Financial Liberalization, Government Stability, and Currency Crises – Some Evidence from South Korea and Emerging Market Economies[*]

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Abstract

Purpose – Recent empirical studies have reached mixed results on the effects of financial liberalization and currency crises. We argue that this relationship is likely to depend both on whether controls are primarily on the degrees of financial liberalization and on the stability of the government. Using the disaggregated data on financial liberalization recently developed by Abiad et al (2010) for a sample of 30 emerging countries over the period 1995-2015, we attempt to investigate the political economy determinants of currency crises.
Design/methodology – Our empirical model considers the relationship between financial liberalization and currency crises for emerging market economies. This study employs the existing theoretical framework to identify the disaggregate level for financial liberalization across countries. Using a multivariate logit model, this study attempts to estimate the interrelationship among financial liberalization, government stability and currency crises complemented by a case study of South Korea.
Findings – Our main findings can be summarized as follows: we find strong support for the proposition that more liberalized financial institutions are positively associated with the probability of currency crises especially under less stable governments, but reduce the risks of currency crises especially for more stable governments. We also examine the role of financial systems with the case of South Korea after Asian financial crises and the results are further supported and consistent with the empirical findings.
Originality/value – Existing studies focus on the economic factors across countries. This paper instead attempts to evaluate the effects of financial liberalization and currency crises by incorporating political considerations with newly developed dataset on financial liberalization, which are essential to the understanding of the causes of currency crises.

Keywords: Currency Crises, Financial Liberalization, Government Stability, South Korea
JEL Classifications: F38, F41, G01

1. Introduction

In the era of globalization, countries have been trying to move toward economic integration by liberalizing the trades and financial sectors, since it is believed that open economy could enhance the countries' welfares more than the closed economic system. As part of this liberalizing trend, developed countries began to eliminate the control on capital during the 1970s and 1980s. During the1990s, emerging market economies, particularly in Latin America and Asia, experienced a surge in international private capital inflows and began liberalizing their current and capital accounts with the strong support of economic power

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countries and the International Monetary Fund (IMF). A substantial expansion in capital inflows helped these countries smooth out consumption, stimulate investments, facilitate economic growth, and generate welfare gains. There is a significant amount of research that analyzes various aspects of the inherent benefits of capital flows, which in turn reduces the likelihood of both financial and currency crises.[1]

However, the lessons from a series of crisis episodes in the 1980s, 1990s and 2000s clearly show that the benefits of capital flows can be reversed and become massive output losses. Although capital inflows normally accelerate economic development, a byproduct can be domestic macroeconomic instability. According to Stiglitz (2002), for instance, the relaxation of capital controls was at the center of the East Asian nations' currency crises and eventual collapses. He argues "The rapid movement of funds into and out of a country is clearly destabilizing, a point brought home forcefully by the East Asian crisis, where the capital outflows exceeded in some cases 10 percent of GDP". This clearly shows that capital market liberalization has not always led to faster growth in developing countries, but has sometimes led to greater risks. Edwards (2004) also agrees with this claim that high capital mobility, especially for fixed income securities, increase macroeconomic volatility and make emerging countries vulnerable to the destabilizing effects of external shocks.

These mixed empirical results above could be the result of applying crude financial liberalization measurements, especially ones that do not distinguish among different types of financial liberalization. Neither do they effectively incorporate political factors into their estimations. To tackle this puzzle, therefore, this paper attempts to address this issue by taking into account both standard economic factors and political considerations over the sample of 30 emerging market economies from 1995 to 2015. The primary reason of selecting emerging markets as our focus is that most countries share common traits where the economic fundamentals are often unstable, the financial system is less developed, and the political/ institutional quality is not as strong as compared to industrialized economies. These will in turn make emerging countries more prone to potential currency crisis.

The main purpose of this paper is aiming to develop a political economy framework by building up theoretical linkages between political considerations (*government stability*), financial liberalization, and the onset of currency crises. In particular, this paper empirically reexamines the effects of financial liberalization policy on the probability of currency crises and provide some case studies to elaborate deeper implication of this causal relationship. Do countries with more liberalized financial policies tend to increase or decrease the risk of undergoing currency crises? Do politics matter in this context? Will be the effects of financial liberalization policies different if they are implemented by different types institutional settings (strong vs weak government)? These are core questions that have been the center of interests in the field of International Political Economy (IPE) and have become a central concern for most of emerging market economies. The IMF (International Monetary Fund), for example, has changed her mind and realized Keynes' capital controls are actually a good thing, and

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[1] For example, Reisen and Soto (2001) suggest that foreign savings can increase domestic savings rather than crowding them out in order to stimulate capital accumulation. Moreover, international capital flows can increase the efficiency of a recipient economy by improving resource allocation, encouraging domestic competition, and reducing the cost of capital. Kose et al. (2006) showed that capital flows can help capital-poor countries growth faster through higher investment. Chinn and Ito (2006) found that countries that can access foreign credits appear to have more capital accumulation than countries without access to foreign credit. However, there is no consensus about the effect of capital flows on welfare gains. Gourinchas and Jeanne (2006) argue that welfare gain from capital mobility appears to be small. Moreover, Reisen and Soto (2001) also support the idea that capital flows can generate welfare losses due to "distorted consumption and production patterns".

