CAPITAL ACCOUNT OPENNESS AND BANKING SOUNDNESS

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Abstract
The recent financial crisis (2008) exposes the unintended consequences of capital account liberalisation on banking soundness. Using bank-level data, we examine the influence of this liberalisation on the rise of risk taking in banking. Through a panel analysis for a sample of 242 banks from the South Asian and Latin American regions over the period from 2005 to 2013, we demonstrate that capital account liberalisation increases the prevalence of non-performing loans and earnings volatility. Our results also show that the level of risk taking in banking was higher before the subprime crisis.

JEF Classification: F32, F37.

Keywords: Capital account, Liberalization, Banks' risk.

I – Introduction

Since the work of McKinnon-Shaw (1973), several countries have liberalised their financial sectors. The goal is to foster economic growth through more financial development and financial integration (Tornell et al., 2004; Bekaert et al., 2005). Because it can have many negative effects, however, financial liberalisation is often criticised as being a source of instability and as a factor in banking crises (Caprio and Klingebiel, 1996; Kaminsky and Reinhart, 1999).

The crisis of 2008 revived the debate about the virtues of liberalisation (Eichengreen and Rose, 2014), thus raising the question of whether the opening of the capital account is the great source of motivation for banks' risk taking. The positive or negative effects of capital account openness depend on the reliability of the institutional framework, the functioning of international financial markets (McKinnon and Pill, 1997) and the level of penetration of foreign banks (Ho, 2016) and the exchange rate regime (Agenor, 2015).

It is clear that analysing the real effects of liberalisation, especially on the banking sector, is very difficult and has many shortcomings. In this article, we analyse whether the relationship between capital account liberalisation and banks' risk taking exists all the time or only in specific periods (crisis periods). We also study whether this relationship essentially depends on the indicator of liberalisation used.Th e first problem faced by such analysis concerns how to measure the liberalisation of the capital account. The second problem is determining the measures for banks' risk taking. The third problem concerns how to link capital account liberalisation with banks' risk taking in an empirical model that can provide us with accurate information on this relationship. Previous studies on the effects of financial liberalisation have focused more on the fragility of the entire financial system (Stiglitz, 2000, 2010; Demirgüç-Kunt and Detragiache, 1998); Gourinchas and Obstfeld, 2012). Other studies have analysed the relationship between financial liberalisation and banking crises (Kaminsky and Reinhart, 1999; Weller, 2001; Eichengreen and Arteta, 2002; Demirguc-Kunt and Detragiache, 2005; Williamson and Mahar, 1998; Noy, 2004). Less focus has been placed on the specific impact of capital account liberalisation on banks. We contribute to the literature by focusing our analysis on one part of the process of financial liberalisation: capital account liberalisation. We believe that addressing only one part of the entire process of liberalisation can be advantageous in terms of yielding robust results. To our knowledge, no prior studies have examined the relationship between capital account openness and banks' risk taking.

We also use microeconomic data (banking data) in conjunction with macroeconomic data and capital account liberalisation indicators. Such a combination of micro and macro data is absent from most of the previous studies. The variables used to reflect the financial liberalisation process are multiple and general. The abovementioned studies used old liberalisation measures, such as the Quinn indicator (1997) or measures based on the ratings from the IMF Annual Report on Exchange Arrangements and Exchange Restrictions. The use of financial liberalisation indicators is extensive in the empirical literature. Some studies have used continuous process tracking variables of liberalisation. For example, Eichengreen and Arteta (2002) used the capital flow to GDP ratio to reflect external liberalisation. Bekaert et al. (2005) uses market capitalisation as an indicator of the intensity of market liberalisation. Kaminsky and Schmukler

(2008) and Abiad and Mody (2005) constructed indices capturing the intensity of and change in financial liberalisation policies. For the measures of banks' risk taking, we focus on two major types of risk taking in banking: credit risk and liquidity risk. Our empirical analysis covers the period between 2005 and 2013 and uses a sample of 242 banks from the Asian and Latin American regions. We construct two main datasets: one with indicators of banks' risk taking and one with indicators of capital account liberalisation and other control variables.

