

The Impact of Financial Liberalization on Economic Growth: The Indirect Link

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Abstract: This study investigates the impact of financial liberalization on economic growth through its effect on the size and activity of the financial sector in a set of developing countries. We use the relative number and share of Foreign banks as proxies for financial liberalization and liquid liabilities and claims on private sector as share of GDP as proxies for the financial development. We find a negative real effect of the level of Foreign banks entry on the size and activity of financial development. However, the effect of financial development on economic growth is positive. This result contradicts the first component of Levine's theory that Foreign bank's entry has positive effect on financial development but confirms the second component that financial development has positive effect on economic growth. Our result is also consistent with Ghosh who finds that a greater banking sector openness reduces economic growth in developing countries.

Key words: Financial liberalization, economic growth, financial development, developing countries, contradicts, Foreign

INTRODUCTION

Financial systems contribute in the process of economic development and this is largely recognized by the literature (King and Levine, 1993; De Gregorio and Guidotti, 1995; Beck and Levine, 2004). Hence, the development of this sector is crucial for developing countries. Allowing entry of Foreign banks to their domestic markets is one option to realize this financial development. Proponents of Foreign banks entry find that they promote financial development directly by providing high-quality financial services and indirectly through competition with domestic banks (Levine, 1996; IMF, 2000, 2006; Peek and Rosengren, 2000). By contrast, opponents find that Foreign banks will stimulate capital flight, serve the most profitable segments of the market, dominate the domestic market and retreat when domestic markets experience financial problems (Levine, 1996; World Bank, 2002; Tamirisa *et al.*, 2000; Agenor, 2001; WB, 2017).

In order to understand the real impact of Foreign banks entry on the hosting economies, we will review the empirical research that examines the following points related to Foreign banks entry: the relative importance of

Foreign banks, the effect of Foreign banks entry on domestic banks, the Foreign banks and the SMEs and Foreign banks and financial crises, Foreign banks entry and economic growth.

The relative importance of Foreign banks: Berger *et al.* (2000) present two hypotheses to clarify the difference in performance between Foreign banks and domestic banks. The home field advantage and the global advantage. Under the home field advantage hypothesis, domestic banks are generally more efficient than Foreign banks because of organizational diseconomies and multiple barriers that occurs when managing an institution from a distance. Under the global advantage hypothesis, Foreign banks are more efficient than domestic banks because they are able to overcome these disadvantages by a superior and high skilled management that can operate from a distance.

Several empirical studies test the relative importance of Foreign banks compared to domestic banks. The results of these studies are mixed. In developed countries, the studies conclude that domestic banks are more efficient than Foreign banks while the opposite is true for developing countries.

In fact, for developing countries (Havrylychuk, 2006; Bonin *et al.*, 2005; Kasman *et al.*, 2005; Sturm and Williams, 2004; Jemric and Vujcic, 2002; Grigorian and Manole, 2002; Hansan and Marton, 2003; Bhattacharyya *et al.*, 1997) find that Foreign banks are more efficient than the domestic banks. Furthermore, Yildirim and Philippatos (2002) find that they are more efficient than domestic banks in terms of costs but less efficient in terms of benefits. However, for nine European countries in transition (Green *et al.*, 2004) find that Foreign banks are not more efficient than domestic banks.

The effect of Foreign banks entry on domestic banks:

Claessens *et al.* (2001) are the first to analyze concretely the effects of Foreign banks entry on group of countries. They find that Foreign banks entry is associated with greater efficiency in the domestic banking system. Claessens and Lee (2002) and Hermes and Lensink (2002) analyze their effects for a sample of low income countries and find that they participate in increasing the efficiency of domestic banks by render them more competitive. Furthermore, Lensink and Hermes (2004) and Hermes and Lensink (2004) claim that their effects on domestic banks will depend on the level of economic development, for the first study and on the level of financial development, for the second. Lee (2002) analyses the impact of Foreign bank entry on domestic banks in the MENA countries and concludes positive effects of this entry on the MENA domestic banks.

Several studies examine the effect of Foreign banks entry on domestic banks in one single country. Denzler (2000), Clarke *et al.* (2000) and Beck *et al.* (2009) conclude positive effects of their entry on domestic market in Turkey, Argentina and Colombia, consecutively. Unite and Sullivan (2003) examine the impact of Foreign banks entry on the banking sector in Philippines and find evidence that it has positive effects but only for those domestic banks that are affiliated to a family business group. While Okuda and Rungsombom (2007) conclude negative effects in the short run but anticipate an improvement in the performance of domestic banks in the long run.

