

Financial Openness, Domestic Financial Development and Credit Ratings

Eugenia Andreasen^a, Patricio Valenzuela^b

^a Department of Economics, University of Santiago of Chile

^b Department of Industrial Engineering, University of Chile

ABSTRACT

This paper shows that financial openness significantly affects corporate and sovereign credit ratings, and that the magnitude of this effect depends on the level of development of the domestic financial market. Issuers located in less financially developed economies stand to benefit the most from opening up their capital accounts, whereas the impact of this effect decreases as the level of development of the domestic capital market improves.

JEL classification: F34; G15; G38

Keywords: Credit risk; Financial development; Financial liberalization

1. Introduction

The last four decades have witnessed a process of global financial integration, which is believed to have fostered economic development due to easier and cheaper access to capital in international markets. However, the unconditional merits of this financial integration process have recently begun to come under scrutiny. A rich body of research emphasizes that financial openness is effective only under certain circumstances and that average effects associated with financial openness hide important heterogeneities (Chinn and Ito, 2006, Baltagi et al., 2009; Fischer and Valenzuela, 2013).

This study contributes to the financial openness literature by empirically investigating the effects of capital account liberalization on both corporate and sovereign credit ratings and by examining whether these effects depend on the degree of domestic financial development. Understanding the determinants of credit ratings is crucial because they signal an issuer's likelihood of default and thus the issuer's cost of debt capital. Moreover, some regulations concerning investments in bonds are directly tied to credit ratings and affect the pool of international and institutional investors that firms and governments can access (Kisgen and Strahan, 2010).¹

Recent studies have documented that capital account restrictions affect foreign currency credit ratings. Capital controls tend to make access to capital in international markets more difficult and/or expensive, increasing default probabilities and lowering both firm and sovereign credit ratings (Prati et al., 2012; Ostry et al., 2009). In fact, credit rating agencies have publicly stated that they positively evaluate governments whose economies are financially integrated with the rest of the world in terms of the reasonableness of their economic policies

¹ Credit ratings can also impose additional costs on firms. For instance, Kisgen (2006) argues that "A firm's rating affects operations of the firms, access to other financial markets such as commercial paper, disclosure requirement for bonds..., and bond covenants."

and that restrictions on capital flows are likely to constrain the ability of firms to meet offshore debt obligations in a timely manner (Standard and Poor's, 2001, 2008).

We further investigate the link between financial openness and credit ratings and examine whether this nexus is shaped by domestic financial development. Our main finding provides empirical evidence that financial openness has a positive effect on credit ratings, and that this effect depends on the level of development of the local financial market. Issuers situated in economies with less developed financial markets stand to benefit most from opening up their capital accounts, although this effect weakens as the level of development of the local capital market improves.

2. Financial openness, domestic financial development and credit ratings

There are at least three reasons to expect that financial openness will have a non-linear effect on credit ratings based on the level of domestic financial development. First, when a country imposes capital controls, a well-developed domestic financial system can act as a substitute for both firm and sovereign financing needs. Therefore, the benefits from removing capital account restrictions should be greater in less financially developed countries. Second, the international finance literature suggests that capital account liberalization reduces risk premiums due to improved risk sharing and enhanced market liquidity (Errunza and Losq, 1985; Bekaert and Harvey, 2000; Chari and Henry, 2004). As its cost of capital decreases, the default probability of an issuer is lowered, and its credit rating improves. As issuers from well-developed local markets already benefit from considerable risk sharing and liquidity, the room for further improvement in this regard is less than that afforded to issuers from less developed financial markets. Finally, more sophisticated domestic capital markets potentially provide

firms with the opportunity to make financial innovations that allow capital controls to be circumvented (Klein and Olivei, 2008).

According to the three channels discussed above, the effects of financial openness on credit ratings should decrease as the level of local financial development rises, a hypothesis we test below.

3. Data

The dataset we study builds on that used in Borensztein et al. (2013), which covers the period 1995-2009 for non-financial publicly traded firms in 11 industrial and 15 emerging economies. The dependent variable consists of the Standard and Poor's foreign currency corporate and sovereign credit ratings. Standard and Poor's (2001) defines a foreign currency credit rating as a "*current opinion of an obligor's overall capacity to meet its foreign-currency-denominated financial obligations... (the credit rating) is based on the obligor's individual credit characteristics, including the influence of country or economic risk factors.... a foreign currency credit rating includes transfer and other risks related to sovereign actions that may directly affect access to the foreign exchange needed for timely servicing of the rated obligation*".

Financial openness is measured by the KAOPEN index developed by Chinn and Ito (2008). The KAOPEN index is the first principal component of four restrictions on cross-border financial transactions reported in the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER). These restrictions indicate the existence of multiple exchange rates, restrictions on current account transactions, restrictions on capital account transactions, and requirements involving the surrender of exports' proceeds. We rescaled the index to values between zero and one. A higher index value indicates greater financial openness.

We utilize two measures of domestic financial development. The first is private credit to GDP, and the second is private bond market capitalization to GDP. Both measures are from the Financial Development and Structure Dataset. Table 1 reports the descriptive statistics for all the variables used in this study. Our dataset also includes firm-level performance indicators and a comprehensive set of macroeconomic control variables.