The paper is organized as follow: in Section II, we review literature on the link between capital account liberalisation and banks' risk taking. The empirical methodology—including a description of the variables, a description of the sample, the model specification, and regression results—is presented in Section III. Conclusions and policy implications follow in Section IV.

II- Literature Review

The issue of the effects of capital account liberalisation on banks' risk taking has been seldom examined in the theoretical and empirical literature. The relationship between financial liberalisation and banking crises, however, has been studied in many empirical papers (Williamson and Mahar, 1998; Kaminsky and Reinhart, 1999; Demirguc-Kunt and Detragiache, 2001; Weller, 2001; Eichengreen and Arteta, 2002; Noy, 2004). With the presence of some differences, we suppose that the results of these studies would be similar if capital account liberalisation was used instead of financial liberalisation and if banks' risk taking were used instead of banking crises.

Among these studies, Demirguc-Kunt and Detragiache (2001) focused on one aspect of financial liberalisation: the relaxation of interest rates. Their analysis covered 53 countries for the period between 1980 and 1995. They found that the liberalisation of interest rates was accompanied by a higher probability of a banking crisis. Another study that focused on domestic financial liberalisation was that of Weller (2001). The author found that banking crises became more likely to occur after liberalisation. Eichengreen and Arteta (2002) extended the analysis of Demirguc-Kunt and Detragiache (2001). They distinguished between internal and external financial liberalisation. They used a dummy variable to describe these liberalisations. Oddly, they found that internal liberalisation contributes more to the probability of a banking crisis than capital account liberalisation does.

Noy (2004) focused his analysis on the macroprudential level. He examined the interactions between internal liberalisation and supervision. He found that banking crises can occur after the weak monitoring that follows liberalisation. The relationship between financial liberalisation and banking crises was also studied by Ranciere et al. (2006). The authors used two proxies for the liberalisation of securities markets and for the relaxation of capital account restrictions. They found that these two proxies of liberalisation cause banking crises. Barth et al. (2013) focused on banking activities, restrictions on the entry of foreign banks and privatisation. They showed that restrictions on banking activities and the entry of foreign banks increase the likelihood of banking crises, while privatisation has no significant effect on this probability. The data used by Barth et al. for the regulatory restrictions were derived from their national survey for the years 1999, 2003, and 2007.

The main study focusing on capital account liberalisation was conducted by Henry (2007). The author defines capital account liberalisation as follows: "capital account liberalisation is a decision by a country's government to move from a closed capital account regime, where capital may not move freely in and out of the country, to an open capital account system in which capital can enter and leave at will". Henry (2007) presented the theory around capital account liberalisation and its relation with speculation but unfortunately did not integrate banks' risk taking. As can be seen from this literature review, there is great interest in the relationship between financial liberalisation and banking crises. Neither the theoretical literature nor the empirical literature allows us to specify a clear theory-based hypothesis for the relationship between the level of capital account openness and banks' risk taking. Despite the difficulty of pinpointing the precise impact of capital account openness, we formulate the hypothesis that *capital account liberalisation motivates banks' risk taking.*

III- Empirical Analysis

1- Variables and sample

Banks' risk taking, as defined by Bouwman and Malmendier (2015), can be measured in three ways. The first way entails calculating the net charge-offs/gross total assets (GTA). Net charge-offs are "the value of loans and leases removed from the books and charged against loss reserves, minus recoveries on delinquent debt". The second way involves using the non-performing loan (NPL) ratio, NPL/GTA, where NPLs are

"loans that are past due 90 days or more and still accruing interest, plus loans in non-accrual status". The third way entails using earnings volatility, defined as "the standard deviation of return on assets (ROA)". There is a lack of data for the first variable. Consequently, we use only the second and third variables (*NPL* and *ROA*) as dependent variables representing banks' risk taking.

