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CAN FINANCIAL DEVELOPMENT CAUSE FINANCIAL INSTABILITY?

LE DEVELOPPEMENT FINANCIER PEUT-IL PROVOQUER L'INSTABILITE FINANCIERE ?

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Abstract

The objective of this article consists to identify which determinants of financial development can cause financial instability and if these determinants depend on the economic development degree of the country. Based on a sample of 56 countries, including 22 developed countries and 32 emerging countries over the period of 1960-2014, we test the role of the financial development measured by financial intermediation, financial market capitalization and financial liberalization, on the occurrence of financial instability. Using a dynamic panel techniques, GMM SYSTEM estimator, our results show that financial intermediation increase financial instability in advanced and emerging countries. However, financial liberalization decrease financial instability in developed economies, and increase it in emerging ones, depending on the degree of financial innovation. Additionally, the quality of regulation plays an important role in stabilizing emerging countries. These results have important implications for financial regulation policies.

Keywords: financial development, financial liberalization, financial innovation, financial intermediates, market capitalization, financial instability.

JEL Classifications : E44 ; G01 ; G10 ; G15 ; O16

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Résumé

Le présent article a pour objet de détecter les déterminants du développement financier qui peuvent causer l'instabilité financière selon le niveau de développement économique du pays. À partir d'un échantillon de 56 pays, dont 22 pays développés et 32 pays émergents sur la période 1960-2014, nous testons le rôle du développement financier mesuré par l'intermédiation financière, la capitalisation boursière et la libéralisation financière, sur l'instabilité financière. En se basant sur l'estimateur GMM SYSTEM en panel dynamique, nos résultats montrent que l'intermédiation financière accroît l'instabilité financière dans les pays avancés et émergents. Toutefois, la libéralisation financière réduit l'instabilité financière dans les pays développés et l'accroît dans les pays émergents, en fonction du degré d'innovation financière. De plus, la qualité de la réglementation joue un rôle important dans la stabilisation des pays émergents. Ces résultats ont de fortes implications sur les politiques de régulation financière.

Mots-clés : développement financier, libéralisation financière, innovation financière, intermédiaires financiers, capitalisation boursière, instabilité financière.

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1. Introduction

Many recent papers have focused on the effectiveness of financial development in promoting economic growth. Several of them have shown positive effect of deregulation and financial liberalization (Klein and Olivei, 2006; Quin and Toyoda, 2008; Greenwood and Jovanovic, 1990; King and Levine, 1992; Levine, 1992, 2005; Rousseaun and Wachtel, 2011, Baier et al., 2012). However, other studies suggest that financial innovation have caused financial instability and different types of financial crises during the last few decades (Morris and Shin, 1998; Reinhart and Rogoff, 2009, Watchel, 2001, Gaytan and Ranciere, 2004, Rajan, 2005, Kpodar, 2006). Kaminsky and Reinhart (1998), Demirguc-Kunt and Detragiache (1998) and Glick and Hutchinson (2001) found that the probability of monetary and banking crises increases following financial liberalization.

Hellmann et al., (2000) show that there is a clear relationship between liberalization and the moral-hazard problem, they argue that freely determined deposit rates increases competition in the financial sector leading banks to offer inefficiently high deposit rate. Bonin and Wachtel (2000) and Wachtel (2001) describe the failure of emerging economies to house a robust institutional framework because of a deeper financial system. Countries that opened financial markets before effective financial regulation experienced several financial crises. Eichengreen

(2004) show that weakness in the institutional framework can cause financial instability and crises. Rancière, Tornell and Westermann (2003) argue that countries that have experienced boom and busts have grown faster than countries with easier credit conditions. In fact, economies with severs credit market imperfections generally adopt credit risk by easing financial constraint in order to overcome the difficulties of economic growth. For the other economies, liberalization and financial deepening does not have a negative impact on growth, but governments have make policies to eliminate risk taking and fragilities.

Eichengreen (2001) show that there are different causes of financial instability and crises, namely weakness in institutional framework. This is relevant in the context of less developed economies, as a weak, undeveloped and immature institutional framework could act as a catalyst for an economic shock, whether internal or external, such as currency crisis. Martin and Rey (2005) show that the liberalization of the stock market and the financial friction in asset markets interact to generate either a boom in investment or financial crashes.

Dell'Arricia and Marquez (2004a, 2004b) try to explain credit allocation decisions of banks in the framework of financial liberalization. They show that in market characterized by greater information asymmetries, adverse selection problem so banks have a tendency to finance borrowers with lower quality. Rajan (2005) examined the risks of financial development by suggesting that in the case of a large and complex financial system, the likelihood of a "catastrophic collapse" increases. Following the example of Loayza and Rancière (2006), Guillaumont and Kpodar (2006) show that the financial instability increases with the increase of financial development. Schularick and Taylor (2012) found that the credit ratio is a good indicator of financial crises, so the latter are "credit booms that have gone bad". While Jordà et al. (2013) show that, the intensity of financial development amplify the severity of recessions. In addition, causes of the global financial crises of 2008 is the excessive financial innovations such as securitization and derivative (mortgage-backed securities, collateralized debt obligation and credit default swap), which lead to credit boom and exposed financial system to high systemic risks (Keys et al., 2010).

Our objective is to identify which determinants of financial development can cause financial instability and, if these determinants depend on the economic development degree of the country.

We analyze the role of financial development in financial instability on a sample of 56 countries, including 22 developed countries and 32 emerging countries, on the period 1960-2014. The choice of this period is justified by the fact that financial development has a positive

effect on growth when its level is moderate, that is for the period 1960-1989. However, rapid and excessive financial development can weaken the financial system and have Inflationary pressures. Between the late 1980s and the beginning of the 1990s, financial liberalization took place and caused less efficient financial development.

Our paper is organized as follows. The second paragraph presents a literature review. Section 3 outlines the empirical methodology, including a presentation of the model and a description of the data used. Section 4 reports estimation results and interpretations. Section 5 features our conclusions.

2. Literature Review

Contributors generally distinguish four classes of causes of financial instability and crises. The first one is **Unsustainable macroeconomic policies** were the focus of early crisis models such as Krugman (1979). Countries suffer from currency crises in these models because they run inconsistent and unsustainable policies. In the classic case, monetary and fiscal policies are too expansionary to be consistent with the currency peg. Macroeconomic imbalances are the fundamental cause of crises, in this view, although the proximate triggers may be contagion effects or imprudently low levels of foreign exchange reserves Obstfeld and Rogoff (2009). The second class is **Financial systems vulnerability** that is more related to imperfections information on financial markets and the fragility of banking systems, and macroeconomic distortions (Tularam and Subramanian, 2013, Ben Moussa, 2015). Third class is relative to **Institutional weaknesses,** the preceding observations raise the question of why banks and borrowers do not more effectively manage these vulnerabilities themselves. This question has given rise to a literature emphasizing weaknesses in domestic governance structures as the ultimate cause of financial instability. Weak corporate and public sector governance allows excessive risk taking, resulting in vulnerable corporate financial structures. Fourth class is **Flaws in the structure of international financial markets.** This view emphasizes the presence of asymmetric information on international financial markets, which encourages investors to cooperate and causes sudden stoppages and reversals of capital flows that can cause crises, regardless of the conditions of savings mobility. The direction of capital flows may be abusive and unstable, given the prevalence of other distortions. A different statement from this point of view refers to the explanations for financial crises highlighting the weaknesses of financial systems, and currency mismatch in particular (Claessens and Kose, 2013).