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they claimed that it's time for capital controls (as part of financial liberalization policy) to be back as an IMF's toolkit.

This paper is organized as follows. Section 2 provides a brief summary of relevant literature on currency crises and explains the hypotheses to be tested. Section 3 describes the data and methodology used to test these hypotheses. Section 4 presents our core results on the relationships among political stability, financial liberalization, and currency crises. Several robustness checks are discussed in this section as well. Section 5 concludes.

2. Overview of Literature

2.1. Currency Crisis Models

In the standard economic literature which explains the causes of the crises, there are at least two generation of currency crisis models that helps explain the process. First is what we so called "first-generation model", was in response to currency crises in developing countries such as Mexico (1973-82) and Argentina (1978-81). In his influential study, Krugman (1979) explicitly showed how a government uses its money-printing machine to finance a budget deficit while also trying to maintain fixed exchange rates by using stock of exchange reserves. Foresighted speculators, recognizing these unsustainable conflicting policies, launch a speculative attack, which quickly exhaust the country's reserves and force an abandonment of the fixed exchange rate. Later various additions have been made to it due to the simplicity of Krugman's model, including additional assumptions and characteristics of currency crises, in order to bring the model closer to a real situation.[2] All the first generation models share some common and obvious flaws. First, the assumption regarding the passive stance of the government, i.e. that a government will not defend the peg in spite of the fact that it knows the central bank has been losing international reserves and will therefore have to abandon the peg, is not a realistic one. Second, this model cannot explain why the currency crises spread to other countries.

Newer models, second generation, are designed to capture features of speculative attacks in Europe and in Mexico in the 1990s. Models by Obstfeld (1994), for instance, argued that currency crisis arises with self-fulfilling expectations from the fact that speculators have strategic incentives against a government's defending strategy. This brings in an important innovation of second-generation model: the government reaction function. In other words, the government would choose to defend a pegged exchange rate, but crises would arise when the markets believed that the government would not have the political capability to sustain it. Nevertheless, financial liberalization could be a useful time-extending tool for the officials facing currency crises, particularly those of the second-generation crisis model type. The main feature of this model is: the real cause of currency crises is not so much what you are actually doing, as what the financial markets suspect you might want to do (Krugman, 1996). Models of self-fulfilling attacks imply that "good" fundamentals may not suffice to avert currency crises. This type of crisis is also driven by herding behavior, and the machinations of large agents. Therefore, to prevent unjustified crises, liberalizing capital for example could provide time to for the officials to react against the speculative attacks. This leads us to one of the main characteristics of the second-generation models as opposed to the first generation models – since the crisis depends largely on expectations, the time of attack and the onset of a currency crisis are impossible to determine. The question is, however, it is not clear why

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[2] For a detailed overview of additions to the first generation models, see Garber and Svensson (1994).

policymakers in the second-generation model would not adjust their behavior to affect these expectations. Both models oversimplify politics.

2.2. Linking Financial Liberalization to Currency Crises

It has been argued that controlling capital inflows could prevent a currency crisis from happening, especially in the emerging market economies and developing countries where the economic fundamentals are often unstable, the financial system is less developed, and the political/institutional quality is often poor (Krugman, 1999; Quinn, 1997). Following this argument, financial liberalization could substantially increase the amount of capital that flows in and will in turn increase the probability of currency crises. This is mainly due to the tendency of over-borrowing by countries after financial liberalization which often leads to an increase in capital inflows followed by a domestic credit boom. For example, Amri et al. (2017) directly deals with the issue of credit boom and banking crises. We found Excessive credit growth is not the only cause of banking crises, but also provide speculators an opportunity to attack the currency. Similarly, Rancière et al. (2006) show that while financially liberalized economies grow faster than non-financially liberalized economies, they experience more crises and are exposed to more severe output contractions during financial crises. This may well be because higher debt levels relative to GDP, caused by financial liberalization and capital inflows, increase the probability of defaults as pointed out by Chwieroth (2010).

