What Explains the Duration of Financial Markets' Shutdown and Re-Access?

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Abstract

We employ a discrete-time parametric duration model on a group of 121 countries over the period 1970-2011. We find that the likelihood of the end of international financial markets' shutdown falls as this event becomes "older". Thus, the build up of a certain bad reputation contributes to the permanence in a state of markets' shutdown. By contrast, the evidence about duration dependence in periods of financial markets' re-access is weaker. In fact, economic and political factors play a much more important role in explaining the duration of these periods. 'High' or positive economic growth, an improvement of the external position of a country and the default history are key catalysts for shortening periods of financial markets' shutdown and increasing the length of markets' re-access. Moreover, while stock market crashes make periods of markets' shutdown longer, banking crises shorten the spells of markets' re-access. Better rating of political risk and tightening of credit conditions in the US also play an influential role, even more than the domestic money market environment.

Keywords: Financial markets' shutdown, financial markets' re-access, duration analysis, Weibull model, duration dependence.
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"… We are making this choice because the strategy of returning to the market was successful, and because… because we recovered our credibility…"

- Pedro Passos Coelho, Prime-Minister of Portugal, 4 May 2014.

1. Introduction

Why are some countries able to access international capital markets? Why do others countries seem to be punished and face the prospects of a long shutdown from the markets?

Over the past century, a number of countries have experienced episodes of loss of access to international capital markets. While the empirical evidence tells us that some of these events lasted many years, it also suggests that, in the majority of cases, countries were relatively successful in returning to a situation where they can borrow in international capital markets.

In the research arena, some relevant works have devoted a great deal of attention to investigate the question of when a country will re-gain markets' access (IMF, 2001, 2003, 2005). Typically, this line of investigation finds that the pace for a country to re-gaining international capital markets' access depends on how supportive the economic environment is and how quickly it is in establishing a reputational record that demonstrates commitment and ability to repay its foreign debt. These aspects are particularly important when markets' re-access takes place in the aftermath of financial crises (Zanforlin, 2007).

We try to complement this strand of the literature by looking at the question of the access to international capital markets from a different angle. More specifically, we ask ourselves about the determinants of the duration of episodes of financial markets' shutdown and re-access. What drives the time span over which sovereigns are shut out from international capital markets? Which key developments allow countries to re-gain the ability to borrow in international capital markets? What are the economic, external, political, reputational and circumstantial factors that explain how long periods of markets' shutdown and re-access are likely to last? Are episodes of markets' shutdown more likely to end as time goes by? By contrast, are events of markets' re-access more sensitive to changes in the country's fundamentals than to the past duration of such events? Thus, rather than looking at the reasons why sovereigns may be compelled to fulfil their debt obligations, as interesting and relevant as this question might be, we focus instead on the determinants of the pace and speed at which periods of financial markets' shutdown are likely to end and periods of re-access to international capital markets are likely to persist over time.

International capital markets' shutdown and re-access are important for two main reasons. First, access to financial markets plays an important role in many countries, as several investment projects on infrastructure and capacity-building are typically financed via assistance from development banks, borrowing from international capital markets or overseas aid. As Esteves and Jalles (2013) highlight, sovereigns are frequently the only entities that can sell their bonds to foreign investors or borrow in international capital markets from foreign banking institutions. Thus, only at a later stage, will private firms enter those markets, thus, making bonds issued or publicly guaranteed by the public sector the primary financial instrument via which sovereigns access international capital markets.

Second, potential lenders can “keep track” of the behaviour of borrowers during periods of markets' shutdown and contribute to the evaluation of whether new funds should be provided or not. Therefore, although governments are generally immune from bankruptcy procedures and only a few of their assets can be seized in the case of a default, shutdowns from international capital markets are not costless. Moreover, the knowledge of the period of markets' shutdown and the costs associated with it can also influence the decision and the timing of default. For example, if the economic impact is small and the punishment is temporary, defaults will be more likely to happen.[1]

From a policy perspective, the investigation about the timing, the length and the determinants of periods of shutdown from and re-access to international capital markets is also crucial for the design and the implementation of effective policies. For instance, by demonstrating a willingness to meet debt obligations during periods of markets' shutdown, governments may find themselves in a position where the adoption of corrective measures speeds up the end of such periods. Similarly, by establishing a record of sound economic performance during periods of markets' re-access, sovereigns raise the likelihood of remaining in that state for longer time. Thus, assessing the determinants of financial markets' shutdown and re-access can contribute to our understanding of what guarantees continued market access for longer periods while providing a better knowledge of market-based borrowing.

Against this background, in the current paper, we test whether the likelihood of financial markets' shutdown and re-access ending changes as those periods become older. We start by identifying, for a sample of 121 countries over the period 1970-2011, episodes of shutdown from and re-access to international capital markets. Then, we employ a discrete-time version of the Weibull duration model where we allow for the presence of economic, political, reputational and circumstantial factors to understand their impact on the duration of episodes of markets' shutdown and re-access.

Our results point out to the presence of negative duration dependence for markets' shutdown. Put it differently, the likelihood of the end of financial markets'

[1] To witness it, the financial crisis of 2008-2009 forced many central banks and governments to adopt policy measures aimed at delivering an economic recovery from a very sharp collapse of the asset markets (Moreno, 2010; Agnello et al., 2012; Borio, 2012; Cimadomo, 2012; Jawadi et al., 2014b).

shutdown after a certain duration falls as this event becomes longer (older). As for periods of markets’ re-access, the empirical evidence is weaker (if not, unsupportive) regarding the existence of duration dependence. In fact, the country's economic, external, political, reputational and circumstantial fundamentals seem to play a much more important role in explaining the duration of markets' re-access. Thus, the build up of a certain good "reputation" contributes to the permanence in a state of markets’ re-access.

The empirical findings also highlight the important role that the economic growth, the health of the external position, the political (in)stability and the default history play on the duration of markets’ shutdown and re-access. More specifically, markets’ shutdown episodes are longer when economic prospects are poor and the ratio of reserves to total external debt falls, when the chief executive has been in office for long periods, and when the country has a history of default episodes. As for the spells of re-access to international capital markets, they tend to be longer when economic growth improves and the ability of a country to repay its external debt ameliorates, when there are neither government crises nor government instability, and when the country’s reputation is high.

When controlling for periods of ‘high’ (positive) versus ‘low’ (negative) growth, our results show that the likelihood of markets’ shutdown ending is particularly reduced when the growth rate of GDP is positive and above the sample average or the country's average. Thus, growth appears to be a key catalyst for shortening periods of shutdown from international financial markets. For markets' re-access, the empirical evidence also confirms the importance of economic growth.

We also condition the duration of a period of markets’ shutdown on the occurrence of a default episode. We show that under these exceptional circumstances, more than the economic performance, it is the stability of political environment that is crucial for shortening shutdowns from international financial markets.