Two studies analyse the effects of Foreign banks entry on domestic banks in Mexico. Haber and Musacchio (2005) did not find any impact of this entry on domestic banks. While, Schulz (2006) find a positive but limited impact on the efficiency of domestic banks.

Foreign banks and the SMEs: Berger and Udell (2002) introduce a model that suggests certain organisational structures (for example, small and closely-held organisation with few managerial layers) which may be

better able than others to resolve the contracting problems associated with relationship lending. Berger *et al.* (2001) find that large and Foreign-owned institutions may have difficulty extending relationship loans to opaque small firms, especially if Foreign banks are headquartered in a far-away nation.

Mian (2003, 2006) shows that greater cultural and geographical distance leads Foreign banks to further avoid lending to SMEs. By contrast (Clarke *et al.*, 2001) find evidence that Foreign banks entry improves firm's access to credit. Several reasons explain why Foreign banks entry may have positive effects on SMEs access to loans. Mester argues that advances in credit scoring methodologies and enhanced computer power is one of the main reasons. While, Bonin and Abel (2000) and Jenkins (2000) find that domestic banks are forced to seek new market niches such as SMEs, since Foreign banks increase competition for large customers.

Clarke *et al.* (2005) consecutively, find that the local operations of Foreign banks and its mode of entry (Greenfield or takeover) are two important determinants of the extent to which Foreign banks discriminate against SMEs.

Foreign banks and crisis: Several studies examine the impact of Foreign banks entry on the likelihood of banking crises and the behavior of Foreign banks during crises. Barth *et al.* (2001) indicate that it is not the actual level of Foreign presence that matters. Instead, it is specific impediments to banks entry that are associated with bank fragility. Moreover, Goldberg *et al.* (2000) conclude that Foreign banks contribute to greater stability in overall financial system credit. This conclusion have been confirmed by Goldberg (2001) and Crystal *et al.* (2002) for a group a latin American countries.

Herrero and Simon find a supportive evidence of a neutral or positive role of Foreign banks in the financial stability of emerging countries. Furthermore, Haas and Lelyveld (2004), Peek and Rosengren (2000) show no evidence of 'cut and run' behavior by Foreign banks in response to economic problems in developing countries. Yeyati and Micco (2007) argue that Foreign penetration led to less competitive and more stable banking sectors in latin America. Buch *et al.* (2003) has shown that financial integration does have stabilizing features in host countries because it allows more diversification of stochastic liquidity shocks.

Peek and Rosengren (1996) and Dekle and Lee (2015) find that Foreign banks reduce lending when they have difficulties in their home country. Bonin and Louie (2016) give evidence that lending behavior of subsidiaries of the big six European multinational banks is not different from

domestic banks and they treat Foreign markets as a “second home market”. Find that higher Foreign bank exposure appears to be a stabilizing force, since Foreign bank’s responsiveness to host conditions becomes less procyclical as exposure increases.

On the other hand, Jeon *et al.* (2006) find that Foreign banks promote capital outflows in Korea during the Asian crisis. While, Cull and Martinez (2007) claim negative effects of Foreign banks entry on stability of the financial sector, since their results show that countries which experienced a banking crisis tend to have higher levels of Foreign bank participation than those that did not.

Foreign banks entry and economic growth: Levine (1996, 2001, 1998, 1999) provides an extensive theoretical study on the link between international financial liberalization and economic growth. He claims that financial liberalization is crucial in promoting economic growth through its role in improving domestic financial markets.

Several studies tried to test empirically the validity of this theory. Kunt *et al.* (1998) find no direct effect of Foreign banks entry on economic growth. They, however, claim the existence of an indirect link through the efficiency of the banking sector. Foreign bank participation decreases banks overhead expenses which is robustly linked with economic growth. Bayraktar and Wang (2004, 2006) find a direct and indirect impact of Foreign banks entry on economic growth. Their results imply an indirect effect of Foreign banks entry on economic growth, through its effect on the efficiency of the banking sector (lower overhead costs and net interest margins of domestic banks).

Other dimensions of financial development (size and activity of the financial market) were not given similar attention and the real implications of financial liberalization on financial development were not thoroughly investigated. The current study aims at empirically testing empirically this relation and find out the impact of financial liberalization, measured by the number and share of Foreign banks in developing countries domestic markets on these dimensions of financial development.