Previous studies on the causes of currency crises are found to be rich in the field of International Political Economy. For example, the standard economic determinants of currency crises have been extensively analyzed in both theoretical and empirical studies (e.g. Abiad, 2003; Angkinand, Chiu and Willett, 2009; Bordo et al., 2001; Bussière and Fratzscher, 2006; Corsetti, Pesanti and Roubini, 1998; Frankel and Rose, 1996; Gourinchas and Obstfeld, 2012; Radelet and Sachs, 1998).[3] Of these studies, the general conclusions are that *the ratio of M2 to international reserves*, t*he rate of domestic credit growth*, *current account deficit/surplus as a share of GDP*, *real GDP growth*, and *real effective exchange rate appreciation* are found to be useful economic indicators in predicting the onset of currency crises. The evidence from the effects of financial liberalization (usually proxied by capital controls) on the likelihood of currency crises are still quite mixture, some studies even found a positive rather than negative relations between capital control and the probability of currency crises (See Eichengreen, Rose and Wyplosz, 1996; Glick and Hutchison, 2005; Leblang, 2003). As noted in the previous section, this ambiguity of empirical evidence mainly comes from using the crude dummy variable measure of financial liberalization.

Conventionally, there are three broad liberalization measures on the basis of the different categories. First, *capital account liberalization* can be divided into two subcategories. On the one hand, so-called *de jure* measures reflect the existence of legal restrictions on international capital transactions. On the other hand, *de facto* measures refer to actual capital flows and stocks of capital. The former consist of different types of capital such as FDI plus portfolio flows or total capital flows (see, e.g., Edison et al., 2004). Second, *equity market liberalization* basically opens domestic stock market to foreign investors. There are different approaches to measuring equity market liberalization. The traditional measure is *Official Liberalization* which specifies the time period in which the liberalization of equity markets to foreign investors occurred (Bekaert and Harvey, 2000). Several authors have extended this indicator

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[3] A comprehensive overview of the empirical literature up to 1997 is to be found in Kaminsky, Lizondo and Reinhart (1997). For an overview of empirical studies in the period from 1997 to 2003, see Abiad (2003).

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by combining different sources and including additional countries (i.e. Bekaert et al., 2005; Bekaert and Harvey, 2000; Kaminsky and Schmukler, 2003). The third category is focuses on the *liberalization of the banking sector*. In general, these measures are concerned with the liberalization of the interest rate. However, compared with the other two categories, bank-based measures are rarely employed in empirical studies.

In this paper, I try to apply the newly developed measure of financial liberalization innovated and constructed by Abiad et al. (2010) in order to capture the full picture of the effects of financial liberalization policies. They basically divide financial liberalization into seven categories including:

1. Credit controls and excessively high reserve requirements
2. Interest rate controls
3. Entry barriers in the financial system
4. Privatization of state-owned banks
5. Financial account restrictions
6. Prudential regulations and supervision of the banking sector
7. Security market liberalization

Each index ranges from 0 to 3, thus the total degree of financial liberalization ranges from 0 to 21. The higher value of index represents the greater degree of financial liberalization. The estimation period covers 91 countries from 1973 to 2005, and recently extended to 2016. Such a newly constructed index could better clarify the role of financial liberalization on various issues - roles which the previous measurements of capital restriction could not identify distinctly. It can also allow us to empirically investigate the effects of reform on financial sector outcomes, such as increased financial intermediation and improved allocative efficiency, and on macroeconomic outcomes such as growth, productivity, and crisis vulnerability.

2.3. The Role of Politics in Explaining Currency Crises

As have discussed in the previous section, both crisis models overlook the importance of the role of politics played in generating crises. This paper will pay special attention to both the *strength of government/government stability* as the primary factor interacting with financial liberalization in affecting the probability of currency crises.

There is a body of empirical literature on this subject, but to date the results obtained have been mixed and few studies have focused specifically on currency crises as a measure of economic instability. The major exception is Leblang (2003) where he has convincingly found significant results of political instability and democracy are harmful for macroeconomic stability.[4] The purpose of this paper is again to systematically examine the relationships among democracy, financial liberalization, and currency crises, while controlling for the standard economic variables in the crisis literature. Alternative political systems may influence the probability of currency crises in general both through the actual policies that can generate inconsistencies between macroeconomic and exchange rate policies, and through effects on policy uncertainty. In addition, in democratic systems electoral cycles

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[4] There are differing perspectives in the political economy literature on the effects of democracy on economic stability. On the one hand, a democratic government can promote economic stability by providing checks and balances accountability (Leblang, 2003; Satyanath and Subramanian, 2004). On the other hand, an impending election may lead policymakers to pursue expansionary macroeconomic policies that are inconsistent with the exchange rate regime, which tends to increase the probability of speculative attacks. (e.g., Frieden, Ghezzi and Stein, 2001).

usually generate time-inconsistency problem which may increase the probability of currency crises.[5]

Similarly, we argue that the roles of domestic political institutions which directly influence a government's ability to implement these policy responses matter during crisis period. With a strong government and a stable political system, countries have a wide range of potential options for liberalizing financial market regulations. On the other hand, in weak or politically unstable governments with high pressure for government spending and little capacity to raise revenues, high rates of inflation are almost inevitable (Cukierman, Edwards and Tabellini 1993). Likewise, MacIntyre (2001) argued the political institutions characterized by the number of veto players, i.e. policy decision makers who must agree to make a change, can determine policy credibility and policy flexibility, which significantly determine investors' confidence and economic reform in the aftermath of crises. Politically weak governments with too many veto players in the system will be difficult to reach consensus in terms of making policy decisions, and in our case, tends to delay the pace and speed of financial liberalization. This will in turn increase the systemic risk of suffering from both financial fragility and currency crises. Two major hypotheses can be derived from discussions above:

H1: Government instability increases the risk of currency crises.
H2: Financial liberalization increase the risk of currency crises, especially under less stable governments.