The international financial system aims to improve the growth of the world economy, but its development can also lead to financial instability. In fact, the process of financial development implies a deepening of the financial system that directs savings towards productive investment and allows the diversification of risks. These positive aspects of financial development lead to higher economic growth in the long term (Guiso, Sapienza and Zingales 2002). Moreover, well-developed financial markets disseminate information about profitable and productive investment opportunities, enhancing the efficiency with which capital is allocated. This suggests that the benefits of financial development are at least as large as the costs of financial instability. Thus, the costs of a policy that limits financial instability by limiting financial development may be even greater than its benefits. In other words, not everyone agrees that there is a tradeoff between policies that limit financial instability by tightly regulating domestic financial markets and international financial transactions, on one hand, and policies to encourage domestic financial development, on the other (Eichengreen, 2012). Indeed, financial development may present weaknesses that have manifested by the occurrence of systemic banking crises, cycles of expansion and recession, as well as overall financial volatility. Whether these are intrinsic to the development process or induced by policy errors, these elements of financial fragility can hamper economic growth. Indeed, financial systems around the world, which have continued to rise dramatically, have led to the 2007/2008 global financial crisis. The relationship between financial development and financial instability has been examined in the literature by some studies that have analyzed the impact of financial developments on financial instability (Gaytan and Rancière, 2004 and Kpodar, 2006). Several theoretical arguments have favored the idea that financial development can lead to financial instability, depending on the activity of the liquidity insurance determined by the financial intermediaries.

It seems essential to explore why financial development is often a source of financial instability. In fact, financial instability is promoted in a context of particular financial development that incorporates financial innovations, the financial liberalization and facility access to credit. **Financial innovation** has created financial products, which characterize derivatives markets, characterized by more freedom for the market economy and the absence of regulation and the legal and accounting standards that govern it. On the other hand, these products were considered toxic, but the level of their risks was inaccurate. Davis and Karim (2008) argue that innovation in financial markets, the complexity and opacity of financial instruments have led to increased uncertainty, coupled with irrational behavior during the crisis. The nature and structure of the

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products imply price difficulties, amplifying the risks taken, in particular to accelerate financial instability.

McKinnon (1973) shows that a large number of studies analyze how financial development can boost economic growth by accelerating productivity growth as well as mobilizing saving. This research contains a number of empirical studies that have presented a number of measures of financial development that have a positive sign with present and future GDP growth rates, showing that **financial liberalization**, by promoting financial development, can improve The growth rate of the long-term economy (King and Levine 1993). This positive view of financial liberalization has been somewhat clouded by the sharp increase in the financial fragility experienced by industrialized and developing countries in the 1980s and 1990s, in particular, in banking sectors (Caprio and Kliengebiel, 1996 and Lindgren, et al.1996).

The role of **financial structure** is also important in financial development. The main activity of financial intermediaries is to acquire deposits in order to use them to grant loans (Andries, 2009). They also enable the meeting of agents with financing needs and agents with a capacity to finance. On the other hand and over time, their role has evolved according to the level of financial development (Kpodar, 2006). When financial liberalization gives banks and other financial intermediaries freedom of action, this increases the opportunities for taking risks. This tends to increase financial fragility, but this is not necessarily bad for the economy, because high-risk investment projects can be more profitable. However, due to limited liability and other forms of implicit and explicit guarantees, the risk appetite of bankers is likely to be much more than is socially desirable (Detragiache,and Demirgüç-Kunt, 1999).

3. Empirical Methodology

3.1. The Model

The various theoretical arguments underpinning the relationship between financial development and financial instability lead us to propose the model below:

$$\textbf{Financial instability}_{i,j} = \alpha_0 + \alpha_1 \textbf{ financial instability}_{i,j-1} + \Sigma\alpha_{ij} \textbf{ financial development}_{i,j} + \Sigma\beta_{ij} \textbf{ Control}_{i,j} + u_j + \theta_{i,j} + \varepsilon_{i,j}$$

Where *financial instability* $_{i,j}$ is the measure of financial instability for the country i in year j, it is expressed by the deviation of the indicator of financial development from its Long-term trend. *Financial development* $_{i,j}$ is the matrix of variables measuring financial development for the

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country i in year j. *Control* $_{i,j}$ is the matrix of control variables of country i in year j,. $\mathcal{E}_{i,j}$ is the error term.

3.2. Variables Definition

Financial instability is measured by the deviation of the financial development indicator from its long-term trend. For each financial development indicator, we can associate an indicator of financial instability. We compute the standard deviation over each period of five-years of the cyclical component of financial development. The cyclical component is the difference between the financial development indicator and its trend component. This trend is extracted using the Hodrick-Prescott filter.

For *financial development*, we consider three indicators: financial intermediation, financial market capitalization and financial liberalization. For Financial intermediation, we use three measures: M3/ PIB, Bank assets / GDP and Central bank-commercial Bank. Market capitalization/ GDP measures the size of the financial sector. For Financial liberalization, we use two indicators: Financial openness (KAOPEN) and Financial innovation.

Control variables includes the quality of regulation, inflation rate and per capita income (See Table 1 for variable definitions and data sources).

We estimate our model based on a sample of 56 countries, including 22 developed countries and 32 emerging countries, over the period 1960-2014 (See table 2 for countries list).

4. Estimation results and discussions

Before model estimation, we conduct the description statistics and the correlation matrix and we conclude that there is no correlation matter (See Table 3 and 4).

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Table 1: Variable definitions and data sources

Variables class			DEFINITION OF VARIABLES	MESURES OF VARIABLES	DATA SOURCES
The class of dependent variable: financial instability		Financial instabilty	The deviation of the indicator of financial development from its trend	The standard deviation calculated over each 5-year period of the cyclical component of financial development	Authors' calculations
The class of variables of financial development	Financial intermediation	M3/ PIB	This measure reflects the financial deepening and shows the amount of liquid provisions of the financial system,	It includes the liabilities of banks, central banks and other financial intermediaries	World Bank
		Bank assets / GDP	It is a measure of financial sector size	It includes credit to private sector, credit to government and bank assets other than credit.	the Global Financial Development
		Central bank-commercial	The degree to which commercial banks in relation to the central bank allocate economies of the company.	It is equal to the ratio of assets of commercial banks divided by commercial banks as well as active central banks	Financial structure
	The financial market	Market capitalization relative to GDP	It is an indicator of the size of the financial sector	It is the market value of quoted shares divided by GDP	Financial structure
	Financial liberalization	Financial openness (KAOPEN)	It is an index measuring the degree of openness of a country's capital account.	Based on the binary nominal variables that codify the tabulation of restrictions on cross-border financial transactions	Chinn and Ito (2013)

