Financial development and financial openness nexus: the precondition of banking competition

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Abstract:

We examine the dynamic relationship between financial development and financial openness using the pooled mean group estimator developed by Pesaran et al. (1999). Our results show that financial openness has a positive effect on financial development in the long run, but may have a negative effect in the short run. Using estimates of country-specific short-run coefficients, we also find that the adverse short-run effects of financial openness are associated with a lower degree of banking competition. The system generalized method of momentums (GMM) estimator also supports these findings, suggesting that the financial development and financial openness nexus is contingent on the degree of banking competition. A key policy implication is that a higher degree of banking competition is a precondition for financial openness to promote financial development.

Acknowledgements

1. Introduction

The pivotal role of financial development in economic development and poverty alleviation is widely accepted. For instance, many studies show that financial development fosters economic growth (King and Levine, 1993; Jayaratne and Strahan, 1996; Demetriades and Hussein, 1996; Levine et al., 2000; Loayza and Rancière, 2006). Others find that it expands economic opportunities for the poor by easing their external financing constraints (that stem from lack of collateral, credit history, or connections) and thus reduces income inequality (Aghion and Boltion, 1997; Galor and Mova, 2004).

The significant impacts of financial development have led researchers to explore its determinants, particularly financial openness, which provides greater opportunities for portfolio diversification and access to overseas funds[1]. Rajan and Zingales (2003) explore the issue from the perspective of incumbent industrialists and financiers and hypothesize that the simultaneous expansion of trade and financial openness is crucial for financial development. Baltagi et al. (2009), however, argue that the expansion of even one of them (trade or financial openness) can still accelerate the development of the banking sector. Hauner et al. (2013) examine Rajan and Zingales' (2003) interest group theory of financial development and find that trade liberalization is a leading indicator of domestic financial liberalization; however, they do not find consistent evidence that financial openness leads to financial development.

Additionally, many researchers explore the underlying cross-country heterogeneity. Chinn and Ito (2002) examine the empirical relationship between capital controls and the development of credit and equity markets, and suggest that they are linked, with the strength of the relationship based on the empirical methodology used and the level of development. Klein and Olivei (2008) argue that countries with open capital accounts have significantly greater financial depth than those with capital account restrictions. However, note that no link has been observed between financial openness and financial development in developing countries. Law and

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[1] Some theories suggest that capital account liberalization allows domestic and foreign investors to engage in greater portfolio diversification (Stulz, 1999; Henry, 2000).

Azman-Saini (2012) reveal that institutional quality contributes to stock market development only when a threshold level of institutional development has been attained. They further find that financial openness has a negative impact on private sector credit. Fischer and Valenzuela (2013) find that financial openness has a positive effect on private credit in economies with competitive banking sectors and that this effect may dissipate and even become negative in economies with imperfect banking competition.

One potential reason for these inconclusive results is that most of the existing studies do not explicitly distinguish between the long- and short-run effects of financial openness on financial development. As discussed above, financial openness could promote financial development in the long run, but the literature on financial fragility shows that financial liberalization raises the risk of financial instability in the short run (Demirgüc-Kunt and Detragiache, 2000; Dell'Ariccia and Marquez, 2004). Another potential reason is that financial openness has an impact only under certain conditions, such as the sophistication of institutional quality and competitiveness of financial sectors. Cross-country heterogeneity in these aspects could explain the mixed evidence on the financial development and financial openness (FD-FO) nexus.

In light of these potential problems, we attempt to contribute to the literature by employing the following empirical strategies: First, we explicitly distinguish between the long- and short-run effects of financial openness on financial development. To this end, we utilize the pooled mean group (PMG) estimator proposed by Pesaran et al. (1999)[2]. The major advantage of this approach is that it addresses the possible cross-country heterogeneity in parameters by allowing different short-run coefficients but requiring the same long-run coefficient across countries. It is conceivable that openness can fully promote financial development only when the domestic financial systems are efficient and thus sophisticated enough to gain from greater cross-border opportunities. Therefore, we can expect long-run convergence in the effect of financial

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[2] The PMG approach has been widely applied to the study of financial empirical research. Examples include Loayza and Rancière (2006), Kim et al. (2012), and Boubaker and Jouini (2014).

openness only among countries achieving the threshold level of domestic efficiency. We test this hypothesis using the PMG estimator. Second, unlike prior studies that emphasized the role of institutions and laws, we focus on the degree of banking competition as key determinant of cross-country heterogeneity. Focusing on the banking sector can be justified because banks play a key role in financial intermediation not only in developing countries, but in many advanced countries as well.