Taking into account the impact of crisis episodes, we find that stock market crashes tend to make periods of markets' shutdown longer, while banking crises shorten the spells of markets' re-access. Moreover, an increase in the number of crisis episodes significantly reduces the likelihood of the end of markets' shutdowns.

While the empirical evidence does not corroborate the existence of a statistically significant impact of the OECD membership on the duration of markets' shutdown and re-access, it reveals the presence of some regional effects. For instance, being part of the North American region tends to make periods of markets' shutdowns longer, which reflects the fact that, despite being infrequent, these periods were typically accompanied by defaults. Additionally, countries in Europe appear to be more likely to re-gain access to international capital markets than African countries.

When we extend our baseline model to accommodate the inclusion of other control variables, we find that: (i) better political risk rating shortens the duration of periods of financial markets' shutdown and makes financial markets' re-access longer; (ii) changes in the dynamics of money market conditions (such as in the domestic credit provided by the banking sector, the flow of domestic credit to the private sector, the size of liquid liabilities or the lending interest) do not seem to be particularly relevant in explaining the length of periods of markets' shutdown and re-access; (iii) accounting for additional external factors, a tightening of credit market conditions in the US shortens the periods of re-access to international capital markets in a significant manner, but changes in global liquidity do not appear to influence the duration of both periods; and (iv) capital controls (in particular, restrictions on capital account transactions faced by non-residents) matter for the duration of episodes of shutdown from international financial markets, but do not play a significant role on the length of periods of re-access to international capital markets.

Finally, our results are robust even after controlling for eventual endogeneity/reverse causality and nonlinearity in the hazard function, accounting for potential outliers (such as countries with "abnormally" long periods of markets' shutdown and re-access or countries that have always exported or imported capital), and considering an alternative identification procedure that tracks variation in portfolio equity net inflows.

Our work is highly indebted to different strands of the literature. Market access is intrinsically related with capital flows and, in this context, we owe to the sudden stops literature of Calvo (1998), which shows that the flows of capital to developing countries often persist many years and, then, stop suddenly. It also reflects the dynamics of capital flows as in Broner et al. (2013), who describe the gross flows by local and foreign investors into developing countries over these countries' business cycle. The issues covered in the paper are also related: (i) to the question of whether flows are pulled into a country by its success or pushed into a country by the lack of opportunities in developed economies (Fernandez-Arias, 1996); (ii) to the linkages between capital flows and local savings (Reinhart and Talvi, 1998); (iii) to the institution-based determinants of capital flows (Papaioannou, 2009); and (iv) to the literature on capital controls (de Gregorio et al., 2000; Forbes and Warnock, 2012).

The rest of the paper is organized as follows. Section 2 reviews the related literature on the field. Section 3 presents the econometric model and the empirical methodology. Section 4 describes the data. Section 5 discusses the results and Section 6 provides the sensitivity analysis. Finally, Section 7 concludes.

2. Literature Review

Why do foreign creditors lend to sovereign governments? Traditionally, two types of penalties (costs) associated with the lack of debt repayment have been investigated: (i) direct sanctions (Bulow and Rogoff, 1989; Fernandez and Rosenthal, 1990); and (ii) reputational costs (Eaton and Gersovitz, 1981; Eaton, 1996). Direct sanctions are usually seen as an interference with current transactions either via denial of trade credit or seizure of foreign assets. Moreover, there is a threat of a permanent embargo on future loans by private sector lenders if a default occurs (Eaton and Gersovitz, 1981). Kohlscheen and O'Connell (2007) show that trade credit lines fall considerably following a default. Thus, repayment occurs because governments worry that they might be shut out from the international capital markets in case of a default and, so punishments act as a deterring mechanism (Kletzer and Wright 2000).

Another strand of the literature emphasizes the costs of default for the domestic economy (Catão and Kapur, 2006). The main argument is that there is a broad "collateral damage" on the debtor's government or its economy, or a "balance sheet" effect of the ownership of sovereign debt by the domestic sector (Broner and Ventura 2010, Guembel and Sussman 2009). Thus, not complying with the official obligations can signal bad credit conditions and change the behavior of other agents in the light of the informational content of sovereign debt (Sandleris, 2008; Andrade, 2009).

There is also a line of investigation focusing on the determinants of public debt. For instance, Claessens et al. (2007) highlight the importance of the country size, the fiscal burden and the quality of the institutional framework as having a positive effect on the development of the bond market. Borensztein et al. (2008) emphasize the role played by the lack of capital controls, the privatization of the pension system and the degree of trade openness. Frankel and Cavallo (2008) emphasize that small countries are typically characterized by a less developed financial sector and trade barriers represent an obstacle in terms of attracting foreign investors to the domestic financial market. This increases their exposure to sudden stops in capital inflows. Consequently, small and relatively closed countries might need to offer higher interest rate to attract foreign capital, implying a higher sovereign debt burden.

Despite this, countries sometimes lose access to international capital markets (and, eventually default) and are able to borrow again at some point in the future. On the theoretical ground, Diamond (1989) and Cole et al. (1995) argue that sovereigns are able to borrow again after a default or a debt restructuring if they engaged in rebuilding their reputation in a significant manner. Arellano (2008) models exclusion from international financial markets after defaulting as a stochastic number of periods, with re-access occurring with an exogenous probability, or independent of both global financial conditions and country-specific conditions. Bi (2008) suggests that the delays in the debt renegotiation process increase the size of the "cake", thus, being mutually beneficial for lenders and borrowers.

From an empirical perspective, Lensink and van Bergeijk (1991) investigate the determinants of a country’s ability to access international capital markets by focusing on whether a country has undertaken actual borrowing. Fostel and Kaminsky (2007) show that both domestic factors (such as economic activity, macroeconomic policies, political risk, real exchange rate volatility, and trade openness) and external factors (namely, global liquidity or terms of trade) explain the access to international capital markets by Latin American countries.[2] Arteta and Hale (2008) study the effects of

[2] From a slightly different glance, Peltonen et al. (2012) quantify the magnitude of wealth effects on consumption using a panel of 14 emerging market economies. The authors show that financial wealth effects tend to be larger for countries with high stock market capitalization, while housing wealth effects are more relevant in countries with low level of financial development or low income level. Montoro and Moreno (2011) emphasize that reserve requirements can be an important complement of the policy rate in the conduct of monetary policy by central banks in Latin America. Mallick and Sousa (2012) use modern

sovereign defaults on credit to the private sector, while Trebesch (2008) shows that the average duration from the start of debt distress until the final debt renegotiation deal is largely driven by government actions and political instability. Panizza et al. (2009) sustain that defaults are easily forgiven and typically encompass the default period. Gelos et al. (2011) measure the access to international capital markets with the frequency of borrowing by developing countries and show that the institutional framework, the perceived quality of policies and the vulnerability to shocks are crucial determinants of the government's ability to tap the markets. Cruces and Trebesch (2013) exploit a comprehensive dataset on creditor losses or haircuts. They claim that higher creditor losses are associated with longer periods of market exclusion which is consistent with the theory on reputational costs.