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		Financial innovation	It is a dummy variable that takes the value 1 for years when Ilya uses the securitization and 0 if no		Reports of countries central banks
Control variables		Quality of regulation	This variable captures the government's ability to formulate and implement good policies and regulations that promote economic practice	Estimated governance (ranged from -2.5 (low) to 2.5 (strong governance performance))	WGI du WB
		Per capita income	It is an indicator of wealth between countries	The gross national income (GNI) for a year, divided by the total number of inhabitants	World Bank
		Inflation rate	This is the Consumer Price Index	It is the variation in the cost of a basket of goods and services generally purchased by specific groups of households	World Bank

Table 2: the distribution of countries

Developed countries	Emergent countries
Germany, Spain, Australia, United States Austria, Finland, Belgium, France, Canada, Greece, Cyprus, Ireland, Denmark, Iceland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, United Kingdom	Argentina, Bangladesh, Brazil, China, Chile, Colombia, South Korea, Dominican Republic, Ecuador, Elsalvadeur, Ghana, Guatemala, Hungary, India, Indonesia, Iran, Malaysia, Morocco, Mexico, Nigeria, Pakistan, Peru, South Africa, Thailand, Turkey, Uruguay, Venezuela

Table 3: Description statistics

Variables	Number Of observations	Mean	Standard deviation	Minimum	Maximum
Financial instability	2029	-3,16 e-11	0,092505	-0,6408614	1,478591
Financial innovation	3192	0,5300752	0,4991729	0	1
Financial liberalization	2456	0,3277237	1,611075	-1,894798	2,389193
M3/ PIB	2331	0,4978571	0,3488508	0,0606373	2,519243
Central bank-commercial	2823	0,8536532	0,1987782	0,0610694	2,596096
Bank assets / GDP	1553	0,5425084	0,4300052	0,0017559	3,312711
Market capitalization relative to GDP	1541	0,2389496	0,3767693	7,78 e-06	3,135934
Per capita income	2915	8,046092	1,662661	4,033751	11,54161
Inflation rate	2915	23,06331	191,5848	-8,422486	7481,664
Quality of regulation	1064	0,5164813	0,9663777	-2,446108	2,247344

Table 4: Correlation matrix

	Financial instability	**Financial liberalization**	**Financial innovation**	**M3 / PIB**	**Central bank-commercial**	**Bank assets / GDP**	**Market capitalization relative to GDP**	**Per capita income**	**Inflation rate**	**Quality of regulation**

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Financial instability	**1**							
Financial liberalization	**0,0288**	**1**						
Financial innovation	**-0,0199**	**0,3951**	**1**					
M3 / PIB	**0,0992**	**0,3198**	**0,4067**	**1**				
Central bank-commercial	**0,0537**	**0.4055**	**0,3110**	**0.4130**	**1**			
Bank assets / GDP	**0,1287**	**0,2141**	**0.1891**	**0,4423**	**0,3539**	**1**		
Market capitalization relative to GDP	**0,1282**	**0.2888**	**0,1966**	**0.4325**	**0.2430**	**0,6037**	**1**	
Per capita income	**0,0143**	**0,6620**	**0.6323**	**0,4940**	**0,5007**	**0,3495**	**0,4170**	**1**

Inflation rate	**-0,0096**	**-0.1172**	**-0,0167**	**-0,0573**	**-0.0476**	**-0.0843**	**-0,0612**	**-0,0405**	**1**	
Quality Of regulation	**0.0196**	**0,6484**	**0,1761**	**0,2840**	**0.4081**	**0.3903**	**0.2622**	**0,7266**	**-0,3175**	**1**

4.1. Main results

Using GMM system, we estimate our model separately for each group of countries (developed and emerging countries) and for each sub period: 1960-1989 and 1990-2014.

4.1.1. The first sub period (1960-1989)

For developed countries:

We will analyze first the impact of financial development measures on financial instability (table5). The first variable is **financial liberalization**; it is statistically significant and negatively affects financial instability. Our result is consistent with Demirguc-Kunt and Detragiache (1999) who empirically test the impact of financial liberalization on banking fragility and show that banking crises are generated in a liberalized financial system. However, the impact of financial liberalization on bank fragility is weak in the case of a strong institutional environment. The second measure is **financial innovation** that is statistically significant, positively affects financial instability. Indeed since the 1970s, changes in the institutional environment (policy deregulation, removal of technological barriers) observed in many economies have allowed the multiplication of new instruments and practices and the emergence of new unregulated markets. This evolution usually involves two speculative pressures and increases financial vulnerability (Arestis et al. 2005). For the indicator of the deepening of financial intermediation measured by **the M3 / GDP ratio,** it is statistically significant, having a positive effect on financial instability. Indeed, this ratio favors financial stability, because high volume of liquidity encourage more riskier and profitable investments, which can generates financial instability. Whereas Sahay et al., (2015) find that deeper financial systems with various instruments contribute to strengthening countries' resilience to shocks such as volatile capital flows, which will reduce financial instability. Pholphirul (2008) shows that the

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size of the financial market (M3 / GDP) encourages financial institutions to manage their domestic resource mobilization and then helps stabilize institutions. T**he ratio Commercial Banks-Central Bank** has a significant and positive effect on financial instability. Indeed, according to Mistral (2009), banks are contributing to the deterioration of their balance sheets by lowering asset prices, a phenomenon amplified by the interconnection of banks' balance sheets and the sophistication of financial innovations, creating asymmetry information issue. **The banking assets / GDP ratio** is significant with a positive impact on financial instability. Indeed the increase of banking assets will increase credits, raising the level of risk and the intensification of financial instability. For Boyd and De Nicolo, (2005) the size allows banks to extend multiple geographic markets, industries and complex financial instruments that can

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Table 5: Results of regressions for developed countries for the period 1960-1989

Financial instability	GMM System				GMM First Difference			
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.682 (0.000)***	0.728 (0.000)***	0.832 (0.000)***	0.815 (0.000)***	0.691 (0.000)***	0.714 (0.000)***	0.689 (0.000)***	0.817 (0.000)***
Financial liberalization	-0.008 (0.03)**	-0.01 (0.008)***	-0.004 (0.438)	-0.001 (0.795)			-0.009 (0.072)*	0.004 (0.603)
Financial innovation	0.021 (0.001)***	0.02 (0.000)***	-0.009 (0.302)	-0.004 (0.62)	0.017 (0.012)**	0.018 (0.003)***	0.016 (0.015)**	-0.009 (0.344)
M3 / PIB	0.027 (0.075)*	0.148 (0.249)	0.006 (0.736)	-0.023 (0.337)	0.035 (0.041)**	0.042 (0.013)**	0.008 (0.786)	0.044 (0.474)
Central bank-commercial	0.184 (0.000)***	0.174 (0.000)***	0.034 (0.629)	0.073 (0.314)	0.182 (0.000)***	0.139 (0.004)***	0.171 (0.001)***	0.018 (0.822)
Bank assets / GDP			0.045 (0.024)**					0.041 (0.095)*
Market capitalization relative to GDP				0.097 (0.028)**				
Per capita income	-0.009 (0.063)*	-0.009 (0.028)**	0.0248 (0.052)*	0.014 (0.341)	-0.008 (0.053)*	-0.01 (0.019)**	-0.006 (0.278)	0.009 (0.577)
Inflation rate		-0.000 (0.793)	0.000 (0.847)	0.000 (0.878)		0.000 (0.323)	8.88e-06 (0.977)	-0.000 (0.879)
Constant	-0.092 (0.056)*	-0.081 (0.15)	-0.27 (0.05)*	-0.186 (0.209)	-0.109 (0.01)***	-0.069 (0.153)	-0.096 (0.111)	-0.147 (0.368)
Number of observation	175	161	96	100	238	224	152	88
Number of instruments	187	173	104	109	214	201	153	89

