Review of Economic Analysis

REA Review of Economic Analysis

Capital Inflows and Domestic Credit Growth: Empirical Evidence from Emerging Market and Developing Economies

Kongchheng Poch, Christopher Gan and Baiding Hu

Volume 15, Number 3-4, 2023

URI: https://id.erudit.org/iderudit/1113894ar
DOI: https://doi.org/10.15353/rea.v15i3-4.5123

See table of contents

Publisher(s)

International Centre for Economic Analysis

ISSN

1973-3909 (digital)

Explore this journal

Cite this article

Poch, K., Gan, C. & Hu, B. (2023). Capital Inflows and Domestic Credit Growth: Empirical Evidence from Emerging Market and Developing Economies. *Review of Economic Analysis*, *15*(3-4), 215–235. https://doi.org/10.15353/rea.v15i3-4.5123

Article abstract

This study investigates the extent to which capital inflows and their composition affect domestic credit growth in emerging market and developing economies (EMDEs) and the role of institutional quality in mediating the capital inflows and domestic credit growth nexus. Using a sample of 130 EMDEs from 1991-2015, the study uses generalized method of moments to control for endogeneity issues. The study makes notable contributions to the literature and policy discourse. First, this is the first empirical studies that documents the persistence of domestic credit growth in EMDEs. Second, the study provides a granular analysis of the capital inflows – domestic credit growth nexus. Whereas gross capital inflows significantly exert a positive impact on domestic credit growth, disaggregated-level analyses showed that only foreign direct investment positively affects domestic credit growth whereas portfolio equity has a negative effect; and portfolio debt and other investment do not. Third, the study adds novel evidence that institutional quality plays a crucial role in mediating the capital inflows – domestic credit growth nexus. Fourth, this study crystallises the lens used to investigate the interactions between capital inflows and institutional quality in analysing the capital inflows – domestic credit growth nexus. Finally, the findings are helpful for designing and implementing macro-financial policy and strengthening institutions, especially in managing capital flows and financial sector.

Review of Economic Analysis 15 (2023) 215-235 1973-3909/2023215

Capital Inflows and Domestic Credit Growth: Empirical Evidence from Emerging Market and Developing Economies

KONGCHHENG POCH
Lincoln University, New Zealand *

CHRISTOPHER GAN
Lincoln University, New Zealand

BAIDING HU
Lincoln University, New Zealand

This study investigates the extent to which capital inflows and their composition affect domestic credit growth in emerging market and developing economies (EMDEs) and the role of institutional quality in mediating the capital inflows and domestic credit growth nexus. Using a sample of 130 EMDEs from 1991-2015, the study uses generalized method of moments to control for endogeneity issues. The study makes notable contributions to literature and policy discourse. First, this is the first empirical study that documents the persistence of domestic credit growth in EMDEs. Second, the study provides a granular analysis of the capital inflows – domestic credit growth nexus. Whereas gross capital inflows significantly exert a positive impact on domestic credit growth, disaggregated-level analyses showed that only foreign direct investment positively affects domestic credit growth whereas portfolio equity has a negative effect; and portfolio debt and other investment do not. Third, the study adds novel evidence that institutional quality plays a crucial role in mediating the capital inflows – domestic credit growth nexus. Fourth, this study crystallises the lens used to investigate the interactions between capital inflows and institutional quality in analysing the capital inflows – domestic credit growth nexus. Finally, the findings are helpful for designing and implementing macro-financial policy and strengthening institutions, especially in managing capital flows and financial sector.

Keywords: Capital inflows, credit growth, institutional quality, generalized method of moments, emerging markets, developing economies

JEL Classifications: F21, F63, F65

* Poch: corresponding author. Department of Financial and Business Systems, Faculty of Agribusiness and Commerce, pkchheng@gmail.com, Gan: Department of Financial and Business Systems, Faculty of Agribusiness and Commerce, Christopher.Gan@lincoln.ac.nz; Hu: Department of Global Value Chains and Trade, Faculty of Agribusiness and Commerce, Baiding.Hu@lincoln.ac.nz

1 Introduction

Capital flow plays a vital role in promoting economic prosperity in the capital-receiving economies, but they also carry substantial risks in the context of macroeconomic stability. The surge in capital flows would be a source of overheating an economy and complicating macroeconomic policy-making (Combes, Kinda, & Plane, 2012). The influx of capital inflow may lead to rapid credit expansion that may fuel upward pressures on inflation and bubbles in asset prices (Grenville, 2008). The capital inflow expansion may also results in excessive credit provision to risky projects which amplify credit boom-and-bust cycles (Blundell-Wignall & Roulet, 2014; Rodrik, 1998). It is frequently argued that financial crises often follow rapid credit expansion (Gourinchas & Obstfeld, 2012; Hernández & Landerretche, 2002; Jordà, Schularick, & Taylor, 2015; Jordà, Schularick, & Taylor, 2012; Schularick & Taylor, 2012), which are typically financed by financing or borrowing from abroad (Akinci & Queralto, 2014; Bruno & Shin, 2013; Mendoza & Terrones, 2012). Based on historical anecdotes, many episodes of financial crisis were the results of swift expansion of banking credit, which was often financed by the surges of capital inflow. Those financial crises include the Chilean crisis in 1970s, Mexican crisis 1994-1995, and Asian financial crisis 1997-1998 (Hernández & Landerretche, 2002). Furthermore, the recent European economic crisis after the 2008-2009 global financial crisis (GFC) was largely related to rapid credit growth (Lane & McQuade, 2014; Lane & Milesi-Ferretti, 2011).

Many studies have investigated the macroeconomic impacts of domestic credit growth and credit boom as well as the causal relationship between rapid credit expansion or credit booms with financial crises (Bruno & Shin, 2013; Gourinchas & Obstfeld, 2012; Schularick & Taylor, 2012). However, against the backdrop of the increasingly integrated global economy, the studies on the role of capital inflows as a major driver of credit growth have been relatively scant. In addition, the composition of capital inflows has received little attention in empirical analysis. A detailed analysis of the different types of capital inflows is essential to gain a better understanding of the different impacts of capital inflows on domestic credit growth. Furthermore, previous studies that often use pooled ordinary least squares (OLS) or fixed-effect (FE) regression methods (Boudias, 2015; Guo & Stepanyan, 2011) may suffer from endogeneity problems due to omitted variables, simultaneity or unobserved heterogeneity across countries.

The relationship between capital inflows and domestic credit growth (DCG) in emerging market and developing economies (EMDEs) has received limited attention. As EMDEs have distinctive geographical and economic characteristics from advanced economies (Kose, Prasad, Rogoff, & Wei, 2010), they are particularly vulnerable to capital flow variations (Choi & Furceri, 2018; Obstfeld, 2012; Raddatz & Schmukler, 2012) which are generally considered as a concern for macroeconomic and financial stability (Pagliari & Hannan, 2017). According to

Jahan and Wang (2016), the impact of international capital flow remains an important policy question, especially in developing countries. Thus, without robust empirical evidence, policy makers in EMDEs are left with economic theory to guide their policy decisions.