Empirical work on the relationship between financial development and economic growth began at the start of the 1990’s with King and Levine (1993). It shows a positive relationship between financial development and economic growth (Demetriades and Arestis, 1996; Odedokun, 1996; Rousseau and wachtel, 1998; Beck and Levine, 2004; Rioja and Valey, 2003). Even though, some researchers argue that there is no real effect of financial development on economic growth, for certain group of countries, especially developing countries (Gregorio and

Manole, 2002; for 12 Latin America countries and Naceur and Ghazouani, 2007; for 11 MENA region countries), they noticed that contradiction between their empirical results and theory may be mainly due to weak infrastructure in those economies.

More recently, Ghosh (2017) studies the influence of banking sector globalization on economic growth for a panel of 138 countries for the period 1995-2013. He finds that greater banking sector openness reduces economic growth in both emerging and low income countries and in countries with >10% Foreign banks. Moreover, Foreign banks reduces private credit flows in host countries. He attributes this reduction to lack of information on potential clients.

MATERIALS AND METHODS

Based on the theory proposed by Levine, this study examines the effects of Foreign banks entry on economic growth through its effects on financial development. It first examines the impact of Foreign banks entry on financial development. We choose different variables than those used by other studies (profits, overhead costs and interest margin) which proxy for the efficiency of financial development. Our choice of variables are liquid liabilities and bank credit (represents, respectively, the financial sector size and activity). The number and share of Foreign banks in the domestic market are used as indicators of Foreign banks existence (financial liberalization). Then, we examine the impact of financial development on economic growth. Our main objective is to analyze the effect of Foreign banks entry in developing countries on economic growth through its effect on the size and activity of financial sector (financial development) (Table 1).

Our sample covers 33 developing countries that have GDP per capita of less than 3,595\$, for the period between 1995 and 2006. Our choice for the study period is due to the fact that this is the time when most of developing countries began to open their markets to Foreign banks, especially after the creation of the general agreement on Trade and Services (GATS) in 1995 where countries took commitments to liberalize their financial sectors. Also, data on the share of Foreign banks is unavailable beyond 2006. Moreover, using this sample period enables us to compare our results with Bayraktar and Wang (2004, 2006) who uses similar time period.

Countries covered by this study are: Bolivia, Cameroun, Congo, Colombia, Dominican Republic, Ecuador, Egypt, Ghana, Guatemala, Honduras, Haiti, Indonesia, India, Jamaica, Jordan, Kenya, Sri Lanka, Malawi, Malaysia, Niger, Nepal, Pakistan, Panama, Peru, Philippines, Paraguay, Senegal, Salvador, Togo, Thailand, Tunisia, Zambia and Zimbabwe.

Table 1: Variables description

Variables	Abbreviations	Period	Sources
Bank credit	Priv	1995-2005	Beck <i>et al.</i> (2009)
Liquid liabilities	Lly	1995-2005	Beck <i>et al.</i> (2009)
Inflation rate	Infla	1995-2005	IMF, world economic outlook database
GDP per capita	GDP	1995-2005	IMF, world economic outlook database
Number of foreign banks	Foreign No.	1995-2006	Claessens <i>et al.</i> (2008)
Share of foreign banks	Foreign share	1995-2006	Claessens <i>et al.</i> (2008)
Rule of law	Law	1996-2006	Kaufmann <i>et al.</i> (2006)
Corruption control	CO corruption	1996-2006	Kaufmann <i>et al.</i> (2006)
Contract enforcement	Enforcement	2004	World bank database
Information on credit	CInfo	2005	World bank database
Share of government in the market	Gov own	1996-2002	Micco <i>et al.</i> (2004)
Market concentration	Concentration	1996-2002	Micco <i>et al.</i> (2004)

Table 2: Model OLS, dependent variable is bank credit (Priv)