3. Data, Methodology and Design

The main objective of this paper is to develop a political economy framework to be able to empirically investigate the interrelationship among financial liberalization, political institutions, and the probability of currency crises. The empirical analysis will be based on 30 emerging market economies from 1975-2005. In dealing with the probability of currency crises, several rounds of *multivariate* logit model will be undertaken as commonly used in standard literature. We begin with the basic model of as below:

$$ProbCC_{i,t} = \alpha + \beta 1(FL)_{i,t-1} + \beta 2(Macro)_{i,t} + \beta 3(CC)_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

where $ProbCC_{i,t}$ is the probability of currency crises for country i at year t. which takes on a value of 1 when a country begins experiencing crises in a given year, and 0 otherwise. *FL* is the financial liberalization index. *Macro* is a set of standard macroeconomic control variables used commonly in the literature including the ratio of M2 to international reserves, the rate of domestic credit growth, current account deficit/surplus as a share of GDP, real GDP growth, and real effective exchange rate appreciation. Data on economic variables can be obtained from the *International Financial Statistics* (IFS) and the *World Economy Indicators* (WDI) database.

Our next step is to add political institutions and including various interaction terms in the

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[5] Bueno de Mesquita et al (2003) present a powerful argument that increases in the number or proportion of citizens that matter for the preservation of a political regime, the greater are the incentives for political leaders to promote good economic performance rather than focusing on redistributive benefits for their coalition of supports. The focus of their model, however, is only on static allocation and does not consider the influence of time asymmetries in the effects of policies that motivate the literature on political business cycles and the problem of time inconsistency more generally. Such contending consideration leads to indeterminacy in our theoretical explanations.

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equation to further examine the causal relationship. The empirical model can be described as below:

$$ProbCC_{i,t} = \alpha + \beta 1(FL)_{i,t-1} + \beta 2(GS)_{i,t-1} + \beta 3(FL)^*(GS)_{i,t-1}$$
$$+ \beta 4(ProbCC)_{i,t-1} + \beta 5(Macro)_{i,t-1} + \varepsilon_{i,t-1} \qquad (2)$$

where in these two equations, *GS* stands for the strength of government while *DEMO* represents the degree of democracy. Details on measurements of our key dependent (crisis index) and independent variables (political institutions and financial liberalizations) are discussed as follows:

3.1. Dependent Variable: Currency Crisis Index

Following Eichengreen, Rose and Wyplosz (1994/1995/1996), recent studies on currency crises construct crisis indices from exchange market pressure (EMP), which is a weighed average of the depreciation rate of nominal exchange rates (%ΔE), the percentage change in international reserves (%ΔR), and the change in interest rate (ΔI). A period of currency crisis is identified when an EMP index exceeds a particular threshold such as two or three standard deviations (σ) above its mean (μ).

$$EMP_{i,t} = [(\alpha\%\Delta E_{i,t}) + (\beta\Delta(I_{i,t} - I_{G,t})) - (\gamma(\%\Delta R_{i,t} - \%\Delta R_{G,t}))]$$

$$Crisis\ i,t = 1, if\ EMP > 2\sigma EMP + \mu\ or,\ Crisis\ i,t = 1, if\ EMP > 3\sigma EMP + \mu \qquad (3)$$

where α, β, γ are weights, which equalize the conditional volatilities of each component. For sensitivity tests, as suggested by Willett et al. (2005), an equal weighted index is also tested. As is common in the literature we use a threshold of two standard deviations.

3.2. Independent Variables: Financial Liberalization

As discussed earlier, we use the newly constructed dataset by Abiad et al. (2010) where they divide the degree of financial liberalization into seven dimensions. Each dimension has various sub-dimensions. Based on the score for each sub-dimension, each dimension receives a "raw score." After a raw score is assigned, it is normalized to a 0–3 scale. The normalization is done on the basis of the classifications listed below for each dimension. That is, fully liberalized = 3; partially liberalized = 2; partially repressed = 1; fully repressed = 0. Thus the total degree of financial liberalization ranges from 0 to 21. The higher value of index represents the greater degree of financial liberalization.

