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Abstract:

The present study examines the impact of banking sector globalization on economic growth for a panel of 138 nations spanning 1995-2013. Employing different econometric models, the study finds greater banking sector openness to reduce economic growth. Such finding holds in both emerging markets and low income countries, and in nations with more than 10 percent foreign banks, but not in advanced economies. The paper also finds foreign banks reduce private credit flows in host nations. This implies foreign banks face informational bottlenecks that hinder them from lending to a large majority of potential client-base in host markets.

Keywords: foreign bank presence, economic growth, economic development, panel data models, Bayesian analysis.

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JEL classification: G21, O16, O40, E44, F43, C23.

1. Introduction

The last two decades have seen a rapid increase in the process of banking sector globalization. However, arguments supporting a policy of openness towards the banking industry in a host nation are far from universally accepted. In the aftermath of the recent global financial crisis (henceforth GFC), there has been considerable academic focus and policy attention on the roles of foreign banks in creating economic vulnerability in host countries (Cetorilli and Goldberg, 2012a, 2012b; De Haas and Van Hooren, 2011, Drakos and Kouretas; 2015). There is a growing body of literature that has explored different implications of banking sector globalization on topics ranging from its impact on bank profitability and cost efficiency (Claessens et al., 2001; Claessens and Lee, 2003; Lensink and Hermes, 2004); credit flows (Detragiache et al. 2008; Giannetti and Ongena, 2012; Gormley, 2010; Pontines and Siregar, 2014; Vogel and Winkler, 2012) to financial stability (Claessens and Van Horen, 2012; Demirguc-Kunt et al., 1998; Galindo et al., 2010; Mishkin, 2006; Moreno and Villar, 2005). However, an aspect of banking sector globalization that has been less studied is its impact on

economic growth. Although a sizable body of research has explored the effect of financial development on growth (Beck and Levine, 2004; Ductor and Grechyna, 2015) there is scant literature that has focused on the effect of foreign bank entry on economic growth per se. This study examines this issue by using a panel dataset of 138 nations encapsulating 1995-2013.

Conceptually foreign banks may positively influence economic growth both directly and indirectly. By bringing additional capital, energetically seeking profitable use of these funds, exerting corporate control, and facilitating better risk management practices, foreign banks may directly boost capital accumulation and efficiency of resource allocation in ways that accelerate growth (Levine 1996). Foreign banks may also spur growth indirectly by intensifying competition. By contesting markets and sharpening competition, foreign banks can raise the overall level of banking sector efficiency. Their entry forces domestic banks to provide better services; domestic banks also become better at mobilizing savings, vigorously seeking profitable use of these savings, exerting better corporate control, and easing risk management in ways that accelerate economic growth (Demirguc-Kunt et al., 1998; Tschoegl, 2005).

In stark contrast to these viewpoints, those against the entry of foreign banks into host countries argue that foreign banks tend to "cherry pick" the most profitable borrowers, leaving the small and medium sized firms unattended who are likely to be informationally opaque. If this argument is justified, a high level of foreign bank penetration may hurt the economic growth of host countries since small and medium sized firms represent usually the largest group of total enterprises and hire a large share of employees (Cull and Peria, 2007; Berger et al., 2005). Foreign banks may also lack local information; a major problem in low income countries (LICs) and even to an extent in emerging and developing market economies (EMs) where asymmetric information problems are severe and legal enforcement is weak (Acharya et al., 2004; Petersen

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and Rajan, 1995). In addition foreign banks are often large organizations and reluctant to decentralize decision power. However, decentralization is necessary if lending decisions need to be based on soft information, based on relationships of banks with prospective local clients and knowledge about local market conditions. This is often the case when dealing with small firms, dominant in LICs and EMs. As a result, the local branches of foreign banks may specialize in funding large firms and overlook small firms. Such neglect may create concerns that foreign bank presence may be detrimental to the financing and growth of small and young businesses (Giannetti and Ongena 2012). This may actually lower overall economic growth, especially in LICs and EMs.

Empirical studies examining the impact of foreign banks on economic growth are not only sparse but also provide ambiguous results. Demirguc-Kunt et al. (1998) using data on 7900 individual commercial banks covering 80 nations for the period 1988-1995, is one of the very few studies that has addressed this issue. The authors find, foreign banks do not exert a significant impact on economic growth. Wu et al. (2010) using country level data on 35 emerging economies for 1996-2003 and employing both OLS and fixed effects models, find greater foreign bank presence to have an insignificant impact on growth (and in fact negative in one specification), but when interacted with capital formation growth is statistically significant in positively affecting economic growth. This leads the authors to conclude that the effect of gross fixed capital formation on output growth is higher in an economy with a more pronounced level of foreign bank penetration relative to those with a lower level of foreign bank penetration.

In this context, this paper makes a contribution to the literature on banking sector globalization. Using three different measures of banking sector openness, I examine their impact on economic growth while controlling other macroeconomic and relevant determinants of

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growth. I cover the widest possible range of nations for the most updated time period 1995-2013. Furthermore, the results are compared across different levels of economic development: EMs, LICs and advanced economies (AEs).¹

From a policy perspective, economic success of any nation intrinsically hinges on the tradeoff between external policy choices and their internal consequences. One such external policy choice is the extent of banking sector openness. Hence, in guiding economic policy, the findings of the analysis will shed light on regulatory measures for central bankers and governments. This study will either exacerbate or ameliorate previous findings on the impact of foreign banks on economic growth in host countries.

The remainder of the paper proceeds as follows. Section 2 provides some trends and patterns on the extent of banking sector globalization and economic growth. Section 3 discusses the determinants of economic growth and the different econometric models. Section 4 presents the results along with several robustness checks. Section 5 examines the impact of foreign banks on credit flows. Finally, section 6 concludes.

2. Trends and patterns in banking-sector globalization and economic growth

2.1 Measuring banking-sector globalization

There are primarily two reasons that drive foreign banks to enter another country. First, in search of higher profits and more diversification opportunities. Foreign banks have entered a host nation either through extending branches and subsidiaries of parent banks or through mergers and acquisitions with private banks in the host nation. Secondly, governments of host nations have increased the accessibility of expanding services for foreign banks. In some cases, foreign

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¹ These nations are categorized under these categories following the World Economic Outlook (2012) of the IMF.

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bank entry into previously restricted markets has occurred in the aftermath of a crisis or political upheaval. Claessens and Hoeren (2012), Goldberg (2009) provide recent trends and patterns.

Figure 1 shows the yearly averages of the percent of foreign banks in a nation. A foreign bank is a bank where 50 percent or more of its shares are owned by foreigners. To provide a comparative perspective, I show the trends for EMs, LICs and AEs. Over the time period of this study, LICs had on average the highest share of foreign banks in their domestic banking industry, followed by that in EMs.

[Figure 1 here]

I also use two other measures to capture the extent of banking sector globalization. The ratio of foreign bank assets to total assets in the banking sector of a nation. Figure 2 shows the annual averages for the period 2004-2013 for which such data are available. Again a similar pattern emerges. LICs have the most foreign assets in their domestic banking industry followed by that in EMs. The third measure is the ratio of outstanding loans from banks outside the country of residence of depositors to GDP of a nation. Figure 3 plots this measure. For most of the time period, AEs have the highest share of loans from non-resident banks in their domestic markets, followed by that in EMs.

[Figures 2 and 3 here]

2.2 Economic growth patterns

Figure 4 shows the annual averages of GDP per capita growth for the full sample of nations as well as that in AEs, EMs and LICs. Over the period of this study, the highest growth rates were achieved in year 2004 in EMs, followed by that in 2006. Pointedly, an ocular view reveals that in year 2009, the eye of the GFC, both AEs and EMs had negative growth rates although it remained positive in LICs.