This study makes important contributions to the literature in several ways. First, this study adds novel empirical evidence on the persistence of domestic credit growth in EMDEs. Second, the study uses a dynamic panel data model to account for the dynamic capital inflows–credit growth relationship for a sample of 130 EMDEs from 1991 to 2015. This study is one of the largest cross-country analyses on the capital inflows–credit growth nexus in EMDEs. Third, this study undertakes the analysis from the aggregate level to the most disaggregated level of capital inflows. The granular analysis at the most disaggregated level of capital inflows, including foreign direct investment (FDI), portfolio equity (PFE), portfolio debt (PFD) and other investment (OI), adds more evidence to the literature. Fourth, this study adds novel evidence on the role of institutional quality, which is a key absorptive capacity of the capital-recipient economy, in mediating the capital inflows–DCG nexus. Fifth, this study crystallises the lens used to investigate the interactions between capital inflows and institutional quality in analysing the capital inflows–domestic credit growth nexus in EMDEs. This study adopts an innovative two-step approach to construct the interaction terms between capital inflows and institutional quality variables.

The study uncovers several key findings. First, the study documents the persistence of domestic credit growth and dynamic relationship between capital inflows and domestic credit growth in EMDEs. Second, capital inflows positively affect credit growth. If gross capital inflows as a share of GDP is doubled, credit growth rises by 13.7 percentage points. Third, the composition of capital inflows matters for credit growth. While the FDI inflows exert a positive impact on credit growth, the portfolio equity inflows have a negative effect; and the other two forms of capital inflows (i.e., portfolio debt and other investment) do not have any effect. Finally, the credit growth inducing effect of capital inflows can be attenuated by improved institutional quality. The empirical result reveals that the credit growth-inducing impact of gross capital inflows could be neutralized if the institutional quality reaches a threshold level of 0.44 on controlling for corruption index scale. This threshold level is extremely high, which is between the 85th and 90th percentiles of the study sample.

2 Literature Review

2.1 Theoretical Perspectives

The increase in capital inflows can theoretically accelerate domestic credit growth in the capital-receiving economies through multiple channels (Lane & McQuade, 2014; Orhangazi, 2014). Firstly, the surge in capital inflows generates more liquidity and loanable funds in the

economy that can be used to provide credit to households or firms. Some proportions of the capital inflows are channelled into financial and banking system that would convert them into credit (Lane & McQuade, 2014). With abundance of more financial resources, banks or financial institutions extend more loans in order to maximize their profits. This phenomena would be amplified by stronger competition in the banking sector, especially in the markets where there are a significant number of foreign banks (Arena et al., 2015). Secondly, capital inflows can push up asset prices, and the rising prices of assets could be utilized as collateral for more borrowings (Lane & McQuade, 2014). Households or firms can borrow more from banks or financial institutions on their existing assets that have higher value; hence, domestic credit supply expands. Thirdly, capital inflows can potentially lower interest rates in the capital recipient economy which would eventually result in domestic credit expansion (Akyüz, 2012). In times of substantial capital inflows, the monetary policy stances in developing countries are maintained at a rate lower than that in normal periods as suggested by Taylor's rule (Burns, Kida, Lim, Mohapatra, & Stocker, 2014).

2.2 Empirical Evidence

By employing an event studies of 99 credit booms over the 1960-2010 period, Elekdag and Wu (2011) suggest that large capital inflows are correlated with credit booms while other domestic factors, particularly loose monetary policy, also play an important role. Credit booms are often preceded or accompanied by large capital inflows based on an exploratory study on a sample of 60 developing and developed economies from 1970 to 1995 (Hernández & Landerretche, 2002). However, the study takes into account only the periods of credit booms based on subjective numerical determination and positive capital inflows over two consecutive periods. More importantly, the study does not provide concise evidence of causality between capital inflows and credit booms. Similar to the finding of Hernández and Landerretche (2002), Mendoza and Terrones (2012) suggest a significant association between net capital inflows and domestic credit booms; however, the study takes into account only the aggregate levels of capital inflows and the behaviour of capital flows during credit booms rather than the periods of low or negative credit growth.

Based on other studies, the rise in gross debt inflows is likely followed by episodes of domestic credit booms. Using panel probit regressions on a sample of 71 advanced and emerging economies from 1975:Q1-2010:Q4, Calderón and Kubota (2012) show that other investment inflows, whose major component is debt flow, are a powerful predictor of the likelihood of lending booms while FDI and PFI have no decisive predicting power. These findings receive further support from a later study that covers 54 advanced and emerging European economies which shows that net debt inflows are strongly associated with domestic credit growth whereas the net equity inflows are not (Lane & McQuade, 2014).

The likelihood that capital inflows cause credit booms in EMDEs is higher (Hernández & Landerretche, 2002). This finding is supported by Calderón and Kubota (2012) whose study shows that the probability of lending booms is more likely in developing countries than their industrial counterparts. Moreover, the likelihood of bad credit booms appears to be more frequent in developing than advanced countries (Calderón & Kubota, 2012). Based on their empirical analysis, a third of the total credit booms identified over the 1975-2010 period ended up in bad credit booms while it was only one-sixth in developed countries (Calderón & Kubota, 2012).

Using Granger causality tests on a sample of 22 EMEs over the 2002-2006 period, Sa (2006) is unable to detect any evidence that capital inflows cause domestic credit booms. The author's results vary for different countries. Hence, it is difficult to draw a conclusion that the influx of capital inflows could cause domestic credit booms, resulting in accumulated financial instability risk. For some countries, the interlinkage between substantial capital inflows and credit booms is conducive to a vigorous financial deepening. Similarly, Amri, Richey, and Willett (2016) demonstrate that the connection between capital inflow upsurges and credit booms is not as strong as it is often believed to be. The authors argue that previous studies fail to conduct adequate tests of the robustness of the results with distinctive measures of either capital flow surges or credit booms. It is worth noting that the existing literature does not have a consensus on the definition of credit booms (Calderón & Kubota, 2012). There are different measures of credit boom episodes (Barajas, Dell'Ariccia, & Levchenko, 2007; Gourinchas, Valdes, & Landerretche, 2001; Mendoza & Terrones, 2008; Tornell & Westermann, 2002). As such, credit booms are rather subjective to numerical designation.

