4418

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

## APPENDIX 9: ESTIMATION RESULTS FOR NET OTHER INVESTMENT (OI)

Table A9.1: Full Sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.035* (0.018)	-0.036** (0.018)	-0.032* (0.018)	-0.032* (0.018)	-0.026 (0.018)	-0.020 (0.019)	0.163 (0.101)	0.224* (0.119)	-0.123 (0.162)	0.021 (0.073)	0.162 (0.128)	0.265** (0.126)
CC(-1)	-1.112*** (0.298)						-1.099*** (0.297)					
GE(-1)		-0.621*** (0.236)						-0.562** (0.237)				
VA(-1)			-0.541* (0.277)						-0.542* (0.278)			
PSAV(-1)				-0.335** (0.162)						-0.322** (0.163)		
RL(-1)					0.812*** (0.289)						0.823*** (0.289)	
RQ(-1)						0.981*** (0.281)						0.973*** (0.281)
DUMF×CC(-1)							-0.350** (0.175)					
DUMF×GE(-1)								-0.444** (0.201)				
DUMF×VA(-1)									0.170 (0.301)			
DUMF×PSAV(-1)										-0.105 (0.138)		
DUMF×RL(-1)											-0.329 (0.221)	
DUMF×RQ(-1)												-0.507** (0.223)
TRD(-1)	0.151*** (0.014)	0.150*** (0.015)	0.146*** (0.015)	0.137*** (0.014)	0.131*** (0.014)	0.138*** (0.014)	0.151*** (0.014)	0.149*** (0.015)	0.146*** (0.015)	0.137*** (0.014)	0.131*** (0.014)	0.138*** (0.014)
GDS(-1)	-1.243*** (0.125)	-1.153*** (0.128)	-1.301*** (0.133)	-1.148*** (0.131)	-1.186*** (0.126)	-1.220*** (0.125)	-1.252*** (0.125)	-1.169*** (0.128)	-1.304*** (0.133)	-1.152*** (0.131)	-1.188*** (0.126)	-1.234*** (0.125)
DCP(-1)	0.347*** (0.023)	0.369*** (0.023)	0.356*** (0.023)	0.363*** (0.023)	0.346*** (0.024)	0.349*** (0.023)	0.343*** (0.023)	0.364*** (0.023)	0.356*** (0.023)	0.361*** (0.023)	0.343*** (0.024)	0.343*** (0.023)
GOV(-1)	-2.673*** (0.399)	-2.836*** (0.400)	-3.259*** (0.373)	-3.153*** (0.374)	-3.363*** (0.375)	-3.690*** (0.395)	-2.658*** (0.398)	-2.840*** (0.399)	-3.254*** (0.373)	-3.160*** (0.374)	-3.362*** (0.375)	-3.653*** (0.394)
LnGPI(-1)	-0.031* (0.018)	-0.028 (0.018)	-0.032* (0.018)	-0.037** (0.018)	-0.035** (0.018)	-0.045** (0.018)	-0.031* (0.017)	-0.029 (0.018)	-0.032* (0.018)	-0.037** (0.018)	-0.035** (0.018)	-0.045** (0.018)
LnREER(-1)	-0.168*** (0.042)	-0.186*** (0.042)	-0.172*** (0.042)	-0.165*** (0.043)	-0.182*** (0.042)	-0.153*** (0.042)	-0.156*** (0.042)	-0.174*** (0.042)	-0.173*** (0.042)	-0.162*** (0.043)	-0.174*** (0.042)	-0.140*** (0.043)
Constant	1.768*** (0.229)	1.571*** (0.218)	1.552*** (0.231)	1.381*** (0.198)	0.906*** (0.244)	0.760*** (0.252)	1.711*** (0.231)	1.493*** (0.221)	1.561*** (0.231)	1.363*** (0.200)	0.868*** (0.245)	0.712*** (0.252)
Observations	898	898	898	898	898	898	898	898	898	898	898	898
Adjusted R-squared	0.390	0.385	0.382	0.383	0.385	0.388	0.392	0.387	0.382	0.383	0.386	0.391
Number of CS	12	12	12	12	12	12	12	12	12	12	12	12
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							17.98***	11.84***	0.83	4.48**	1.89	1.67
Prob							0.0000	0.0006	0.3615	0.0345	0.1695	0.1971