3. Estimation framework, data and methodology.

To disentangle the independent impact of foreign bank participation on economic growth from other macroeconomic and socio-economic determinants, I control for such factors. The estimation framework is derived from the Solow model of economic growth:

 $\Delta(\text{GDP per capita growth})_{it} = a_0 + a_1 \log(y_i/y_{\text{US}})_{it}^{1990} + a_2(\text{Investment/GDP})_{it} + a_3(\text{Government} \text{Expenditure})_{it} + a_4(\text{Trade Openness})_{it} + a_5(\text{Average years of schooling})_{it} + a_6(\Delta \text{Pop})_{it} + a_7(\text{Log of Banks Assets-to-GDP})_{it} + a_8(\text{Banking sector globalization})_{it} + \lambda_t + \varepsilon_{it}$ (1)

 λ_t denotes time fixed-effects and ε_{it} is an independently and identically distributed error term. I use the log of a nation's per capita GDP (PPP-adjusted) relative to the US in 1990 to control for convergence or "catch-up" effects. A priori expectation of a_1 is negative. To capture factor accumulation, I use the ratio of gross fixed capital accumulation to GDP. I expect $a_2>0$. Greater government expenditure can promote growth through employment creation. At the same time, it can increase budget deficits and public debt that in turn can hurt economic growth. So, a_3 is ambiguous. Next, greater trade openness contributes positively towards economic growth, both by increasing allocative efficiency and by accelerating the transfer of technology. I expect $a_4>0$. Additionally, other control variables include average numbers of years of schooling and population growth rate. A priori their expected signs are positive and negative, respectively.

Turning to the banking-industry specific variables, I use the logarithmic value of bank assets-to-GDP to measure the banking-industry's size in each nation. This will also proxy for banking sector's overall level of development. However, theoretically its impact on growth is ambiguous. On the one hand, a well-developed banking-industry can ameliorate information and transactions costs, thereby fostering efficient resource allocation and promoting growth. On the other hand, financial development, by enhancing resource allocation and hence the returns to saving, may lower saving rates. If there are sufficiently large externalities associated with saving

and investment, then banking-sector development lowers economic growth (King and Levine, 1993; Beck and Levine, 2004). Banking sector globalization is captured by the three measures discussed earlier. The upper panel of Table 1 provides their summary statistics and sources.

[Table 1 here]

Following standard conventions in empirical growth regressions, I construct a panel with data averaged over five-year intervals to abstract from business cycle relationships. With a sample size spanning from 1995 to 2013, I use three 5-year panels from 1995-1999; 2000-04; 2005-09 and one 4-year panel from 2010-13. These four non-overlapping panels are long enough to eliminate business cycle effects but short enough to capture important changes that occur over time for a particular country. It also lessens the problem of serial correlation in the transitory component of the disturbance term of the estimation model.

For robustness purposes, I employ three different econometric models. Firstly, I use a fixed effects model with time dummies. The time fixed effects will capture the effects of global shocks common to all countries considered. Such time dummies also control for other country-invariant but time-variant unobserved factors. This is especially relevant in light of several institutional and regulatory changes in the banking sector over time. Secondly, I use the two-step systems GMM-estimation developed by Arellano and Bover (1995), Blundell and Bond (1998) adjusted with the Windmeijer (2005) correction for standard errors, to control for potential endogeneity among the variables. This methodology essentially regresses levels and changes in economic growth rates on the lags of the same variable as well as other explanatory variables using lagged levels as instruments. These internal instruments help to eliminate bias resulting from possible endogeneity of independent variables. Economic growth for any nation may show a path dependency pattern where previous year's growth rates may influence the present one.

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The GMM estimation further allows taking into account of such possible persistence. Arellano and Bover (1995), Blundell and Bond (1998) show that the systems-GMM estimation produces dramatic increases in both consistency and efficiency.² However, a key challenge using the systems-GMM methodology is that the number of instruments tends to explode with the number of time periods. Instrument proliferation can overfit endogenous variables and fail to expunge their endogenous components. I circumvent this methodological challenge in two ways. Firstly, following Roodman (2009 a, b), I limit the lags in GMM-style instruments and also collapse the instruments. Secondly, I adopt a parsimonious approach, similar to Beck and Levine (2004), and include a limited number of control variables at a time, as used in cross-country growth regressions. By keeping the instrument set small, I minimize the over-fitting problem and maximize the confidence that one has in the more efficient two-step systems-GMM estimator.

The third methodology I employ is the nonparametric quantile regression that models the quantiles of the dependent variable, economic growth here, given a set of conditioning variables. When we use fixed-effects or GMM estimations, it is implicitly assumed we only focus on the conditional mean of real GDP per capita growth. Such models may not provide a satisfactory answer to how different variables might affect growth rates if the latter is far from the level of the conditional mean. For example, several nations witnessed negative growth rates in year 2009 during the eye of the GFC and its immediate aftermath. In such a situation, unlike fixed-effects or GMM estimations, quantile regressions are highly flexible by focusing on the impact of the covariates not only on the central part but also at the tail areas of the entire conditional distribution. Moreover, the quantile regression approach does not require strong distributional assumptions, and offers a distributionally robust method of modeling these relationships

² I use the system estimator rather than the difference-GMM estimation because the latter eliminates the crosscountry relationship and focuses only on time difference, and secondly, suffers from imprecision and potentially biased estimates in small samples (Alonso-Borrego and Arellano, 1999; Blundell and Bond, 1998).

(Koenker 2005). I report estimations at the 50 percent of quantiles. Results for other selected quantiles remained largely unchanged.

4. Results and Robustness Checks

Table 2 presents the results for the entire sample. Columns 1-3 show the fixed-effects model results using the three different measures of banking sector globalization, respectively. In Regs. 1 and 2, both the share of loans from non-resident banks and the share of foreign banks are statistically insignificant. However, in Reg. 3, the share of foreign assets to total bank assets is negatively significant. In all three specifications, I-to-GDP positively and significantly influences growth while higher population growth negatively affects growth, following theoretical priors. The other control variables are statistically insignificant in the first two specifications. In Reg. 3, initial per capital GDP relative to that in the US reduces growth, confirming the convergence hypothesis. Both trade openness and average years of schooling are positively significant as expected a priori. Government expenditure-to-GDP negatively affects economic growth. This negative coefficient is in line with the argument in Sala-I-Martin et al. (2004) that public consumption does not tend to contribute to growth directly, but needs to be financed with distortionary taxes that hurts growth. Likewise, the negative coefficient for banking industry size suggests that higher banking sector development may lead to more savings thereby reducing its return, which in turn dampens economic growth.

Moving to the GMM estimations in columns 4-6, the three measures of banking sector globalization are negatively significant. This provides stronger evidence that greater foreign bank

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presence reduces economic growth per se after controlling for other relevant factors.³ Turning to the quantile regressions in columns 7-9, the share of foreign bank assets is negatively significant while the two other measures of banking sector globalization are insignificant. All other controls are significant with correct signs.

[Table 2 here]

4.1 Results across levels of economic development.

Tables 3 and 4 exhibit the findings for EMs and LICs, respectively. The results for the EMs are very similar to the full-sample. A higher share of foreign bank assets reduces growth when using the fixed effects model. Both the shares of foreign banks and foreign bank assets significantly reduce economic growth in the GMM and quantile regressions, respectively. The control variables exhibit less empirical regularity in their statistical significance. Both gross fixed capital formation and population growth are statistically significant having signs consistent with theoretical priors. Notably, higher bank assets-to-GDP is positively significant in EMs, implying greater banking industry development is conducive to achieve higher growth.

In LICs, both higher loans from non-resident banks and higher share of foreign bank assets significantly reduce economic growth when using the fixed effects model. Likewise, a greater share of foreign banks and foreign bank assets lower growth in the GMM and quantile estimations, again in line with the findings for the full-sample and in EMs. For the control variables, average years of schooling are positively significant, indicating that education is important to promote growth in LICs. Initial GDP per capita relative to that in the US is negatively significant in six of the nine estimations supporting the fact that 'catch-up' matters in دائلر دکنده مقالات علمی Freepaper.me paper

³ I also included other controls like life expectancy at birth and changes in terms-of-trade. Both these variables were statistically insignificant. Hence, the results presented here exclude them to maintain model parsimony and avoid instrument proliferation.

LICs. Likewise, greater fixed capital formation promotes growth, while both higher government spending and population growth have an inimical impact on growth.

[Tables 3 and 4 here]

Table 5 presents the results for AEs. Here we would expect the presence of foreign banks to matter the least in influencing growth. Not surprisingly, the results support this assertion. The three measures of banking sector globalization are all statistically insignificant. Likewise, initial GDP per capita relative to that in the US is also insignificant as expected, implying that catch-up effect is not an issue in AEs (except in the quantile regressions). For the other controls, higher Ito-GDP, trade openness and average years of schooling significantly increase growth while G-to-GDP lowers growth, supporting economic theory. Population growth and the banking industry size are both statistically insignificant. Pointedly, there is evidence of growth inertia with the lagged coefficients positively significant in two of the three GMM estimations. The finding bodes relevance in light of the negative growth rates exhibited by AEs in year 2009. It indicates lower economic growth in one year will feed into the next, and it will take some time for such nations to come out of the downward phase of the business cycle.