Although capital inflows are generally an important driver of domestic credit growth (Duenwald, Gueorguiev, & Schaechter, 2005; Hansen & Sulla, 2013), the direct interaction between these two variables is underexplored, particularly for cross-country analysis. By applying structural vector autoregressive model (SVAR) to the Australian economy, Raghavan, Churchill, and Tian (2014) find that a positive shock to debt flows has significantly positive impact on domestic credit growth and other macroeconomic variables, such as higher aggregate demand and real exchange rate appreciation. This result resonates with the study of Lane and McQuade (2014), demonstrating that debt flows have stronger positive impact on domestic credit growth. Based on a case study of Turkey between 2005 and 2013, bank flows compared to other types of capital inflows appear to have the largest influence on credit supply expansion (Baskaya, Di Giovanni, Kalemli-Özcan, Peydro, & Ulu, 2017). By undertaking cross-country analysis, Bruno and Shin (2013) examined domestic credit growth as a consequence of global liquidity and leverage cycles but did not study it as a result of capital inflows.

Using the two-stage least squares techniques on a sample of 21 advanced and emerging economies over the 2000-2015 period, Kim (2016) argues that portfolio inflows hold greater

influence in driving the impact of credit growth on credit risks in the case of seven Asian emerging economies. However, the study does not control for different economic development levels and financial systems between developed and emerging market economies. By controlling for financial system development and structure, Igan and Tan (2017) provide empirical evidence that capital inflows positively and significantly affect domestic credit growth. The result remains robust when capital inflows decomposed into FDI and non-FDI. This finding reveals the essential role of financial system in examining the linkage between capital flows and credit growth as Goldfajn and Valdés (1997) unveil that the impacts of capital flows are amplified via banks.

The literature exposed a few critical gaps in analysing the knot between capital flows and credit growth. Firstly, the discussion of the macro-financial impacts of credit growth or credit booms has paid limited attention to the driving forces such as capital flows. Capital flows could be a factor of the cross-country differences in domestic credit growth and its associated ramifications such as bank runs or financial crises. Secondly, few studies directly explore the relationship between capital flows and credit growth in EMDEs. Although Igan and Tan (2017) provide a granular examination of this nexus, their study covers only 33 advanced and emerging market economies. As EMDEs have distinct geographical and economic characteristics from advanced economies, we can hypothesise that capital inflows may affect domestic credit growth in EMDEs differently. Thirdly, with regard to the analysis on the capital flows-credit growth nexus, the roles of other important factors such as financial system, institutional arrangement and exchange rate regime are often neglected.

3 Empirical Methodology and Data

To characterise the dynamic relationship between capital inflows and credit growth, a dynamic panel data model is used for the analysis. Following the prior work of Antoshin et al. (2017) and Fendoğlu (2017), the baseline specification is provided by an autoregressive distributed lag model as follows:

$$DCG_{it} = \varphi DCG_{i,t-1} + \lambda CIF_{it} + \sum_{j=1}^{n} \gamma_j Y_{jit} + \varepsilon_t + \xi_{it} \tag{1}$$

(for i=1, 2, 3, …, N, and t=1, 2, 3, …, T)

where the subscripts i and t are indices for country and period, respectively. DCG denotes the growth rate of credit issued to the private sector over the GDP. CIF refers to the matrix of capital inflow variables. Depending on the capital inflow specifications, the matrix consists of the following variables: (1) gross capital inflows (GCI), (2) foreign direct investment (FDI) and

non-FDI inflows, and (3) FDI, portfolio equity (PFE), portfolio debt (PFD), and other investment (OI) inflows. Y denotes a matrix of control variables including financial development (FD), broad money (BM), trade openness (TO), exchange rate regime (ERR), the initial-period per capita GDP (GDPPC_INT), GDP growth rate (GDPG), inflation rate (IFR), and the change in the nominal exchange rate (CNER). These control variables are included based on the literature. ε_t is the time-fixed effect. Finally, ξ_{it} is the error term, which consists of the unobserved country-fixed effect μ_i and the innovation ι_{it} which is assumed to be independent and identically distributed with mean zero and variance σ_t^2.

The model (equation (1)) may suffer from endogeneity problems due to simultaneity or unobservable heterogeneity. The presence of the lagged domestic credit growth in the model as an explanatory variable indicates there is a correlation between the independent variables and the error term, ξ_{it}, since the lagged domestic credit growth, $DCG_{i,t-1}$, relies on $\xi_{i,t-1}$, which is partly determined by the country-fixed effect, μ_i. Because of this correlation, the estimation will result in biased, inconsistent coefficients if the model is estimated by OLS or FE estimators (Baltagi, 2013; Roodman, 2009a). Thus, this study adopts the system generalized method of moments (SGMM) estimator that can address the endogeneity problems and provide consistent and unbiased estimates under the condition that the unobservable heterogeneity exists but time-invariant (Roodman, 2009b; Wintoki et al., 2012). The SGMM estimator involves jointly estimating a system of the level and first-differenced equation for a dynamic panel data model by using lagged differences and lagged levels as instruments for the level equation and the first-differenced equation, respectively.

This study focuses on EMDEs for the 1991-2015 period. The sample of the study includes 130 EMDEs, consisting of 31 emerging market economies (EMEs) and 99 low-income developing economies (DEs), and covers all the regions globally; thus, making it one of the most comprehensive studies. The selection of the country sample and study period is dictated by the availability of data. Because some data is not available for some economies, the sample for regression analyses drops to between 102-118 economies. There remains some missing data during the study period for several economies; consequently, the dataset is an unbalanced panel. Following the literature (Lane & McQuade, 2014; Samarina & Bezemer, 2016), this study uses non-overlapping five-year averages of the underlying data from 1991-2015 to smooth out short-run fluctuations or business cycles as our interest is on the medium- and long-term persistence of domestic credit growth (Chinn & Prasad, 2003; Kose, Prasad, & Taylor, 2011; Lane & McQuade, 2014; Reinhardt, Ricci, & Tressel, 2013).

We use a panel dataset of 130 EMDEs during the 1991-2015 period. Data for capital flows is obtained from the Balance of Payment (BOP) database of the International Monetary Fund (IMF). The World Bank's World Development Indicators (WDI) database is the source for the following data: gross domestic product (GDP), credit to private sector, credit by banks to private sector, broad money, trade, nominal exchange rate, and consumer price index. The IMF World Economic Outlook database is the data source for GDP per capita, GDP growth rate, and inflation rate. The exchange rate regime data is obtained from the latest version of Ilzetzki, Reinhart, and Rogoff (2017) classification.

4 Empirical Results and Discussion

4.1 Capital Inflows and Domestic Credit Growth: Baseline Results

Table 1 displays the baseline results of the capital inflows-credit growth model estimated by the SGMM estimator. Column 1 in Table 1 reports the results of the relationship between gross capital inflows and domestic credit growth (Model 1). Column 2 presents the results with gross capital inflows disaggregated into FDI and non-FDI inflows (Model 2). Column 3 shows the results when gross capital inflows are further disaggregated into FDI, portfolio equity, portfolio debt and other investment (Model 3). The results of the post-estimation diagnostic tests indicate that all necessary assumptions required to validate the SGMM estimator are fulfilled for all four regression models. First, the AR(2) tests fail to reject the null hypothesis that there is no second-order serial correlation in the residuals for all the four models. The Hansen tests for over-identifying restrictions indicate that the instrument sets used in all four models are exogenous.