For the indicators of capital account openness, we use those presented by Fernández, Klein, Rebucci, Schindler and Uribe (2015). The authors presented a new dataset of capital control restrictions on both inflows and outflows of 10 categories of assets for 100 countries over the period between 1995 and 2013. We use the first four indicators presented by the authors (*ka, kai, kao* and *eq*).

The fifth indicator used in our paper is the Chinn-Ito index (2017) (noted *KAOPEN*). This index measures a country's degree of capital account openness. The more open the country is to cross-border capital transactions, the higher the value of this index will be. By construction, the series has a mean of zero.

Three control variables are also introduced: the growth rate (*gdp*), the real interest rate (*rate*) and the inflation rate (*inf*) (Demirguc-Kunt and Detragiache, 2001; Eichengreen and Arteta, 2002; Kaminsky and Reinhart, 1999).

Table 1 presents these variables and their definitions, notations and sources.

The sample used in our analysis is composed of 242 banks from the Asian and Latin American countries. The choice of these countries is simply motivated by the fact that they have been affected to a greater extent by the effects of the recent crisis and that they have adopted at different levels the IMF's recommendations to open up their capital accounts.

2- Model specification

We use the model of Demirgüç-Kunt and Huizinga (2000). We regress banks' risk taking (*NPL, ROA*) on various capital account openness proxies (*ka, kai, kao, eq and KAOPEN)* and a battery of control variables, including macroeconomic variables (*gdp, rate and inf*) and year and bank fixed effects (β_i and λ_t, respectively). We cluster standard errors by bank ($£_{i,t}$). The baseline model is presented as follows:

$$RISK_{i,t} = f\,(CAL_{i,t}, MACRO_t) + \beta_i + \lambda_t + £_{i,t}$$

Where RISK represents the vector of dependent variables, CAL is the vector of the capital account liberalisation indicators and MACRO is the vector of macroeconomic control variables.

The diagnostic tests, presented in Table 2, reveal that panel regression is preferable to pooled regression. They also demonstrate that a fixed effects model is preferable to a random effects model. The tests of autocorrelation and heteroscedasticity of errors show the presence of these problems. We use the variants of the "xtgls" function presented by STATA to address these problems. This function estimates the model using generalised least squares (GLS) estimators. These are evaluated by adjusting the variance-covariance matrix of the errors to consider the presence of intra- and inter-individual heteroscedasticity and/or autocorrelation intra- and inter-individuals. Another approach is to regress the fixed effects model with ordinary least squares (OLS), using the Eicker-White standard deviations robust to heteroscedasticity. Table 3 presents the results of these regressions. Models (1) and (3) are regressed using GLS, and models (2) and (4) are regressed with OLS (Eicker-White).

To determine whether the indicators of capital account liberalisation favoured banks' risk taking, we divide the analysis period into two sub-periods: one before the sub-prime crisis (2005-2007) and the second after the crisis (2008-2015). It is assumed here that banks' risk taking was higher before the crisis than after the crisis.

3- Regression results

Table 3 presents the results of the regressions. After the robustness check in Table 2, the results allow for confirming our hypothesis that capital account openness enables banks to take more risks. Except for the coefficients of "eq" (average equity restrictions), which are non-significant, all the coefficients of CAL (*ka, kai, kao, eq and KAOPEN)* have a positive and significant impact on NPL and on ROA. According to these results, greater opening of the capital account favoured the granting of bad credit (to non-creditworthy customers) and also accentuated the volatility of banks' profits in the period between 1995 and 2013.

The breakdown of the analysis into two sub-periods (before and after the crisis) helped to highlight excessive risk taking before the crisis. The coefficients of CAL became weaker after the crisis period. This indicates a return to a more normal state, with moderate risk taking by banks. The crisis revealed substantial weaknesses

in the banking system and the prudential framework, which had engendered excessive lending and risk taking unsupported by adequate capital and liquidity buffers.