Another set of empirical works focuses on the determinants of sovereign spreads, in particular, in emerging market economies. For instance, the research found in Kaminsky et al. (1998), Eichengreen et al. (2001), Mody et al. (2001), Mauro et al. (2006), Accominotti et al. (2011) and Gelos et al., 2011) shows that the default history stands as a prominent explanatory variable. Moreover, default episodes can have a large and persistent effect on sovereign spreads. For instance, Sturzenegger and Zettelmeyer (2007) show that credit rationing or even total market exclusion are an extreme form of punishment associated to default episodes.

Other contributions to the existing literature analyse the drivers of market re-access. Various studies have documented a key role for sound macroeconomic policies and strong domestic and external positions as pre-conditions for market re-access (IMF

Bayesian econometric methods and find that, for the BRICS economies (i.e. Brazil, Russia, India, China and South Africa), unexpected monetary policy contractions have a large and negative effect on output and help to stabilize short-term inflation, but also generate a persistently negative impact on real equity prices. Finally, Jawadi et al. (2014a) show that fiscal policy has a strong Keynesian effect in BRIC countries, thus, suggesting that there is no evidence of "expansionary fiscal contraction" in emerging economies where government expenditure is largely pro-cyclical. In addition, the empirical evidence gives support to the idea that the dynamics of growth (in the case of China), exchange rate and inflation (for Brazil and Russia) and commodity prices (in India) explain the adjustments in fiscal policy.

(2001, 2003, 2005)). Some other pieces of research show that there is little evidence on specific factors that may affect countries that suffered financial crisis as opposed to those willing to re-gain access to financial markets (Grigorian 2003; Gelos et al. 2011). Put it differently, the analysis generally looks into the question of how a country gains access to capital markets even if it did not experience any difficulty in servicing its sovereign debt. Zanforlin (2007) investigate the main determinants of re-access to international capital markets by countries that faced a severe financial crisis or a restructuring of their debt. Using a simple probit approach and data for 49 emerging market economies, the author shows that the ability of a country to successfully re-access debt markets depends on its intention to rebuild the reputation as a creditworthy borrower, with creditors evaluating the case to resume lending on the basis of the expected returns from the global liquidity cycle. Esteves and Jalles (2013) show that in the wake of a default, there is a rationing effect on the access of the domestic corporate sector to long-term credit and on foreign investment. From a theoretical point of view, the authors argue that governments typically precede private firms and municipals in terms of the ability to borrow from international capital markets. Thus, the proverb ‘like father, like son(s)’: when governments (i.e. the " father") default, the private sector (i.e. the "son") faces a costly punishment in terms of access to credit.

As can be inferred from the discussion above, the majority of the works on sovereign debt look at the drivers of government debt or the reasons why governments may want to repay their obligations. Yet, another interesting question concerns the determinants of the duration of the periods of financial markets’ shutdown and re-access. What makes countries more likely to lose access to international financial markets and which variables explain the length of a period of shutdown? Which factors allow countries to re-gain the possibility of financing their needs in international financial markets and, thus, help speeding up the return to a period of access to those markets? We try to provide answers to these issues in the current work.

Thus, our work is also highly indebted to different strands of the literature about international capital flows. The seminal work by Calvo (1998) shows that financial and balance of payment crises are typically associated with sudden stops in international credit flows. Moreover, even though these episodes of financial instability can take place even when the weak external position of the country is fully financed by foreign direct investment, equity and long-term bond financing can help to reduce the likelihood of sudden stop crises.

Subsequent research in the field devotes a great deal of attention to the study of the cyclical patterns displayed by gross capital flows and focuses on episodes of abrupt reversals in capital inflows, true sudden stops, and capital flights (Faucette et al., 2005; Rothenberg and Warnock, 2011; Forbes and Warnock, 2012; Calderón and Kubota, 2013), or looks at the long-run trends in gross capital flows and shows that large international capital flows typically lead to the build-up of large gross international investment positions (Lane and Milesi-Ferretti, 2007; Kraay et al., 2005; Gourinchas and Rey, 2007; Obstfeld, 2012). Similarly, the dynamics of specific types of gross international capital flows in the aftermath of particular events has substantially been explored by various authors (Frankel and Schmukler, 1996; Kim and Wei, 2002; Albuquerque et al., 2007; Milesi-Ferretti and Tille, 2010). Broner et al. (2013) find that international capital flows are large in magnitude and characterized by high volatility. In the context of crisis episodes, gross capital flows tend to fall sharply and there is a retrenchment in capital outflows by residents and capital inflows by non-residents.

A different line of investigation assesses the determinants of international capital flows. Fernandez-Arias (1996) develops a theoretical model that emphasizes the role played by country risk and shows that it is mainly the decline in international interest rates that leads to an improvement in country creditworthiness. Thus, international capital flows seem to be "pushed" by the lack of opportunities in the developed world instead of being "pulled" by attractive domestic conditions in developing countries. Reinhart and Talvi (1998) contest the view that domestic and foreign saving are positively related in Asia and negatively related in Latin America. The authors argue that, when trend and cyclical components of domestic saving and capital flows are correctly identified, the two regions display a similar response of domestic saving to capital inflows in the short-run. As a result, the distinct relationship between domestic and foreign savings merely reflects the different trends in demographic factors and per capita GDP rather than capital fluctuations. Other papers reveal that there is a significant correlation between institutional quality, such as low corruption and well-functioning bureaucracy, and international capital flows (Wei, 2000; Portes and Rey, 2005; Buch, 2003; Gelos and Wei, 2005). In the same line, Papaioannou (2009) investigates the drivers of international financial flows and highlights that improvements in the institutional framework act as catalysts for significant increases in bank lending.

Finally, some authors evaluate the importance of capital controls. Lougani and Rush (1995) find that "credit shocks" (such as changes in reserve requirements) have a significant effect on investment, real economic activity and bank lending. De Gregorio et al. (2000) show that the more persistent and significant effect of capital controls takes place via the composition of capital inflows, which is tilted towards longer maturities. Forbes and Warnock (2012) also investigate the waves in international capital flows. The authors identify episodes of “surges” and “stops” (i.e. sharp increases and decreases, respectively, of gross capital inflows) and “flight” and “retrenchment” (i.e.

sharp increases and decreases, respectively, of gross capital outflows). They find that while global factors are significantly linked with episodes of extreme capital flows, domestic factors seem to play a secondary role. Moreover, banking, geographic and trade contagion are relevant for episodes of capital flow retrenchments, and capital controls do not appear to insulate an economy against surges or stops in foreign capital flows.

In this context, the duration analysis gains special relevance. Having flourished in the engineering and medical fields, its use rapidly spread out to other sciences. In economics, it started to be employed in labour economics to assess the duration of unemployment spells and business cycles (Kiefer, 1983, 1984, 1988; Sichel, 1991; Castro, 2010).[3] Lunde and Timmermann (2004) investigate the existence of duration dependence in stock markets' bull and bear cycles, while Bracke (2013) focuses on house price upturns and downturns. Agnello et al. (2013) make use of this analysis to assess the determinants of the duration of fiscal consolidation programs and Agnello et al. (2015) apply it to the identification of the drivers of the duration of periods of booms, busts and normal times in the housing markets.