The rest of this paper is organized as follows. In Section 2, we study the long- and short-run effects of financial openness on financial development using the PMG estimator. In Section 3, we use the generalized method of moments (GMM) estimation to study the role of banking competition in the FD-FO nexus. Section 4 presents our conclusions.

2. The long-run relationship and short-run heterogeneity of the FD-FO nexus

2.1 Methodology and data

Our estimation strategy largely follows that of Loayza and Rancière (2006), who use the PMG estimator to examine the long- and short-run relationships between financial development and economic growth. PMG estimation can briefly be described as follows: Assume that the dynamic relationship between financial development and its determinants is given by the following autoregressive distributed lag (p, q) model:

$$y_{it} = \sum_{j=1}^{p} \beta_{ij} y_{i,t-j} + \sum_{j=0}^{q} \gamma_{ij} x_{i,t-j} + \mu_i + \varepsilon_{it} \qquad (1)$$

where y_{it} is the measure of financial development, x_{it} represents a set of explanatory variables (including a measure of financial openness and control variables), μ_i is the fixed effect, β_{ij}

and γ_{ij} are coefficients, ε_{it} is the time-varying disturbance, and subscripts i and t represent the country and time, respectively.

Eq. (1) can be re-parameterized as an error-correction model as follows:

$$\Delta y_{it} = \phi_i(y_{i,t-1} - \theta_i x_{i,t}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij} \Delta x_{i,t-j} + \mu_i + \varepsilon_{it} \tag{2}$$

where ϕ_i is the coefficient on the error correction term, θ_i is the long-run coefficient, and λ_{ij} and δ_{ij} are short-run coefficients. The PMG estimator is obtained by restricting the long-run coefficient, θ_i, so that it is the same for every country. Thereafter, the maximum-likelihood method is used for estimation. Pesaran et al. (1999) show that under certain regularity conditions, PMG estimators are consistent and asymptotically normal, regardless of whether the regressors are $I(0)$ or $I(1)$.

Our panel data set covers 70 countries with annual data from 1980 to 2011[3] (for the complete list of countries in the sample, see Appendix A). We use private domestic credit and M2 (as a share of GDP) as proxies for level of financial development. The level of financial openness is measured using the *de facto* index proposed by Lane and Milesi-Ferretti (2007). The *de facto* measure of financial globalization is defined as the sum of a country's foreign assets and liabilities (as a share of GDP). Income levels, trade openness, and inflation rates are all included as control variables[4]. The data source for these variables is the World Bank's World Development Indicators.

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[3] Unlike other studies that typically average their data over a number of year horizons (Chinn and Ito, 2006), we follow the example of Baltagi et al. (2009) and use annual data to maximize the sample size and identify the parameters with greater precision.

[4] The income level is measured using the log of GDP per capita (constant 2005 US$). We measure trade openness as the sum of exports and imports (as a share of GDP). The inflation rate is measured by the annual percentage changes in GDP deflator divided by 100.

2.2 Dynamic heterogeneous panel analysis estimation results

Table 1 shows the results obtained from PMG estimation, which measures financial development in terms of private domestic credit (as a share of GDP). Since we seek to examine the cross-country variations in the short-run coefficients, we impose common lag structures across the countries. To preserve a degree of freedom, we chose a maximum lag of 1 for all of the variables[5]. A lag of 1 is consistent with the existing studies that use the dynamic panel GMM model with 1 lag on the dependent variable (Beck et al., 2007; Kim et al., 2010; Inoue and Hamori, 2013). The Hausman test indicates that the null hypothesis of homogeneous long-run coefficients cannot be rejected for all parameters jointly, as well as for individual ones. We therefore focus on the PMG estimation results shown in Table 1.