The results presented thus far provide overwhelming evidence that greater banking sector globalization reduces economic growth. This suggests foreign banks face informational bottlenecks that hinder them from lending to a section of the potential client-base. This in turn prevents the host markets from reaping the benefits of foreign bank presence in terms of a greater allocation of credit, hence lowering growth. Moreover, the negative coefficient lends empirical support to the views espoused theoretically in studies like Levine (1996) that foreign banks are unlikely to play a dominant role in host nations because of cost advantages enjoyed by domestic banks in terms of acquiring information about firms, business conditions, and policy changes.

[Table 5 here]

4.2 Does the extent of foreign bank penetration matter?

If the aforementioned finding is indeed driven by informational asymmetries and higher costs of acquiring soft information by foreign banks, the deleterious effect of greater foreign bank presence on economic growth would be less in nations with a low share of foreign banks. Without direct measures of the degree to which markets and banks in a broad cross-section of countries ameliorate information and transactions costs, I explore this issue in Table 6 by presenting results for countries categorized according to different threshold levels of foreign bank presence: more than 10 percent, more than 30 percent, more than 50 percent, and finally less than 10 percent on average over the period of study. For brevity purposes, the GMM estimation results are shown using the shares of foreign banks and foreign bank assets, respectively. The negatively significant coefficients for these two measures are consistently found for nations with more than 10, 30 and 50 percent foreign banks, respectively. However, for countries with less than 10 percent the coefficient is insignificant, suggesting the presence of foreign banks is not strong enough to reduce allocation of credit and significantly lower growth.

[Table 6 here]

4.3 Addressing model uncertainty

I account for potential model uncertainty in growth regressions by using a Bayesian model averaging (BMA) approach that expresses uncertainty about unknown parameters using probabilities, including the outcome of interest, economic growth here. BMA is especially relevant in panel growth regressions because it allows considering two levels of uncertainty: the uncertainty associated with the parameters conditional on a given model and the uncertainty in the specification of the empirical model (Moral-Benito 2012). BMA is also suited here to

provides another form of sensitivity analysis relative to the frequentist methods. Table 7 presents the posterior mean estimates of the BMA analysis along with their Monte Carlo standard errors (MCSEs) based on a Markov chain Monte-Carlo model composition (MC³) method with 25,000 iterations and using a Zellner's (1986) g distribution as priors for all parameters.⁴ The posterior means are comparable to the corresponding coefficient estimates of the frequentist techniques. The means of the three measures of banking-sector globalization are negatively significant and consistent with the different frequentist approaches. The same applies for the other controls.

[Table 7 here]

4.4 Results using yearly data

The analysis presented thus far use four non-overlapping panels. To ensure that that the smoothened series using 5-year averages may not have generated spurious relationships that would not appear in the original time series, I next use yearly data. Table 8 presents the fixed effects model results using year dummies. The three measures of banking sector globalization significantly reduce economic growth for the full sample, confirming the earlier results. Such findings are most accentuated in LICs. The share of foreign assets and foreign banks also reduce growth in both EMs and AEs.

[Table 8 here]

5. Foreign banks and private credit flows.

Taken together the results provide evidence that greater banking sector globalization reduces economic growth. This holds especially for LICs and EMs but not so in AEs. Consistent with banking theories that incorporate information asymmetries, this finding supports the notion

⁴ The BMA results are robust to sensitivity analysis performed to evaluate the influence of different competing priors. The posterior inclusion probabilities of the explanatory variables were also high justifying their inclusion in the model.

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of "cherry picking" where foreign banks due to their informational disadvantages and weak relationship with local clients consciously lend only to the more transparent firms and deprive the large majority of small and medium firms that are more informationally opaque, thereby reducing overall credit provision and hence growth. To explore this channel of argument, I next examine the impact of banking sector globalization on private credit flows.

Following Detragiache et al. (2008), the amount of credit extended from private sources is measured by private credit-to-GDP ratio. Domestic credit to private sector refers to financial resources provided to the private sector, such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises as well.

Private credit flows are modelled as a function of banking-industry specific factors $(X_{i,t}^{j})$, macroeconomic fundamentals and institutional variables $(X_{i,t}^{l})$:

Private Credit flows_{i,t} =
$$\alpha + \beta_0 X^{j}_{i,t} + \beta_1 X^{l}_{i,t} + e_{i,t}$$
 (2)

 $X^{l}_{i,t}$ incudes industry structure or concentration, size and risks, respectively. I measure bank concentration by the assets of three largest commercial banks as a share of total commercial bank assets in a country. As used earlier, size is measured by total assets of the banking industry divided by GDP of a nation. Industry risk is measured by Z-score that compares the buffer of a country's banking system (capitalization and returns) with the volatility of those returns i.e. sum of return on assets and equity capital-to-assets divided by standard deviation of ROA.⁵ $X^{l}_{i,t}$ includes economic freedom, real GDP growth, inflation and real GDP per capita. Economic

⁵ More concentrated banking systems may enhance market power and misallocate credit flows or channelize them towards certain types of firms only. More concentrated banking systems tend to have fewer but larger-sized banks. Managers of such banks may charge higher interest rates leading to a decline in credit flows. Larger size banking industry should reduce costs by reaping economies of scale or scope and help provide more credit flows. Also, in large sized markets banks will face more competitive pressures, causing them to reduce interest rates and hence increase credit flows. Higher industry risk implies more chances of default and hence is expected to have a pernicious effect on private credit flows.

freedom is used as an institutional control variable. It is an indicator of how a country's policies rank in terms of providing economic freedom and is a composite of ten indicators ranking policies in the areas of trade, government finances, government interventions, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, regulation, and black market activity.⁶ Higher scores indicate polices more conducive to competition and economic freedom. Table 9 presents the fixed effects model results (using both year and country dummies) for the shares of foreign banks and foreign assets, respectively.

Both measures are negatively significant implying an increase in the share of foreign of bank presence is associated with a decline in private credit flows, for the full-sample as well as in EMs. The share of foreign banks significantly reduces credit flows in LIC and AEs as well. The results for private credit flows support the asymmetric information and cherry-picking argument espoused in the extant literature and provide an underlying reason why greater banking sector globalization reduces economic growth.

6. Conclusion.

While the potential benefits of foreign bank entry are many, the evidence found here suggests that information asymmetries may prevent the host nations from reaping these benefits. The findings here are also in line with a body of literature (Acharya et al., 2004; Dell'Arricia and Marquez, 2004; Detragiache et al. 2008; Gormley, 2010; Mian, 2006, Sengupta, 2007 among others) that has espoused concerns that foreign banks face significant informational asymmetries in poor and developing countries that hamper them from lending to small firms that are more informationally opaque, and hence reduce economic growth.

⁶ The lower panel of Table 1 provides the summary statistics of these variables and their sources.

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However, the results found here should not be interpreted as evidence supporting more protectionist policies towards foreign banks. Rather, the negative effect on credit flows and economic growth found in this study could be used as a policy guide. For foreign banks this calls for developing local knowledge and relationships when they enter EMs and LICs, where a large share of potential borrowers are often identified only on the basis of soft information. From the perspective of the host nations banking regulatory authorities, they may consider strengthening accounting standards, disclosure rules and credit evaluating agencies. By reducing banks' costs of obtaining information about prospective clients, such policies may increase the range of firms foreign banks finance and at the same time reduce the scope for a systematic drop in loans from domestic banks in response to increased competition. This will help in a greater allocation of credit that will positively contribute to economic growth.

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Figure 1: Percentage of Foreign Banks to Total Banks



Figure 2: Loans from Non-Resident Banks-to-GDP







Figure 4: Annual averages of GDP per capita growth



Economic growth variables used in four non-overlapping panels	Source	Mean	Max	Min	Std. Dev	Obs.
Real GDP (PPP-adjusted) per capita growth	WDI	2.666	51.466	-9.654	3.870	671
Log(GDP per capita/GDP per capita US) ¹⁹⁹⁰	WDI	-1.878	0.836	-4.486	1.211	652
Gross Fixed Capital Formation-to-GDP	WDI	22.860	179.976	3.958	10.114	656
Government Expenditure-to-GDP	WDI	16.216	123.887	3.308	8.086	660
Population Growth	WDI	1.521	15.526	-1.758	1.461	692
Trade Openness	WDI	89.675	446.319	0.670	53.059	679
Log (Bank Assets-to-GDP)	GFD, FRED	3.583	5.783	-0.691	0.984	641
Average years of total schooling	Barro and Lee	7.313	13.420	0.650	3.122	558
Non-resident Bank Loans-to-GDP	FRED	69.258	4477.97	0.056	342.671	670
Foreign bank-to-Total Banks	GFD, FRED	38.084	100	0.000	26.520	521
Foreign Assets-to-Total Assets	GFD, FRED	41.089	100	0.000	32.262	336
Variables used in private credit flows estimations	Source	Mean	Max	Min	Std. Dev	Obs.