3.3. Measurements on Government Strength

As a proxy of measuring government strength, as suggested by Chiu and Willett (2009), I use the government stability index of the *International Country Risk Guide* (ICRG). According to ICRG, government stability is defined as government's ability to carry out its declared program, and its ability to stay in office. This is an assessment both of the government's ability to carry out its declared program(s), and its ability to stay in office. This will depend on the type of governance, the cohesion of the government and governing parties, the closeness of the next election, the government's command of the legislature, popular approval of government policies, and so on. In general, the risk rating of government stability assigned is the sum of three subcomponents, each with a maximum score of four points and

a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk. The three subcomponents are: *Government Unity* (0-4), *Legislative Strength* (0-4), and *Popular Support* (0-4).[6] Therefore, the ICRG index ranges from 1 (the lowest level of government strength) to 12 (the highest level).

Data on economic controlling variables is taken from the *International Financial Statistics* (IFS) database. Drawing from the literature on determinants of currency crises, we control for a standard set of macroeconomic variables (Bordo et al., 2001; Chiu and Willett, 2009; Corsetti, Pesanti and Roubini, 1999; Frankel and Rose, 1996; Glick and Hutchison, 2005). These are the ratio of money and quasi money (M2) to international reserves, the rate of domestic credit growth, current account deficit/surplus as a share of GDP, and real effective exchange rate appreciation.[7]

Lastly, we also include elections as a political control variable. There already exists a large literature relating elections to economic outcomes; this literature can be divided into two distinct but related strands: one focusing on uncertainty and the second examining the incentives of policymakers surrounding elections (Frieden, Ghezzi, and Stein, 2001; Leblang, 2002; Leblang, 2003; Leblang and Bernhard, 2000; Lobo and Tufte, 1998; Walter, 2006). While the electoral effect is not the primary focus of this paper, we include it in our model because it helps control for problems of time-inconsistency and short run political pressures.[8] We measure the electoral dates using data from *Database of Political Institutions* and create an election dummy coded as one if there is an election for either the legislature or executive branch in that year.

4. Empirical Results

4.1. Panel Regression Results

Table 1 presents the summary of descriptive statistics. Our regression results are presented in Table 2. There are six equations. Columns (1) and (4) of Table 2 only consider the impacts of the degree of financial liberalization on the likelihood of currency crises using the pooled precision weights and equal weights systems, respectively. As shown in column (1) the degree of financial liberalization (FL) are positively while not statistically significant associated with the occurrence of currency crises across all types of currency crisis measures. This indicates that the more liberalized financial system will tend to increase the likelihood of crises but this correlation needs further investigation. Next we add our main institutional variable – government stability into our equation. As shown in column (2) and (5), the coefficient of government stability (β_2) shows the effects of a strong government on the probability of

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[6] In particular, government stability depends on the type of governance, the cohesion of the government and governing parties, the closeness of the next election, the government's command of the legislature, popular approval of government policies, and so on.

[7] Real effective exchange rate appreciation (REER) is calculated from nominal effective exchange rate (a measure of the value of a currency against the weighted average of several foreign currencies) divided by a price deflator or index of costs. Data is obtained from both JP Morgan and World Development Indicators (WDI).

[8] Government officials with short-time horizons (as in the run-up to an election) in general tend to be biased toward generating expansionary macroeconomic policies for the short-run benefits (e.g. to increase domestic output and win the election) at the expense of the long-run costs (e.g. increased inflation), as suggested by the traditional political business cycle literature. Also see Walter and Willett (2012) for a discussion of the relationship between short time horizons and the tendency for governments to delay adjustments until crises erupt.

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currency crises under various degrees of financial liberalization. Not only the coefficients of government stability (Stab) are negative and statistically significant correlated with the probability of crisis, but also the degrees of financial liberalization become statistically significant as well, suggesting that there seems to be an interactive effect between government stability and financial liberalization.

Table 1. Descriptive Statistics

	Mean	**St dev.**	**Min**	**Max**
Stab	8.16	1.77	3	12
FL	12.3	3.60	2	21
m2/reserves	6.23	5.04	0.89	34.19
Credit Growth	47.15	22.05	2.79	126.85
CA/GDP	-1.85	4.78	-23.77	56.40
REER	101.65	15.88	64.76	178.45
Election	0.41	0.78	0	1

Table 2. Degree of Financial Liberalization, Government Stability, and Probability of Crises