[Table 1]

The long-run coefficient on financial openness is positive and statistically significant; this result is consistent with the findings of previous studies. However, estimates of the short-run coefficient indicate that financial openness has a statistically significant negative impact on financial development. One possible explanation for this negative effect is the absence of efficient and deep domestic financial systems that benefit from greater financial openness without being destabilized by volatile short-run capital flows. As a number of emerging market crises have shown, the combination of premature financial openness and inefficient and shallow domestic financial systems can lead to serious financial crises. As for the control variables, the long-run coefficients on the income level and trade openness are positive and statistically significant.

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[5] It should be noted that adding 1 lag increases the number of short-run coefficients by 70 for each explanatory variable.

To see whether our results are sensitive to the measurement methodology used, we explore an alternative financial development measure (M2 as a share of GDP) and find the results (see Table 2) largely similar to those in Table 1 (which is based on the measure by private domestic credit as a share of GDP). Using the M2 indicator, we find that financial openness has a negative impact on financial development in the short run; however, this is not statistically significant. We also find that the long-run coefficient on the inflation rate is negative and significant. It is also worth mentioning that the short-term effect of trade openness on financial development is negative and statistically significant. This result is quite similar to Kim et al.'s (2010) findings of a positive long-run relationship between trade openness and financial development coexisting with a negative short-run relationship.

[Table 2]

2.3 Analysis of short-run heterogeneous effects

In this section, we examine the possible explanation for the short-term negative effect of financial openness. As discussed in the Introduction section, we focus on the role of banking competition in financial development. We measure the degree of banking competition using the Boone indicator, which gives the elasticity of profits to marginal costs; the more negative the figure is, the higher the degree of competition in the banking sector[6]. The indicator is based on the hypothesis that more efficient banks (i.e., those with lower marginal costs) earn greater profits or higher market shares (the efficient structure hypothesis). This effect is stronger when banks interact more aggressively. As compared to the banking concentration ratio (which is generally considered to be a poor proxy), the main advantage of the Boone indicator in

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[6] The Boone indicator can be downloaded from the Word Bank Global Financial Development Database. This database's estimations of the Boone indicator follows the methodology used by Schaeck and Cihák (2010), except that it utilizes marginal costs instead of average costs.

measuring banking competition is that it captures the interactions between banks (Berger et al., 2004; Claessens and Laeven, 2004). Furthermore, we average this measure of competition over each country's sample period[7]. In so doing, we can examine whether a difference exists between the mean short-run coefficients of countries with a high degree of banking competition and those with a low degree, based on the median value of the countries' Boone indicators. Table 3 shows the means of short-run coefficients for each subsample (i.e., countries with low and high degrees of competition) and the t-test results for significance of their differences. The t-tests indicate that the difference in means between the two subsamples is highly significant.

[Table 3]

Figure 1 shows the frequency distributions for the subsamples. We see that the means of short-run coefficients, represented by vertical lines for each distribution, are positive for countries with a high degree of competition and negative for countries with a low degree. All in all, statistical evidence indicates that if a country faces low competition in its banking sector, its financial development is more likely to be adversely affected in the short run by financial openness.

[Figure 1]

3. Further analysis using the system GMM estimator

3.1 Methodology and data

To explore this topic in greater depth and gain more insight into the results obtained from the PMG estimation above, we employ the system GMM estimator proposed by Arellano and Bond (1991) and Arellano and Bover (1995), and analyze the influence of financial openness and banking competition on financial development. Our sample for this analysis consists of 102

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[7] The length of the period depends on availability of data.

countries with annual data from 1998 to 2011 (see Appendix A). Compared to the previous

PMG estimation, the present sample period is shorter because of limited availability of data on

the frequency of systemic banking crises and the banking sector's probability of default. We

include these variables to control for the possible short-run effect of financial fragility induced

by liberalization. In contrast, the sample coverage of countries is wider because more data are

available for all variables due to the shorter sample period[8]. In this way, we try to confirm

whether banking competition is a precondition for financial openness in a country and examine

the role of banking competition in financial development. For this, we add a cross-product term

to capture the heterogeneity in impact of financial openness on financial development across

different levels of competition in the banking sector. Since this approach is rather similar to the

analysis of short-run heterogeneous effects using the PMG estimator, we extend Eq. (1) to

include banking competition as follows:

$$y_{it} = \beta_0 + \beta_1 y_{i,t-1} + \beta_2 FO_{i,t-1} + \beta_3 COMP_{i,t-2} + \beta_4 FO_{i,t-1} * COMP_{i,t-2} + \gamma' X_{it} + \mu_t + \eta_i + \varepsilon_{it} \ (3)$$

where y represents financial development (measured by private domestic credit/GDP), FO is

financial openness (as defined above), COMP represents banking competition (measured by the