These results are similar to the findings of Danthine and Kurmann (2007), Fahlenbrach and Stulz (2011) and Barras, Scaillet and Wermers (2010), which demonstrated that excessive risk taken by banks before a crisis tends to drop sharply immediately after a crisis. This is due to a return to the introduction of capital account restrictions and a limitation of the liberalisation of capital flows. The macroeconomic variables did not yield significant coefficients, except for the inflation rate in model (4), which was found to positively affect earnings volatility.

IV- Conclusions

The impact of capital account liberalisation on banks' risk taking is increasingly a matter of debate. The recent crisis allowed this relationship to resurface. Our analysis confirms the negative effects of this liberalisation on banks. With more freedom, banks seeking more profit do not hesitate to take more risks. The crisis of 2008 can be considered a stopping point to this disorder (Anginer et al., 2012). According to our results, banks' risk taking in relation to the CAL indicators was higher before the crisis than after.

To retain the benefits issued from capital account liberalisation, bank risk-taking behaviours can be reduced with the strengthening of macroprudential supervision. Authorities should monitor the ongoing adaptation and evolution in the nature and locus of risk taking within the banking sector (BIS, 2018; Kim et al., 2011). Micro-level risks can also be reduced through individual-institution prudential supervision (including controls such as capital adequacy requirements and limits on lending concentrations), and system-wide risk can be minimised by maintaining sound macroeconomic policy. Unfortunately, except for the inflation rate, macroeconomic variables had no significant effects in our models; however, it is clear that a stable macroeconomic environment can inhibit the flying of banks to take more risk (Gizycki, 2001).

According to Kose and Prasad (2018), the possible solution to banks' risk taking is to accept it, continue forward and try to control it as much as possible. International experiences should be considered as a guide. Sustainable national political and macroeconomic conditions, a regulatory framework to frame the appropriate banking sector, and monitoring effective capital flows significantly increase the chances that capital account openness will foster sustainable growth.

Appendix

Table 1- Variables Description

Variable	Definition	Notation	Source
Capital account liberalization indicators			
ka	Overall restrictions index (all asset categories)	ka	Fernández, Klein, Rebucci, Schindler and Uribe (2015) "Capital Control Measures: A New Dataset"
kai	Overall inflow restrictions index (all asset categories)	kai	
kao	Overall outflow restrictions index (all asset categories)	kao	
eq	Average equity restrictions	eq	
Chinn-Ito Index	Index based on the binary dummy variables that codify the tabulation of restrictions on cross-border financial transactions reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)	KAOPEN	Chinn, M. D. and H. Ito, The Chinn-Ito Index, http://web.pdx.edu/~ito/Chinn-Ito_website.htm, last updated 20 July 2017.
Dependent variables			

Non-performing loans	Loans that are past due 90 days or more and still accruing interest, plus loans in non-accrual status.	NPL	Orbis Bank Focus
Return on assets	the standard deviation of return on assets	ROA	
Control variables			
Growth rate	GDP growth rate	gdp	International Financial Statistics
Real interest rate	Real interest rate	rate	
Inflation rate	Variation of consumer price index	inf	

