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Article

Does financial liberalization affect negatively emerging stock market stability?

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Abstract
In this paper, we focus on the impact of financial liberalization on stability of emerging stock market. We identify crises in a group of Latin American (Argentina, Brazil and Chile) and Asian countries (Philippines, Korea, Taiwan and Thailand) during 1975–2005. This paper aims to apply the methodology of CMAX method. Our results indicate that liberalization triggers more unstable stock market in the short run and generate several crises. Still, liberalization seems to generate more stable financial markets in the long run. Financial liberalization does not increase the frequency of crises in emerging countries and at long-term, crises are less several.

Keywords: emerging stock market, financial liberalization, Crisis, Cmax method

JEL: G17, G18, O16

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1. Introduction

During the late 1980s and early 1990s several Latin America and Asian economies went through a number of economic reforms and financial liberalization. However, these processes have been tempered by financial crisis. The crisis illustrates possible risks of financial liberalization. There are two contrasting views of financial liberalization. In one view, financial liberalization strengthens financial development and contributes to higher long-run growth. In another view, liberalization induces excessive risk-taking, increases macroeconomic volatility and leads to more frequent crisis. The effect of financial liberalization on growth and its impact on financial fragility and the propensity to crisis have been largely studied in separate strands of the empirical literature. The financial crisis literature tests whether financial liberalization increases the risk of financial crisis. Kaminsky and Reinhart (1998), Detragiache and Demirguc-Kunt (1998), Rodrik (1998, 2000), Soros (2002), Stiglitz (2002) and Glick and Hutchinson (2001) find that the propensity to crises increases in the aftermath of financial liberalization. In contrast, the literature on liberalization claimed that financial liberalization helps to improve the functioning of financial systems and allowing cross-country risk diversification. For example, Obstfeld (1998), Stulz (1999) and Mishkin (2003) claim that financial liberalization promotes transparency and accountability, reducing adverse selection and moral hazard while in financial markets. The empirical research, so far, has not helped to resolve the conflicting views. In fact, the various lines of empirical research focus either on the short-run or the long-run effects of liberalization, without studying the possible time-varying effects of financial liberalization. Studies analyzing the behaviour of stock prices have been undertaken in the recent years. It was confirmed in the study that owing to liberalization the stock markets tend to become more stable. Examples of analyses of emerging market cycles are Bekaert and Harvey(1997), De Santis and Imrohoroglu (1997), Huang and Yang (1999), Kim and Singal (2000), Aggarwal and al. (1999), Kaminsky and Schmuckler (2003) and Edwards and al. (2003). Financial liberalization cause financial extremes in the short-run and also brings a change in the institutional set up of which will have a supporting and better functioning of financial markets.
In this paper we analyze the stability of stock market and we identify their crises over the period 1975-2005 for seven emerging countries. The choices of countries and period make the analysis especially relevant. Our sample period corresponds to years of profound development of both the financial and

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the productive sides in these emerging countries, but also to the years of the major financial crises. The emerging stock markets analyzed in this paper represent a highly diverse sample. During the period under consideration they had different regulations regarding international capital mobility, different domestic supervisory systems and different exchange rate regimes. This diverse data set, then, allows us to provide a better understanding of the liberalization process and second to explain the link between financial liberalization and more stable financial market. We are particularly interested in addressing the following questions: What are the effects of financial liberalization on stability of emerging stock markets? Has it changed through time? What are the effects of financial liberalization on the frequency and intensity of crisis?

The structure of the paper is as follows. In section 2 we present briefly reviews some of the previous contributions on the relationship between financial liberalization, stability of stock market cycle and crisis. In Section 3 we present the data. In Section 4, we present methodologies CMAX method, used to detecting crisis. In section 5, we provide a discussion of the results in the context of our analysis. Finally, in section 6 we offer some concluding remarks.

2. Literature review

During the last decades, many emerging countries have liberalized their financial systems. This financial liberalization has been linked to lending booms and crisis. However, markets may become informationally more efficient, behavior of stock market reacts fully and more quickly to relevant information; also, increased volumes of speculative capital may induce several crises. After liberalization, the gradual development and diversification of the markets could lead to lower volatility and to a lower sensitivity to new information.