The lagged domestic credit growth coefficient is positive and statistically significant at the 5% and 1% levels for Models 1-3 and 4, respectively. These significant results justify the inclusion of the lagged domestic credit growth in the dynamic panel data models and confirm the persistence of domestic credit growth in EMDEs as documented in the literature (Furceri et al., 2012; Gozgor, 2014; Igan & Pinheiro, 2011). The results support the dynamic relationship between capital inflows and domestic credit growth as suggested by previous studies (for example, Fendoğlu, 2017; Tovar Mora, Garcia-Escribano, & Vera Martin, 2012). In their empirical analysis, Blanchard, Ostry, Ghosh, and Chamon (2017) modelled domestic credit growth using a dynamic panel data approach for a sample of 19 EMEs although the lagged domestic credit growth is statistically insignificant.

The estimation results show that capital inflows are significantly associated with domestic credit growth in EMDEs. The gross capital inflows coefficient is positive and strongly significant at the 1% level, indicating the evidence of the capital inflows' positive impact on domestic credit growth (Model 1). When the model is estimated separately for two groups of

economies, namely emerging market economies (EMEs) and low-income developing economies (DEs), the results show that capital inflows are still significantly associated with domestic credit growth for both groups of the economies. However, the coefficient of the gross capital inflows for the EMEs group is noticeably larger than the gross capital inflow coefficient for the DEs group. This indicates that gross capital inflows can cause higher domestic credit expansion in EMEs than in DEs.

The estimation result is not only statistically significant but also economically significant. If the gross capital inflows as a share of GDP is doubled, domestic credit growth rises 13.7 percentage points (Model 1). The result is generally consistent with the open-economy theory that the influx of external finance would lead to increased loanable funds in the capital-recipient economy and eventually accelerate domestic credit extension. The finding confirms a general belief as identified in the literature (Duenwald et al., 2005; Hansen & Sulla, 2013; Hegerty, 2009) that foreign capital inflows are a determinant of domestic credit growth. The literature also indicates that external factors, such as foreign capital inflows, are propellers of credit booms – a period of excessive credit growth – in the capital-recipient economy (Arena et al., 2015; Bakker & Gulde, 2010; Elekdag & Wu, 2011; Hernández & Landerretche, 2002).

The composition of capital inflows matters in the capital inflows- domestic credit growth nexus. According to Models 2 and 3, only the FDI inflows have a positive impact on domestic credit growth. In Models 2 when gross capital inflows are disaggregated into FDI and non-FDI, the coefficient of FDI inflows is positive and statistically significant at the 5% level while the coefficient of the non-FDI is insignificant at all conventional levels. In Model 3 when gross capital inflows are disaggregated into FDI, portfolio equity, portfolio debt and other investment, only the coefficient of FDI inflows is positive and significant at the 10% level. The results reveal that only the FDI inflows have a positive effect on domestic credit growth whereas the other types of capital inflows do not. To substantiate this finding, a separate FDI-domestic credit growth specification (Model 4) with the same set of control variables is estimated by the same two-step SGMM method. Column 4 in Table 1 shows the coefficient of FDI inflows remains positive and statistically significant at the 5% level. The result adds additional evidence that FDI inflows cause an increase in domestic credit growth.

The results appear plausible because the largest share of capital inflows in the sample is FDI. More importantly, the result is consistent with the theoretical proposition of Blanchard et al. (2017), who argued that non-debt inflows are more likely to make the host economy expansionary and thus increase credit growth. The FDI inflows may stimulate domestic economic activity and create business links with local enterprises in the host economy, thereby increasing credit demand and eventually resulting in domestic credit expansion. In addition, rising FDI may increase the asset value of households and firms in the host economy, which is used as collateral to get more loans from financial institutions (Lane & McQuade, 2014).

Table 1 SGMM estimation results of Models 1 to 4

	Dependent Variable: Domestic Credit Growth			
Models	(1)	(2)	(3)	(4)
Lagged domestic credit growth	0.178**	0.211**	0.537**	0.300***
	(0.086)	(0.091)	(0.222)	(0.105)
Gross capital inflows	0.137***			
	(0.052)			
Foreign direct investment inflows		0.414**	0.601*	0.224**
		(0.196)	(0.307)	(0.097)
Non-FDI inflows		0.072		
		(0.089)		
Portfolio equity inflows			-4.996	
			(3.155)	
Portfolio debt inflows			1.464	
			(1.695)	
Other investment inflows			-0.207	
			(0.366)	
Financial development	-0.584***	-0.681***	-0.471*	-0.762***
	(0.207)	(0.239)	(0.272)	(0.176)
Broad money	0.312**	0.375***	0.401**	0.443***
	(0.124)	(0.142)	(0.187)	(0.115)
Trade openness	-0.074	-0.046	-0.171**	-0.168
	(0.076)	(0.057)	(0.069)	(0.103)
Exchange rate regime	-0.114	-0.118*	-0.039*	-0.143**
	(0.073)	(0.071)	(0.021)	(0.066)
Log of initial-period per capita GDP	0.027	0.009	0.007	0.052
	(0.048)	(0.036)	(0.029)	(0.044)
GDP growth rate	1.314	1.826	-0.837	0.306
	(0.987)	(1.114)	(1.011)	(1.409)
Inflation rate	1.134**	0.983**	1.132**	1.267*
	(0.505)	(0.491)	(0.523)	(0.646)
Change in nominal exchange rate	-1.048***	-0.958**	-0.883*	-0.845*
	(0.392)	(0.384)	(0.531)	(0.459)
Constant	0.048	0.000	0.097	0.000
	(0.410)	(0.000)	(0.195)	(0.000)
Time-fixed effect	Yes	Yes	Yes	Yes
Observations	380	374	295	400
Number of countries	118	115	102	118
Number of instruments	28	29	29	29
p-value for Hansen's test	0.775	0.660	0.696	0.474
p-value for AR(1) test	0.000***	0.000***	0.016**	0.000***
p-value for AR(2) test	0.632	0.397	0.343	0.883

Note: Robust standard errors are in parentheses. ***, **, * represent significance at 1%, 5%, and 10% levels, respectively. Model 1 investigates the GCI-DCG relationship. Model 2 investigates the impact of capital inflows on the DCG at the disaggregated level by decomposing GCI into FDI and non-FDI. Model 3 is the most granular model when GCI is further disaggregated into FDI, PFE, PFD, and OI. Model 4 investigates the FDI-DCG relationship.
Source: Authors' estimations.