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A9.2: High Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.041 (0.029)	-0.037 (0.030)	-0.042 (0.029)	-0.036 (0.029)	-0.024 (0.029)	-0.009 (0.030)	0.756*** (0.289)	1.101*** (0.324)	-0.380 (0.380)	1.736*** (0.553)	2.737*** (0.684)	1.035*** (0.303)
CC(-1)	-1.143** (0.572)						-1.031* (0.569)					
GE(-1)		-0.049 (0.499)						0.622 (0.528)				
VA(-1)			-1.369** (0.532)						-1.404*** (0.533)	-0.108 (0.392)		
PSAV(-1)				-0.073 (0.396)								
RL(-1)					1.849*** (0.661)						1.968*** (0.650)	1.798*** (0.488)
RQ(-1)						1.471*** (0.484)						
DUMFxCC(-1)							-1.268*** (0.458)	-1.781*** (0.505)	0.605 (0.678)			
DUMF×GE(-1)												
DUMF×VA(-1)												
DUMF×PSAV(-1)										-2.970*** (0.926)		
DUMF×RL(-1)											-4.412*** (1.093)	-1.713*** (0.494)
DUMF×RQ(-1)												0.120*** (0.020)
TRD(-1)	0.124*** (0.021)	0.109*** (0.022)	0.124*** (0.021)	0.108*** (0.020)	0.099*** (0.020)	0.117*** (0.020)	0.122*** (0.021)	0.099*** (0.022)	0.125*** (0.021)	0.107*** (0.020)	0.096*** (0.020)	-1.313*** (0.203)
GDS(-1)	-1.218*** (0.206)	-1.186*** (0.220)	-1.359*** (0.214)	-1.177*** (0.224)	-1.359*** (0.213)	-1.246*** (0.205)	-1.263*** (0.205)	-1.352*** (0.223)	-1.373*** (0.215)	-1.200*** (0.222)	-1.404*** (0.209)	0.352*** (0.044)
DCP(-1)	0.325*** (0.047)	0.356*** (0.046)	0.337*** (0.045)	0.356*** (0.045)	0.369*** (0.044)	0.373*** (0.044)	0.311*** (0.047)	0.355*** (0.046)	0.334*** (0.045)	0.347*** (0.044)	0.351*** (0.044)	-4.318*** (0.671)
GOV(-1)	-2.994*** (0.700)	-3.624*** (0.727)	-3.665*** (0.614)	-3.661*** (0.619)	-3.769*** (0.614)	-4.534*** (0.676)	-2.738*** (0.701)	-3.690*** (0.718)	-3.641*** (0.615)	-3.366*** (0.619)	-3.346*** (0.613)	-0.008 (0.069)
LnCPI(-1)	0.111* (0.063)	0.098 (0.071)	0.111* (0.063)	0.094 (0.063)	-0.041 (0.079)	0.003 (0.069)	0.114* (0.063)	0.055 (0.072)	0.113* (0.063)	0.090 (0.063)	-0.043 (0.078)	-0.030 (0.076)
LnREER(-1)	-0.112 (0.075)	-0.123 (0.076)	-0.084 (0.076)	-0.119 (0.076)	-0.078 (0.076)	-0.091 (0.075)	-0.056 (0.077)	-0.044 (0.079)	-0.086 (0.076)	-0.037 (0.080)	0.015 (0.078)	-0.649 (0.463)
Constant	0.843* (0.494)	0.333 (0.446)	0.861* (0.467)	0.348 (0.451)	-0.338 (0.478)	-0.231 (0.453)	0.511 (0.504)	-0.177 (0.463)	0.886* (0.468)	-0.008 (0.459)	-0.839* (0.485)	445 (0.459)
Observations	445	445	445	445	445	445	445	445	445	445	445	445
Adjusted R-squared	0.438	0.433	0.441	0.433	0.443	0.445	0.447	0.447	0.441	0.445	0.462	0.459
Number of CS	5	5	5	5	5	5	5	5	5	5	5	5
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F3: F-test							10.65***	3.94**	0.93	9.18***	3.85*	0.02
Prob							0.0012	0.0479	0.3365	0.0026	0.0504	0.8926