	(1) Pooled	**(2)** Pooled	**(3)** Pooled	**(4)** Equal	**(5)** Equal	**(6)** Equal	**(7)** p-value
Stab $_{t-1}$	-	-0.365** (-2.43)	-0.677*** (-2.67)	-	-0.981** (-2.16)	-0.892** (-2.45)	0.001***
FL $_{t-1}$	2.876 (1.15)	1.624* (1.86)	3.863** (1.96)	2.335 (0.98)	1.981* (1.88)	3.721** (2.31)	0.05**
Stab*FL $_{t-1}$	-	-	-0.558** (-2.43)	-	-	-0.658** (-2.31)	0.05**
m2/res $_{t-1}$	0.097** (2.57)	0.163*** (3.97)	0.251*** (3.87)	0.243** (2.42)	0.458* (1.54)	0.072** (2.28)	0.000***
Credit growth $_{t-1}$	0.021* (1.76)	0.042** (1.96)	0.051** (2.01)	0.034** (2.24)	0.078* (1.86)	0.032* (1.68)	0.05**
Ca/GDP $_{t-1}$	0.065 (0.42)	0.026** (1.97)	0.087* (1.66)	0.047 (0.56)	0.183* (1.65)	0.159* (2.47)	0.1*
REER $_{t-1}$	0.178** (2.68)	0.053** (2.01)	0.057*** (2.95)	0.021** (2.34)	0.049** (2.34)	0.012** (2.67)	0.001***
Election $_{t-1}$	0.375** (1.96)	0.229* (1.65)	0.210** (1.96)	0.991** (1.98)	0.468** (2.66)	0.824* (1.88)	0.05**
_cons	-2.278*** (-3.35)	-2.455** (-3.24)	-2.889*** (-4.61)	-2.478*** (-4.87)	-1.825*** (-4.21)	-2.789*** (-2.27)	0.001***
N	686	721	775	675	732	765	

Note: t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$.

Next, we turn to the effects of incorporating government stability by interacting it with different types of financial liberalization. In order to appropriately account for the coefficients of the interaction terms, we recalculate the standard error at various values of the

conditioning variables (i.e. types of financial liberalization).[9] These results are shown in column (3) and (6), which presents the conditional relationship between government stability and the various types of financial liberalization. Government stability (Stab) enters into the equation with significant and negative signs across the different crisis measures. This effect is stronger, however, when using the equal weights version than for the pooled precision weights. The coefficients on the controls variables retain their signs but fall in magnitude and significance. These results are in general consistent with our hypothesis *H1* and suggest the likely importance of interacting government stability with controls. In columns (3) and (6), the estimated coefficients of *Stab* are significant and negative suggesting that a more stable government tends to be less likely to have currency crises. This again offers further support for *H1*. Especially interesting is that when the political stability variable is added and interacted with financial liberalization the coefficients become significant, and keep the negative sign as we have expected. The coefficients of both interaction variables are significant and have the expected signs across different crisis measures. This supports our conjecture that the relationship between the degrees of financial liberalization and the probability of currency crises depends at least in part on the stability of the government.

To better understand the conditionality of government stability, we then compute the probability of currency crises across different levels of government stability and the degrees of financial liberalization. This exercise allows us to see the influence of changes of government stability on the probability of currency crises, holding other variables constant.[10] The preferred method to interpret interactive effects in such models is through the graphical presentation of the relationship between changes in the variables of interest. This will give us a picture of how the crisis probabilities change at different degrees of government stability and various levels of controls on capital flows over time. The estimated probabilities are reported in Table 3 and Fig. 1.
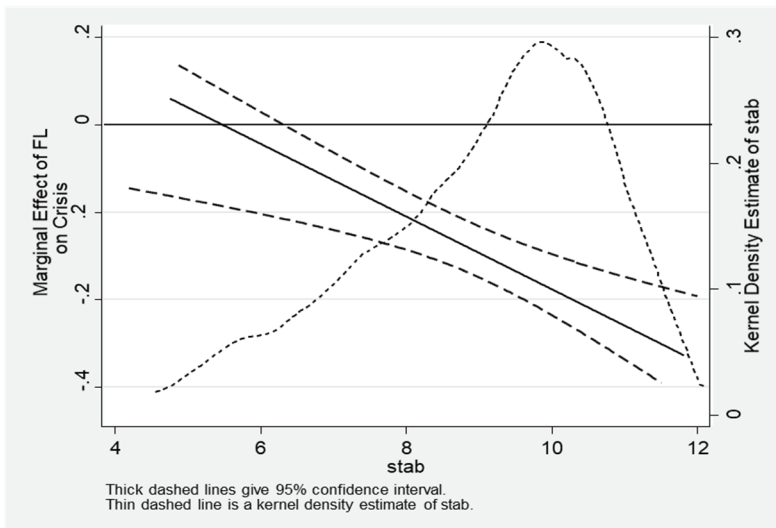
Table 3. Government Stability, Financial Liberalization, and Probability of Currency Crises

	FL = 0-5	FL = 6-10	FL = 11-15	FL = 16-21
STAB = 3	.128	.265	.361	.568
STAB = 4	.093	.214	.326	.516
STAB = 5	.046	.178	.247	.468
STAB = 6	.031	.135	.219	.392
STAB = 7	.027	.104	.152	.319
STAB = 8	.017	.073	.148	.261
STAB = 9	.013	.047	.123	.162
STAB = 10	.012	.036	.068	.114
STAB = 11	.007	.024	.043	.102
STAB = 12	.004	.005	.024	.096

[9] In probit models, the interpretation of the coefficient of the interaction term is not straight forward and requires special treatment (Brambor, Clark and Golder, 2006). One problem is that STATA does not provide the standard error for the interaction term. In order to test the significance of the interaction term, we compute a variance-covariance matrix for each variable after running a regression. With the aid of the variance-covariance matrix, we are able to obtain sufficient information to estimate the standard error.