Models	1	2	3	4	Models	5	6	7	8
Log GDP	0.375 (0.103)***	0.273 (0.121)**	0.183 (0.136)	0.165 (0.098)	Log GDP	0.355 (0.099)***	0.236 (0.127)*	0.176 (0.144)	0.152 (0.100)
Foreign No.	-0.294 (0.135)**	-0.295 (0.133)**	-0.381 (0.153)**	-0.240 (0.115)**	Foreign share	-0.214 (0.123)*	-0.232 (0.121)*	-0.255 (0.131)*	-0.187 (0.092)*
Log infla	-0.166 (0.085)*	-0.146 (0.085)*	-0.157 (0.100)	-0.167 (0.072)*	Log Infla	-0.133 (0.084)	-0.114 (0.083)	-0.138 (0.104)	-0.163 (0.072)**
Law	0.404 (0.147)**	0.399 (0.145)**	0.409 (0.176)**	0.227 (0.134)	Law	0.427 (0.150)***	0.418 (0.147)***	0.392 (0.187)**	0.197 (0.136)
Co corruption	-0.222 (0.195)	-0.190 (0.194)	-0.185 (0.216)	-0.108 (0.161)	CO corruption	-0.235 (0.200)	-0.197 (0.198)	-0.180 (0.227)	-0.092 (0.162)
Log enforcement	-0.566 (0.205)**	-0.626 (0.207)***	-0.717 (0.250)***	-0.410 (0.192)**	Log Enforcement	-0.499 (0.203)**	-0.576 (0.206)***	-0.632 (0.255)**	-0.357 (0.185)*
C info		0.025 (0.019)	0.021 (0.021)	0.004 (0.015)	CInfo	0.029 (0.020)	0.029 (0.020)	0.018 (0.022)	0.002 (0.015)
Gov own			-0.137 (0.166)	-0.058 (0.121)	GovOwn			-0.138 (0.175)	-0.059 (0.122)
Concentration			-0.341 (0.187)*	-0.274 (0.135)*	Concentration			-0.326 (0.195)	-0.262 (0.135)*
Observations	33	33	31	29	Observations	33	33	31	29
Adjusted R ²	0.70	0.70	0.72	0.61	Adjusted R ²	0.68	0.69	0.69	0.61

*, **, ***Represent significance at 0.1, 0.05, 0.01 respectively standard errors are between brackets

Based on previous literature, we choose several variables as determinants of financial development: the (number and share of Foreign banks), level of financial development (liquid liabilities and bank credit to private sector), quality of institutions and legal system (rule of law, corruption control, contract enforcement, information on credit) Kunt and Levine, 2004; Demetriades and Hussein 1996; Demetriades and Andrianova, 2004), level of economic development (GDP per capita), inflation (Inflation rate) (Rousseau and Wachtel, 2002; Boyd *et al.*, 2001) and share of assets possessed by the government (La Porta *et al.*, 2002, 1997-1998 and 2002). We add to these variables the degree of market concentration. We use Ordinary Least Squares (OLS) method to estimate two versions of the following Eq:

$$Y_i = \alpha + \beta F_i + \gamma X_i + \mu_i$$

Where:

- Y_i = The variable that represents financial development
- F_i = The variable that represents the level of openness to Foreign banks
- X_i = The matrix of control variables
- μ_i = The error term
- α = The constant

β = the coefficient of the degree of openness to Foreign banks and

γ = The vector of coefficients on the control variables

For each version, we change the group of explicative variables to test the sensitivity of the coefficient that we are interested in. The examined models are:

$$Priv_i = \alpha + \beta Foreign Num_i + \gamma X_i + \mu_i \quad (1)$$

$$Priv_i = \alpha + \beta Foreign Share_i + \gamma X_i + \mu_i \quad (2)$$

$$Lly_i = \alpha + \beta Foreign Num_i + \gamma X_i + \mu_i \quad (3)$$

$$Lly_i = \alpha + \beta Foreign Share_i + \gamma X_i + \mu_i \quad (4)$$

For the first 2 models, eight regressions were estimated (4 regressions each). We add new explanatory variables subsequently to test the sensitivity of the results (Table 2). In regressions 4 and 8, we delete two countries that we consider outliers for the priv variable (Malaysia and Thailand). Table 2 shows that the values of the coefficients of financial liberalization are negative

and they are statistically significant. Hence, the results from Table 2 suggest a negative and significant real effect from the level of financial liberalization, measured by the number and share of Foreign banks, on the activity of the financial sector (financial development). Other interesting results are the negative and significant effect of bank concentration and contract enforcement on the level of financial development. As predicted, GDP and Rule of law have a positive and significant effect on financial development but they lose their significance when we delete the outliers for the priv variable in regressions 4 and 8.