Table 2 - Diagnostic Tests

	Individual effects test **H0 : absence of individual effects**	**Test of Hausman** **H0 : no significant difference between fixed effects and random effects**	**Errors hetroscedasticity test of** **H0 : errors are homoscedastics**	**Errors autocorrelation test** **H0 : no errors autocorrelation**
Before crisis (2005 - 2007)				
Panel NPL	F test that all u_i=0: F(241, 225) = 16.28 Prob > F = 0.0000	chi2(3) = 10.50 Prob>chi2 =0.3115	Wald test for heteroskedasticity in fixed effect regression model H0: sigma(i)^2 = sigma^2 for all i chi2 (18) = 3135.55 Prob>chi2 = 0.0000	Wooldridge test for autocorrelation in panel data F(1,241) = 12.623 Prob > F = 0.0024
	p-value < 10% Rejet H0 Conclusion : regression with panel data	p-value > 10% Use of fixed effects panel	p-value < 10% Rejet H0 Presence of heteroscedasticite problem	p-value < 10% Rejet H0 Presence of autocorrelation problem
Panel ROA	F test that all u_i=0: F(241, 224) =16.0 Prob > F = 0.0000	chi2(3) = 11.90 Prob>chi2 = 0.2192	Wald test for heteroskedasticity in fixed effect regression model H0: sigma(i)^2 = sigma^2 for all i chi2 (242) = 2279.38 Prob>chi2 = 0.0000	Wooldridge test for autocorrelation in panel data F(1,241) = 10.710 Prob > F = 0.0045
	Conclusion : regression with panel data	p-value >10% Use of fixed effects panel	p-value < 10%; Rejet H0 Presence of heteroscedasticite problem	p-value < 10%; Rejet H0 Presence of autocorrelation problem
After Crisis (2008 - 2013)				
Panel NPL	F test that all u_i=0: F(241, 224) = 68.04 Prob > F = 0.0000	chi2(3) = 3.16 Prob>chi2 =0.9774	Wald test for heteroskedasticity in fixed effect regression model H0: sigma(i)^2 = sigma^2 for all i chi2 (242) = 106.62 Prob>chi2 =0.0000	Wooldridge test for autocorrelation in panel data F(1, 241) = 185.309 Prob > F = 0.0000
	p-value < 10% Rejet de H0 Conclusion : regression with panel data	p-value >10% Use of fixed effects panel	p-value <10% Rejet H0 Presence of heteroscedasticite problem	p-value < 10% Rejet H0 Presence of autocorrelation problem
Panel ROA	F test that all u_i=0: F(241, 224) = 68.04P F = 0.0000	chi2(3) = 3.16 Prob>chi2 = 0.9774	Wald test for heteroskedasticity in fixed effect regression model H0: sigma(i)^2 = sigma^2 for all i chi2 (242) = 106.62 Prob>chi2 = 0.0000	Wooldridge test for autocorrelation in panel data F(1, 241) = 185.309 Prob > F = 0.0000
	Conclusion : regression with panel data	p-value >10% Use of fixed effects panel	p-value <10% Rejet H0 Presence of heteroscedasticite problem	p-value < 10% Rejet H0 Presence of autocorrelation problem