Studies analyzing the effect of financial liberalization are mixed. Bekaert and Harvey (1997) generally find that volatility decreases after liberalization and stock market become more stable. De Santis and Imrohoroglu (1997) also find evidence that instability decreased after liberalization in a subset of countries, such as Argentina. Glick and Hutchinson (2001) find that the propensity to banking and currency crises increases in the aftermath of financial liberalization. However, Huang and Yang (1999), using the dates of financial liberalization from De Santis and Imrohoroglu (1997), show that the unconditional volatility of the stock markets in three of the countries analyzed (South Korea, Mexico and Turkey) increased after liberalization, whereas it decreased in another four countries (Argentina, Chile, Malaysia and the Philippines). Aggarwal et al. (1999) find that most events around the time period when shifts in volatility occur are local but that liberalization processes seem not to have induced the changes in variance. Also, they find both increases and decreases in volatility depending on the country and on the sequence of events. Bekaert and al. (2006), find that volatility of stock market cycles seems to decrease after liberalization. Time varying patterns of financial cycles before and after financial liberalization was examined by Kaminsky and Schumkler (2001, 2002, 2003) in 28 countries using non parametric methodology (turning point detection). The results indicate that more liberalization cause financial extremes in the short-run and also brings a change in the institutional set up of which will have a supporting and better functioning of financial markets. In a study done by Edwards et al (2003), the stock price behavior in six emerging economies is analyzed. They find that volatility after financial liberalization has increased in Asian countries but not in Latin American countries. Trabelsi .A (2013), investigate the characteristics of stock market cycles in a group of Latin American and Asian countries using univariate structural unobserved components time series models. The results indicate that liberalization triggers more volatile stock market in the short run. Still, liberalization seems to generate more stable financial markets in the long run.

3. Description of data

In this paper we analyze stability of stock market in a group of Latin American (Argentina, Brazil and Chile) and Asian countries (Philippines, Korea, Taiwan and Thailand). To do this, we identify market crises during 1975–2005, which allows us to characterize crisis for each country studied that is intensity and frequency during the study period. We make a distinction between the pre and post-financial reform periods. The data are taken from the S&P /IFCG[1] (S&P/IFC monthly Global Index) (Standad and Poor / Global International Finance Corporation), which gives monthly series from 1975 to 2005. The year thereafter, conditional on the deregulation is not being reserved. The dates of liberalization (table1) are finding by G. L. Kaminsky and S. Schmukler (2003)[2]. Most of studies focus on the elimination of controls on just one particular financial sector, be it the capital account, the domestic financial sector and the stock market. Kaminsky and Schmukler find a chronology deals with the regulations in three sectors.

Table1. The dates of financial liberalization

Asian countries		Latin American countries	
Philippines	01/94	Argentina	01 /90
Korea	01/96	Brazil	03/95
Taiwan	01/97	Chile	01/92
Thailand	01/98		

4. CMAX method

Patel and Sarkar (1998) define a variable CMAX which compares the current value of the index with its maximum value on the preceding T periods:

$CMAX = x_t / \max [x € (x_{t-j}= 0,1, ... , T)]$, (5)

Where x_t, is the level of the stock index at time t. The sliding window is fixed by T. Retention window is two years. This method captures the crises from extreme levels reached by a stock market index over a given time window. We identify a market crisis when $CMAX_t$ ratio exceeds a critical level 1.5 the standard deviation below its average level over the whole sample. The peak is the month where the index peaked on T periods prior to the date where the critical level is exceeded. The trough is the month where the index reached its minimum level during the crisis. The date of recovery is defined by the month in which the index reached its highest level found before the crash. The amplitude is the maximum loss recorded during the crisis that is to say the change in the index between peak and trough.

5. Estimation results

CMAX method has the advantage of identifying the crises in relation to the historical volatility of the stock index. Table 2 shows the dates of crises for the countries of Latin America, the intensity of the fall of the index and the recovery period.

[1] S&P/IFC global index present the performance of the global activity of the stock market for each country.

[2] G. L. Kaminsky and S. Schmukler (2003): « short- run pain, long-run gain: The effects of financial liberalization», IMF Working Paper No WP/03/34; February 2003.

Table2. Crises identified for the countries of Latin America by the CMAX method

Countries	Date of trough	Amplitude %	Duration of crash	Duration of recovery
Argentina	September 19976	-73	5 months	2 years and 5 months
	May 1981	-85	1 year and 9 months	2 years and 10 months
	September 2001	-81	1 years and 5 months	2 years and 3 months
Brazil	November 1976	-30	1 month	
	June 1977	-29	2 months	
	December 1977	-35	1month	8 years
	November 1978	-38	10 months	
	December 1979	-58	1 month	
	May 1983	-68	1 month	
	July 1983	-66	2 months	
	September 1986	-79	10 months	2 years and 4 months
	October 1990	-78	1 month	
	February 1995	-40	3 months	1 year and 5 months
	May 1998	-69	10 months	
	August 2001	-46	3 months	5 years
	July 2002	-61	3 months	
Chile	November 1976	-12	2 months	2 months
	November 1977	-8	1 month	2 months
	July 1980	-44	1 years and 9 months	3 years and 5 months
	April 1987	-2.2		
	October 1987	-17.9	2 months	11 months
	May 1988	-11	3 months	2 months
	May 1990	-16	1 month	6 months
	November 1991	-13.4	3 months	4 months
	April 1994	-18.7	2 months	7 months
	March 1996	-25.7	4 months	
	August 1996	-22.3	1 month	2 years
	December 1997	-30.9	5 months	
	May 2005	-4.4	11 months	4 months
	November 2005	-6	2 months	
			2 months	