As this paper intends to explain the duration of periods of shutdown from and re-access to (international) financial markets, a duration model is suitable to perform such analysis. Moreover, given that we aim at finding the specific factors that influence the length of such periods, we rely on a discrete-time duration model as it allows for the inclusion of time-varying covariates. Finally, in the light of the typically short duration of periods of capital markets' shutdown and re-access, a discrete-time duration model appears to be the adequate econometric framework to address the question of interest (Ohn et al, 2004; Castro, 2010).

[3] See Kiefer (1988) for a review of the literature on economic duration analysis.

The existence of negative duration dependence in periods of shutdown from international capital markets can be thought as corroborating the evidence of reputation as an important factor in sovereign lending as suggested by Eaton and Gersowitz (1981). While we do not explicitly relate such result with the test of a particular theory, our empirical findings are consistent with the idea that as the length of these episodes increases, the country's reputation as a good or bad borrower solidifies.

Indeed, as we focus on net bank or bond transfers from private creditors to either the public and the publicly guaranteed sector or the private sector to identify periods of financial markets' shutdown and re-access, our approach allows us to investigate the events of distressed sovereign debt restructurings with foreign commercial creditors and, thus, sovereign debt disputes and government coerciveness during debt crises (Trebesch, 2008, 2011; Enderlein et al., 2012; Cruces and Trebesch, 2013). Therefore, the empirical evidence provides insights about sovereign default and not merely about capital flows.

3. Econometric model

The duration variable is defined as the number of years a country is shut out from (international) financial markets.[4] If T measures the time span between the beginning of that period and its end, then, t_1, t_2, ..., t_n represent the observed duration of the markets' shutdown. The probability distribution of the duration variable, T, can be specified by the cumulative distribution function, $F(t) = \Pr(T<t)$, and the corresponding density function is $f(t) = \mathrm{d}F(t)/\mathrm{d}t$. Alternatively, the distribution of T can be characterized by the survivor function, $S(t) = \Pr(T\geq t) = 1\text{-}F(t)$, which measures the probability that the duration of the shutdown survives at least t periods.

[4] We also make a similar analysis for the duration of re-access to the (international) financial markets.

A particularly useful function for duration analysis is the hazard function, $h(t) = f(t)/S(t)$, which measures the rate at which markets' shutdown spells will end at time *t*, given that they lasted until that moment. In other words, it measures the probability of exiting from a state in moment *t* conditional on the length of time in that state. This function helps characterizing the path of duration dependence. For instance:

- if $dh(t)/dt>0$ for $t=t^*$, there is positive duration dependence in t^*;
- if $dh(t)/dt<0$ for $t=t^*$, then there is negative duration dependence in t^*; and
- if $dh(t)/dt=0$ for $t=t^*$, there is no duration dependence.

Therefore, when the derivative of the hazard function with respect to time is positive, the probability of a market shutdown ending in moment *t*, given that it has reached t^*, increases with its age. Thus, the longer the shutdown from the financial markets, the higher the conditional probability of its end will be.

From the hazard function, we can derive the integrated hazard function, $H(t) = \int_0^t h(u)du$, and compute the survivor function, $S(t) = \exp[-H(t)]$. While different parametric continuous-time duration models can measure the magnitude of duration dependence and the impact of other time-invariant variables on the likelihood of an event ending, the most commonly used functional form of the hazard function is the proportional hazard model:

$$h(t, x) = h_0(t)\exp(\boldsymbol{\beta}'\mathbf{x}), \qquad \textbf{(1)}$$

where $h_0(t)$ is the baseline hazard function that captures the data dependence of duration and represents an unknown parameter to be estimated, $\boldsymbol{\beta}$ is a (k×1) vector of parameters that need to be estimated and $\mathbf{x}$ is a vector of covariates. The proportional hazard model can be estimated without imposing any specific functional form to the baseline hazard function (the so called "Cox model"). However, Hess and Persson (2010) highlight that the use of Cox proportional hazards models may be inadequate when applied to large data sets, because: (i) it may lead to biased coefficient estimates and standard errors, especially, when there are many tied duration times; (ii) it can improperly control for unobserved heterogeneity; and (iii) it imposes the restrictive assumption of proportional hazards. Therefore, we opt for a more popular alternative which imposes a specific parametric form for the baseline hazard function $h_0(t)$, i.e. the "Weibull model".

The Weibull model is characterized by the following (baseline) hazard function:

$$h_0(t) = \gamma p t^{p-1}, \tag{2}$$

where p parameterizes the duration dependence, t denotes time, γ is a constant; moreover, $p>0$ and $\gamma>0$. If $p>1$, the conditional probability of a turning point occurring increases as the phase gets older, i.e. there is positive duration dependence; if $p<1$ there is negative duration dependence; finally, there is no duration dependence if $p=1$. Therefore, by estimating p, we can test for duration dependence in markets' shutdown.

Inserting the Weibull specification for the baseline hazard function, as expressed by equation (2), in the proportional hazard function denoted by (1), we get:

$$h(t, \mathbf{x}) = \gamma p t^{p-1} \exp(\mathbf{x}\boldsymbol{\beta}). \tag{3}$$

Hence, the corresponding survivor function can be written as:

$$S(t, \mathbf{x}) = \exp[-\gamma t^{p} \exp(\mathbf{x}\boldsymbol{\beta})]. \tag{4}$$

Nevertheless, this continuous-time duration model may not be the most adequate model to employ in this analysis. Although the length of time of a shutdown from the financial markets is a continuous-time process, available data are inherently discrete (years). Furthermore, discrete-time duration models have the important advantage of allowing for the inclusion of time-varying covariates. In addition, discrete-time duration models are typically more adequate when the minimum duration for the phases is relatively short (Ohn et al, 2004; Castro, 2010). Thus, we rely on discrete-time methods for this duration analysis.