4. Empirical strategy

The primary objective of this study is to explore whether financial openness affects credit ratings and whether this effect depends on the degree of domestic financial development. In order to reduce potential problems associated with endogeneity stemming from omitted time-invariant characteristics, we conduct panel data regressions. Thus, our corporate credit rating econometric model takes the following form:

$$Corp_Rtg_{ict} = \beta_0 FO_{ct-1} + \beta_1 FD_{ct-1} + \beta_2 FD_{ct-1} \times FO_{ct-1} + \varphi X_{ict} + \theta Z_{ct-1} + A_i + B_t + \varepsilon_{it} \quad (1)$$

where $Corp_Rtg_{ict}$ is the corporate credit rating of firm i in country c , at time t . FO_{ct-1} is the lagged value of financial openness and FD_{ct-1} is the lagged value of the degree of domestic financial development. The interaction term $(FD_{ct-1} \times FO_{ct-1})$ aims to capture the heterogeneity of the impact of financial openness on credit ratings. X_{ict} is a vector of firm-level performance indicators, and Z_{ct-1} is a vector of macroeconomic control variables. A_i and B_t are vectors of firm and year dummy variables that control for average firm-level characteristics and global factors, respectively. ε_{it} is the error term.

Our sovereign credit rating model takes the following form:

$$Sov_Rtg_{ict} = \gamma_0 FO_{ct-1} + \gamma_1 FD_{ct-1} + \gamma_2 FD_{ct-1} \times FO_{ct-1} + \theta Z_{ct-1} + A_i + B_t + \varepsilon_{it} \quad (2)$$

where Sov_Rtg_{ct} is the credit rating of country c at time t . A_c is a vector of country dummy variables that control for average country-level characteristics.

According to the models presented in Equations (1) and (2), the effect of financial openness on corporate and sovereign credit ratings at different levels of domestic financial development can be calculated by examining the partial derivatives of credit ratings with respect to financial openness:

$$\frac{\partial Corp_Rtg_{ict}}{\partial FO_{it-1}} = \beta_0 + \beta_2 FD_{it-1} \quad (3)$$

$$\frac{\partial Sov_Rtg_{ict}}{\partial FO_{it-1}} = \gamma_0 + \gamma_2 FD_{it-1}. \quad (4)$$

We hypothesize that $\beta_0 > 0$ and $\beta_2 < 0$, and that $\gamma_0 > 0$ and $\gamma_2 < 0$. In other words, financial openness has a positive effect on credit ratings in economies with underdeveloped financial markets, but this effect weakens as the level of financial market development rises. If the relationship between financial openness and credit ratings were just a simple correlation caused by common macroeconomic factors rather than a causal effect, this non-linearity would not arise.

5. Results

Table 2 reports the results from estimating Equations (1) and (2) by ordinary least squares with clustering of errors by country-year and year, respectively. Columns 1 and 2 present the results for our corporate credit rating models using private credit to GDP and private bond

market capitalization to GDP as measures of domestic financial development, respectively. Analogously, columns 3 and 4 present the results for our sovereign credit rating models.

Table 2 shows that in all our regressions, financial openness and both measures of financial development have positive and highly statistically significant coefficients, whereas the interaction terms between financial openness and financial development have negative coefficients that are also highly statistically significant. Consistent with our hypothesis, the significant positive coefficient on financial openness and the negative coefficient on the interaction term indicate that issuers situated in economies with less developed financial markets stand to benefit most from opening up their capital accounts, while the impact of this effect declines as the level of the local capital market's development improves. Furthermore, it is notable that most of the coefficients associated with our firm- and country-level control variables have their expected signs and are highly statistically significant.

6. Conclusion

This article presents unique preliminary evidence that financial openness affects both corporate and sovereign credit ratings and that the magnitude of the effect is not homogenous. Issuers located in economies with less-developed financial markets stand to benefit most from opening up their capital accounts, whereas the openness effect diminishes as the level of development of the local capital market improves.

Acknowledgments

Patricio Valenzuela wishes to thank the Fondecyt Initiation Project # 11130390 and the Institute for Research in Market Imperfections and Public Policy, ICM *IS130002*, Ministerio de Economía, Fomento y Turismo for their financial support.