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Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.000	0.000	0.000	0.000
Sargan test	277.809 (0.000)***	359.037 (0.000)***	119.721 (0.044)**	130.541 (0.022)**	284.636 (0.000)***	300.391 (0.000)***	286.576 (0.000)***	94.958 (0.121)
AR(2) test	0.616 (0.537)	-0.714 (0.475)			-0.492 (0.622)	-1.287 (0.198)	0.48 (0.631)	0.48 (0.631)

impair their stability. In terms of control variables, we found that **per capita income** is significant with a negative effect on financial instability. Other studies argued a negative association between some indicators of financial instability and the level of per capita GDP (Frankel and Saravelos, 2010; and Rose, 2011).

For Emerging countries:

Financial liberalization is statistically significant and positively affects financial instability. This result corroborates with Eichengreen (2001) who found that financial liberalization could lead to financial instability and non-optimal allocation of capital (Table 6). **The Commercial Banks-Central Bank ratio** has a significant and positive effect on financial instability. This result confirm those of Wagner (2007) who show that improving the liquidity of assets in the event of a crisis makes the crisis less costly for the bank, which leads the bank to take a risk that largely compensates the bank initial positive impact on stability. Regarding **the market capitalization ratio** that presents the financial market, we found that it has a significant and negative effect on financial instability. Pilhon and Ben Gamra (2007) found that the liberalization of the financial market have not an impact on financial stability for the 1980s, as emerging countries had a closed economy. For the control variables, we found that **the inflation rate** has a significant and positive effect on financial instability. High inflation is an indicator of macroeconomic and financial instability (Fisher,1993 and Edwards, 1998).

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Table 6: results of regressions for emergent countries for the period 1960-1989

Financial instability	GMM System				GMM First Difference			
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.712 (0.000) ***	0.589 (0.000) ***	0.454 (0.000) ***	0.452 (0.002) ***	0.694 (0.000) ***	0.699 (0.000) ***	0.515 (0.000) ***	0.516 (0.000)***
Financial liberalization	0.004 (0.099) *	0.009 (0.017) **	0.007 (0.145)	0.007 (0.156)	0.005 (0.042) **	0.005 (0.039) **	0.009 (0.021) **	0.009 (0.035)**
M3 / PIB			-0.101 (0.183)	-0.099 (0.226)				-0.001 (0.987)
Central bank-commercial	0.065 (0.000) ***	0.036 (0.081) *	0.16 (0.023) **	0.161 (0.034) **	0.066 (0.000) ***	0.064 (0.000) ***	0.151 (0.034) **	0.151 (0.051)*
Bank assets / GDP		0.005 (0.860)	0.184 (0.163)	0.183 (0.177)			0.57 (0.000) ***	0.571 (0.000)***
Market capitalization relative to GDP			-0.283 (0.094) *	-0.285 (0.115)			-0.698 (0.000) ***	-0.699 (0.000)***
Per capita income				0.001 (0.971)	0.011 (0.009) ***	0.012 (0.008) ***	0.0035 (0.897)	0.0034 (0.905)
Inflation rate	0.000 (0.120)	0.000 (0.000) ***	0.000 (0.000) ***	0.000 (0.000) ***		0.000 (0.108)	0.000 (0.000) ***	0.000 (0.000)***
Constant	-0.045 (0.000) ***	-0.036 (0.04)**	-0.106 (0.101)	-0.115 (0.658)	-0.122 (0.000) ***	-0.123 (0.000) ***	-0.211 (0.367)	-0.209 (0.413)
Number of observation	449	68	55	55	436	423	41	41
Number of instruments	374	68	55	55	359	355	42	42
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Sargan test	450.483 (0.002)***	80.778 (0.05)**	60.393 (0.09)*	58.653 (0.099)*	433.195 (0.002)***	416.393 (0.007)***	50.925 (0.031)**	49.296 (0.034)**
AR(2) test	0.272 (0.786)	-0.487 (0.626)			0.247 (0.804)	0.244 (0.806)	0.244 (0.806)	

4.1.2. The second sub period (1990-2014)

For Developed countries:

Financial liberalization is statistically significant and positively affects financial instability (Table7). Pilhon and Ben Gamra (2007) found that the acceleration of external openness and the liberalization of financial markets seem to play an important role in the financial instability in the 1990s. Regarding **the M3 / GDP ratio**, it is statistically significant and has a positive effect on the measure of financial instability. This result contradict those of Khaitan (2014) who found that greater financial deepening, by providing to individuals, households and small businesses better access to financial risk management tools, can improve resilience and stability

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Financial instability	GMM System					GMM First Difference		
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.785 (0.000) ***	0.796 (0.000) ***	0.773 (0.000) ***	0.776 (0.000) ***	0.735 (0.000) ***	0.751 (0.000) ***	0.743 (0.000) ***	0.725 (0.000) ***
Financial liberalization				-0.002 (0.498)			-0.006 (0.092) *	-0.009 (0.03)**
M3 / PIB	0.025 (0.054) *	0.004 (0.764)	-0.023 (0.183)	-0.025 (0.159)	0.095 (0.000) ***	0.07 (0.01)**	0.066 (0.018) **	0.091 (0.003) ***
Central bank-commercial			0.088 (0.027) **	0.0915 (0.024) **			0.088 (0.023) **	0.131 (0.004) ***
Bank assets / GDP			0.103 (0.000) ***	0.103 (0.000) ***	0.021 (0.014) **	0.084 (0.000) ***	0.083 (0.000) ***	0.094 (0.000) ***
Market capitalization relative to GDP		0.031 (0.047) **	-0.033 (0.058) *	-0.033 (0.063) *		-0.0382 (0.037) **	-0.034 (0.062) *	-0.036 (0.05)**
Per capita income	0.0079 (0.059) *	0.0086 (0.076) *	0.003 (0.515)	0.004 (0.509)				-0.014 (0.076) *
Inflation rate	-0.000 (0.012) **	-0.000 (0.062) *	-0.000 (0.42)	-0.000 (0.343)	-0.000 (0.099) *	-0.000 (0.132)	-0.000 (0.314)	-0.000 (0.201)
Quality of regulation			-0.017 (0.008) ***	-0.016 (0.012) **		-0.011 (0.081) *	-0.012 (0.077) *	-0.011 (0.074) *
Constant	-0.074 (0.022) **	-0.073 (0.06)*	-0.124 (0.012) **	-0.125 (0.011) **	-0.062 (0.000) ***	-0.061 (0.000) ***	-0.138 (0.000) ***	-0.079 (0.115)
Number of observation	684	517	395	395	530	386	366	366
Number of instruments	327	296	272	273	268	253	253	254
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Sargan test	711.036 (0.000) ***	642.958 (0.000) ***	498.951 (0.000) ***	495.796 (0.000) ***	517.79 (0.000) ***	439.059 (0.000) ***	419.361 (0.000) ***	430.505 (0.000) ***
AR(2) test	-2.545 (0.011) **	-2.78 (0.005) ***	-2.46 (0.014) **	-2.61 (0.009) ***	-2.922 (0.003) ***	-2.507 (0.012) ***	-2.525 (0.011) **	-2.556 (0.011) **