4.2 Capital Inflows and Domestic Credit Growth: Role of Institutional Quality

Referring to the baseline results presented in Section (4.1), capital inflows positively affect domestic credit growth. We argue that the capital-recipient economy's absorptive capacity plays a vital role in mediating the capital inflows-domestic credit growth relationship. To examine the role of institutional quality, we include the interaction term between capital inflows and institutional quality into the models. The institutional quality (IQ) is proxied by the corruption control index, which is a key dimension of the world governance index (WGI) produced by the World Bank and used extensively in the literature for measuring the quality of institution. Further, corruption is often cited as a major barrier to good economic performance (Acemoglu & Robinson, 2012; Kunieda et al, 2014).

The model estimation often suffers from multicollinearity problem when an interaction term is multiplied by two variables of interest because this multiplicative variable tends to be highly correlated with the two variables or one of them. To circumvent this problem, we use a novel two-step method to create the interaction variable between capital inflows and institutional quality. The capital inflows-institutional quality interaction terms are the residuals obtained from regressing the product of capital inflows and institutional quality multiplication (i.e., CIF*IQ) on capital inflows and institutional quality.

Table 2 reports the estimation results of Models 5 to 8. The results of the post-estimation diagnostic tests indicate the validity of the use of SGMM estimator for all the four models. Based on the AR(2) tests, the null hypothesis that there is no second-order serial correlation in the residuals for all the four models cannot be rejected. The Hansen tests also yield the results that the instrument sets used in all four models are exogenous.

The coefficient of the lagged domestic credit growth is positive and significant at the 10% level for Models 5-7 and at the 5% level for Model 8. The results, again, support the inclusion of the lagged domestic credit growth as a right-hand side variable in the model and reaffirm the dynamic characteristics of domestic credit growth in EMDEs. The results also reinforce the evidence of the dynamic relationship between capital inflows and domestic credit growth in EMDEs.

Although the coefficient of the gross capital inflows is statistically insignificant, it is still positive, indicating a positive effect on domestic credit growth. The FDI coefficient is positive and significant at the 1% level for Models 6 and 8 and at the 5% level for Model 7. The result further confirms the positive effect of capital inflows on domestic credit growth. Conversely, portfolio equity coefficient is negative and statistically significant at the 5% level (Model 7). This result reveals that an increase in portfolio equity inflows results in a slower pace of domestic credit growth. A well-developed equity market that can attract equity investments would become a primary source of financing for domestic firms; thus, reducing the demand for

credit. Because the majority of the sample economies relies on the banking system and the share of portfolio equity inflows in the sample is much less than the share of FDI in the gross capital inflows, the aggregate analysis suggests that capital inflows generally cause domestic credit growth. The results underline the importance of disaggregated analysis. Different components of capital inflows generate different impacts on domestic credit growth, and the composition of capital inflows matters for domestic credit growth.

The interaction terms between the capital inflows and institutional quality variables, which are of analytical interest, have coefficients that are significant at the 5% level for Models 5, 6 and 8, but insignificant for Model 7. However, the signs are negative for all four models. There is thus some evidence that institutional quality plays a crucial role in lessening the impact of capital inflows on domestic credit growth. As this study uses the control of corruption index as a proxy for institutional quality, the result could be interpreted explicitly that the pace of domestic credit expansion could be attenuated when the corruption is better controlled, *ceteris paribus*. It is true, to some extent, that many loan applications are approved because the loan officers receive bribes, favours or personal benefits. Personal relationships and connections could be another reason for getting loan applications approved even though the applications do not necessarily meet the lending standards. As exposed by Park (2012), there is robust evidence that corruption is a major driver of bad loans in the financial system. A surge in bank lending and eventually non-performing loans are aggravated by an increase in banks' risk-taking behaviour, especially under the condition of severe corruption (Chen, Jeon, Wang, & Wu, 2015). Thus, it is reasonable to believe that poor-performing state-owned enterprises, particularly in developing countries, have abundant loans that are possibly motivated by either favours or political reasons. For instance, bribery is a determinant of firms' financial access in China (Chen, Liu, & Su, 2013) and bank lending in Russia (Weill, 2011). In summary, our findings align with the institutional economic theory that argues for the beneficial role of the institution in strengthening financial stability and improving economic performance. The findings are highly relevant for policymaking with regard to capital flow management, financial stability strengthening and ultimately sustained economic growth.

To estimate the importance of institutional quality in lessening the impact of capital inflows on domestic credit growth, we investigate the institutional quality level that can neutralise the credit growth-inducing effects of capital inflows. With reference to the regression results (Model 5), the threshold level at which the gross capital inflows would be neutralised can be estimated by applying the first derivative to the model and setting the result to zero. For Column 1 in Table 2 (Model 5), application of the first derivative yields the following result:

$$\frac{\partial DCG}{\partial GCI} = 0.028 - 0.063 * IQ \tag{2}$$

Table 2 The SGMM estimation results of Models 5 to 8

	Dependent Variable: Domestic Credit Growth			
	(5)	(6)	(7)	(8)
Lagged domestic credit growth	0.190*	0.377*	0.442*	0.272**
	(0.098)	(0.201)	(0.226)	(0.127)
Gross capital inflows	0.028			
	(0.063)			
Foreign direct investment inflows		0.299***	0.614**	0.237***
		(0.108)	(0.255)	(0.068)
Non-FDI inflows		-0.094		
		(0.181)		
Portfolio equity inflows			-5.283**	
			(2.541)	
Portfolio debt inflows			0.556	
			(2.152)	
Other investment inflows			-0.177	
			(0.454)	
Financial development	-0.416**	-0.578**	-0.425**	-0.508**
	(0.170)	(0.260)	(0.215)	(0.208)
Broad money	0.212*	0.358*	0.303**	0.281**
	(0.111)	(0.184)	(0.154)	(0.124)
Trade openness	-0.078*	-0.103*	-0.127**	-0.118**
	(0.043)	(0.058)	(0.054)	(0.052)
Exchange rate regime	-0.016	-0.026	-0.031	-0.027*
	(0.017)	(0.019)	(0.023)	(0.016)
Log of initial-period per capita GDP	-0.001	0.003	0.020	0.007
	(0.031)	(0.028)	(0.030)	(0.024)
GDP growth rate	1.447	0.180	-0.031	-0.107
	(0.995)	(0.555)	(0.639)	(0.503)
Inflation rate	0.558**	0.641	0.937**	0.421
	(0.259)	(0.434)	(0.439)	(0.338)
Change in nominal exchange rate	-0.589*	-0.373	-0.678*	-0.332
	(0.352)	(0.335)	(0.383)	(0.363)
Institutional quality	0.021	0.018	-0.009	-0.003
	(0.064)	(0.051)	(0.070)	(0.074)
Gross capital inflows **x** Institutional quality	-0.063**			
	(0.032)			
FDI inflows **x** Institutional quality		-0.604**	-0.034	-0.368**
		(0.299)	(0.735)	(0.171)
Constant	0.156	0.141	0.000	0.110
	(0.260)	(0.258)	(0.000)	(0.221)
Time-fixed effect	Yes	Yes	Yes	Yes
Observations	374	374	295	400
Number of countries	115	115	102	118
Number of instruments	39	38	34	36
p-value for Hansen's test	0.539	0.360	0.469	0.143
p-value for AR(1) test	0.000***	0.005***	0.011**	0.001***
p-value for AR(2) test	0.547	0.216	0.271	0.216

Note: Robust standard errors are in parentheses. ***, **, * represent significance at 1%, 5%, and 10% levels, respectively. Model 5 investigates the GCI-DCG relationship. Model 6 investigates the impact of capital inflows on the DCG at the disaggregated level by decomposing GCI into FDI and non-FDI. Model 7 is the most granular model when GCI is further disaggregated into FDI, PFE, PFD, and OI. Model 8 investigates the FDI-DCG relationship.