Boone indicator), and X is a set of control variables (including the same basic macroeconomic

variables in Eq. (1)). As noted above, we also include the frequency of systemic banking crises

and the banking system's probability of default among the control variables in the system GMM

estimator. The data source for the frequency of systemic banking crises is Laeven and Valencia

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[8] Despite wider coverage of countries, the number of observations in GMM estimation is significantly smaller than that in PMG estimation due to the shorter sample period (see Appendix B). Therefore, we chose to use the full sample of 102 countries in GMM estimation. We recognize that the difference in the structure of data set may lead to the question of comparability between the two estimations. However, we also note that the sample countries of PMG and GMM estimation respectively represent in total over 83% and 88% of the world's GDP (current US$) in 2011, indicating that our sample is reasonably comprehensive.

(2012). The banking system's probability of default is measured using the bank Z-score indicator provided by the World Bank's World Development Indicators. Following Baltagi et al. (2009) and Fischer and Valenzuela (2013), we lag financial openness (FO) by one period to treat it as predetermined. In addition, we lag banking competition (COMP) by two periods to capture the effect on financial development of market structure prior to financial openness. This is consistent with our empirical question of whether the effect of financial openness depends on the precondition of degree of competitiveness in the banking sectors. From Eq. (3), the partial derivative of financial development with respect to financial openness can be expressed as

$$\frac{\partial y_{it}}{\partial FO_{i,t-1}} = \beta_2 + \beta_4 COMP_{i,t-2} \tag{4}$$

3.2 System GMM estimator results

The results of the system GMM estimation presented in Table 4 confirm the findings of our previous analysis. Income level and inflation have a statistically significant impact on financial development, but no evidence suggests that trade openness has an effect. As suggested by Rajan and Zingales (2003), trade openness without financial openness is unlikely to encourage financial development. However, our focus is on the roles of financial openness and banking competition in financial development, and so we do not include the cross-product term between financial and trade openness in our specification to identify such a conditional effect. PMG estimation results show that trade openness effect has strong short-term heterogeneity, suggesting that it is limited by various heterogeneity factors such as financial openness (Rajan and Zingales, 2003).

[Table 4]

We find that financial openness has a significant positive impact on financial development. We also find that the interaction term between financial openness and banking competition has a statically significant negative impact. This indicates that financial openness is beneficial for financial development when the banking sector is competitive. Figure 2 plots the marginal effect of financial openness on financial development. In addition, we conclude that banking competition itself promotes financial development. We also find that financial fragility (defined as systemic banking crises and the probability of banking system default) deters financial development.

[Figure2]

4. Conclusions

This study constitutes a significant contribution to the literature because it distinguishes between the long- and short-run effects of financial openness on financial development and shows that these effects differ greatly. Additionally, we find that in both PMG and GMM estimations, the adverse short-run effects of financial openness are associated with the degree of competition in the individual countries' banking sectors. Our results also suggest that banking competition promotes financial development. In addition, we find that financial fragility has a negative effect on financial development. Thus, we can conclude that the key question on the relationship between financial development and financial openness is not whether countries stand to benefit from financial openness in the long run, but rather under what circumstances they benefit. Policy makers should note that to gain full benefit from financial openness, a country (especially a developing one) must have a healthy and competitive financial environment—one that renders the banking sectors more efficient and thus enables them to gain from greater cross-border opportunities.