of the real economy and therefore the financial system that serves it. Concerning **the Commercial Banks-Central Bank ratio**, it has a significant and positive effect on financial instability. Our results corroborate with those of BIS (2011) who analyzes global liquidity from a financial stability point of view. Showing that liquidity can be a potential source of instability because of its own dynamics or because it amplifies the cyclical movements of the domestic financial situation and intensifies internal imbalances. **The banking assets / GDP ratio** is significant and has a positive impact on financial instability. This is consistent with Laeven et

Table 7: results of regressions for developing countries for the period 1990-2014

al. (2014) who found that the size of the banks causes the risk of the banking system. Indeed, the big banks are more risky than the smaller ones. In terms of control variables, we found that **the rate of inflation** has a significant and positive effect on financial instability. This result approves those of Rousseau and Wachtel (2002) who found that beyond the inflation threshold, credit market frictions become binding, credit rationing intensifies and the performance of the financial sector deteriorates causing financial instability or financial crises.

For emerging countries:

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Financial instability	GMM System					GMM First Difference		
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.785 (0.000) ***	0.796 (0.000) ***	0.773 (0.000) ***	0.776 (0.000) ***	0.735 (0.000) ***	0.751 (0.000) ***	0.743 (0.000) ***	0.725 (0.000) ***
Financial liberalization				-0.002 (0.498)			-0.006 (0.092) *	-0.009 (0.03)**
M3 / PIB	0.025 (0.054) *	0.004 (0.764)	-0.023 (0.183)	-0.025 (0.159)	0.095 (0.000) ***	0.07 (0.01)**	0.066 (0.018) **	0.091 (0.003) ***
Central bank-commercial			0.088 (0.027) **	0.0915 (0.024) **			0.088 (0.023) **	0.131 (0.004) ***
Bank assets / GDP			0.103 (0.000) ***	0.103 (0.000) ***	0.021 (0.014) **	0.084 (0.000) ***	0.083 (0.000) ***	0.094 (0.000) ***
Market capitalization relative to GDP		0.031 (0.047) **	-0.033 (0.058) *	-0.033 (0.063) *		-0.0382 (0.037) **	-0.034 (0.062) *	-0.036 (0.05)**
Per capita income	0.0079 (0.059) *	0.0086 (0.076) *	0.003 (0.515)	0.004 (0.509)				-0.014 (0.076) *
Inflation rate	-0.000 (0.012) **	-0.000 (0.062) *	-0.000 (0.42)	-0.000 (0.343)	-0.000 (0.099) *	-0.000 (0.132)	-0.000 (0.314)	-0.000 (0.201)
Quality of regulation			-0.017 (0.008) ***	-0.016 (0.012) **		-0.011 (0.081) *	-0.012 (0.077) *	-0.011 (0.074) *
Constant	-0.074 (0.022) **	-0.073 (0.06)*	-0.124 (0.012) **	-0.125 (0.011) **	-0.062 (0.000) ***	-0.061 (0.000) ***	-0.138 (0.000) ***	-0.079 (0.115)
Number of observation	684	517	395	395	530	386	366	366
Number of instruments	327	296	272	273	268	253	253	254
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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Sargan test	711.036 (0.000) ***	642.958 (0.000) ***	498.951 (0.000) ***	495.796 (0.000) ***	517.79 (0.000) ***	439.059 (0.000) ***	419.361 (0.000) ***	430.505 (0.000) ***
AR(2) test	-2.545 (0.011) **	-2.78 (0.005) ***	-2.46 (0.014) **	-2.61 (0.009) ***	-2.922 (0.003) ***	-2.507 (0.012) ***	-2.525 (0.011) **	-2.556 (0.011) **

For the ratios: **M3 / GDP ratio, Commercial Banks-Central Bank** and **banking assets to GDP**, our results show that they are statistically significant and have a positive effect on financial instability (Table 8). This result is the same as the developed countries. As far as **the market capitalization ratio** is concerned, we found that it has a significant and negative effect on financial instability. These results corroborate with those of Pilhon (2005) who has shown

Table 8: results of regressions for emergent countries for the period 1990-2014

that the existence of large and liquid financial markets encourage a better distribution of risks thanks to the strategies of risk diversification carried out by institutional investors who have become the central characters of the contemporary financial systems which can decrease the level of the financial instability. Institutional variables measured by **the quality of regulation** has a significant and negative effect on financial instability. Several studies found a positive relationship between regulatory governance and financial stability (Beck et al. 2003; Das et al. 2004 and Ponce,2009). For the control variables, we found that **Per capita income** is significant and has a positive effect on financial instability. In fact when people get more income, they will invest it to get more profit, or profitable investment are also risky which can lead to financial instability. **The inflation rate** has a significant and negative effect on financial instability. According to Borio (2006), financial imbalances can develop in a context of low inflation due to favorable developments in supply, productivity gains, globalization and technological advances. In this context, the credibility of price stability by anchoring inflationary expectations leads to higher wage rigidity, can delay inflationary pressures in the short term, but this can lead to unsustainable expansion of aggregate long-term demand. Low inflation avoids the tightening of monetary policy and leads to the development of imbalances.

4.2. Robustness checks

4.2.1. Robustness for the whole sample over the whole period

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Table 9: Results of regressions for whole sample over the whole period