Source: Authors' estimations.

This result indicates that the credit growth-inducing impact of gross capital inflows could be neutralised if the institutional quality reaches a threshold level of 0.44 based on the control of corruption index scale. This level of 0.44 on the corruption control index is higher than the average level of 0.0 on the scale that ranges from -2.5 (poor performance) to 2.5 (best performance). Noticeably, the 0.44 threshold level of corruption control index is much higher than the average level of -0.347 in our study sample. The 0.44 threshold level is between the 85th and 90th percentiles of the study sample. This result indicates that to weaken the impact of capital inflows on domestic credit growth in the host economy, a robust institution needs to be developed.

5 Conclusion and Policy Implications

As fast-growing domestic credit is a major macro-financial instability concern for policymakers in EMDEs. Therefore, it is important to understand to what extent capital inflows can affect domestic credit growth. Our study applies system GMM method to estimate a dynamic panel data model of the link between capital inflows and domestic credit growth for a sample of 130 EMDEs for the period from 1991 to 2015.

Based on the regression results, our study records several important findings. First, our study documents the persistence of domestic credit growth and dynamic relationship between capital inflows and domestic credit growth in EMDEs. Second, gross capital inflows have a positve impact on domestic credit growth. The result is statistically and economically significant. If gross capital inflows as a share of GDP is doubled, credit growth rises by 13.7 percentage points. This is broadly consistent with the open-economy theory that the influx of external finance results in increased loanable funds in the capital-recipient economy and eventually accelerated domestic credit expansion. Third, the composition of capital inflows matters for domestic credit growth. Among the four types of capital inflows, FDI inflows positively affect credit growth whereas portfolio equity inflows have the opposite effect. The result is robust to various specifications. An explanation is that FDI was the largest contributor to gross capital inflows into EMDEs during the sample period. Thus, the aggregate analysis shows that gross capital inflows generally induce credit growth. Finally, the empirical analysis adds novel evidence on the role of the absorptive capacity of the capital-recipient economy in the capital inflows-domestic credit growth nexus. Improved institutional quality in the capital-recipient economy reduces the impact of capital inflows on domestic credit growth. The credit-growth inducing effects of capital inflows could be neutralised if a country realises a threshold level of about 0.44 based on the institutional quality of -2.5 (poor performance) and 2.5 (best performance) scale. The results are robust to different model specifications.

The empirical findings are relevant for policy considerations with regard to capital flow and macroeconomic policy management. Firstly, it is generally recognised that too rapid a rise in

credit growth may bring the economy to the brink of overheating and instability. To prevent or resolve economic overshooting, it is vital to understand the drivers of credit growth; and capital inflows are primary drivers of credit growth. Secondly, it is essential to monitor capital flow movements closely so that appropriate measures of capital flow management can be taken to discipline the impacts of capital inflows timely. As domestic credit growth in EMDEs is persistent, the influx of capital inflows over a certain consecutive periods may lead to rapid credit growth or credit booms. Thirdly, although it is generally recognised that FDI has growth-enhancing impacts on the capital-recipient economy, it is important to scrutinize the FDI movements because the FDI becomes increasingly volatile and the sudden surges of FDI are likely to result in rapid credit growth, carrying financial instability risks. For example, some forms of FDI may be channelled into the banking or financial sector, resulting in rapid credit supply in the economy. Finally, improving institutional quality is a policy priority. The empirical finding shows that the pace of credit growth caused by capital inflows can be weakened by enhanced institutional quality.

Appendix

Table 3 Descriptive statistics of the variables used in the CIF-DCG model

Variable	Obs	Mean	Std.Dev.	Min	Max
DCG	565	0.029	0.109	-0.967	0.746
GCI	556	0.062	0.314	-6.625	1.637
FDI	603	0.045	0.083	-0.059	1.606
NONFDI	556	0.015	0.297	-6.653	1.379
PFE	466	0.002	0.011	-0.044	0.164
PFD	490	0.005	0.011	-0.064	0.076
OI	604	0.019	0.107	-1.388	1.619
FD	626	0.313	0.239	0.002	1.429
BM	626	0.470	0.308	0.016	2.503
TO	626	0.809	0.346	0.002	2.410
ERR	645	2.099	1.085	1.000	5.400
GDPPC_INT	629	7.810	1.208	5.089	11.179
GDPG	645	0.019	0.038	-0.245	0.213
IFR	642	0.462	3.196	-0.064	65.171
CNER	634	0.113	0.377	-0.133	6.507
IQ	650	-0.347	0.679	-1.648	1.572

Source: Authors' calculations based on data from various databases.

Table 4 Correlation matrix of the variables used in the CIF-DCG model

	DCG	GCI	FDI	NONFDI	PFE	PFD	OI	FD	BM	TO	ERR	GDPPC_INT	GDPG	IFR	CNER	IQ
DCG	1															
GCI	0.028	1														
FDI	0.055	0.317***	1													
NONFDI	0.017	0.961***	0.047	1												
PFE	0.003	0.568***	0.727***	0.158***	1											
PFD	-0.014	0.263***	0.130***	0.262***	0.116**	1										
OI	0.039	0.159***	0.021	0.154***	0.042	0.206***	1									
FD	-0.033	0.063	0.217***	0.006	0.244***	0.193***	0.072*	1								
BM	0.017	0.084*	0.197***	0.033	0.189***	0.154***	0.066	0.794***	1							
TO	0.052	0.107**	0.252***	0.040	0.044	0.041	0.066	0.346***	0.321***	1						
ERR	-0.154***	-0.022	-0.097**	0.003	0.012	-0.051	-0.085**	-0.268***	-0.237***	-0.236***	1					
GDPPC_INT	-0.039	-0.007	0.113***	-0.038	0.131***	0.262***	0.082**	0.497***	0.434***	0.303***	-0.173***	1				
GDPG	0.180***	0.074*	0.117***	0.044	0.035	0.047	0.060	0.109***	0.047	0.036	-0.254***	-0.061	1			
IFR	-0.168***	-0.004	-0.027	0.002	-0.010	-0.043	-0.005	-0.096**	-0.078*	-0.026	0.294***	-0.048	-0.310***	1		
CNER	-0.203***	-0.024	-0.050	-0.011	0.006	-0.065	-0.049	-0.199***	-0.184***	-0.076*	0.429***	-0.128***	-0.210***	0.562***	1	
IQ	-0.023	-0.018	0.140***	-0.057	0.143***	0.179***	0.105***	0.457***	0.374***	0.265***	-0.231***	0.599***	0.079**	-0.128***	-0.185***	1

Note: ***, **, * represent significance at 1%, 5%, and 10% levels, respectively.