Private Credit-to-GDP	GFD, FRED	51.379	313.851	0.010	48.199	1974 🕂 🧏
Bank Asset Concentration	GFD, FRED	70.795	100.000	7.248	20.753	1981 🖉 🧯
Bank Assets-to-GDP	GFD, FRED	59.647	349.994	1.298	50.894	1982 –
Bank z-score	GFD, FRED	16.041	74.129	-13.067	11.054	2041 🖣 🛓
Economic Freedom	Heritage Foundation	61.316	90.500	21.400	10.538	2028
Inflation	WDI	19.910	24411.03	-9.798	536.099	2079
Real GDP growth	WDI	4.003	104.485	-62.077	4.929	2124
Real GDP per capita	WDI	11535.73	87716.73	128.127	15785.07	2110
Private Credit-to-GDP	GFD, FRED	51.379	313.851	0.010	48.199	1974

Mnemonics are: GFD – Global Financial Development, The World Bank Group, FRED: Economic Database of the Federal Reserve Bank of St. Louis, WDI – World Development Indicators, The World Bank Group.

Table 2: Full-sample										
	Fixed-e	ffects reg	ressions	System-	GMM reg	ressions	Qua	ntile regres	sions	
	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 8	Reg. 9	
				-	267.54	458.52	248.06	546.229	544.27	
c	-1.559	-2.543	-0.295	50.337	1	2	0	***	6*	
	(-	(-	(-			(1.10)		(a		
	0.527)	0.685)	0.243)	(-0.13)	(0.62)	(1.18)	(1.21)	(2.69)	(1.71)	
Initial GDP per capita	_		- 0.928*	- 0 781*	- 0 895*	- 0 845*	- 0.669*	- 0 763**	- 0 956*	
1990	0.756*	-0.865	**	**	**	**	**	*	**	
	(-		(-							
	1.717)	(-1.55)	5.252)	(-3.94)	(-4.15)	(-4.42)	(-4.53)	(-4.79)	(-5.01)	
	0.201*	0.252*	0.192*	0.183*	0.184*	0.181*	0.136*	0.141**	0.163*	
I-to-GDP	**	**	**	**	**	**	**	*	**	
	(3.532)	(3.594)	(8.497)	(6.03)	(5.41)	(5.91)	(7.18)	(7.08)	(6.66)	
				- 0.061*	- 0.067*	_	- 0.075*	- 0 075**	_	
G-to-GDP	-0.052	-0.019	-0.034	*	*	0.052*	**	*	0.064*	
	(-	(-	0100			01002			0.000	
	0.728)	0.205)	(-1.17)	(-2.35)	(-2.27)	(-1.64)	(-3.19)	(-2.9)	(-1.98)	
	-	-	-	-	-	-	-	-	-	
	0.724*	0.854*	0.703*	0.683*	0.796*	0.812*	0.705*	0.743**	0.655*	
Population Growth	** (** (** (**	**	**	**	ጙ	**	
	(- 2 376)	(-	(- 7 197)	(-5.60)	(-9.28)	(-9.74)	(-7.15)	(-7,72)	(-6.41)	
	2.370)	2.331)	0.008*	0.007*	0.007*	0.008*	(7.15)	(1.12)	0.007*	
Trade Openness	0.001	0.005	**	**	**	**	0.003*	0.004**	**	
1	(0.207)	(0.668)	(3.678)	(3.54)	(3.86)	(4.40)	(1.68)	(2.24)	(2.97)	
Average years of	· /	· /		· /	× /		``´´	0.154**		
schooling	-0.054	-0.103	0.079	0.154*	0.117*	0.099	0.106*	*	0.143*	
	(-	(-	(1.000)	(4 Q Q)						
	0.281)	0.461)	(1.093)	(1.83)	(1.64)	(1.35)	(1.67)	(2.44)	(1.86)	
			- 0.60**	- 0 514*	- 0 532*	- 0 707*		_	- 0.416*	
Log (Assets-to-GDP)	0.352	0.295	*	**	*	**	-0.28*	0.321**	*	

			(-						
	(0.786)	(0.564)	3.456)	(-2.43)	(-2.21)	(-2.80)	(-1.88)	(-2.16)	(-2.17)
Non-resident Bank				-0.001*					
Loans-to-GDP	0.000			**			0.000		
	(-								
	0.148)			(-5.60)			(0.60)		
Foreign bank-to-Total									
Banks		-0.012			-0.01*			-0.006	
		(-			(1, 0)			(124)	
		0.773)			(-1.08)			(-1.54)	
Foreign Assets-to-Total			-0011*			- 0.012*			_
Assets			**			**			0.009*
			(-						
			2.515)			(-2.38)			(-1.94)
GDP per capita									
growth _(t-1)				0.005	0.009	0.009			
				(0.45)	(1.03)	(0.91)			
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Africa dummy	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Island dummy	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
adj. R2 or pseudo R2	0.054	0.058	0.488				0.159	0.183	0.312
F-stat	3.087	3.006	22.615	19.240	28.930	29.280			
Ν	480	421	273	365	317	273	480	421	273
No. of Cross-sections	128	112	112	128	112	112			
AR(1)				-1.68	-1.95	-1.69			
p-values				0.093	0.07	0.092			
AR(2)				-0.84	-1.14	-0.85			
p-values				0.402	0.255	0.393			
Hansen				2.48	0.27	0.16			
p-values		MK	1	0.115	0.6	0.693			
No. of Instruments				14	14	14			

Regs.1, 4, 7 show results using loans from non-residential banks –to-GDP; Reg. 2, 5, 8 show the results using foreign banks-to-total banks; Regs 3, 6, 9 show the results using foreign assets-to-total assets. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **,*** indicates significance at the 10%, 5%, 1% level.

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Table 3: Emerging and developing market economics

Fixed-effects regressions	System-GMM regressions	Quantile regressions

25

	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 8	Reg. 9
				307.04	441.26	727.05	- 185.97	- 333.2	
С	0.116	1.427	0.125	9	2	6	6	92	27.661
	(0.019)	(0.216)	(0.07)	(0.48)	(0.78)	(1.29)	(-0.51)	(- 0.84)	(0.05)
Initial CDD par conita				- 0.678*					
1990	0.754	1.166	- 0.625* (-	*	-0.327	-0.400	0.652*	-0.566	-0.64*
	(0.597)	(0.894)	1.856)	(-2.04)	(-1.20)	(-1.45)	(-1.78)	1.55)	(-1.84)
I-to-GDP	0.372* **	0.373* **	0.154* **	0.168* **	0.169* **	0.177* **	0.155* **	0.15* **	0.147* **
1-10-0101	(2.803)	(2.737)	(4.442)	(5.08)	(5.92)	(5.15)	(4.18)	(3.89)	(3.75)
G-to-GDP	-0.117	-0.217	-0.043	0.021	-0.014	-0.014	0.038	-0.027	-0.006
	(- 0.667)	(- 1.171)	(- 0.848)	(0.43)	(-0.33)	(-0.30)	(0.73)	(- 0.53)	(-0.11)
	- 1 631*	- 1 938*	- 0 893*	- 0 775*	- 0 003*	- 0.958*	- 0.714*	- 0 79*	- 0 773*
Population Growth	**	**	**	**	**	**	**	**	0.775 **
	(-	(-	(-				(1.50)	(-	(= 11)
Trada Opannass	3.028)	3.373)	6.512)	(-5.64)	(-9.69)	(-8.31)	(-4.52)	4.83)	(-5.11)
Trade Openness	(0.848)	(0.983)	(0.848)	(-0.04)	(0.54)	(0.55)	(0.000)	(0.000)	(0.35)
Average years of	(0.0.10)	(01300)	(0.0.10)	(010 1)		(0.00)	(0.02)	(0100)	(0.00)
schooling	0.952*	0.838*	0.160	0.052	0.003	0.096	-0.008	0.140	0.145
	(1.985)	(1.675)	(1.221)	(0.40)	(0.54)	(0.79)	(-0.06)	(0.95)	(0.94)
Log (Assets-to-GDP)	1.804*	2.140 [.] *	-0.140	-0.297	-0.164	-0.288	0.317	0.291	0.204
	(1.745)	(2,02)	(-	(0.80)	(0.50)	(0.80)	(1.07)	(0,04)	$(0, \epsilon^2)$
Non-resident Bank	(1.743)	(2.02)	0.308)	(-0.80)	(-0.30)	(-0.80)	(1.07)	(0.94)	(0.62)
Loans-to-GDP	-0.001	X C		0.002			0.001		
	(-0.077)			(0.40)			(0.26)		
	0.077)			(0.40)	-		(0.20)	-	
Foreign bank-to-Total		0.022			0.032*			0.02*	
Banks		-0.033			<u>~</u> ~			* (-	
		1.028)	_		(-4.46)	_		2.16)	_
Foreign Assets-to-Total			0.022*			0.024*			0.019*
Assets			**			**			**
			(- 3.467)			(-3.05)			(-2.75)
GDP per capita $growth_{(t-1)}$				0.014	0.002	0.005			
1)				(1.34)	(0.34)	(0.51)			
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Africa dummy	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Island dummy	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
adj. R2 or pseudo R2	0.069	0.085	0.496	22 940	20.210	16.040	0.174	0.205	0.329
r-stat N	2.071 189	2.297 182	11.578	22.840 145	20.310 138	16.940 130	189	182	130