RESULTS AND DISCUSSION

For the second two Models 3 and 4, 8 regressions were also estimated. As in the first two models, we add new explanatory variables subsequently to test the sensitivity of the results Table 3 to the inclusion of control variables. In regression 4 and 8, we delete two countries that we consider outliers for the Lly variable (Malaysia and Jordan). The results from Table 3 show negative and statistically significant values of the parameter of financial liberalization. Hence, the results from Table 3 also conclude a negative and significant effect from the level of financial liberalization, measured by the number and share of Foreign banks on the size of the financial sector (financial development). As in the results of the first two models, bank concentration and contract enforcement show negative effect on the level of financial development but it is insignificant for bank concentration. GDP and Rule of law have positive and significant impact on financial development but they lose significance when adding new explanatory variables or deleting outliers for the Lly variable.

The second step in testing the indirect effect of financial liberalization on economic growth is to examine the effect of financial development on economic growth. The study examines the effect of financial development on economic growth for the same set of countries and for the same period (1995-2006). The variables used in the model are the same variables used in the endogenous economic growth model. The regression model takes the following form:

$$\text{Economic growth}_i = \alpha + \beta \text{ financial development}_i + \gamma \text{ control variables}_i + \varepsilon \quad (5)$$

The control variables used in the model are divided into three groups: simple series, political series and complete series. The simple series contains two indicators: the initial and real GDP per capita to control the convergence and the average number of years of education as indicator of human capital stock in the economy. The political series contains the two indicators of the simple series plus four new variables: inflation rate, government expense ratio as a share of the GDP, sum of exportations and importations as a share of the GDP and black market premium. The complete series contains all the variables of the political series plus a measure of political stability. These measures are: political stability and absence of violence/terrorism. We estimate two versions of Eq. 5 with one indicator of financial development in every version.

The results obtained in Table 4 regarding the coefficients on financial development is in conformity with the literature. The parameter of Priv and Lly are positive and they are statistically significant. In addition, the results for other explanatory variables are also in conformity with the literature and with the precedent

Table 3: Model OLS, dependent variable is Liquid liabilities (Lly)

Models	1	2	3	4	Model	5	6	7	8
Log GDP	0.278 (0.095)***	0.319 (0.125)**	0.241 (0.148)	0.190 (0.123)	Log GDP	0.247 (0.101)**	0.268 (0.134)*	0.231 (0.160)	0.176 (0.950)
Foreign No.	-0.423 (0.14)***	-0.423 (0.137)***	-0.527 (0.167)***	-0.389 (0.141)**	Foreign Share	-0.329 (0.125)**	-0.325 (0.127)**	-0.361 (0.146)**	-0.273 (0.119)**
Log Infla	-0.113 (0.085)	-0.121 (0.088)	-0.142 (0.109)	-0.161 (0.089)*	Log Infla	-0.070 (0.085)	-0.074 (0.088)	-0.118 (0.116)	-0.148 (0.092)
Law	0.423 (0.148)***	0.425 (0.150)***	0.415 (0.191)**	0.289 (0.160)*	Law	0.451 (0.152)***	0.453 (0.155)***	0.390 (0.207)*	0.257 (0.169)
Co corruption	-0.215 (0.195)	-0.227 (0.199)	-0.199 (0.235)	-0.225 (0.192)	CO corruption	-0.231 (0.203)	-0.238 (0.208)	-0.190 (0.252)	-0.217 (0.202)
Log Enforcement	-0.459 (0.205)**	-0.435 (0.213)*	-0.533 (0.272)*	-0.490 (0.225)**	Log Enforcement	-0.373 (0.206)*	-0.360 (0.217)	-0.419 (0.282)	-0.410 (0.229)*
CInform		-0.010 (0.022)	-0.008 (0.022)	-0.014 (0.019)	CInform		-0.005 (0.021)	-0.012 (0.024)	-0.017 (0.019)
GovOwn			-0.044 (0.180)	0.139 (0.156)	GovOwn			-0.047 (0.194)	0.149 (0.164)
Concentration			-0.157 (0.203)	-0.287 (0.175)	Concentration			-0.136 (0.217)	-0.281 (0.183)
Observations	33.0	33.0	31.0	29.0	Observations	33.0	33.0	31.0	29.0
Adjusted R ²	0.67	0.66	0.63	0.56	Adjusted R-squared	0.64	0.63	0.58	0.52

*, **, ***Represent significance at 0.1, 0.05, 0.01, respectively. Standard errors are between brackets