We see that Argentina is the country that has fewer crises detected of the Latin America region. Two crises detected before financial liberalization and one crisis after liberalization. Recovery periods are about two years. For Argentina the financial liberalization has no significant effect on the amplification of financial crises, however, the crises of Argentina are the most strong in terms of fall of the indices (85%). For Brazil, was detected thirteen crises, the majority are pre-financial liberalization (1995). The most important crisis is the 1986 and 1990 with a fall of 79% for ten months and a recovery period of 2 years and 4 months. The period of liberalization are marked by great instability and falls indices was very high (79-78%). Chile stock market is the most stable of the region, eleven crises detected with the highest amplitudes is 44%. The most important crisis is 1980, which lasted 1 year and 9 months.
Table 3 shows the dates of crises and their intensity for the countries of Asia.

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Table3. Crises identified for the Asian countries by the CMAX method

Countries	Date of trough	Amplitude %	Duration of crash	Duration of recovery
Philippines	May 1976	-35.8	6 months	2 years
	July 1980	-50.6	5 months	
	December 1984	-26	2 months	11 months
	September 1987	-33.3	7 months	1 years and 5 months
	August 1990	-43.6	3 months	1 years and 9 months
	March 1994	-18.4	5 months	
	January 1995	-22.8	1 years and 10 months	2 years and 8 months
	September 1998	-78.8	1 month	
	November 2002	-71.9	1month	
Korea	April 1976	-3.9	5 months	7 months
	April 1977	-6.5	1 month	3 months
	September 1978	-46	12 months	5 years
	October 1980	-57.2	2 months	6 months
	August 1987	-13.5	4 months	
	July 1989	-40.6	1 month	4 years
	January 1990	-32	9 months	
	February 1995	-18.4	1 month	
	June 1996	-48	10 months	2 years
	October 1997	-74	5 months	
	October 2000	-54	4 months	2 years and 10 months
Taiwan	April 1996	-26	6 months	1 year and 6 months
	December 1978	-21.9	1 months	
	October 1979	-24.7	2 months	4 months and 5 months
	June 1980	-30	1 month	
	July 1982	-24	2 months	10 months
	December 1982	-24.2	1 month	
	January 1985	-29.7	8 months	6 months
	October 1987	-39	4 months	5 months
	December 1988	-29.6	1 month	3 years and 4 months
	May 1990	-77.5	6 months	1 year
	July 1995	-33	7 months	1 year
	July 1998	-34.9	6 months	3 years and 3months
	October 2000	-51.8	6 months	
Thailand	April 1978	-9.7	2 months	3 months
	February 1979	-46.9	13 months	4 years and 1 month
	December 1985	-18.3	3 months	7 months
	May1986	-16.5	3 months	6 months
	October 1987	-32	3 months	8 months
	August 1990	-51.2	6 months	3 years and 8 months
	June 1994	-24.3	1 month	
	January 1995	-27	1 month	7 years
	July 1996	-62.6	1 years and 6 months	
	February 2004	-16.1	1 month	

We see that Philippines, Korea, Taiwan and Thailand are affected by severe crises during the period of financial liberalization, falling indexes have reached 78.8% and the duration of recovery crises are long (7 years). Nine crises are identified for the Philippines, the most severe have occurred after financial liberalization. The most important crises are of the September 1998 and November 2002 with a fall of

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indices equal respectively to 78.8% and 71.9%. In Korea the most important crisis of 1996 which is the year of financial liberalization. The crisis lasted ten months with amplitude of 48%. For Taiwan was detected thirteen crises, most are not very severe except May 1990 and October 2000. These crises reaches levels fall respectively 77.5% and 51.8%, their recovery times were also very long and more than three years. Thailand crisis is the longest crisis in the region which lasted seven years. One detected after financial liberalization with low amplitude equal to 16.1%, but before financial liberalization, we detected nine crises.

6. Conclusions

Our results showed that liberalization seems to generate more instable financial markets just after financial liberalization. Financial liberalization does not increase the frequency of crises in emerging countries. However, we note that the crises are become more severe during and just after the financial liberalization with the exception of Thailand. Stock market of Asian countries continues to be very instable in the post-reform period, mostly because of the influence of the Asian crisis. However, after financial liberalization, Latin American stock market leads to more stable. At long-term crises are less several.

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Annexes