Variable dependant	GMM System				GMM First differencer			
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.751 (0.000) ***	0.728 (0.000) ***	0.734 (0.000) ***	0.664 (0.000) ***	0.697 (0.000) ***	0.688 (0.000) ***	0.693 (0.000) ***	0.609 (0.000) ***
Financial liberalization	0.003 (0.101) *	0.006 (0.014) **	0.002 (0.419)	0.000 (0.994)	0.005 (0.044) *	0.007 (0.01)**	0.003 (0.399)	-0.006 (0.31)
M3 / PIB	0.055 (0.000) ***	0.042 (0.001) ***	0.052 (0.000) ***	0.074 (0.003) **	0.033 (0.000) ***	0.059 (0.000) ***	0.038 (0.018) **	0.18 (0.000) ***
Central bank-commercial	0.03 (0.008) ***	-0.014 (0.33)	0.111 (0.000) ***	0.13 (0.012) **	-0.316 (0.055) *	-0.017 (0.266)	-0.014 (0.625)	0.198 (0.001) ***
Bank assets / GDP		0.058 (0.000) ***		0.183 (0.000) ***	0.337 (0.000) ***	0.439 (0.000) ***	0.064 (0.000) ***	0.182 (0.000) ***
Market capitalization relative to GDP			0.0255 (0.004) ***	-0.049 (0.007) ***			-0.026 (0.016) **	-0.045 (0.014) **
Per capita income	-0.013 (0.000) ***	-0.024 (0.000) ***	-0.023 (0.000) ***	-0.025 (0.001) ***		-0.02 (0.000) ***		-0.049 (0.000) ***
Inflation rate					3.6é-06 (0.671)			-0.000 (0.809)
Quality of regulation				-0.104 (0.326)				-0.021 (0.057) *
Constant	0.05 (0.009) ***	0.163 (0.000) ***	0.589 (0.09)*	-0.011 (0.326)	-0.012 (0.422)	0.125 (0.003) ***	-0.058 (0.024) **	0.066 (0.373)
Number of observation	1531	949	892	541	893	908	807	501

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Number of instruments	1.3 e+03	949	894	522	894	909	808	502
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sargan test	2321.826 (0.000) ***	1441.638 (0.000) ***	1404.037 (0.000) ***	797.204 (0.000) ***	1158.283 (0.000) ***	1187.877 (0.000) ***	1034.383 (0.000) ***	665.041 (0.000) ***
AR(2) test	-1.477 (0.139)	-1.494 (0.135)	-1.383 (0.166)	-1.457 (0.145)	-1.491 (0.136)	-1.499 (0.134)	-1.547 (0.121)	-1.464 (0.143)

We re-estimate the panel regressions for financial instability for the whole sample, using the GMM System and GMM first difference (Tables 9). We point out that there is no significant variation between the results when using GMM FIRST DIFFERENCE and our main result.

The regression results show also a significant positive relationship between financial liberalization, financial innovation, M3 to GDP ratio, the ratio Commercial Banks-Central Bank, banking assets to GDP ratio, inflation; and financial instability. Our results show also a negative relationship between the market capitalization ratio, per capita income, and financial instability. These results are consistent with the ones from system GMM estimators.

4.2.2. Robustness for whole sample

We re-estimate our model for developed countries for whole period and for emergent countries for whole period of the study (tables 10 and 11).

Table 10: Results of regressions for Developed countries

Variable dependant	GMM System				GMM First Difference			
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.664 (0.000) ***	0.653 (0.000) ***	0.62 (0.000) ***	0.474 (0.000) ***	0.641 (0.000) ***	0.628 (0.000) ***	0.608 (0.000) ***	0.403 (0.000)***
Financial liberalization	-0.013 (0.155)	-0.009 (0.297)	-0.000 (0.994)	-0.001 (0.969)	0.31 (0.004) ***	0.332 (0.003) ***	0.026 (0.034) **	0.1 (0.006)***
Financial innovation	-0.059 (0.049) **	-0.034 (0.258)	-0.032 (0.29)			-0.003 (0.918)	-0.015 (0.633)	
M3 / PIB	0.056 (0.04)***	0.084 (0.003) ***	0.076 (0.005) ***	0.317 (0.000) ***	0.144 (0.000) ***	0.154 (0.000) ***	0.201 (0.000) ***	0.765 (0.000)***
Central bank-commercial	0.082 (0.542)	0.16 (0.236)	0.142 (0.283)	1.085 (0.002) ***		-0.078 (0.268)	0.121 (0.4)	1.016 (0.007)***
Bank assets / GDP	0.18 (0.000) ***	0.196 (0.000) ***	0.196 (0.000) ***	0.352 (0.000) ***	0.127 (0.000) ***	0.131 (0.000) ***	0.169 (0.000) ***	0.387 (0.000)***
Market capitalization relative to GDP	-0.079 (0.000) ***	-0.056 (0.012) **	-0.069 (0.001) ***	-0.104 (0.015) **			-0.019 (0.403)	-0.056 (0.153)
Per capita income		-0.055 (0.002) ***		-0.07 (0.233)	-0.084 (0.000) ***	-0.083 (0.001) ***	-0.093 (0.001) ***	-0.233 (0.000)***
Inflation rate			0.009 (0.000) ***	0.011 (0.307)	0.006 (0.044) **	0.006 (0.049) **	0.007 (0.028) **	0.004 (0.692)
Quality of regulation				0.055 (0.355)				-0.034 (0.618)
Constant	-0.122 (0.307)	0.285 (0.103)	-0.299 (0.018) **	-0.899 (0.152)	0.561 (0.009) ***	0.626 (0.007) ***	0.502 (0.058) *	0.357 (0.566)

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Number of observation	266	266	266	128	288	280	258	120
Number of instruments	298	298	298	139	287	281	257	119
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sargan test	447.693 (0.000)***	445.584 (0.000)***	450.013 (0.000)***	208.723 (0.000)***	370.565 (0.000)***	358.019 (0.000)***	325.144 (0.000)***	150.488 (0.006)***
AR(2) test	0.072 (0.942)			0.7823	0.777 (0.436)	0.499 (0.617)		

For financial instability, we found some results as for the main results, such as financial liberalization, M3 to GDP ratio, the Commercial Banks-Central Bank ratio, the banking assets to GDP ratio, which have the same positive relationship with financial instability as in the case of the other subsamples. Inflation has also a positive relationship with financial instability but not in the different subsamples, it has this relationship in the case of the whole sample for the period 1960-1989 and developed countries for whole period. The market capitalization ratio and per capita income have a negative relationship with financial instability, which is the same result in the case of most subsamples.

Tables 11: Results of regressions for Emergent countries

Variable dependant	Gmm System				Gmm first differenced			
	Reg 1	Reg 2	Reg 3	Reg 4	Reg 1	Reg 2	Reg 3	Reg 4
dependant variable (-1)	0.752 (0.000) ***	0.753 (0.000) ***	0.762 (0.000) ***	0.755 (0.000) ***	0.717 (0.000) ***	0.716 (0.000) ***	0.701 (0.000) ***	0.745 (0.000) ***
Financial liberalization	0.002 (0.072) *	0.001 (0.362)	0.003 (0.073) *	0.002 (0.170)	0.004 (0.025) **	0.004 (0.022) **	0.002 (0.355)	0.004 (0.178)
Financial innovation	-0.011 (0.001) ***	-0.011 (0.001) ***	-0.016 (0.012) ***	-0.014 (0.000) ***	-0.021 (0.005) ***	-0.021 (0.006) ***	-0.016 (0.04)** *	
M3 / PIB	0.03 (0.000) ***	0.026 (0.001) ***	-0.006 (0.566)	0.024 (0.002) ***	0.028 (0.065) *	0.028 (0.066) *	0.042 (0.014) **	0.032 (0.186)
Central bank-commercial		0.22 (0.008) ***					0.055 (0.018) **	0.066 (0.041) **
Bank assets / GDP			0.045 (0.000) ***		0.049 (0.000) ***	0.049 (0.000) ***	0.053 (0.000) ***	0.083 (0.000) ***
Market capitalization relative to GDP			-0.002 (0.879)		-0.0226 (0.084) *	-0.0227 (0.082) *	-0.0227 (0.087) *	-0.034 (0.029) **
Per capita income				0.004 (0.096) *			-0.01 (0.063) *	-0.009 (0.162)
Inflation rate		-5.06e-06 (0.29)	-9.50e-07 (0.861)			2.17e-06 (0.681)	2.51e-08 (0.996)	-0.000 (0.429)
Quality of regulation								-0.009 (0.104)
Constant	-0.007 (0.016) ***	-0.023 (0.000) ***	0.003 (0.632)	-0.004 (0.573)	-0.009 (0.299)	-0.009 (0.29)	0.009 (0.752)	0.024 (0.522)
Number of observation	1201	1137	598	664	571	570	550	383
Number of instruments	1.1e+03	1.1e+03	608	675	570	569	549	382
Wald (p-value)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sargan test	1598.128 (0.000) ***	1.494.239 (0.000) ***	865.978 (0.000) ***	928.012 (0.000) ***	741.49 (0.000) ***	739.897 (0.000) ***	723.95 (0.000) ***	528.718 (0.000) ***