A discrete-time version of the proportional hazards model was developed by Prentice and Gloeckler (1978). The respective discrete-time hazard function is given by:

$$\begin{aligned} P_{it} = \Pr\left[T_i = t \mid T_i \geq t, \mathbf{x}_{it}\right] = 1 - e^{-h_t e^{\boldsymbol{\beta}'\mathbf{x}_{it}}} &= 1 - e^{-e^{\lambda_t + \boldsymbol{\beta}'\mathbf{x}_{it}}} \\ \Leftrightarrow \ln\left[-\ln(1 - P_{it})\right] = \lambda_t + \boldsymbol{\beta}'\mathbf{x}_{it} & \end{aligned}, \qquad \textbf{(5)}$$

which is equivalent to the complementary log-log (or cloglog) function, where $\lambda_t \ (= \ln h_t)$ represents the logarithm of an unspecified (baseline hazard) function of time and $\mathbf{x}_{it}$ is a vector of time-varying explanatory variables. One suitable and quite popular specification for λ_t is the discrete-time analogue to the continuous-time Weibull model, which yields:[5]

$$\lambda_t = \ln h_t = \alpha + (p-1)\ln t\,. \qquad \textbf{(6)}$$

Prentice and Gloeckler (1978) show that discrete-time log-likelihood function for a sample of $i = 1,...,n$ spells can be written as follows:

$$\ln L = \sum_{i=1}^{n}\sum_{j=1}^{t_i} y_{it} \ln\left(\frac{P_{ij}}{1 - P_{ij}}\right) + \sum_{i=1}^{n}\sum_{j=1}^{t_i} \ln\left(1 - P_{ij}\right), \qquad \textbf{(7)}$$

where the dummy variable y_{it} is equal to 1 if the shutdown from the markets of country i ends at time t, and 0 otherwise. The model is estimated by Maximum Likelihood substituting P_{ij} by **(5)** and λ_t by **(6)**. Moreover, we account for heteroscedasticity across countries by considering a clustered sandwich estimator, which allows for intra-group correlation of the standard errors and, thus, relaxes the usual requirement of independence among observations.

[5] Note that $\lambda_t = \ln h_t = \ln(\gamma p t^{p-1}) = \alpha + (p-1)\ln t$, with $\alpha = \ln(\gamma p)$ and $t = DurMktShutDown$.

4. Data

The data used in the duration analysis consists of spells, which, in our study, represent the number of years of financial markets' shutdown (*DurMktShutDown*). For each of the 121 countries included in our sample,[6] annual data over the period 1970-2011 on private and public borrowing are collected from the Global Development Finance - World Development Indicators (GDF-WDI) database of the World Bank and used to measure the degree of a country's shutdown from international capital markets. Specifically, we consider that net negative bank or bond transfers from private creditors to either the public and the publicly guaranteed sector or the private sector imply a markets' shutdown (i.e. no access to international capital markets). By contrast, positive net transfers denote periods of markets' re-access.

As it is common in the literature about duration analysis, we consider both episodes that had an exit in the sample, and episodes that do not end in the sample as ending at the end of the sample. Similarly, episodes that start before beginning of the sample are constrained to start when the sample period begins.

These measures allow us to understand if a country has access to international financial markets even if it does not borrow. Indeed, in order to be able to borrow from abroad, the country must have a relatively good financial health. Moreover, we focus on net transfers from bank and bond creditors to the public debtor to be able to distinguish markets' re-access from situations in which countries simply roll over their existing debt and issue new debt instead of writing it down (Eaton, 1992). Additionally, we look at periods of sovereign shutdown or re-access, which are related with restructurings of public or publicly guaranteed debt vis-a-vis creditors such as banks and bondholders. Thus, net transfers of debt affecting official creditors, such as loans from the

[6] The list of countries included in the analysis is reported in the Appendix.

International Bank for Reconstruction and Development (IBRD) which lends at market rates, credits from the International Development Association (IDA) which are provided at concessional rates, are excluded or those negotiated under the chairmanship of the Paris Club. Similarly, net transfers of debt between the private sector (even if they may be coordinated by the public sector) are not taken into account. The same applies to portfolio equity net flows, as, in contrast to the private sector which may raise capital through the sale of both debt and equity (and for which bond and equity flows may work both as a substitute and complement), public authorities generally raise capital via the issuance of debt in the form of bonds. This categorization of the exchange of domestic and external debt follows the work of Sturzenegger and Zettelmeyer (2007).

Along these lines, we create a dummy variable that takes the value of one during markets' shutdown, and zero otherwise; and we create another dummy variable that takes the value of one during markets' re-access, and zero otherwise. Then, we measure the respective durations of each event and use a discrete-time duration model to explain the determinants of the duration of periods of markets' shutdown and the duration of periods of markets' re-access.

Non-guaranteed long-term debt from bonds that are privately placed corresponds to the variable 'DT.NTR.PNGB.CD: PNG, bonds', while non-guaranteed long-term commercial bank loans from private banks and other private financial institutions are captured by the variable 'DT.NTR.PNGC.CD: PNG, commercial banks and other creditors'. In what concerns public and publicly guaranteed debt from bonds that are either publicly issued or privately placed, we use the variable 'DT.NTR.PBND.CD: PPG, bonds'**.** Finally, public and publicly guaranteed commercial bank loans from private banks and other private financial institutions are summarized by the variable 'DT.NTR.PCBK.CD: PPG, commercial banks'. In all four cases, we consider net transfers, i.e. net flows minus interest payments during the year. Therefore, negative transfers show net transfers made by the borrower to the creditor during the year.

At this stage, we should highlight that we do not aim at distinguishing between the "supply" and the "demand" factors that underline the reasons behind the willingness of a government to borrow in international capital markets. For instance, it could be the case that loans from international organisations or foreign governments are available at more appealing terms in which case countries will not demand private funding and, thus, shutdown and re-access could reflect a decision of credit suppliers. Alternatively, a country may have a large and captive pool of domestic savings, thereby making access to international capital markets to be of second-order importance, even though sovereigns entities are typically the first to sell their bonds to foreign investors or to borrow in international capital markets, with the private sector taking the same steps only afterwards to attract foreign direct investment, as Esteves and Jalles (2013) correctly point out. Even if these aspects may be relevant, they do not weaken our identification procedure, as we already account for various domestic factors (including economic, external, political, reputational and circumstantial forces) that can ultimately explain why being shut out from or having access to international capital markets may be more important for some countries and less relevant for others.

Under these circumstances, a combination of "price" and "quantity" indicators could help to uncover more clearly whether borrowing in international capital markets reflects the existence of "supply" or "demand" constraints. For instance, if yields on existing government debt are relatively high and debt flows are negative, supply constraints are more likely to play a major role; in contrast, if yields are relatively low and debt flows are negative, demand factors will be more crucial.

However, it is important to note that even if we were to distinguish between "supply" and "demand" constraints, we would face three major challenges. First and most importantly, data for yields on existing government debt are not available for a large number of emerging market economies which represent the bulk of the countries covered in our study. Moreover, as Debrun and Kinda (2013) suggest, if one wants to have a narrower indicator of the pressure faced by the fiscal stance, one should be looking at the interest payments on debt expressed as a share of general government revenue instead of the government bond yields *per se*. This would reduce the number of countries for which data are available to 16, thus, making the econometric analysis unfeasible. Second, we would need to make "ad-hoc" decision vis-a-vis the threshold for the yield on existing government debt (or other similar "price" indicator) above which or below which we would identify a specific period as a markets' shutdown or a markets' re-access. Debrun and Kinda (2013) show that the effect of the interest bill on debt stabilization efforts can only be estimated in a precise manner when the ratio between the interest payments on debt and the general government revenue exceeds 12% for advanced economies and 26% in the case of emerging markets. Without theoretically-grounded or empirically-based arguments, any choice regarding the threshold for the "price" indicator would face the criticism of being subjective or even random.