No. of Cross-sections	50	48	49	50	48	49
AR(1)				2.73	-1.92	2.53
p-values				0	0.055	0
AR(2)				-1.28	-0.82	-1.51
p-values				0.2	0.4	0.131
Hansen				0.04	0.8	0.67
p-values				0.848	0.37	0.413
No. of Instruments				14	14	14

Regs.1, 4, 7 show results using loans from non-residential banks –to-GDP; Reg. 2, 5, 8 show the results using foreign banks-tototal banks; Regs 3, 6, 9 show the results using foreign assets-to-total assets. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **, *** indicates significance at the 10%, 5%, 1% level.

		I able 4	: Low In	icome C	ountries				
	Fixed-e	effects regr	ressions	System	-GMM reg	gressions	Quan	tile regres	sions
	Reg. 1	Reg. 2	Reg. 3	Reg. 4	Reg. 5	Reg. 6	Reg. 7	Reg. 8	Reg. 9
с	-2.109	0.915	0.911	- 685.98 0	- 1101.8 16	- 781.72 8	- 530.11 2	- 257.88 0	- 650.06 0
	(- 1.045) -	(0.356)	(0.324)	(-0.81)	(-1.30)	(-0.76)	(-1.16) -	(-0.74) -	(-1.04)
Initial GDP per capita 1990	1.081* ** (-	0.882* ** (-	0.819* ** (-	1.14** *	-0.529	-0.663	0.899* **	0.619* **	-0.423
I-to-GDP	3.485) 0.121* **	2.371) 0.148* **	2.307) 0.154* **	(-2.68) 0.172* **	(-1.32) 0.149* **	(-1.44) 0.124* **	(-2.81) 0.076* **	(-2.53) 0.118* **	(-1.27) 0.121* **
	(3.72)	(3.293)	(3.539)	(3.80)	(3.25)	(2.58)	(2.24)	(4.03) - 0.128*	(3.34)
G-to-GDP	-0.058	-0.093 (-	0.011	- 0.077*	-0.074	-0.045	0.108** *	0.128* **	0.079*
	1.262)	1.587)	(0.204)	(-1.74)	(-1.29) - 0 777*	(-0.51)	(-2.27)	(-3.18)	(-1.64)
Population Growth	0.084	-0.071 (-	-0.515 (-	0.624*	*	0.704*	-0.54*	0.453*	0.638*
Trade Openness	(0.282) 0.001	0.173) -0.006 (-	1.081) 0.004	(-1.70) 0.005	(-2.19) -0.001	(-1.73) 0.001	(-1.77) 0.007	(-1.72) 0.000	(-1.85) -0.001
Average years of	(0.116) 0.268*	0.777)	(0.483)	(0.52) 0.334*	(-0.10)	(0.13)	(1.03) 0.311*	(0.06) 0.298*	(-0.19)
schooling	** (2.386)	0.247* (1.818)	0.077 (0.596)	** (2.42)	0.21* (1.99)	0.145 (0.98)	** (2.74)	** (3.33)	0.227* (1.90)
Log (Assets-to-GDP)	-0 361	- 0.831* *	- 0 821*	-0 564	- 1.085* **	- 0.995* *	- 0.884* **	- 0.771* **	- 0 743*
	0.501		0.021	0.50-					0.775

Table 4: Low Income Countries

	(- 1.151)	(- 2.211)	(- 1.942)	(-1.40)	(-2.75)	(-2.12)	(-2.70)	(-3.15)	(-1.98)
Non-resident Bank Loans-to-GDP	- 0.001*			-0.001			0.000		
	(- 1.637)			(-0.90)			(-0.65)		
Foreign bank-to-Total		0.004			- 0.023* **			- 0.012*	
Danks		-0.004 (-						0.012	
		0.366)			(-2.63)			(-1.70)	
Foreign Assets-to-Total			-			0.025*			0.018*
Assets			0.016*			**			*
			1.702)			(-2.57)			(-2.19)
GDP per capita $growth_{(t-1)}$				0.110	0.044				
1)				-0.119	0.066	0.037			
Vear dummies	Ves	Ves	Ves	-1.22 Ves	0.20 Ves	U.21 Ves	Ves	Ves	Ves
A frica dummy	Yes	Yes	Yes	No	No	No	No	No	No
Island dummy	Yes	No	No	No	No	No	Yes	Yes	Yes
adi. R2 or pseudo R2	0.262	0.287	0.415				0.238	0.269	0.384
F-stat	5.428	5.016	5.646	16.980	17.390	16.910			
Ν	163	121	73	124	91	73	163	121	73
No. of Cross-sections	45	33	32	45	33	32			
AR(1)				2.65	2.14	-1.94			
p-values				0	0.03	0.052			
AR(2)		-		0.46	-1.09	0.65			
p-values				0.647	0.278	0.5			
Hansen				1.06	0.41	0.78			
p-values				0.304	0.524	0.377			
No. of Instruments				14	14	14			

Regs.1, 4, 7 show results using loans from non-residential banks –to-GDP; Reg. 2, 5, 8 show the results using foreign banks-tototal banks; Regs 3, 6, 9 show the results using foreign assets-to-total assets. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **,*** indicates significance at the 10%, 5%, 1% level.