AR(2) test	-1.593 (0.111)	-1.56 (0.118)	-1.707 (0.087) *	-1.677 (0.093) *	-1.759 (0.078) *	-1.755 (0.079) *	-1.673 (0.094) *	-2.694 (0.007) ***

5- Concluding remarks

In this paper, we test the impact of financial development measures on financial instability on a sample of 56 countries, including 22 developed countries and 32 emerging countries, on the period 1960-2014.

The innovations of this paper are twice: first, it consider financial development through three ways, financial intermediation, size of financial sector and the degree of financial liberalization. Second, it consider two sub-period, 1960-1989 and 1990-2014, in order to separate period with mitigate financial development from period with accelerated evolution of financial innovation in the 1990's and 2000's.

The results show that financial intermediation variables increase financial instability for developed and emerging countries for the whole period of study.

Financial liberalization has positive impact on financial instability in developed countries, but it has negative impact on emerging countries in the first sub-period, because liberalization and financial innovation were not enough developed in the 1960's in emerging countries. However, since the 1980s, these systems become source of financial crises because of the multiplying of risky products that were the main source of crises. The specificity for emerging economies is that financial markets size and the quality of regulation decrease the probability of financial instability; it is not the case for developed countries.

It appear that for developed countries, regulation must be improved in order to smooth the negative effect of financial intermediation on financial instability, given their high degree of financial innovation.

So more regulated banking system, more restrictions on capital account transactions and more exchange control, will limit financial instability. Thus, China, despite the significant financial problems, has not experienced an overt banking or currency crisis in recent years. The obvious explanation for this fact is that the country maintains strict controls on both its banks and capital account transactions.

REFERENCES

Andries, A. M. (2009), "A comparative analysis of performance and soundness indicators of the main Romanian banks". Analele Stiintifice ale Universitatii "Alexandru Ioan Cuza" din Iasi - Stiinte Economice, vol. 56, 45-70.

Arestis, P. Guglielmo M. C., Cipollini, A. and Spagnolo, N. (2005), "Testing for financial contagion between developed and emerging markets during the 1997 East Asian crisis", International Journal of Finance & Economics, 10, (4), 359-367.

Baier, L. S., Bergstrand, J. H. and Egger, P., (2008), "Do Economic Integration Agreements Actually Work? Issues in Understanding the Causes and Consequences of the Growth of Regionalism", The World Economy, 31, (4), 461-497.

Beck, T., Levine, R. and World Bank. Financial Sector Strategy and Policy Group (2000). New firm formation and industry growth : does having a market- or bank-based system matter? Washington, D.C.: World Bank, Financial Sector Strategy and Policy Dept.

Ben Gamra, S. and Plihon, D., (2007), "Politiques de libéralisation financière et crises bancaires", Economie Internationale, issue 112, 5-28.

Ben Moussa, W. (2015), "The Models of Third Generation: Controversies on the ProfoundR Nature of the Asian Crisis". Asian Development Policy Review, 2015, 3(4):76-92

Bonin, J. and Wachtel, P., (2002), "Financial sector development in transition economies: Lessons from the first decade", BOFIT Discussion Papers, N 9.

Borio, C. (2006): "Monetary and prudential policies at a crossroads? New challenges in the new century", Moneda y Crédito, 224, pp 63–101. Also available as BIS Working Papers, no 216, September.

Boyd, J.H. and De Nicoló, G., (2005), "The theory of bank risk taking and competition revisited," Journal of Finance, 60, 1329-1343.

Caprio, Jr., Gerald, and Klingebiel, D. (1996), "Bank Insolvency: Bad Luck, Bad Policy or Bad Banking". Annual World Bank Conference on Development Economics, April.

Claessens, S., and Kose, M. A., (2013), " Financial Crises Explanations, Types, and Implications", IMF Working Paper No. 13/28

Das, U.S., Quintyn, M. and Chenard, K. (2004), "Does Regulatory Governance Matter for Financial System Stability? An Empirical Analysis," IMF Working Paper, WP/04/89, International Monetary Fund.

Davis, E. Ph. and Dilruba, K. (2008). "Comparing Early Warning Systems for Banking Crises". Journal of Financial Stability, Volume 4, Issue 2, pp 89 – 120.

Dell'Ariccia, G. and Marquez, G. (2004a), "Lending Booms and Lending Standards". Mimeo, IMF.

Dell'Ariccia, G., and Marquez, R. (2004b), "Information and Bank Credit Allocation". Journal of Financial Economics, 72 (1), 185-214.

Demirgüç-Kunt, A. and Detragiache, E. (1998) "The Determinants of Banking Crises: Evidence from Developing and Developed Countries." IMF Staff Papers 45, 81–109.

Demirgüç-kunt, A. et Detragiache, E., (1998), "The Determinants of Banking Crises in Developing and Developed Countries". IMF Staff Paper. Vol. 45, No.1(March 1998).

Edwards, S. (1998). 'Openness, productivity and growth: What do we really know?', Economic Journal, 108, 383-398.

Eichengreen, B. J. (2001), "Capital Account Liberalization: What Do the Cross-Country Studies Tell Us?". World Bank Economic Review 15:341–66.

Eichengreen, B. J. (2012), "European Monetary Integration with Benefit of Hindsight", Journal of Common Market Studies, 50 (1), Special Issue: Guest Edited by Walter Mattli and Alec Stone Sweet, Pages 123-136.

Fischer, S., 1993. The role of macroeconomic factors in growth. Journal of Monetary Economics 32 (3), 485-511.

Frankel, J. A. and Saravelos, G. (2010), "Are Leading Indicators of Financial Crisis Useful for Assessing Country Vulnerability?". Evidence from the 2008–09 Global Crisis, NBER Working Paper No. 16047.

Gaytan, A., Ranciere, R. (2004), "Banks liquidity crises and economic growth". Econometric Society, North American Summer Meeting. p399.