Table 1
The results of PMG estimation (FD measured by private domestic credit/GDP)

	PMG	MG	Hausman test
Long-run coefficients			
Financial openness	0.1859***	-0.0434	0.7565
	(0.0243)	(0.1810)	[0.3844]
Income levels	0.1531***	0.6731**	1.3669
	(0.0296)	(0.3047)	[0.2423]
Trade openness	0.1984***	-0.1968	2.1127
	(0.0417)	(0.1880)	[0.1461]
Inflation rate	-0.0041	0.2365	0.0329
	(0.0028)	(0.9065)	[0.8561]
		Joint Hausman test:	5.9600
			[0.2021]
Error-correction coefficients	-0.0914***	-0.3129***	
	(0.0137)	(0.0269)	
Short-run coefficients			
Δ Financial openness	-0.0633**	-0.0256	
	(0.0309)	(0.0223)	
Δ Income levels	0.0456	-0.2004**	
	(0.0684)	(0.0868)	
Δ Trade openness	-0.0922	-0.0026	
	(0.0577)	(0.0653)	
Δ Inflation rate	-0.1122	-0.3115**	
	(0.0895)	(0.1415)	
Intercept	-0.0627***	-1.9225***	
	(0.0128)	(0.4339)	

Notes
1. The values in parentheses are the standard errors of corresponding estimates.
2. The values in brackets are the p-values of the Hausman test.
3. *,** and, *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table 2
The results of PMG estimation (FD measured by M2/GDP)

	PMG	MG	Hausman test
Long-run coefficients			
Financial openness	0.0997**	-0.2637	1.0411
	(0.0398)	(0.2446)	[0.3076]
Income levels	0.3939***	1.0129**	0.7871
	(0.0480)	(0.4772)	[0.3750]
Trade openness	1.2456***	0.3695	4.2877
	(0.1199)	(0.3001)	[0.0384]
Inflation rate	-2.6078***	-2.7447*	0.0580
	(0.3062)	(1.6240)	[0.8097]
		Joint Hausman test:	11.0900
			[0.0256]
Error-correction coefficients	-0.0610***	-0.2448***	
	(0.0143)	(0.0649)	
Short-run coefficients			
Δ Financial openness	-0.0194	-0.0353	
	(0.0281)	(0.0340)	
Δ Income levels	-0.1389	-0.2124	
	(0.1226)	(0.1750)	
Δ Trade openness	-0.1572**	-0.1718	
	(0.0609)	(0.1189)	
Δ Inflation rate	-0.3661*	0.3433	
	(0.2173)	(0.2953)	
Intercept	-0.1772***	-0.4061	
	(0.0504)	(2.8744)	

Notes
1. The values in parentheses are the standard errors of corresponding estimates.
2. The values in brackets are the p-values of the Hausman test.
3. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table 3

Test of difference in means of short-run coefficients between the subsamples

Low degree of banking competition vs. high degree of banking competition

(a) *FD measured by private domestic credit/GDP*

	Mean short-run coefficients	Std. Error	No. Obs.
Low degree	-0.1472	0.2136	35
High degree	0.0205	0.2742	35
Test of difference in means: Ho: Diff=0 vs. Ha: Diff≠0			
	Diff	*t*-value	*p*-value
t-test	0.1677	2.8537	0.0057
Satterthwaite-Welch *t*-test[#]	0.1677	8.1437	0.0058

(b) *FD measured by M2/GDP*

	Mean short-run coefficients	Std. Error	No. Obs.
Low degree	-0.0967	0.2681	35
High degree	0.0579	0.1662	35
Test of difference in mean: Ho: Diff=0 vs. Ha: Diff≠0			
	Diff	*t*-value	*p*-value
t-test	0.1546	2.8991	0.0050
Satterthwaite-Welch *t*-test[#]	0.1546	8.4047	0.0053

[#]Welch(1947)