References

- Baltagi, B., Demetriades, P., Hook Law, S., 2009. Financial development and openness: Evidence from panel data. *Journal of Development Economics* 89, 285-296.
- Bekaert, G., Harvey, C. R., 2000. Foreign speculators and emerging equity markets. *Journal of Finance*, 55, 565–614.
- Borensztein, E., Cowan, K., Valenzuela, P., 2013. Sovereign ceilings “lite”? The impact of sovereign ratings on corporate ratings. *Journal of Banking and Finance* 37, 4014-4024.
- Chinn, M. D., Ito, H., 2006. What matters for financial development? Capital controls, institutions, and interactions. *Journal of Development Economics* 81, 163-192
- Chinn, M. D., Ito, H., 2008. A new measure of financial openness. *Journal of Comparative Policy Analysis* 10, 309-322.
- Errunza, V., Losq, E., 1985. International asset pricing under mild segmentation: Theory and test. *Journal of Finance* 40, 105-124.
- Fischer, R., Valenzuela, P., 2013. Financial openness, market structure and private credit: An empirical investigation. *Economic Letters* 121, 478-481.
- Chari, A., Henry, P. B., 2004. Risk sharing and asset prices: Evidence from a natural experiment, *Journal of Finance* 59, 1295-1324.
- Kisgen, D., 2006. Credit ratings and capital structure. *Journal of Finance* 61, 1035–1072.
- Kisgen, D., Strahan, P., 2010. Do regulations based on credit ratings affect a firm’s cost of capital? *Review of Financial Studies* 23, 4324–4347.
- Klein, M., Giovanni O., 2008. Capital account liberalization, financial depth, and economic growth. *Journal of International Money and Finance* 27, 861-875.
- Ostry, J., Prati, A., Spilimbergo, A., 2009. Structural reforms and economic performance in advanced and developing countries. *IMF Occasional Paper* 268.
- Prati, A., Schindler, M., Valenzuela, P., 2012. Who benefits from capital account liberalization? Evidence from firm-level credit ratings data. *Journal of International Money and Finance* 31, 1649-1673.
- Standard, Poor’s, 2001, Rating methodology: Evaluating the issuer. Ratings criteria, September 7.
- Standard and Poor's, 2008, Sovereign credit ratings: A primer. New York: Standard and Poor’s, May.

Table 1
Descriptive statistics

	Obs.	Mean	Std. Dev.	Min.	Max.
<i>Firm level</i>					
Corporate credit rating	2,949	13.42	3.43	1	21
EBIT/assets	2,949	8.20	6.05	-13.12	44.86
EBIT/interest expense	2,949	7.52	0.71	6.21	12.98
Retained earnings/assets	2,949	19.16	17.50	-88.78	76.53
Working capital/assets	2,949	6.57	15.36	-88.96	75.91
Equity/capital	2,949	54.27	20.36	-57.22	100.00
Size	2,949	4.12	1.37	0.33	8.09
<i>Country level</i>					
Sovereign credit rating	301	15.69	4.90	1	21
GDP per capita (logs)	301	8.94	1.50	5.51	11.02
Inflation	301	4.12	5.34	-1.41	58.02
Current account/GDP	301	-0.10	5.17	-12.04	17.44
GDP growth	301	3.82	3.30	-13.13	13.01
GDP volatility	301	0.07	0.15	0.00	0.89
Financial openness	301	0.73	0.31	0.16	1.00
Private credit/GDP	301	0.76	0.47	0.10	2.20
Private bond/GDP	283	0.24	0.29	0.00	1.64

Table 2
Financial openness, domestic financial development and credit ratings

	Corporate credit ratings		Sovereign credit ratings	
	(1)	(2)	(3)	(4)
Financial openness	3.4895*** (1.2316)	3.3329*** (1.1030)	3.9717** (1.5176)	3.0997** (1.3010)
Private credit/GDP	2.5845** (1.1373)		6.0463*** (1.5383)	
Private credit/GDP x Financial openness	-3.0854*** (1.1388)		-5.0786*** (1.4074)	
Private bond/GDP		5.4850** (2.2916)		16.1311*** (4.0632)
Private bond/GDP x Financial openness		-8.7348*** (2.5419)		-16.1833*** (4.0670)
EBIT/assets	0.0379*** (0.0079)	0.0356*** (0.0081)		
EBIT/interest expense	0.1847*** (0.0673)	0.2006*** (0.0663)		
Retained earnings/assets	0.0178*** (0.0042)	0.0197*** (0.0043)		
Working capital/assets	0.0166*** (0.0060)	0.0191*** (0.0062)		
Equity/capital	0.0188*** (0.0040)	0.0161*** (0.0039)		
Size	0.5330*** (0.1147)	0.5178*** (0.1131)		
GDP per capita (logs)	-0.4167 (0.5376)	-0.3807 (0.5469)	0.4236 (0.7239)	0.3092 (0.6951)
Inflation	-0.0326* (0.0186)	-0.0313* (0.0184)	-0.0256 (0.0330)	-0.0323 (0.0257)
Ccurrent account/GDP	0.0454** (0.0218)	0.0201 (0.0224)	-0.0241 (0.0243)	-0.1082*** (0.0263)
GDP growth	0.0841** (0.0423)	0.0694* (0.0408)	0.1291* (0.0653)	0.0505 (0.0659)
GDP volatility	-3.3107*** (0.9171)	-3.0016*** (0.8488)	-3.9118*** (1.2307)	-2.3494** (0.9687)
Observations	2949	2873	301	283
R-squared	0.9264	0.9270	0.9583	0.9575
Firm fixed effects	YES	YES	NO	NO
Country fixed effects	NO	NO	YES	YES
Time fixed effects	YES	YES	YES	YES

Note: Numbers in parentheses are standard errors. Standard errors of models 1 and 2 are clustered at the country-year level. Standard errors of models 3 and 4 are clustered at the year level.

* Significance level at 10%.

** Significance level at 5%.

*** Significance level at 1%.