Source: Authors' estimations.

References

Acemoglu, D., & Robinson, J. A. (2012). *Why nations fail: The origins of power, prosperity, and poverty*. New York: Crown Business.

Akinci, O., & Queralto, A. (2014). Banks, capital flows and financial crises. Retrieved from https://www.federalreserve.gov/econresdata/ifdp/2014/files/ifdp1121.pdf

Akyüz, Y. (2012). *The Financial Crisis and the Global South: A Development Perspective.* London: Pluto Press.

Amri, P. D., Richey, G. M., & Willett, T. D. (2016). Capital surges and credit booms: how tight is the relationship? *Open Economies Review, 27*(4), 637-670.

Antoshin, S., Arena, M. M., Gueorguiev, N., Lybek, M. T., Ralyea, M. J., & Yehoue, M. E. B. (2017). Credit growth and economic recovery in Europe after the global financial crisis. *IMF Working Paper (WP/17/256)*. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2017/11/17/Credit-Growth-and-Economic-Recovery-in-Europe-After-the-Global-Financial-Crisis-45411

Arena, M., Bouza, S., Dabla-Norris, M. E., Gerling, M. K., & Njie, L. (2015). Credit booms and macroeconomic dynamics: Stylized facts and lessons for low-income countries. *IMF Working Paper (WP/15/11)*. Retrieved from https://www.imf.org/external/pubs/ft/wp/2015/wp1511.pdf

Bakker, B. B., & Gulde, A.-M. (2010). The credit boom in the EU new member states: Bad luck or bad policies? *IMF Working Paper (WP/10/130)*. Retrieved from https://www.imf.org/external/pubs/ft/wp/2010/wp10130.pdf

Baltagi, B. H. (2013). *Econometric analysis of panel data* (5th Ed.). Hoboken, NJ: John Wiley & Sons.

Barajas, A., Dell'Ariccia, G., & Levchenko, A. (2007). *Credit booms: The good, the bad, and the ugly*. http://www.nbp.pl/Konferencje/NBP_Nov2007/Speakers/Dell_Ariccia.pdf

Baskaya, Y. S., Di Giovanni, J., Kalemli-Özcan, Ş., Peydro, J.-L., & Ulu, M. F. (2017). Capital flows and the international credit channel. *Journal of International Economics, 108,* S15-S22.

Blanchard, O., Ostry, J. D., Ghosh, A. R., & Chamon, M. (2017). Are capital inflows expansionary or contractionary? Theory, policy implications, and some evidence. *IMF Economic Review, 65*(3), 563-585.

Blundell-Wignall, A., & Roulet, C. (2014). Capital controls on inflows, the global financial crisis and economic growth. *OECD Journal: Financial Market Trends, 2013*(2), 29-42.

Bruno, V., & Shin, H. S. (2013). Capital flows, cross-border banking and global liquidity. *NBER Working Paper No. 19038.*

Burns, A., Kida, M., Lim, J. J., Mohapatra, S., & Stocker, M. (2014). Unconventional monetary policy normalization in high-income countries: Implications for emerging market capital

flows and crisis risks. Retrieved from https://openknowledge.worldbank.org/handle/10986/17711

Calderón, C., & Kubota, M. (2012). Gross inflows gone wild: Gross capital inflows, credit booms and crises. Retrieved from http://documents.worldbank.org/curated/en/785761468183285429/Gross-inflows-gone-wild-gross-capital-inflows-credit-booms-and-crises

Chen, M., Jeon, B. N., Wang, R., & Wu, J. (2015). Corruption and bank risk-taking: Evidence from emerging economies. *Emerging Markets Review, 24*, 122-148.

Chen, Y., Liu, M., & Su, J. (2013). Greasing the wheels of bank lending: Evidence from private firms in China. *Journal of Banking & Finance, 37*(7), 2533-2545.

Chinn, M. D., & Ito, H. (2006). What matters for financial development? Capital controls, institutions, and interactions. *Journal of Development Economics, 81*(1), 163-192.

Chinn, M. D., & Ito, H. (2008). A new measure of financial openness. *Journal of Comparative Policy Analysis, 10*(3), 309-322.

Chinn, M. D., & Prasad, E. S. (2003). Medium-term determinants of current accounts in industrial and developing countries: an empirical exploration. *Journal of International Economics, 59*(1), 47-76.

Choi, S., & Furceri, D. (2018). Uncertainty and cross-border banking flows. *IMF Working Paper (WP/18/04)*. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2018/01/05/Uncertainty-and-Cross-Border-Banking-Flows-45539

Combes, J.-L., Kinda, T., & Plane, P. (2012). Capital flows, exchange rate flexibility, and the real exchange rate. *Journal of Macroeconomics, 34*(4), 1034-1043.

Duenwald, C., Gueorguiev, N., & Schaechter, A. (2005). Too much of a good thing? Credit booms in transition economies: The cases of Bulgaria, Romania, and Ukraine. Retrieved from http://web.worldbank.org/archive/website01049/WEB/IMAGES/L8CEYLAR.PDF

Elekdag, S., & Wu, Y. (2011). Rapid credit growth: Boon or boom-bust? *IMF Working Paper (WP/11/241)*. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Rapid-Credit-Growth-Boon-or-Boom-Bust-25305

Fendoğlu, S. (2017). Credit cycles and capital flows: Effectiveness of the macroprudential policy framework in emerging market economies. *Journal of Banking & Finance, 79*, 110-128.

Furceri, D., Guichard, S., & Rusticelli, E. (2012). The effect of episodes of large capital inflows on domestic credit. *The North American Journal of Economics and Finance, 23*(3), 325-344.

Goldfajn, I., & Valdés, R. O. (1997). Capital flows and the twin crises: the role of liquidity. *IMF Working Paper (WP/97/87)*. Retrieved from https://www.imf.org/external/pubs/ft/wp/wp9787.pdf

Gourinchas, P.-O., & Obstfeld, M. (2012). Stories of the twentieth century for the twenty-first. *American Economic Journal: Macroeconomics, 4*(1), 226-265.