	F	Fixed-effects			stem-GM	Μ			
	1	regressio	ns	r	egression	s	Qua	ntile regress	ions
	Reg.	Reg.			0	Reg.		3	
	1	2	Reg. 3	Reg. 4	Reg. 5	6	Reg. 7	Reg. 8	Reg. 9
				-	150.56	250.6	1516.22	1387.149	1683.6
с	1.170	3.905	-2.714	79.408	6	26	***	***	18*
		(0.27	(-						
	(0.10)	2)	0.719)	(-0.14)	(0.21)	(0.27)	(6.93)	(9.05)	(1.72)
							-		
Initial GDP per capita	-	-				-	1.374**	-	
1990	0.037	1.009	-0.649	-0.665	-0.650	0.607	*	1.001***	-1.350
	(-	(-							
	0.015	0.345	(-			(-			
))	0.995)	(-1.17)	(-0.85)	0.86)	(-3.59)	(-3.54)	-1.03)
	-	-	0.188*			0.214			
I-to-GDP	0.017	0.136	**	0.149*	0.179*	**	0.039	0.045*	0.125
	(-	(-							
	0.082	0.536	(3.182						
)))	(1.91)	(1.82)	(2.07)	(1.19)	(1.86)	(1.04)
				-	-			-	
G-to-GDP	0.217	0.193	-0.038	0.066*	0.079*	0.064	-0.051*	0.078***	-0.041
	(1.09	(0.91	(-			(-			
	8)	1)	0.798)	(-1.65)	(-1.96)	0.72)	(-1.69)	(-3.91)	(-0.41)
	-	-				-		-	
Population Growth	0.937	1.057	-0.309	-0.122	-0.203	0.244	-0.180	0.412***	-0.088
	(-	(-							
	0.842	0.845	(-			(-	(())		
))	0.893)	(-0.57)	(-1.12)	0.60)	(-1.03)	(-3.55)	(-0.12)
		0.024	0.008*	0.006*	0.006*		0.007**		
Trade Openness	0.016	**	**	**	**	0.006	*	0.006^{***}	0.008
	(1.55	(2.03	(2.988	(2 2 0)	(* 10)		(1.10)		
	7)	9)		(3.79)	(3.10)	(1.50)	(4.49)	(5.70)	(1.46)
Average years of	0.514	0.000	0.100	0.155*	0.170*	0 1 7 7	0.114	0.00.4*	0.074
schooling	0.514	0.623	0.180	*	0.172*	0.177	0.11*	0.094*	0.074
	(1.10	(1.14	(1.411	(2.1c)	(1.0.4)	(1,0,4)	(1, CE)	(1, 0, 4)	(0.21)
	6)	4))	(2.16)	(1.84)	(1.04)	(1.65)	(1.84)	(0.31)
							-		
Log (Assats to CDP)	-	-	0.526	0 5 2 5	0 5 4 2	-	0.525*** *	-	0.760
Log (Assets-10-GDP)	1.915	2.055	-0.320	-0.355	-0.345	0.579		0.555	-0.769
	(-	(-	((
×	1.555	1.252	(-	(1.43)	(1.46)	(-0.60)	(3.11)	(3.18)	(0.80)
Non resident Rank))	1.149)	(-1.43)	(-1.40)	0.00)	(-3.41)	(-3.48)	(-0.80)
Loops to CDP	-			0.000			0.000		
Loans-to-ODF	0.001			0.000			0.000		
	(-)								
)			(-0.78)			(-0.30)		
Foreign hank-to-Total	,	_		(-0.70)			(-0.57)		
Ranks		0.043			-0.003			-0.001	
Danko		(-			0.003			0.001	
		1.276							
)			(-0.38)			(-0.24)	
Foreign Assets_to_Total		,	-0.002		(0.50)	_		(0.2 1)	-0.003
i oreign Assers-10-10tal			-0.002			-			-0.005

Table 5: Advanced Economies

Assets						0.001			
			(-			(-			
			0.274)			0.09)			(-0.27)
GDP per capita growth _{(t-}									
1)				0.011*	0.012*	0.029			
				(1.81)	(1.72)	(0.20)			
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Africa dummy	No	No	No	No	No	No	No	No	No
Island dummy	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
adj. R2 or pseudo R2	0.046	0.054	0.532				0.291	0.288	0.414
						18.71			
F-stat	1.516	1.552	8.139	28.520	23.580	0			
Ν	128	118	70	96	88	70	128	118	70
No. of Cross-sections	33	31	31	33	31	31			
AR(1)				-2.3	-1.87	-1.9			
p-values				0.031	0.05	0.05			
AR(2)				-0.7	-0.88	0.44			
p-values				0.483	0.379	0.657			
Hansen				1.3	1.09	0.02			
p-values				0.254	0.297	0.894			
No. of Instruments				14	14	14			

Regs.1, 4, 7 show results using loans from non-residential banks –to-GDP; Reg. 2, 5, 8 show the results using foreign banks-to-total banks; Regs 3, 6, 9 show the results using foreign assets-to-total assets. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **,*** indicates significance at the 10%, 5%, 1% level.

	Lass 4	han 10	Mana	than 10	More than 30 More than 50			
	Less t	nan 10	More	than 10	More	than 50	More	than 50
	perc	cent	per	cent	per	cent	pero	cent
	Reg. 1	Reg. 2	Reg. 1	Reg. 2	Reg. 1	Reg. 2	Reg. 1	Reg. 2
					-			
с			267.928	437.828	149.013	46.042	213.332	349.474
			(0.63)	(1.06)	(-0.26)	(0.08)	(0.23)	(0.40)
		×	-	-	-		× /	· /
Initial GDP per capita	1.187**		0.846**	0.851**	0.685**	-		
1990	*	-0.881	*	*	*	0.697**	-0.605	-0.241
	(-4.04)	(-1.20)	(-3.83)	(-3.94)	(-2.34)	(-2.14)	(-1.44)	(-0.65)
	0.265**	0.215*	0.174**	0.182**	0.105**	0.122**		
I-to-GDP	*	**	*	*	*	*	0.091*	0.108*
	(5.05)	(3.03)	(5.08)	(5.54)	(2.85)	(2.84)	(1.79)	(1.75)
G-to-GDP	0.044	0.105	-0.065*	-0.063*	-0.048	-0.053	-0.052	-0.025
	(0.53)	(1.04)	(-1.95)	(-1.76)	(-1.11)	(-1.15)	(-0.93)	(-0.40)
			-	-	-	-	-	-
			0.832**	0.841**	0.715**	0.744**	0.624**	0.661**
Population Growth	-0.127	-0.157	*	*	*	*	*	*
	(-0.15)	(-0.27)	(-9.28)	(-10.45)	(-6.05)	(-5.55)	(-4.76)	(-4.86)
		0.023*	0.006**	0.007**	0.006**	0.006**	0.006**	0.005**
Trade Openness	0.007	**	*	*	*	*	*	*
_	(0.46)	(2.34)	(3.70)	(3.78)	(3.65)	(3.45)	(1.93)	(1.78)
Average years of	. ,	. /	. /	. /	. /	. /		. ,
schooling	0.213	-0.214	0.123	0.104	0.044	0.029	-0.054	-0.155
U								

Table 6: Results across different degrees of foreign bank penetration

	(0.96)	(-1.03)	(1.70)	(1.32)	(0.59)	(0.34)	(-0.39)	(-1.10)
				-				
Log (Assets-to-GDP)	-0 484	-1 318*	- 0.61***	0.592*** *	-0.250	-0.253	-0.034	-0 184
	(-1.07)	(-1.93)	(-2.67)	(-2.31)	(-1.08)	(-1.01)	(-0.11)	(-0.59)
	(1107)	(100)	-	(2101)	-	(1101)	(0111)	(0.07)
Foreign bank-to-Total			0.018**		0.027**			
Banks	0.000		*		*		-0.04**	
	(0.00)		(-2.74)		(-3.78)		(-2.02)	
				-				
Foreign Assets-to-Total		0.012		0.012**		0.011		0.010
Assets		-0.013		$\tilde{\mathbf{r}}$		-0.011		-0.012
GDP par capita growth		(-0.20)		(-2.36)		(-2.09)	0 465**	(-1.09)
ODF per capita growth _{(t-}	0.010	0.049	0.010	0.009	0 322**	0.288*	*	0 47***
1)	(0.98)	(1.05)	(1.02)	(0.85)	(2, 22)	(1.9)	(29)	(2,31)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Africa dummy	No	No	No	No	No	No	No	No
Island dummy	No	No	No	No	No	No	No	No
F-stat	145.39	787.09	26.72	29.13	16.73	13.14	24.82	16.93
Ν	41	31	276	238	187	164	111	98
No. of Cross-sections	16	15	96	95	65	65	39	39
AR(1)	-1.83	-1.8	-1.91	-1.95	-2.34	-2.15	-1.93	-2.45
p-values	0.068	0.065	0.05	0.053	0.019	0.031	0.053	0.012
AR(2)		-1.22	-0.77	-0.79	-0.85	-0.88	0.45	-1.49
p-values		0.221	0.439	0.43	0.47	0.49	0.25	0.136
Hansen	0.06	1.66	0.26	0.23	0.91	0.26	0.2	0.7
p-values	0.807	0.198	0.608	0.635	0.341	0.613	0.157	0.402
No. of Instruments	14	14	14	14	14	14	14	14

Reg. 1 shows the results using foreign banks-to-total banks; Reg 2 shows the results using foreign assets-to-total assets. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **, *** indicates significance at the 10%, 5%, 1% level.