Third, from an empirical point of view, the relationship between sovereign spreads and episodes of markets' shutdown or re-access is not as clear and refined as that based on capital flows. In fact, some authors claim that sovereign debtors have typically better credit conditions (thus, lower borrowing costs) than private debtors (Cavallo and Valenzuela 2010), i.e. the so called "sovereign ceiling". As a result, a rise in sovereign risk has a negative effect on lending to the corporate sector (Kaminsky and

Schmukler 2002, Reinhart and Rogoff 2004, Das et al. 2010). By contrast, other authors reject empirically the existence of crowding-out effects between government borrowing and private borrowing or even find evidence supporting a boost in external financing of private investment subsequently to government investment financed with foreign capital (Clemens and Williamson 2004; Das et al. 2010).

For these reasons, our approach relies on the "quantity" of financial flows and should not be interpreted as a way of providing the "supply" or the "demand" factors behind the government's borrowing behaviour in international capital markets, but rather as a means to allow a proper identification of periods of markets' shutdown and re-access. This procedure is largely in accordance with the criteria set by Cruces and Trebesch (2013) to uncover events of distressed sovereign debt restructurings with foreign commercial creditors, and the data gathered by Enderlein et al. (2012) to assess sovereign debt disputes and government coerciveness during debt crises, and Trebesch (2008, 2011) to explain the delays in sovereign debt restructurings.

As a final remark, we emphasize that the empirical evidence based on our definition of markets' shutdown and re-access remains robust even when we account for the presence of capital controls and additional external factors. Therefore, capital flows are not independent of the country (domestic) characteristics and do not reflect a dichotomy between "price" (i.e. demand) and "quantity" (i.e. supply) driving forces. These empirical results are shown in the section six, where we present the sensitivity analysis.

Our baseline model includes a set of economic, external, political, reputational and circumstantial variables which, according to the existing literature presented in Section 2, are expected to capture the countries' ability to borrow, thus, the occurrence of periods where the countries are shut out from the access to international capital markets and those where they re-gain the access. The economic indicators are:

- *GDP growth rate (GDP)*: Economic fundamentals significantly impact on the investment climate and low growth rates signal economic vulnerability. In countries experiencing adverse economic conditions, both private and foreign investors refrain from investing. This, combined with the increasing borrowing costs through syndicated loans or bond issuances, significantly reduce the country’s ability to borrow, forcing it to satisfy its financing needs less frequently via the international capital markets. Real economic growth can also be thought as providing information for the investors' expectations about future returns from resuming lending, as the GDP growth rate represents the real return from investment in a given country (Zanforlin, 2007). The GDP series are obtained from the World Bank's WDI database.
- *Trade as percentage of GDP (Trade)*: It measures the degree of openness of a country. A decline in the exchanged volumes with trade partners can bring additional difficulties to a country's borrowing capacity and lead to the lack of confidence on its ability to repay the debt.

The external indicator is captured by:

- *Total reserves as percentage of total external debt (Reserves)*: It measures the degree to which a country may be exposed to a "sudden-stop" crisis event or a "credit crunch" episode. Therefore, it reveals the strength of a country to deal with unfavourable changes in external conditions. It also reflects the ability of a country to repay its external debt. As a result, a fall in this ratio may increase the likelihood of periods of financial markets' shutdown and contribute to the end of a period of market re-access.

The stability of the political environment may also play a key role on the timing and the circumstances under which countries are shut out from the markets or re-gain market access. To account for this effect, we have considered three indicators:

- *Years in Office (YrsOffice)*: It measures the number of years the chief executive has been in office and it is provided by the Database of Political Institutions (DPI) of the World Bank. The policy horizon of the chief executive is an important determinant of the borrowing decision process. The shorter the period a chief executive expects to be in office, the more likely he will take actions that yield short-run benefits at the expenses of significant long-run costs. In particular, the immediate benefits of higher loans might come at the price of accepting unfavourable borrowing conditions and being subject to future sanctions for not repaying the debt.
- *Government crises (GovCrises)*: This variable counts the number of any rapidly developing situation that might lead to the fall of the current regime and remove a particular government from power with the exclusion of situations of revolt. It is retrieved from the Cross-National Time-Series Data Archive (CNTS). Countries facing more government crises will have more difficulties in terms of access to the financial markets, implying that they may be excluded from that access for longer periods.
- *Regime durability (RegimeDur)*: This variable counts the number of years that a cabinet has been in power, up to the current year. A cabinet that falls during its first year in power is counted as 1. Every time there is a government termination, the variable is reset to 1 the year after the termination. It comes from the Polity IV Database. Countries characterized

by more stable political regimes benefit from a higher reputation at the international level, which makes it easier to borrow on capital markets.

Two additional variables are used to control for the reputation of the country and for the impact of external aid on the duration of the markets' shutdown. These are:

- *Default history (DefaultHist)*: Debt repudiation generally results in a shutdown from the international capital markets. In particular, in the absence of a credible debt restructuring process (eventually supported by international institutions), financial markets discriminate, in terms of access, between defaulters and non-defaulters. To assess whether discrimination has long-lasting effects or not, we include a dummy variable tracking episodes of default. Based on the chronology of the selective default rating as compiled by the Cavanaugh et al. (2013), this dummy variable takes the value of one during the years of default and zero otherwise.
- *IMF program (IMFProg)*: This is a dummy variable that controls for whether a country is under an agreement with the IMF (either by Stand-By Arrangements, Extended Fund Facilities or Poverty Reduction and Growth Facility programs) or not. It assesses the role played by the multilateral financial assistance provided by the IMF as a means for overcoming liquidity problems by facilitating the country's access to capital markets. The information about the timing of IMF-supported programs is extracted from the Monitoring of Fund Arrangements (MONA) database of the IMF.

By organizing the data in spells - where a spell represents the number of years that a country is shut out from the financial markets (*DurMktShutDown*) - we are able to identify 561 episodes, which vary from the duration of one year to the duration of 30 years, thereby, generating 1989 observations for our discrete-time duration analysis. For the duration of financial markets' re-access (*DurMktReAccess*), we identify 324 spells, ranging from one to 11 years and generating 684 observations for the discrete-time duration analysis.

The descriptive statistics are summarized in Table 1, where further details about the regressors employed in the duration analysis are also presented. As expected, average real GDP growth is higher during periods of markets' re-access (5.2%) than during periods of markets' shutdown (3.5%). Trade also benefits from markets' re-access: indeed, the average degree of openness is larger when the country gains re-access to financial markets (63.3%) than when it loses it (58.4%). We can also see that the political environment is relatively more stable during periods of financial markets' re-access than periods of financial markets' shutdown. For instance, government crisis episodes are, on average, less frequent and the average regime durability is higher during periods of markets' re-access (15.5 years versus 13.6 years in the case of markets' shutdown).