[10] A significant coefficient estimate on an interaction term is "neither a necessary nor sufficient" condition for establishing the existence of an interactive relationship (Berry, DeMeritt and Esarey, 2010).

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Fig. 1. Predictive Margins of Government Stability on Probability of Currency Crises

Thick dashed lines give 95% confidence interval.
Thin dashed line is a kernel density estimate of stab.

   As shown in Table 3, the crisis propensities decrease with the loosening degrees of financial liberalization and this in general has a positive impact on the likelihood of currency crises. This effect gets stronger as the government becomes more stable (i.e., moving from scale 3 to scale 12). Fig. 1 also shows 95% confidence intervals for all the estimated probabilities. This helps to explain the pattern of convergence where at low levels of government stability the probability of a crisis is much higher when for example capital controls on financial markets are extensive, but at high levels of stability the probability of crisis is low regardless of the level of capital controls. It also suggests that our reported probabilities on crisis propensities are fairly reliable across different levels of financial liberalization.[11]

   Finally, we also conduct a numbers of sensitivity tests in order to check for the robustness of our results. First, I use different currency crisis measures using equal weight schemes as suggested by Willett et al (2005). The results are reported in Table 2 columns (4) - (6). As discussed earlier, the general findings are consistent with using a pool weight system. Second, I also use the proxies for government stability developed by Kaufmann et al. (1999). They measure political stability as the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.[12] As shown in Table 4 and Fig. 2, the results of excluding extreme values were generally consistent with our main results in Table 3. The results using the alternative political stability index constructed by Kaufmann et al. are generally consistent with those using our main measure of government stability. The unregulated financial system with political unstable governments are associated with higher risk of currency crises and the effects are stronger when governments become political more unstable.

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[11] The predictive margins with 95% confidence interval is displayed in Fig. 4 as suggested by Berry, Golder, and Milton (2012) and Brambor, Clark and Golder (2006).
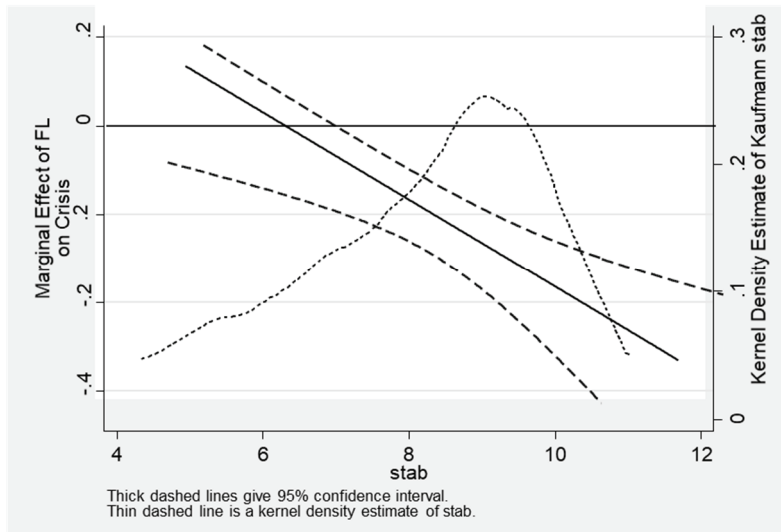
[12] The data on political stability is mainly extracted from Worldwide Governance Indicators (WGI) covering more than 180 countries from 1996 to 2017. The higher the score, the greater is the political stability.

Table 4. Kaufmann Stability, Financial Liberalization, and Probability of Currency Crises

	(1) Pooled	(2) Pooled	(3) Pooled	(4) Equal	(5) Equal	(6) Equal	(7) p-value
KStab$_{t-1}$	-	-0.326**	-0.457***	-	-0.754**	-0.457**	0.000***
		(-2.23)	(-2.74)		(-2.43)	(-2.35)	
FL$_{t-1}$	1.453	1.523*	2.324**	2.354	1.657*	3.546**	0.05**
	(1.15)	(1.85)	(1.96)	(0.38)	(1.78)	(2.32)	
KStab*FL$_{t-1}$	-	-	-0.643**	-	-	-0.586**	0.03**
			(-2.23)			(-2.38)	
m2/res$_{t-1}$	0.345**	0.253**	0.754***	0.643**	0.434*	0.456**	0.001***
	(2.34)	(1.97)	(2.87)	(2.54)	(1.44)	(2.18)	
Credit growth$_{t-1}$	0.054*	0.034**	0.068**	0.032**	0.023*	0.011*	0.05**
	(1.76)	(1.96)	(2.56)	(2.12)	(1.76)	(1.65)	
Ca/GDP$_{t-1}$	0.021	0.016**	0.076*	0.234	0.423*	0.455*	0.1*
	(0.12)	(1.77)	(1.88)	(0.46)	(1.85)	(2.67)	
REER$_{t-1}$	0.432**	0.547**	0.235***	0.654**	0.685**	0.436**	0.001***
	(2.61)	(2.51)	(2.88)	(2.24)	(2.14)	(2.33)	
Election$_{t-1}$	0.345**	0.462*	0.523*	0.124**	0.234**	0.235*	0.1*
	(2.16)	(1.75)	(1.86)	(2.18)	(2.32)	(1.78)	
_cons	-2.325***	-2.547**	-2.234***	-2.478***	-1.432***	-2.654***	0.000***
	(-3.66)	(-2.54)	(-3.41)	(-2.97)	(-3.21)	(-2.66)	
N	612	675	712	634	688	734	