Table 3 - Regressions results

	(1)	(2)	(3)	(4)
	NPL		ROA	
	Before Crise		After Crise	
	Coef.	Coef.	Coef.	Coef.
	(t-student)	(t-student)	(t-student)	(t-student)
ka	**0.021**	**0.036**	**0.018**	**0.014**
	(2.69)	**(2.8)**	**(2.93)**	**(2.25)**
kai	**0.164**	**0.174**	**0.0653**	**0.142**
	(1.93)	**(1.27)**	**(1.90)**	**(2.50)**
kao	**0.091**	**0.089**	**0.068**	**0.011**
	(6.46)	**(6.43)**	**(6.41)**	**(5.79)**
eq	0.092	0.028	0.012	0.014
	(0.03)	(-0.13)	(0.12)	(1.90)
KAOPEN	**0.052**	**0.058**	**0.024**	**0.013**
	(2.65)	**(2.59)**	**(2.15)**	**(2.29)**
gdp	0.067	0.144	-0.147	-0.073
	(0.4)	(0.82)	(-0.88)	(-0.43)
rate	-0.033	-0.025	-0.025	-0.004
	(-1.00)	(-0.76)	(-0.76)	(-0.15)
inf	0.0424	**0.039**	0.018	**0.177**
	(0.47)	**(2.50)**	(0.22)	**(2.64)**
Cte	3.04	2.202	0.109	-2.152
	(3.55)	(2.98)	(0.16)	(-1.17)
	Coefficients: generalized least squares Panels: homoskedastic Correlation: no autocorrelation Estimated covariances = 1 Number of obs = 762 Estimated autocorrelations = 0 Number of groups = 242 Estimated coefficients = 9 Time periods = 3 Wald chi2(9) = 84.84 Log likelihood = -400.3733 Prob > chi2 = 0.0000	Coefficients: OLS/Eicker-White Panels: homoskedastic Correlation: no autocorrelation Estimated covariances = 1 Number of obs = 762 Estimated autocorrelations = 0 Number of groups = 242 Estimated coefficients = 10 Time periods = 3 Wald chi2(9) = 82.35 Log likelihood = -401.3103 Prob > chi2 = 0.0000	Coefficients: generalized least squares Panels: homoskedastic Correlation: no autocorrelation Estimated covariances = 1 Number of obs = 1210 Estimated autocorrelations = 0 Number of groups = 242 Estimated coefficients = 9 Time periods = 5 Wald chi2(9) = 82.35 Log likelihood = -401.3103 Prob > chi = 0.0000	Coefficients: OLS/Eicker-White Panels: homoskedastic Correlation: no autocorrelation Estimated covariances = 1 Number of obs = 1210 Estimated autocorrelations = 0 Number of groups = 242 Estimated coefficients = 9 Time periods = 5 Wald chi2(9) = 70.67 Log likelihood = -405.7922 Prob > chi2 = 0.0000

References

- Abiad, A., and Mody, A. (2005). Financial reform: What shakes it? What shapes it?. American Economic Review, 95(1), 66-88.
- Anginer, D., Demirguc-Kunt, A., and Zhu, M. (2012). How does deposit insurance affect bank risk? Evidence from the recent crisis. The World Bank.
- Agénor, R. (2015). L'intégration financière internationale: Théories, évidences, et leçons des expériences récentes. OCP Policy Center, n° 08/15.
- Barras, L., Scaillet, O., and Wermers, R. (2010). False discoveries in mutual fund performance: Measuring luck in estimated alphas. The journal of finance, 65(1), 179-216.
- BIS (2018) .Structural changes in banking after the crisis. Report prepared by a Working Group established by the Committee on the Global Financial System. CGFS Papers No 60.
- Barth, J. R., Lin, C., Ma, Y., Seade, J., and Song, F. M. (2013). Do bank regulation, supervision and monitoring enhance or impede bank efficiency?. Journal of Banking and Finance, 37(8), 2879-2892.