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							L	ow Incor	ne				
	Full-sample			Eme	Emerging Markets			Countries			Advanced Economies		
	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	
	1	2	3	1	2	3	1	2	3	1	2	3	
	-						-	-	-				
	4.04	0.19	0.37	1.24	4.28	0.99	4.04	1.53	1.20	12.7	17.4	1.15	
с	7	3	0	6	9	9	7	6	5	24	67	1	
	(0.03	(0.21	(0.03	(0.61	(0.33	(0.20	(0.03	(0.37	(0.07	(0.11	(1.38	(0.43	
	9))	8)	9))	2)	9)	8)	2)	6)	8))	
	-	-	-			-	-	-	-		-	-	
Initial GDP per capita	0.37	0.51	0.81	0.77	1.49	0.50	1.19	1.04	0.92	0.11	0.04	0.37	
1990	8	3	5	3	3	0	9	1	0	5	7	2	

	(0.03	(0.03	(0.00	(0.10	(0.09	(0.04	(0.01	(0.04	(0.02	(0.16	(0.17	(0.03
	5)	8)	4)	8)	4)	9)	7)	1)	9)	2)	6)	9)
I-to-GDP	0.19	0.25	0.18	0.34	0.33	0.14	0.15	0.18	0.18	0.11	0.01	0.20
	8	6	6	6	0	5	1	3	2	0	8	4
	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.02	(0.00
	6)	5)	2)	9)	6)	2)	2)	2)	2)	9)	6)	4)
G-to-GDP	0.08	0.03	0.05	0.16	0.22	0.03	0.10	0.10	0.00	0.12	0.09	0.06
	6	9	3	8	1	2	4	9	5	1	8	4
	(0.00	(0.00	(0.00	(0.00	(0.01	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00
	6)	6)	3)	9))	5)	4)	4)	1)	5)	8)	4)
Population Growth	0.92 0 (0.02 5)	0.97 1 (0.02 2)	0.77 1 (0.00 6)	1.55 3 (0.04)	2.00 5 (0.03)	0.90 9 (0.00 6)	0.11 6 (0.03 1)	0.20 0 (0.03 5)	0.74 3 (0.04 3)	- 0.85 1 (0.10 6)	0.22 2 (0.08 6)	0.22 2 (0.01 7)
Trade Openness	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
	1	5	8	1	8	5	3	2	5	8	1	6
	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00	(0.00
	0)	1)	0)	2)	1)	0)	0)	1)	0)	0)	1)	0)
Average years of schooling	0.08	0.17	0.08	0.76	0.79	0.11	0.24	0.28	0.11	0.11	0.12	0.03
	3	2	7	1	7	7	2	8	2	7	0	5
	(0.01	(0.01	(0.00	(0.04	(0.01	(0.01	(0.01	(0.01	(0.00	(0.01	(0.04	(0.01
	3)	1)	2)	0)	6)	3)	5)	0)	8)	6)	1)	2)
Log (Assets-to-GDP)	0.09 7 (0.03 7)		0.65 0 (0.01 7)	1.38 6 (0.09 2)	1.78 1 (0.13 8)	0.24 6 (0.01 0)	0.35 8 (0.00 8)	0.62 6 (0.01 9)	0.52 1 (0.02 3)	3.00 8 (0.05 0)	3.29 4 (0.14 5)	0.90 0 (0.05 3)
Non-resident Bank Loans-to-GDP	0.00 1 (0.00 0)		0	0.00 1 (0.00 1)			0.00 1 (0.00 0)			0.00 0 (0.00 0)		
Foreign bank-to-Total Banks		0.02 5 (0.00 1)			0.04 9 (0.00 2)			0.00 7 (0.00 1)			0.01 9 (0.00 3)	
Foreign Assets-to-Total Assets			0.01 3 (0.00 0)			0.02 3 (0.00 0)			0.01 3 (0.00 0)			0.00 2 (0.00 0)
N	480	421	273	189	182	130	163	121	73	128	118	70
	0.31	0.34	0.34	0.38	0.34	0.35	0.32	0.35	0.33	0.35	0.35	0.28
Acceptance rate	2	0	4	1	7	4	3	1	2	1	/	0

Terms in brackets denote Monte Carlo standard errors (MCSEs). Coefficients in bold denote significant ones based on low values of MCSEs.

Table 8: Fixed effects results using yearly data

	F	ull-samp	le	Eme	Emerging markets			Low Income Countries			Advanced Economies			
	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.		
	1	2	3	4	5	6	7	8	9	10	11	12		
	1.823		2.679	-	-	3.404		3.862			6.499			
С	***	2.731	***	6.425	5.250	***	0.086	***	2.083	7.227	***	0.099		
				(-	(-									
	(2.72)	(1.57	(3.13	1.414	1.013	(2.71)	(0.06	(2.73)	(1.33	(0.70	(4.68	(0.05		
	2)	9)	2)))	4)	2)	8)	5)	6)	6))		
	-	-)	-	,	,	-	-	-	-	0)	-	,		
Initial GDP per	0.287	-	0 758			0 526	0.672	0.646	0 754	-	1 191			
capita 1990	***	0 350	***	0 4 5 4	0.810	**	***	***	***	0 229	***	0.037		
	(-	(-	(-	0.454	0.010			(-	(-	(-	(_	0.057		
	2 776	1 368	6 628	(0.41)	(0.67	(-	(-	2 762	3 084	0.080	3 486	(0.07)		
	2.770))	(0.+1	(0.07	1.06)	(-))))	(0.07		
)) 0.17*)	<i>J</i>)	0,512	0.171	2.36))) 0.00*))	0.220		
I-to-GDP	0.210	0.1/* **	0.175	0.497	0.313	0.171	0.101	0.135	0.09**	0.000	0.052	0.239		
	(04.0	(4.0.4	(10.2	(1.50	(4.40	(6.40)	(11.0	(6.1.1	(4.40	0.029	(1.00	(5.50		
	(24.3	(4.84	(10.3	(4.59	(4.43	(6.42	(11.2	(6.11	(4.48	(0.14	(1.90	(5.53		
	13))	31)	8)	3)	9)	46)	1)	3)	1)	8))		
<i>a a b b</i>	-	-	-	-	-	-	-	-			-	-		
G-to-GDP	0.08*	0.033	0.078	0.271	0.317	0.091	0.108	0.065			0.069	0.0'/4		
	**	***	***	***	*	***	***	*	0.042	0.236	***	**		
			(-	(-	(-	(-	(-	(-	(-		(-	(-		
	(-	(-	3.646	1.837	1.981	2.146	3.389	2.119	1.253	(1.16	2.688	2.024		
	4.58)	0.76))))))))	7)))		
	-	-	-	-	-	-	-	-	-		-	-		
Population Growth	0.769	0.819	0.892	1.184	1.469	0.932	0.525	0.829	1.061	-	0.384	0.758		
	***	***	***	***	***	***	***	***	***	0.390	***	***		
	(-	(-	(-	(-	(-	(-	(-	(-	(-	(-	(-	(-		
	9.975	4.707	12.23	2.573	2.741	8.619	2.706	4.699	4.593	0.395	3.109	3.607		
))	9))))))))		
T 1 0	0.006	,	0.009	-		0.009	0.022	-	,	,	0.006	0.008		
Trade Openness	***	0.005	***	0.001	0.002	*	***	0.001	0.005	0.015	***	***		
				(-				(-						
	(3.62)	(1.08)	(5.09)	0.033	(0.07	(1.75	(3.92)	0 232	(1.11	(1.35	(5.13	(4.08)		
))	2)	0.055	6)	4)	8))	2)	(1.55 9)	2)	5)		
	,	,	-/	3	0)	- -	-)	2) -)) -	2)	-		
Log (Assets-to-	- 202	- 0.678	0.782		1 705	-	- 0.870	- 0.05*	-	-	-	-		
GDP)	0.000 ***	0.078 ***	***	1 275	*	***	0.079 ***	**	0.029 ***	2.344 ***	1.144	***		
	(1.373		(((((((
	(-	2 270	(-	(1.20	$(1 \ \epsilon 1)$	(-	(-	(-	(-	(-	(-	(-		
	0.007	2.219	3.095	(1.58	(1.01	2.232	5.478	5.780	2.221	1.020	5.965	2.339		
))	6)	2))))))))		
Non-resident Bank	-						-							
Loans-to-GDP	0.002			-			0.003			-				
	*			0.002			~~ <i>*</i>			0.002				
	(-			(-			(-			(-				
	1.668			1.179			4.189			0.368				
))))				
Foreign hank-to-		-						-			-			
Total Ranks		0.015			-			0.018			0.109			
i Juli Duliks		*			0.036			***			***			
		(-			(-			(-			(-			
		1.759			1.166			2.795			4.121			
))))			
Foreign Assots to			-			-			-					
Total Assets-to-			0.018			0.026			0.013			-		
Total Assets			***			***			*			0.002		
			(-			(-			(-			(-		
			5.258			4.722			1.904			0.376		
))))		
Vear dummica	Vec	Vec	, Vec	Vec	Vec	, Vec	Vec	Vec	, Vec	Vec	Vec	, Vec		
i cai dummes	1 68	1 68	1 68	1 68	1 68	168	168	168	168	105	168	108		

Africa dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Island dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R ²	0.324 49.42	0.045	0.454 39.38	0.032	0.034	0.438 23.50	0.314 19.06	0.187	0.180	0.029	0.584 30.62	0.678 31.98
F	6	4.958	3	2.310	2.294	0	6	6.916	6.959	1.705	7	3
N	2426	2098	971	982	917	463	987	643	434	584	508	236

Regs.1, 4, 7, 10 show the results using loans from non-residential banks –to-GDP; Regs. 2, 5, 8, 11 show the results using foreign banks-to-total banks; Regs. 3, 6, 9, 12 show the results using foreign assets-to-total assets. The Barro-Lee measure of education is only available in 5-year intervals. Hence it is excluded in the analysis here. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **, *** indicates significance at the 10%, 5%, 1% level.