Table 4. The results of GMM estimation

	(1)	(2)	(3)
Financial development (lagged)	1.0440***	0.9500***	0.9492***
	(0.0274)	(0.0511)	(0.0509)
Financial openness (lagged)	0.0128*	0.0145**	0.0117*
	(0.0074)	(0.0072)	(0.0070)
Banking competition (lagged by two periods)	-0.0212**	-0.0013	-0.0167**
	(0.0082)	(0.0022)	(0.0069)
Financial openness (lagged) × Banking competition (lagged by two periods)	-0.0680***		-0.0525**
	(0.0246)		(0.0217)
Frequency of systemic banking crises	-0.0718***	-0.0365*	-0.0368*
	(0.0195)	(0.0202)	(0.0202)
Banking system's probability of default	-0.0020***	-0.0014**	-0.0014**
	(0.0006)	(0.0006)	(0.0006)
Income levels		0.0371**	0.0369**
		(0.0181)	(0.0183)
Trade openness		-0.0485	-0.0459
		(0.0335)	(0.0338)
Inflation rate		-0.1892***	-0.1899***
		(0.0234)	(0.0243)
Intercept	-5.8363*	-9.4001**	-9.3239**
	(3.1493)	(3.8656)	(3.8511)
No.Countries /No.Observations	102/1056	102/1037	102/1037
Specification test (p-values)			
(a) Sargan test	0.4313	0.2424	0.2344
(b) Serial correlation			
First-order	0.0046	0.0096	0.0097
Second-order	0.1888	0.2601	0.2358

Notes
1. Figures in parentheses are Windmeijer (2005)-robust standard error.
2. *,**, and *** indicate significance at the 10%, 5%, and 1% level, respectively.
3. Year dummies are including in all the regressions.

Figure1. Frequency distributions of short-run coefficients for subsample

(a) *FD measured by private domestic credit/GDP*

Short-run coefficient

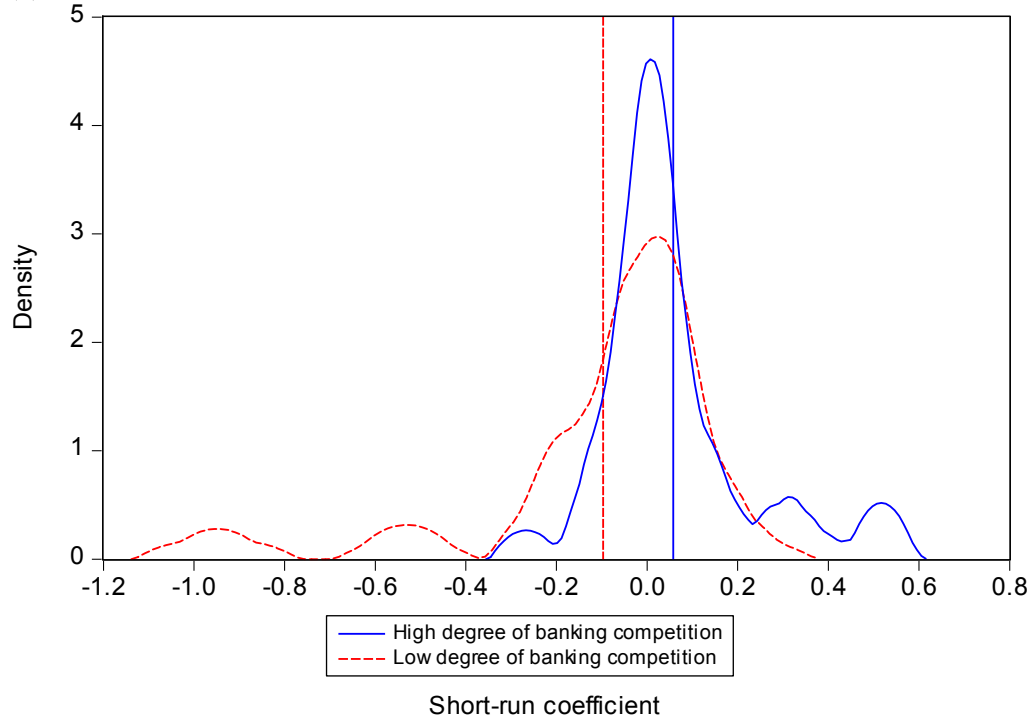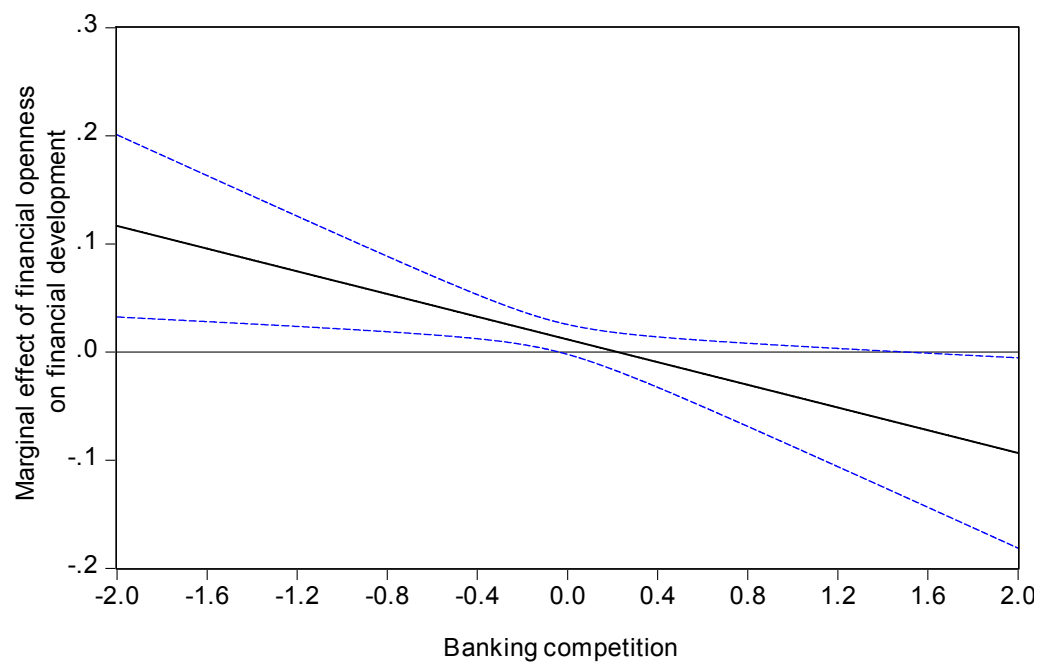(b) *FD measured by M2/GDP*