[INSERT TABLE 1 HERE.]

Looking at the distribution of the events under investigation (Table 2), we note that African countries are excluded from capital markets for substantially longer periods than other regions. Latin American countries follow in the rank. The evidence for the North American region is not particularly significant given the limited number of countries belonging to this group. The statistics reported in Table 2 suggest that, overall, re-gaining access to the capital markets is more difficult than being shut out. In fact, the frequency of capital markets' shutdowns is almost three times higher than the frequency of market re-access and this suggests that the loss of reputation following a shutdown has long-lasting effects. This notably applies to the African and Latin American economies. Interestingly, the European countries seem to be particularly resilient to market shutdowns. For OECD countries, the distribution of the events is substantially balanced with the frequency of market shutdowns being slightly higher than the frequency of market re-accesses. Finally, we highlight that the frequencies of markets' shutdown and re-access do not total 100%, because we focus on periods of financial markets' re-access rather than considering mere periods of financial markets' access. Thus, we look only at periods of (re-)access to international capital markets that were preceded by a markets' shutdown.

[INSERT TABLE 2 HERE.]

In Figure 1, we plot the survivor function for the markets’ shutdown spells. It can be seen that the probability of a spell surviving after duration t_i substantially decreases at a steady pace with the time a country is excluded from the market. Similar behaviour is found in Figure 2 for market re-access spells. Whether this decline is consistent with the existence of duration dependence in the respective episodes of shutdown from or re-access to international capital markets is something that we investigate in the next Section with a proper parametric duration analysis.

[INSERT FIGURE 1 HERE.]

[INSERT FIGURE 2 HERE.]

5. Empirical Results

5..1. Markets' shutdown

The empirical evidence that emerges from the estimation of the discrete-time version of the Weibull model for the duration of market shutdowns is summarized in Table 3. We note that the estimate of *p* measures the magnitude of the duration dependence. A one-sided test is used to detect the presence of duration dependence. The results provide strong evidence of negative duration dependence for the duration of markets' shutdown, i.e. *p* is statistically lower than 1 (where θ indicates significance at a 5% level). This means that the likelihood of a market shutdown ending decreases as its length increases or as it becomes "older". Put it differently, the probability of a market shutdown ending at time *t*, given that it lasted until that moment, decreases over time.

In Column 1, we only control for duration dependence but, in Column 2, we allow for the effects of economic factors. The results are quite clear in indicating the important role that the economic environment plays on the length of time a country is shut out from the financial markets. They show that higher GDP growth contribute, as expected, to a significant decrease in the length of markets' shutdown. Similarly, an increase in the ratio of reserves to total external debt rises the likelihood of the end of markets' shutdown, although the statistical significance is weaker in the case of this variable. Additionally, we do not find a significant impact of the degree of trade openness on the likelihood of markets' shutdown ending.

In Column 3, some political variables are included in the model, but only the number of years the chief executive is in office has proved to influence significantly the duration of markets' shutdown: the longer the chief executive is in office, the lower the likelihood of a market shutdown ending. This indicates that a change in government might be necessary to improve the country's reputation and its ability to make the required reforms, as well as to create the necessary conditions to pay its loans and, ultimately, to re-gain access to the markets.[7] No significant effects are observed in the case of the number of government crises and the duration of the political regime.

Additional explanatory variables like the history of default and the external intervention from the IMF are considered in Column 4. The results point out to the importance of the default history – the fact that a country has witnessed episodes of default raises the duration of markets' shutdown -, but do not suggest a significant role for the presence of an IMF program.[8]

Finally, in Column 5, we restrict the analysis to the regressors with significant coefficients. The results confirm and reinforce the importance of the economic growth, the number of years in office and the default history on the duration of markets' shutdown.

[INSERT TABLE 3 HERE.]

5.2. Markets' re-access

The results for markets' re-access are presented in Table 4. As before, we start by controlling only for duration dependence. Then, we allow for the effects of economic, political, and reputational and circumstantial factors (Columns 2, 3 and 4, respectively).

The empirical findings indicate that, to keep its access to the markets, the economic environment is crucial: a higher growth rate of GDP reduces the likelihood of

[7] Aisen and Veiga (2008) argue that political instability, especially, in countries where the access to domestic and external debt financing is low, is associated with high inflation, while Catão and Torrones (2005) uncover a similar empirical relationship between fiscal deficits and inflation.

[8] We also distinguished among the different types of programmes (extended credit facilities, stand-by arrangements and extended fund facilities), but no significant results were found. This empirical evidence is available upon request.

a country losing its re-access to capital markets. Similarly, an increase in the ratio of reserves to total external debt allows countries to keep markets’ re-access for longer time spans; and, once again, *Trade* is not significant.

Regarding the political control variables, we observe that it is mainly the number of government crises that drives the duration of market re-access. More specifically, the higher the number of government crises in a year, the higher the likelihood of markets’ re-access ending. Thus, political instability makes it more difficult for a sovereign to get funding in the capital markets.

Additionally, we find that episodes of default contribute, as expected, to a fall in the duration of markets’ re-access. However, no relevant effects are found regarding eventual reputational gains from the implementation of an IMF programme.

In the last regression, we restrict the analysis to those regressors that display significant coefficients. The results sustain the importance of economic growth, government instability and default history on the duration of market re-access. However, they no longer corroborate the existence of negative duration dependence. In fact, the coefficient estimate associated with p is not significantly different from 1. Put it differently, the likelihood of the end of financial markets’ re-access does not significantly depend on how long the country has been in that state. Consequently, when a country re-gains access to the market, economic and political factors are much more important in explaining the duration of this period than its own duration. This result is in sharp contrast with the findings for periods of markets' shutdown.

[INSERT TABLE 4 HERE.]

6. Sensitivity Analysis

6.1. 'High' (positive) versus 'low' (negative) growth

As the economic environment – in particular, the GDP growth rate – has proved to be one of the most relevant factors for both the duration of markets' shutdown and markets' re-access, in this Section, we provide a more extensive analysis of the role played by economic growth.

Table 5 summarizes the changes of GDP growth (on average) during the re-access times. It shows that markets' re-access is generally associated to a significant improvement in economic fundamentals.

[INSERT TABLE 5 HERE.]

In Table 6, we distinguish: (i) between the situation where the GDP growth rate is higher or lower than zero; (ii) the case where the GDP growth rate is higher or lower than the sample average (*smpl_average*); and (iii) the case where the GDP growth rate is higher or lower than the country average (*ctry_average*). We make this distinction between the sample average and the country average given that the former signals comparative well-being as a part of portfolio allocation problem for investors, while the later signals country well-being.

We start by looking at the results for markets' shutdown. They show that the positive impact of the economic growth on the likelihood of markets' shutdown ending is relevant when the growth rate is positive (Column 1), but no significant impact is found when the growth rate is negative. Similarly, when we consider the average growth rate as the threshold, we observe a statistically significant (and positive) impact only when the growth rate is above its mean (Column 2). The same result emerges when we replace the average growth rate of the panel with the average growth rate for each country (Column 3).