					Low In	come	Advanced		
	Full-sample		Emerging	Markets	Coun	tries	Economies		
	Reg. 1	Reg. 2	Reg. 1	Reg. 2	Reg. 1	Reg. 2	Reg. 1	Reg. 2	
	-		-						
	18.865**	23.67**	14.37**					85.501	
c	*	*	*	8.596	1.092	3.547	20.387	*	
	(-3.687)	(2.695)	(-3.587)	(1.113)	(0.599)	(0.983)	(0.671)	(1.718)	
Bank Asset					- 0.020**				
Concentration	-0.033*	0.019	-0.009	0.09***	*	-0.025*	-0.136*	0.077	
	(-1.691)	(0.579)	(-0.493)	(2.70)	(-2.476)	(-1.962)	(-1.949)	(0.75)	
		0.489**	0.817**	0.676**		0.755**	0.548**	0.352*	
Asset-to-GDP	0.678***	*	*	*	0.82***	*	*	**	
		(25.323	(42.906	(20.965		(33.086	(17.552		
	(47.643)))	(59.203)))	(9.306)	
	-			-	- 0.091**				
Bank z-score	0.095***	-0.15**	-0.029	0.23***	*	0.003	-0.173*	-0.027 (-	
	(-2.596)	(-2.188)	(-0.806)	(-2.968)	(-4.851)	(0.09)	(-1.86)	0.155)	
Inflation	-0.002	0.022	-0.009	0.007	0.013	0.029	-0.018	0.573	
	(-0.107)	(0.328)	(-0.67)	(0.125)	(0.755)	(1.139)	(-0.031)	(0.613)	
	S <i>i</i>	-	· /	· /	· /	· /	-	-	
	-	0.277**					1.454**	1.097*	
Real GDP growth	0.302***	*	-0.070	-0.127	-0.002	-0.038	*	*	
								(-	
	(-4.135)	(-2.931)	(-1.223)	(-1.573)	(-0.061)	(-0.968)	(-3.367)	2.023)	
Pool CDP por conito	0.001***	- 0.001**	0.001**	0.000	*	*	0.001*	0.001	
Real ODF per capita	0.001	0.001	0.001	0.000			-0.001	-0.001	
	(5, 124)	(-2.035)	(2 11)	(-1, 1/8)	(871)	(5.65)	(-1 722)	(-	
	(3.124)	(-2.055)	(2.11) 0 2/1**	(-1.140)	(0.71)	(3.05)	(-1.722)	1.507)	
Economic Freedom	0 459***	0 268**	*	0.110	-0.030	0 12**	*	0 403	
	(6.125)	(2.1/3)	(3.936)	(0.962)	(-0.925)	(2.084)	(3.492)	(0.645)	
Foreign Banks-to-Total	(0.123)	(2.175)	(3.750)	(0.902)	(-0.725)	(2.00+)	(3.472)	(0.0+3)	
Banks	0 111***		0.063**		-0.012*		0 338**		
	(-3 715)		(-2 38)		(-1 739)		(-2074)		
Foreign Assets-to-Total	(5.715)	-	(2.50)	-	(1.737)		(2.077)		
Assets		0.119**		0.172**		0.001		-0.059	

Table 9: Impact of foreign banks on private credit flows:

		*		*						
								(-		
		(-3.459)		(-4.677)		(0.036)		0.344)		
adj. R2	0.970	0.980	0.970	0.966	0.994	0.995	0.919	0.952		
						1095.21				
F-stat	358.668	325.69	305.682	175.82	1371	3	88.399	92.576		
Ν	1645	934	747	453	488	312	410	220		
Cross-sections	128	125	57	57	40	45	31	31		

Reg.1 shows results using foreign banks-to-total banks. Reg 2 shows the results using foreign assets-to-total assets.

Estimations are made using both time and country fixed-effects. Terms in brackets denote z-stats based on robust standard errors clustered in countries. *, **, *** indicates significance at the 10%, 5%, 1% level.

APPENDIX:

List of Countries covered

Afghanistan (LIC), Albania (EM), Algeria (EM), Angola (EM), Argentina (EM), Armenia (LIC), Australia (AE), Austria (AE), Azerbaijan (EM), Bahamas, The (EM) Bahrain (EM), Bangladesh (LIC), Belarus (EM), Belgium (AE), Bhutan (LIC), Bolivia (LIC), Bosnia and Herzegovina (EM), Brazil (EM), Brunei Darussalam (AE), Botswana (EM), Bulgaria (EM), Burundi (LIC), Cameroon (LIC), Canada (AE), Chile (EM), China (EM), Colombia (EM), Costa Rica (EM), Croatia (EM), Cyprus (AE), Czech Republic (AE), Denmark (AE), Dominican Republic (EM), Djibouti (LIC), Ecuador (EM), Egypt (EM), El Salvador (EM), Eritrea (LIC), Estonia (EM), Ethiopia (LIC), Fiji (LIC), Finland (AE), France (AE), Gabon (LIC), Georgia (LIC), Germany (AE), Ghana (LIC), Greece (AE), Grenada (LIC), Guatemala (EM), Haiti (LIC), Honduras (LIC), Hong Kong SAR, China (AE), Hungary (EM), Iceland (AE), India (EM) Indonesia (EM), Ireland (AE), Israel (AE), Italy (AE), Jamaica (EM) Japan (AE), Jordan (EM), Kazakhstan (EM), Korea, Rep. (AE), Kuwait (EM) Kyrgyz Republic (LIC), Latvia (EM), Lebanon (EM,) Lesotho (LIC), Lithuania (EM), Luxembourg (AE), Macedonia (EM), Madagascar (LIC), Malaysia (EM), Malta (AE), Mauritius (EM), Mexico (EM), Moldova (LIC), Morocco (EM), Mozambique (LIC), Namibia (EM), Netherlands (AE), New Zealand (AE), Nicaragua (LIC), Nigeria (LIC), Norway (AE), Oman (EM), Pakistan (EM), Panama (EM), Paraguay (EM), Peru (EM), Philippines (EM), Poland (EM), Portugal (AE), Qatar (EM), Romania (EM), Russian Federation (EM), Rwanda (LIC), Samoa (LIC), Saudi Arabia (EM), Senegal (LIC), Serbia (EM), Seychelles (LIC), Sierra Leone (LIC), Singapore (AE), Slovak Republic (AE), Slovenia (AE), South Africa (EM), Spain (AE), Sri Lanka (EM), St. Vincent & the Grenadines (LIC), Swaziland (LIC), Sweden (AE), Switzerland (AE), Tajikistan (LIC), Tanzania (LIC), Thailand (EM), Tunisia (EM), Turkey (EM), Turkmenistan (LIC), Uganda (LIC), Ukraine (EM), United Arab Emirates (EM) United Kingdom (AE), USA (AE), Uruguay (EM), Uzbekistan (LIC) Venezuela, RB (EM), Viet Nam (LIC), Yemen Rep. (LIC), Zambia (LIC), Zimbabwe (LIC).

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Highlights

- Examines a panel of 138 nations spanning 1995-2013.
- Uses different frequentist methods and Bayesian analysis. •
- Three different measures of banking-sector globalization lower growth. ٠
- Banking-sector globalization also reduces private credit flows. •

a barks.