Glick, R., Hutchison, M., (2001), "Banking and currency crises: how common are twins?". In: Glick, R., Moreno, R., Spiegel, M.M. (Eds.), Financial crises in emerging markets. Cambridge University Press, Cambridge (Chapter 2). Previously issued as Federal Reserve Bank of San Francisco Center for Pacific Basin Studies. Working Paper No. PB99-08. Federal Reserve Bank of San Francisco.

Greenwood, J. and Jovanovic, B. (1990), "Financial development, growth, and the distribution of income". Journal of Political Economy 98(5), 1076–1107. Guillaumont, S.J., Kpodar, K. (2006), Financial development, financial instability and Economic growth. Economics and Prevision, 3(174), 87-111.

Guiso, L., Sapienza, P. and Zingales, L., (2002), "Does Local Financial Development Matter?", NBER Working Paper No. 8923.

Hellmann, T.F., Murdock, K.C., Stiglitz, J.E. (2000), Liberalization, moral hazard in banking, and prudential regulation: Are capital requirements enough? The American Economic Review, 90(1), 147-165.

Jorda, O., Schularick, M. and Taylor, AM. (2013a), "When credit bites back. J. Money Credit Bank. 45(s2):3–28

Kaminsky, G., Lizondo, S. and Reinhart, C.M. (1998), "Leading Indicators of Currency Crises." IMF Staff Papers. Vol. 45 (1). p 1-48. March 1998.

Kelly, R., McQuinn, K., and Stuart, R. (2011). Exploring the steady-state relationship between credit and gdp for a small open economy-the case of Ireland. Research Technical Papers No 1531, 1.

Keys, J., B., Mukherjee, T., Seru, A. and Vig, V., (2010), "Did Securitization Lead to Lax eening? Evidence from Subprime Loans", Quarterly Journal of Economics, Vol. 125, (1), pp. 307-362.

Khaitan R. (2014), « The Role of Financial Inclusion and Financial Deepening".IFMR Finance Foundation.

King, R. et Levine, R., (1992), "Financial Indicators and Growth in a Cross Section of Countries". World Bank Policy Research Working paper, N°819.

Kpodar, K.R. (2006), In: Guillaumont, S.J., Plane, P., editors. Financial Development, Financial Instability and Economic Growth: Implications for Poverty Reduction. Vol. 1. Université d'Auvergne Clermont-Ferrand. p334.

Krugman, P., (1979), "A model of balance of payments crises". Journal of Money, Credit, and Banking *11*.

Laeven, L., Ratnovski, L. and Tong, H. (2014), "Bank Size and Systemic Risk". IMF Staff Discussion Note 14/04 http://www.imf.org/external/pubs/ft/sdn/2014/sdn1404.pdf

Levine, R. (1992), "Financial Structures and Economic Development," Policy Research Working Paper Series, 849, The World Bank.

Levine, R. (2005), "Finance and Growth: Theory and Evidence". Handbook of Economic Growth, in: Philippe Aghion & Steven Durlauf (ed.), Handbook of Economic Growth, edition 1, volume 1, chapter 12, pages 865-934 Elsevier

Lindgren, C.J, Garcia, G. and Saal, M.E. (1996), "Bank Soundness and Macroeconomic Policy". IMF.

Loayza, N., Rancière, R. (2006), Financial development, financial fragility, and growth. Journal of Money Credit and Banking, 38(4), 1051-1076.

Martin, P. and Rey, H., (2005), "Globalization and Emerging Markets: With or Without Crash?," CEPR Discussion Papers 5165, C.E.P.R. Discussion Papers.

Mckinnon, R. I. (1973), « Money and Capital in Economic Development ». The Brookings Institution, Washington. D. C.

Michael Klein, M., W. and Olivei, G., (2008), "Capital Account Liberalization, Financial Depth and Economic Growth", NBER Working Paper No. 7384.

Mistral, J. (2009), « En Amérique, un retour de l'Etat mais pas de socialisme ! » dans Lubochinsky C. (2009), pp.87-91.

Morris, S. and Hyun Song Shin, H., S., (1998): "Unique Equilibrium in a Model of Self-Fulfilling Currency Attacks", American Economic Review, Vol. 88, No. 3, pp. 587-597.

Pholphirul, P., (2008) "Financial Instability, Banking Crisis, and Growth Volatility: An Investigation of Bi-Directional Relationship", International Journal of Business and Management (ISBN: 1833-3850), Vol.3, No.6 (June 2008): 97-110.

Plihon, D. (2005), « As grandes empresas fragilizadas pelas finanças ». In: F. CHESNAIS[Org.], A finança mundializada. São Paulo: Boitempo Editorial.

Plihon, D. and Ben Gamra S., (2007), "Qualtié des Institutions, Libéralisation et Crises Bancaires Le Cas Des Pays Emergents ». CEPN Working Papers hal-00574136, HAL.

Ponce, J. (2009), "A Normative Analysis of Banking Supervision: Independence, Legal Protection and Accountability," Paolo Baffi Centre on Central Banking & Financial Regulation, Research Paper Series, No. 2009-48.

Quin, D. P., and Toyoda, M., (2008), "Does Capital Account Liberalization Lead to Growth?", Review of Financial Studies, 2008, vol. 21(3), 1403-1449.

Rajan, R.G. (2005), "Has financial development made the world riskier?". IMF Paper

Ranciere, R., Tornell, A. and Westermann, F. (2003), "Crises and Growth: A Reevaluation". NBER Working Paper 10073, 2003.

Reinhart, C and K Rogoff (2009): This time is different: Eight centuries of financial folly, Princeton: Princeton University Press.

Rose, A.K., 2011. International financial integration and crisis intensity. ADBI Working Papers 341.

Rousseau P.L., Wachtel P. (2002), "Inflation thresholds and the finance-growth nexus", Journal of International Money and Finance, 21(6), 777-793.

Rousseau, P. and Wachtel, P., (2011), "what is happening to the impact of financial deepening on economic growth?", Economic Enquiry, Volume49 (1), Pages 276-288.

Sahay, R., Cihák, M., N'Diaye, P., Barajas, A., Bi, R. Ayala, D. Gao, Y. Kyobe, A., Nguyen, L., Saborowski, Ch., Svirydzenka, K. and Yousefi, S. R. (2015) "Rethinking Financial Deepening: Stability and Growth in Emerging Markets." IMF Staff Discussion Note 15/08. Washington: International Monetary Fund (May).

Schularick, M. and Taylor, AM. (2012), "Credit booms gone bust: monetary policy, leverage cycles, and financial crises", 1870–2008. Am. Econ. Rev. 102:1029–61.

Tularam, G. and Subramanian, B. (2013) "Modeling of financial crises: a critical analysis of models leading to the global financial crisis". Global journal of business research, volume 7, n° 3, pp.101.

Wagner, W. (2007), « The liquidity of bank assets and banking stability », Journal of Banking and Finance, n°31, pp.121-139.

Watchel, P. (2001), "Growth and Finance: What Do We Know and How Do We Know It?". International Finance, vol.4, n°3, pp.335-362.