Short-run coefficient
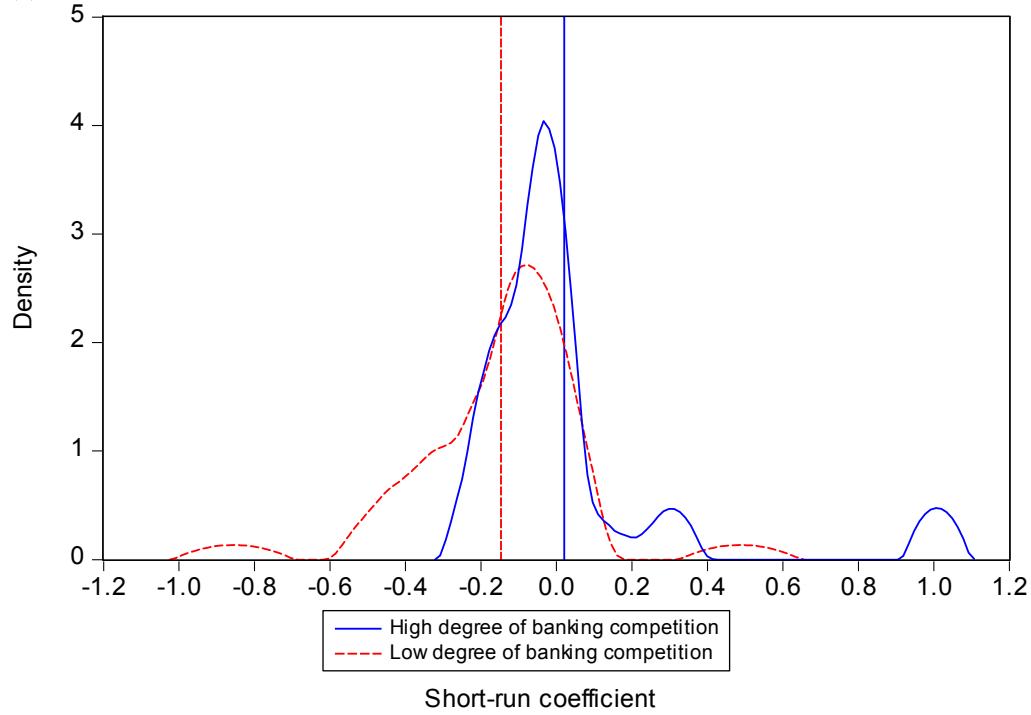
Figure2. Marginal effects of financial openness on financial development conditional on the degree of banking competition

Note: The solid line represents the marginal effect. The dotted line represents

95% confidence intervals.