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

Table A9.3: Low Institutional Quality

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DUMF	-0.019 (0.012)	-0.018 (0.012)	-0.019 (0.012)	-0.019 (0.012)	-0.019 (0.012)	-0.016 (0.012)	0.035 (0.182)	-0.109 (0.138)	0.025 (0.101)	-0.024 (0.061)	-0.026 (0.130)	-0.087 (0.197)
CC(-1)	0.131 (0.172)						0.136 (0.173)					
GE(-1)		-0.530*** (0.160)						-0.547*** (0.162)				
VA(-1)			0.177 (0.147)						0.180 (0.147)			
PSAV(-1)				0.005 (0.078)						0.004 (0.079)		
RL(-1)					-0.082 (0.193)						-0.083 (0.195)	
RQ(-1)						-0.882*** (0.207)						-0.883*** (0.208)
DUMFxCC(-1)							-0.124 (0.413)					
DUMF×GE(-1)								0.190 (0.287)				
DUMF×VA(-1)									-0.092 (0.208)			
DUMF×PSAV(-1)										0.016 (0.182)		
DUMF×RL(-1)											0.015 (0.279)	
DUMF×RQ(-1)												0.150 (0.419)
TRD(-1)	0.147*** (0.029)	0.117*** (0.030)	0.133*** (0.030)	0.144*** (0.029)	0.138*** (0.031)	0.152*** (0.028)	0.148*** (0.029)	0.114*** (0.030)	0.133*** (0.030)	0.144*** (0.030)	0.138*** (0.032)	0.151*** (0.029)
GDS(-1)	-0.199* (0.102)	-0.207*** (0.100)	-0.157 (0.110)	-0.209** (0.103)	-0.218*** (0.104)	-0.238*** (0.100)	-0.197* (0.103)	-0.209** (0.100)	-0.151 (0.111)	-0.210** (0.103)	-0.219** (0.105)	-0.236** (0.100)
DCP(-1)	0.047*** (0.020)	0.076*** (0.021)	0.052*** (0.020)	0.050*** (0.021)	0.052*** (0.020)	0.051*** (0.019)	0.047*** (0.020)	0.079*** (0.021)	0.051*** (0.020)	0.050*** (0.021)	0.052*** (0.020)	0.052*** (0.019)
GOV(-1)	0.316 (0.293)	0.087 (0.298)	0.348 (0.294)	0.313 (0.294)	0.304 (0.294)	0.495* (0.291)	0.322 (0.294)	0.077 (0.298)	0.362 (0.297)	0.311 (0.295)	0.302 (0.296)	0.502* (0.292)
LnCPI(-1)	-0.044*** (0.008)	-0.040*** (0.008)	-0.044*** (0.008)	-0.044*** (0.008)	-0.044*** (0.008)	-0.040*** (0.008)	-0.044*** (0.008)	-0.040*** (0.008)	-0.044*** (0.008)	-0.044*** (0.008)	-0.044*** (0.008)	-0.040*** (0.008)
LnREER(-1)	-0.254*** (0.032)	-0.238*** (0.032)	-0.258*** (0.033)	-0.252*** (0.032)	-0.253*** (0.032)	-0.251*** (0.032)	-0.253*** (0.032)	-0.239*** (0.032)	-0.259*** (0.033)	-0.252*** (0.032)	-0.253*** (0.032)	-0.252*** (0.032)
Constant	1.367*** (0.159)	1.624*** (0.155)	1.357*** (0.152)	1.417*** (0.148)	1.470*** (0.186)	1.798*** (0.166)	1.361*** (0.160)	1.642*** (0.157)	1.353*** (0.153)	1.419*** (0.149)	1.471*** (0.190)	1.805*** (0.168)
Observations	453	453	453	453	453	453	453	453	453	453	453	453
Adjusted R-squared	0.368	0.383	0.369	0.367	0.367	0.392	0.367	0.382	0.368	0.366	0.366	0.391
Number of CS	7	7	7	7	7	7	7	7	7	7	7	7
Country Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
H3: F-test							0.00	1.38	0.12	0.01	0.05	2.49
Prob							0.9764	0.2416	0.7259	0.9172	0.8275	0.1152