Note: t statistics in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$.

Fig. 2. Predictive Margins of Kaufmann Government Stability on Probability of Currency Crises

Thick dashed lines give 95% confidence interval.
Thin dashed line is a kernel density estimate of stab.

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4.2. Financial Liberalization and Government Stability in South Korea

In addition to the qualitative analysis, I also conduct a small case study using the example of South Korea. Questions have been raised about many of the quantitative proxies for political variables. Clearly they cannot capture all of the relevant nuances, and in some cases different proxies for the same concept differ substantially. Therefore, a case study can provide a supplement to the quantitative results above. Among those emerging market economies, South Korea is one of the representative examples since the outbreak of Asian financial crisis in 1997-98. Korea has gone through financial deregulation since the early 1980s with the removal of various restrictions on bank and credit management. As Cho (1998) argued, however, that the mistaken sequencing of financial liberalization contributed to the speed and severity of the crisis both by exposing the system to roll-over risk, and by encouraging excessive indebtedness of firms. As the results, the domestic financial crisis soon led to a currency crisis in Korea. Korea's currency crisis was not caused by speculative short-term portfolio flows, but rather by the refusal of many foreign creditors to roll over their short-term credit to Korean banks and merchant banking companies (Cho, 1998).

When we turn to the indicator of government stability from 1995 to 2015, the average value for South Korea during that period was 8.68 points with a minimum of 6.72 points in 2014 and a maximum of 9.68 points in 1996. As discussed earlier, the *ICRG* has provided this data annually with the higher score meaning for more stable governments with less riots and strikes. Another political stability index from Kaufmann and world bank (-2.5 weak; 2.5 strong) also suggested the similar pattern. The average value for South Korea political stability during that period from 1995-2015 was 0.35 points, with a minimum of 0.11 points in 2014 and a maximum of 0.57 points in 1996. Korea has gone through a formal democratization since 1987. In the past three decades, both the transition to consolidate democracy and advanced market economy have become crucial factors for Korean economic development. However, political system is still far from effective. The post-democratic political system has failed to deliver what the government promised or what the people expected, making political distrust higher and politics more unstable. The transitional democracy has also created several social and economic problems such as poor governance, high-level corruption, political distrust, social polarization, and lack of consensus on major issues (Choi 2018). This will in turn make democratic governments less capable and ineffective of implementing necessary macroeconomic adjustments policies especially during financial/currency crises. As Chiu and Willett (2019) have pointed out, liberal financial policies such as capital controls on outflows perform better under a political stable government in preventing currency crises. Other Asian democracies such as Taiwan have also suffered from the similar political difficulties and confrontations from making effective economic policies.

5. Concluding Remarks

Capital flow surges and sudden stops have become a major problem for both emerging market economies and developing economies. Our empirical results on the degrees of financial liberalization, government stability and the likelihood of currency crises are consistent with views that measures to limit surges of inflows may be useful. Not only does government weakness increase the probabilities of currency crises directly, but it also interacts with the effects of the degrees of financial liberalization. We find that in a large sample of emerging market countries, financial liberalization typically leads to financial fragility and occasional financial crises. In other words, rapidly opening the financial systems are estimated to increase the probabilities of currency crises. These increases are particularly

large when governments are weak. This finding is consistent with the view that efficient controls on capital inflows for example, should be viewed as an aspect of macro prudential risk management rather than measures that attempt to minimize capital inflows.

Financial liberalization alleviates the consequences of capital market imperfections, but does so at the cost of increasing financial fragility. Hence, the overall effect of financial liberalization on growth is the result of a risk-return trade-off. A financially liberalized economy grows faster in normal times, but is exposed to severe output contractions during financial crises. Thus we believe that the IMF's reconsideration of "institutional views" - there is no presumption that full liberalization is an appropriate goal for all countries at all times - is well justified. investigate this question.

There are a number of directions in which this type of research can be extended and our initial findings suggest that additional research in this area is justified. One important direction is to explore the use of other measures of government strength and weakness. The inclusion of measures of types of political regimes (democracy vs autocracy) seems likely to be particularly worthwhile. Investigating further the relationships among financial liberalization and political regime types should be a topic of future research.

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