Table 4: Results from estimating Model 5

Models	1	2
Constant	4.73614 (1.147)***	4.65663 (1.114)***
Initial GDP	-0.000204978 (0.00012)	-0.00019442(0.0001)*
Schooling (average years of secondary)	0.0639763 (0.1502)	0.0703641(1.145)
Trade openness (IMP+EXP/GDP)	-0.00191631(0.0079)	-0.00132624(0.00752)
Inflation	0.0178482 (0.034)	0.0191935(0.0332)
Government expenses (per GDP)	-0.0298164 (0.063)	-0.0486044 (0.062)
Black market premium	-0.0882818 (0.03155)**	-0.0941507 (0.0309)***
Priv	2.09918 (1.164)*	
Lly	2.19756 (0.991)**	
Political stability	0.0010294 (0.410)	0.0647363 (0.389)
R ²	0.381	0.418
No. of observations	32.0	32.0

For each country, each variable represent the average of the period (1995-2006); *, **, ***Represent, successively, 0.1; 0.05; 0.01 level of statistically significance. Type error are inside the brackets. We delete Zimbabwe due to lack in data for Government expenses; World bank database

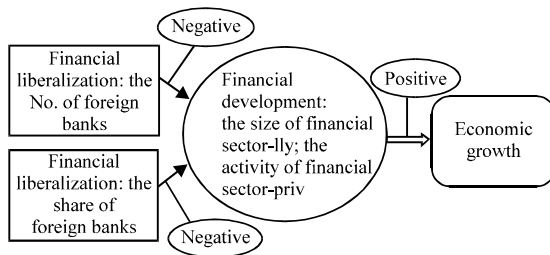


Fig. 1: Modelling the influence of financial liberalization on economic growth for developing countries

empirical studies. For example, the literature predicts negative relationship between the initial level of GDP and the economic growth and positive relationship between average years of secondary and the economic growth which is in conformity with our results. Hence, the results conclude a positive and significant effect of the size and activity of the financial sector (financial development) on economic growth for developing countries.

At this stage, the current study concludes negative and significant impact of financial liberalization on economic growth for developing countries through its impact on financial development. These results are consistent with Detragiache *et al.* (2008) and Claessens and Horen (2014) who find negative and significant impact of Foreign banks entry on private credit in developing countries. On the other hand (Levine, 1996, 2001; Kunt *et al.* (1998); Bayraktar and Wang, 2004, 2006) demonstrate that financial liberalization has positive effect on economic growth through its effect on financial development. In fact, the difference between their results and the evidence of the present study are mainly due to two points. First, this study chooses the size and activity of the financial sector as proxies of financial development while previous studies use efficiency as a measure of financial development. Second, the current study concentrates only on developing countries while previous studies examine combined set of developing and developed countries (Fig. 1).

CONCLUSION

In this study, we develop a model to examine the impact of financial liberalization on economic growth, through the financial development channel, for a sample of 33 developing countries during the period 1995-2006. We find a negative and significant effect of financial liberalization on economic growth through its effect on the level of financial development. Even though the influence of financial development on economic growth is positive for these countries, the effect of financial liberalization on financial development (size and activity of the financial sector) was negative and statistically significant. This negative relationship between financial liberalization and economic growth is consistent with Ghosh (2017) for developing and low income countries.

This study provides compelling evidence that financial liberalization, measured by the number and share of Foreign banks, was not a good policy to increase economic growth in developing countries. This result is in contrast to Levine (1996, 2001) and Bayraktar and Wang (2004, 2006) who demonstrate that financial liberalization has positive effect on economic growth through its effect on financial development.

The difference between Levine (1996, 2001) and Bayraktar and Wang (2004, 2006) and the results of the present study may be due to using different measures of financial development. Their studies concentrate on the efficiency of the financial sector as a measure of financial development (Bayraktar and Wang, 2004, 2006) while this study chooses the size and activity of the financial sector as a measure of financial development. Another reason for the observed negative effect may be due to the small sample period covered by this study. Developing countries may need more time to realize the expected results from liberalization. Furthermore, the difference in results may also be due to the special case of developing countries. It is not a simple task for developing countries, due to their lack of experience, to fully benefit from the entry of Foreign banks. Developing countries may need

more time to assimilate methods and best practices of Foreign banks to realize the expected positive effects of Foreign banks entry. All those caveats constitute venues for further research.

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