Note: Standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

## APPENDIX 10: VARIABLES, DEFINITION, SCALE AND SOURCES

Variable Name	Code	Scale	Short Definition	Treatment	Data Source
GDP Per Capita	GDPPC	Constant 2010 USD	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	Interpolated and merged	WDI, The World Bank
Net Direct Investment	DI	Ratio to GDP	Net direct investment are the net inflows (liabilities minus assets) of investment to acquire a lasting management interest (10% or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. It is the change in assets minus the change in liabilities.	Interpolated and merged	IFS and WEO, The IMF
Net Portfolio Equity Investment	PIEQUITY	Ratio to GDP	This is net inflows (liabilities minus assets) of cross-border transactions and positions of equity securities, other than those included in direct investment or reserve assets.	Interpolated and merged	IFS and WEO, The IMF
Net Portfolio Debt Investment	PIDEBT	Ratio to GDP	This is net inflows (liabilities minus assets) of cross-border transactions and positions of debt securities, other than those included in direct investment or reserve assets.	Interpolated and merged	IFS and WEO, The IMF
Net Other Investment	OI	Ratio to GDP	This is the net inflows (liabilities minus assets) of the residual category investment that includes all financial transactions of debt and equity instruments that are not considered in direct investment, portfolio investment, or reserve assets. It consists of: (1) trade credits; (2) use of at Fund credit and loans from the Fund; (3) other loans; (4) currency and deposits; and (5) other assets and liabilities.	Interpolated and merged	IFS and WEO, The IMF
Financial Stress Index	FSI	Index	FSI is a composite index that measures the degree of financial stress in four financial markets—banks, foreign exchange, equity, bonds.	Transformed monthly to quarterly	ARIC, The ADB
Institutional Quality	INS	Index (0-1)	This captures the overall institutional quality calculated based on six components of institutions. They reflect political, legal and economical strengths of an economy.	Principal Component Factor Analysis	Self-calculated
Control of Corruption	CC	Unit (−2.5 to +2.5)	This captures the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	Transformed to 0 to 1	WGI, The World Bank
Government Effectiveness	GE	Unit (−2.5 to +2.5)	This captures perceptions of the quality of public services, civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	Transformed to 0 to 1	WGI, The World Bank

*continued on next page*

**Appendix 10** *table continued*

Variable Name	Code	Scale	Short Definition	Treatment	Data Source
Voice and Accountability	VA	Unit (–2.5 to +2.5)	This captures perceptions of the extent to which a country's citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	Transformed to 0 to 1	WGI, The World Bank
Political Stability and Absence of Violence and Terrorism	PSAV	Unit (–2.5 to +2.5)	This measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.	Transformed to 0 to 1	WGI, The World Bank
Rule of Law	RL	Unit (–2.5 to +2.5)	This captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Transformed to 0 to 1	WGI, The World Bank
Regulatory Quality	RQ	Unit (–2.5 to +2.5)	This captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Transformed to 0 to 1	WGI, The World Bank
Trade	TRD	Ratio to GDP	This is the sum of imports and exports of goods and services measured as a share of current gross domestic product.	Interpolated	WDI, The World Bank
Domestic Credit to Private Sector	DCP	Ratio to GDP	This refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment.	Interpolated	WDI, The World Bank
Gross Domestic Savings	GDS	Ratio to GDP	Gross domestic savings are calculated as GDP less total consumption expenditure.	Interpolated	WDI, The World Bank
General Government Consumption	GOV	Ratio to GDP	General government final consumption expenditure includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security other than capital formation expenses.	Interpolated	WDI, The World Bank
Consumer Price Index	CPI	Index	Consumer price index reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals.	None	IFS, The IMF
Real Effective Exchange Rate	REER	Index	REER is the real effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs. It is calculated based on CPI.	None	IFS, The IMF, ADBI Database and CEIC