- Bouwman, C. H., and Malmendier, U. (2015). Does a Bank's History Affect Its Risk-Taking?. American Economic Review, 105(5), 321-25.
- Bekaert, G., Harvey, C. R., and Lundblad, C. (2005). Does financial liberalization spur growth?. Journal of Financial economics, 77(1), 3-55.
- Caprio, G., and Klingebiel, D. (1996, April). Bank insolvency: bad luck, bad policy, or bad banking?. In Annual World Bank conference on development economics (Vol. 79).
- Chinn, M. D., Ito, H., and Aizenman, J., (2017). Balance sheet effects on monetary and financial spillovers: The East Asian crisis plus 20. Journal of International Money and Finance, 74, 258-282.
- Detragiache, Enrica, 1999. Bank Fragility and International Capital Mobility. IMF Working Paper, Vol., pp. 1-20.
- Demirgüç-Kunt, A., and Detragiache, E. (1999). Financial liberalization and financial fragility. The World Bank.
- Demirgüç-Kunt, A., and Detragiache, E. (2005). Cross-country empirical studies of systemic bank distress: a survey. National Institute Economic Review, 192(1), 68-83.
- Demirgüç-Kunt, A., and Huizinga, H. (2000). Financial structure and bank profitability. World Bank Policy Research Working Paper, (2430).
- Demirgüç-Kunt, A., and Detragiache, E. (1998). The determinants of banking crises in developing and developed countries. Staff Papers, 45(1), 81-109. https://doi.org/10.2307/3867330.
- Danthine, J. P. (2017). Taux négatifs: made for Switzerland.
- Eichengreen, B., and Rose, A. (2014). Capital controls in the 21st century. Journal of International Money and Finance, 48, 1-16.
- Eichengreen, B., and Arteta, C. (2002). Banking crises in emerging markets: presumptions and evidence. Financial policies in emerging markets, 47-94.
- Fahlenbrach, R., Prilmeier R. and Stulz R.M. (2011), "This Time is the Same: Using Bank Performance in 1998 to Explain Bank Performance During the Recent Financial Crisis", National Bureau of Economic Research Working Paper, No. 17038.
- Fernández, A., Klein, M. W., Rebucci, A., Schindler, M., and Uribe, M. (2015). Capital control measures: A new dataset (No. w20970). National Bureau of Economic Research.
- Gizycki, M. C., and Gizycki, M. (2001). The effect of Macroeconomic conditions on banks' risk and profitability. Reserve Bank of Australia.
- Gourinchas, P. O., and Obstfeld, M. (2012). Stories of the twentieth century for the twenty-first. American Economic Journal: Macroeconomics, 4(1), 226-265. https://doi.org/10.1257/mac.4.1.226.
- Henry, P. B. (2007). Capital account liberalization: Theory, evidence, and speculation. Journal of economic Literature, 45(4), 887-935.
- Ho, S. Y. (2016). Global Economic and Financial Crisis: Exploring the Transmission Channels and Impacts on sub-Saharan African Economies. MPRA Paper, n° 75658/16. https://doi.org/10.22495/rgcv6i4siart5.
- Kaminsky, G. L., and Schmukler, S. L. (2008). Short-run pain, long-run gain: Financial liberalization and stock market cycles. Review of Finance, 12(2), 253-292.
- Kose M. Ayhan and Prasad Eswar (2018) .Capital Accounts: Liberalize or Not? Finance and Development.
- Kaminsky, G. L., and Reinhart, C. M. (1999). The twin crises: the causes of banking and balance-of-payments problems. American economic review, 89(3), 473-500.
- Kim, J. B., Song, B. Y., and Zhang, L. (2011). Internal control weakness and bank loan contracting: Evidence from SOX Section 404 disclosures. The Accounting Review, 86(4), 1157-1188.
- McKinnon, R. I., and Pill, H. (1997). Credible economic liberalizations and overborrowing. The American Economic Review, 87(2), 189-193

- Noy, I. (2004). Financial liberalization, prudential supervision, and the onset of banking crises. Emerging Markets Review, 5(3), 341-359.
- Ranciere, R., Tornell, A., and Westermann, F. (2006). Decomposing the effects of financial liberalization: Crises vs. growth. Journal of Banking and Finance, 30(12), 3331-3348.
- Stiglitz, J. E. (2000). Capital market liberalization, economic growth, and instability. World development, 28(6), 1075-1086. https://doi.org/10.1016/s0305-750x(00)00006-1.
- Stiglitz, J. E. (2010). Risk and global economic architecture: Why full financial integration may be undesirable. American Economic Review, 100(2), 388-392. . https://doi.org/10.1257/aer.100.2.388.
- Tornell, A., Westermann, F., and Martinez, L. (2004). The positive link between financial liberalization, growth and crises (No. w10293). National Bureau of Economic Research.
- Weller, C. E. (2001). Financial crises after financial liberalisation: Exceptional circumstances or structural weakness?. Journal of Development Studies, 38(1), 98-127.
- Williamson, J., and Mahar, M. (1998). A survey of financial liberalization (No. 211). Princeton Univ International Economics.
- Zhang, X., Li, F., Li, Z., and Xu, Y. (2018). Macroprudential Policy, Credit Cycle, and Bank Risk-Taking. Sustainability, 10(10), 3620.