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Country	PMG estimation (70 countries)	GMM estimation (102 countries)
	Appendix A	
	Sample of countries	
Algeria	–	×
Antigua and Barbuda	–	×
Argentina	×	×
Australia	×	×
Austria	×	×
Bahrain	–	×
Bangladesh	×	×
Belgium	×	×
Belize	–	×
Benin	×	×
Bhutan	–	×
Bolivia	–	×
Botswana	×	×
Brazil	×	×
Burundi	×	×
Cameroon	×	×
Canada	×	×
Chile	×	×
China	×	×
Colombia	–	×
Congo, Dem. Rep. of	–	×
Costa Rica	×	×
Côte d'Ivoire	×	×
Cyprus	×	×
Denmark	–	×
Djibouti	–	×
Dominican Rep.	×	×
Ecuador	–	×
El Salvador	–	×
Ethiopia	–	×
Finland	×	×
France	×	×
Gabon	×	×
Gambia, The	–	×
Germany	×	×
Ghana	×	×
Greece	×	×
Grenada	×	×
Guatemala	×	×
Guinea	–	×
Haiti	–	×
Honduras	×	×
India	×	×
Indonesia	×	×
Ireland	×	×
Israel	–	×
Italy	×	×
Japan	×	×
Jordan	×	×
Kenya	×	×
Korea	×	×
Lesotho	×	×
Libya	–	×
Madagascar	×	×
Malawi	×	×
Malaysia	×	×
Mali	×	×
Malta	×	×
Mauritania	×	×

Mauritius	–	×
Mexico	×	×
Morocco	×	×
Nepal	×	×
Netherlands	×	×
Nicaragua	–	×
Niger	×	×
Nigeria	×	×
Norway	×	×
Oman	×	×
Pakistan	×	×
Panama	–	×
Paraguay	–	×
Peru	×	×
Philippines	×	×
Portugal	–	×
Rwanda	–	×
Samoa	–	×
Saudi Arabia	–	×
Senegal	×	×
Sierra Leone	×	×
Singapore	×	×
Spain	×	×
Sri Lanka	×	×
St. Kitts and Nevis	–	×
Sudan	×	×
Suriname	–	×
Swaziland	×	×
Sweden	–	×
Syrian Arab Republic	×	×
Tanzania	–	×
Thailand	×	×
Togo	×	×
Trinidad and Tobago	×	×
Tunisia	–	×
Turkey	×	×
Uganda	×	×
United Arab Emirates	–	×
United Kingdom	×	×
United States	×	×
Uruguay	×	×
Venezuela, Rep. Bol.	×	×
Zambia	×	×

Note: × indicates that the country is included in the sample, while – indicates that the country is not included in the sample.

Appendix B

Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
(1)Dataset used in PMG estimator, 70 countries (1980-2011)					
Private domestic credit/GDP	2199	0.4835	0.4580	0.0154	2.9646
M2/GDP	2097	0.5504	0.4508	0.0655	2.8340
Financial openness	2238	-0.3910	0.5832	-5.4103	2.5561
Income levels	2229	7.9831	1.6964	4.9683	11.1244
Inflation rate	2233	0.2430	1.8263	-0.2763	50.4878
Trade openness	2232	0.7242	0.5123	0.0632	4.3966
(2) Dataset used in GMM estimator, 102 countries (1998-2011)					
Private domestic credit/GDP	1393	0.5361	0.5100	0.0020	2.9646
Financial openness	1427	-0.2730	1.2155	-3.0820	17.2070
Boone indicator	1287	-0.0576	0.2076	-2.0820	5.9680
Frequency of systemic banking crises	1428	0.0763	0.2656	0.0000	1.0000
Banking system's probability of default (z-score)	1312	15.5694	9.8421	-11.5740	65.2840
Income levels	1418	8.0955	1.7002	4.8715	11.1244
Inflation rate	1421	0.0925	0.7129	-0.3281	26.3012
Trade openness	1407	0.7920	0.4731	0.1587	4.3966