Gourinchas, P. O., Valdes, R., & Landerretche, O. (2001). Lending booms: Latin America and the world. *NBER Working Paper No. 8249*. Retrieved from https://www.nber.org/papers/w8249

Gozgor, G. (2014). Determinants of domestic credit levels in emerging markets: The role of external factors. *Emerging Markets Review, 18*, 1-18.

Grenville, S. (2008). Central banks and capital flows. *ADB Institute Discussion Paper No. 87*.

Guo, K., & Stepanyan, V. (2011). Determinants of bank credit in emerging market economies. *IMF Working Paper WP/11/51.*

Hansen, N.-J. H., & Sulla, M. O. (2013). Credit Growth in Latin America: Financial Development or Credit Boom? *IMF Working Paper (WP/13/106)*.

Hegerty, S. W. (2009). Capital inflows, exchange market pressure, and credit growth in four transition economies with fixed exchange rates. *Economic Systems, 33*(2), 155-167.

Hernández, L., & Landerretche, O. (2002). Capital inflows, credit booms, and macroeconomic vulnerability: the cross-country experience. *Banking, Financial Integration, and International Crises, Central Bank of Chile Santiago, Chile,* 199-233.

Igan, D., & Pinheiro, M. (2011). Credit growth and bank soundness: fast and furious? Retrieved from https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Credit-Growth-and-Bank-Soundness-Fast-and-Furious-25390

Igan, D., & Tan, Z. (2017). Capital Inflows, Credit Growth, and Financial Systems. *Emerging Markets Finance and Trade, 53*(12), 2649-2671.

Ilzetzki, E., Reinhart, C. M., & Rogoff, K. S. (2017). Exchange arrangements entering the 21st century: Which anchor will hold? Retrieved from https://scholar.harvard.edu/files/rogoff/files/exchange_rate_arrangments_in_21st_century_nber_paper_23134.pdf?m=1487094196

Jahan, S., & Wang, D. (2016). Capital account openness in low-income developing countries : Evidence from a new database. *IMF Working Paper WP/16/252.* Washington DC: International Monetary Fund (IMF).

Jordà, Ò., Schularick, M., & Taylor, A. M. (2015). Betting the house. *Journal of International Economics, 96*, S2-S18.

Jordà, Ò., Schularick, M. H., & Taylor, A. M. (2012). When credit bites back: Leverage, business cycles, and crises. Retrieved from https://www.frbsf.org/economic-research/files/wp11-27bk.pdf

Kim, J.-H. (2016). Study on the Impact of the Private Credit Excess on the Credit Risk under the Massive Capital Inflows. *East Asian Economic Review, 20*(3), 391-423.

Kose, M. A., Prasad, E., Rogoff, K., & Wei, S.-J. (2010). Financial globalization and economic policies. In D. Rodrik & M. Rosenzweig (Eds.), Handbook of development economics (Vol. 5, pp. 4283-4359). Oxford: Elsevier. Retrieved from https://www.sciencedirect.com/science/article/pii/B9780444529442000227.

Kose, M. A., Prasad, E. S., & Taylor, A. D. (2011). Thresholds in the process of international financial integration. *Journal of International Money and Finance, 30*(1), 147-179.

Kunieda, T., Okada, K., & Shibata, A. (2014). Corruption, capital account liberalization, and economic growth: Theory and evidence. *International Economics, 139*, 80-108.

Lane, P. R., & McQuade, P. (2014). Domestic credit growth and international capital flows. *The Scandinavian Journal of Economics, 116*(1), 218-252.

Lane, P. R., & Milesi-Ferretti, G. M. (2011). The cross-country incidence of the global crisis. *IMF Economic Review, 59*(1), 77-110.

Mendoza, E. G., & Terrones, M. E. (2008). An anatomy of credit booms: Evidence from macro aggregates and micro data. *NBER Working Paper No. 14049*. Retrieved from https://www.nber.org/papers/w14049.pdf

Mendoza, E. G., & Terrones, M. E. (2012). An anatomy of credit booms and their demise. *NBER Working Paper No. 18379*. Retrieved from https://www.nber.org/papers/w18379.pdf

Obstfeld, M. (2012). Financial flows, financial crises, and global imbalances. Journal of International Money and Finance, 31(3), 469-480.

Orhangazi, Ö. (2014). Capital Flows and Credit Expansions in Turkey. *Review of Radical Political Economics, 46*(4), 509-516.

Pagliari, M. S., & Hannan, S. A. (2017). The volatility of capital flows in emerging markets: Measures and determinants. *IMF Working Paper (WP/17/41)*.

Park, J. (2012). Corruption, soundness of the banking sector, and economic growth: A cross-country study. *Journal of International Money and Finance, 31*(5), 907-929.

Raddatz, C., & Schmukler, S. L. (2012). On the international transmission of shocks: Micro-evidence from mutual fund portfolios. *Journal of International Economics, 88*(2), 357-374.

Raghavan, M., Churchill, A., & Tian, J. (2014). The effects of portfolio capital flows and domestic credit on the Australian economy. Retrieved from https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=ESAMACE2014&paper_id=336

Reinhardt, D., Ricci, L. A., & Tressel, T. (2013). International capital flows and development: Financial openness matters. *Journal of International Economics, 91*(2), 235-251.

Rodrik, D. (1998). Who needs capital account convertibility? In S. Fischer, N. R. Cooper, R. Dornbusch, M. P. Garber, C. Massad, J. J. Polak, D. Rodrik, & S. S. Tarapore (Eds.), *Should the IMF Pursue Capital Account Convertibility?* (Vol. 207, pp. 55-65). New Jersey: Princeton University.

Roodman, D. (2009a). How to do xtabond2: An introduction to difference and system GMM in Stata. *The Stata Journal, 9*(1), 86-136.

Roodman, D. (2009b). A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics, 71*(1), 135-158.

Sa, S. (2006). Capital flows and credit booms in emerging market economies. *Financial Stability Review, 9*, 49-66.

Samarina, A., & Bezemer, D. (2016). Do capital flows change domestic credit allocation? *Journal of International Money and Finance, 62*, 98-121.

Schularick, M., & Taylor, A. M. (2012). Credit booms gone bust: Monetary policy, leverage cycles, and financial crises, 1870-2008. *American Economic Review, 102*(2), 1029-1061.

Tornell, A., & Westermann, F. (2002). Boom-bust cycles in middle income countries: Facts and explanation. *IMF Staff Papers, 49*(1), 111-155.

Tovar Mora, C. E., Garcia-Escribano, M., & Vera Martin, M. (2012). Credit growth and the effectiveness of reserve requirements and other macroprudential instruments in Latin America. *IMF Working Paper WP/12/142.* Washington DC: International Monetary Fund (IMF).

Weill, L. (2011). How corruption affects bank lending in Russia. *Economic System, 35*(2), 230-243.

Wintoki, M. B., Linck, J. S., & Netter, J. M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics, 105*(3), 581-606.