The results are similar for markets’ re-access, but with the obvious symmetric signs and somewhat weaker in terms of statistical significance. Thus, while the likelihood of markets’ re-access ending is not significantly impacted by positive or negative growth (Column 4), economic growth seems to exert a significant influence on the duration of markets’ re-access both when the GDP growth rate is above and below the sample average (Column 5) or the country average (Column 6).

All in all, these findings suggest that the economic environment is particularly relevant when the economy is growing. This reduces the duration of markets’ shutdown and raises the duration of markets’ re-access.

As for the economic, political and external/reputational control variables, the empirical evidence remains both qualitatively and quantitatively unchanged. In one hand, a rise in the ratio of reserves to total external debt reduces the duration of markets' shutdowns, while the fact that a country has faced previous of default makes these periods longer. On the other hand, the higher the number of government crises in a year and the past history of default episodes, the more likely it is that a period of markets’ re-access will end.

Finally, our results corroborate unequivocally the existence of negative duration dependence in periods of markets' shutdown, but remain weaker vis-a-vis this feature of the duration analysis in the case of periods of markets' re-access.

[INSERT TABLE 6 HERE.]

6.2. Markets' shutdown associated with a default episode

In this Section, we condition the duration of a period of markets' shutdown on the occurrence of a default, i.e. on being in a default state contemporaneously. Table 7 reports the frequency of markets' shutdown conditional on the occurrence of sovereign default. When compared to Table 2, it suggests that defaults increase the frequency (and the probability) of a country being shut out from the markets. This is especially true for Latin American countries, where markets' shutdowns have been associated with default episodes in more than three-fourths of the cases. By contrast, in Europe, only 43.9% of markets' shutdowns appear to be associated with default episodes. In the whole sample, about 60% of markets' shutdowns occurred during or in the direct aftermath of a default.

[INSERT TABLE 7 HERE.]

We now consider episodes of markets' shutdown that take place within the default period (from the beginning until the end). Thus, our dummy variable takes the value of one during the years of shutdown associated with a default period, and zero otherwise. Consequently, conditionality is taken with respect to the contemporaneous default state and not with respect to the historical default variable.

One obvious caveat of this experiment is that the number of episodes identified as a shutdown from international financial markets substantially falls and, consequently, the number of observations included in the regressions is reduced, thereby, negatively impacting on the precision of estimates. Moreover, it should be noted that as we are conditioning the definition of markets' shutdown on the occurrence of defaults, we need to exclude the variable that tracks episodes of defaults (i.e. *DefaultHist*) from the set of regressors.

Table 8 provides a summary of the findings relative to the duration of markets' shutdown during default periods, which are broadly similar to the ones reported in Table 3. In fact, the results keep supporting the existence of negative duration dependence, as reflected by the value of *p*, which is significantly lower than 1. Therefore, the likelihood of the end of a shutdown of financial markets within a default period decreases over time. As before, an increase in the ratio of reserves to total external debt makes episodes of markets' shutdown more likely to end, while the degree of trade openness does not appear to impact significantly on it. Additionally, despite the negative coefficient associated with *IMFProg*, it is not statistically significant.

Two main differences between the results of this empirical exercise and the ones associated with the findings reported in Table 3 should be highlighted. First, constraining the definition of markets' shutdown with the occurrence of a default period implies that GDP growth rate is no longer significant. This might be the case because during default periods, the GDP growth rate is typically negative and, as shown in Table 6, when that happens, the impact of economic growth on the likelihood of markets' shutdown ending is not significant. Second, using such identification of markets' shutdowns uncovers the existence of a significant role for the variable *GovCrises*: an increase in the number of government crises makes markets' shutdowns associated with a default more likely to persist over time. However, the number of years that a cabinet has been in power, up to the current year - i.e. a variable that captures the stability of the political regime - does not have a significant influence on the length of markets' shutdowns. Thus, during default episodes, the duration of periods of markets shutdown becomes more sensitive to events that put political stability at risk and less responsive to the policy horizon of the chief executive. Moreover, in the light of a period of markets' shutdown within a default episode, international financial markets value more political stability than economic factors (such as an improvement of the general economic activity).

[INSERT TABLE 8 HERE.]

6.3. Crisis episodes

We now investigate the role played by crisis episodes in explaining the duration of periods of financial markets' shutdown and re-access. Borio and Lowe (2002) emphasize that banking crises have typically had a large impact in terms of output lost. Borio and Drehmann (2009) also note that these episodes are normally preceded by booms in asset prices and credit. Even in the case of emerging markets, while the impact of financial turmoil of 2008-2009 was initially limited, the failure of the Lehman Brothers has led to large capital inflows reversals and shutdown or substantially reduced trading of emerging market issuers in international debt markets (Moreno and Villar, 2010). Zanforlin (2007) highlights that episodes of severe financial crises typically entail a loss of access to international capital markets and, in some cases, a process of foreign debt restructuring. Hale and Arteta (2007) and Arteta and Hale (2008) use panel data models and test the effects of sovereign crises on the access to foreign credit and investment by the private sector. The authors find that defaults lead to a substantial fall in foreign credit to private firms in emerging market economies. By contrast, focusing on the British economy, Flores (2011) suggests that the impact of sovereign risk on capital inflows to private firms is reasonably small. Using data for corporates and municipals in emerging market economies that received foreign capital between 1880 and 1913, Esteves and Jalles (2013) show that sovereign default episodes impose a large and persistent credit rationing in the private sector.

In order to control for the importance of such events, we consider different types of crisis episodes which are measured as dummy variables taking the value of one when a crisis occurs and zero otherwise. These variables comprise currency crises, inflation crises, stock market crashes, debt crisis (among which we distinguish between domestic debt crises and external debt crises), and banking crisis. The classification and identification of crises episodes is provided by Reinhart and Rogoff (2011).

Table 9 presents a summary of the empirical results for the impact of crisis episodes on the duration of markets' shutdown. It shows that only stock market crashes seem to have a significant effect: the occurrence of this type of crisis episodes tends to make a markets' shutdown longer. Yet, this result needs to be interpreted cautiously as the number of observations is critically lower than that associated with other regressions. An increase in the number of crisis episodes (as expressed by the variable *Crisis tally*) also significantly reduces the likelihood of the end of markets' shutdowns.

With respect to the other control variables, our results suggest that: (i) the economic environment is a key determinant of the duration of markets' shutdowns, as a rise in the real GDP growth rate substantially contributes to the end of these periods; (ii) when the ratio of reserves to total external debt increases, the end of a markets' shutdown is speeded up; and (iii) the existence of a history of default episodes is detrimental for the duration of markets' shutdowns, as it makes these periods to last longer. Thus, the presence of crisis episodes does not affect the role played by economic, political and external/reputational variables in shaping the duration of a markets' shutdown.

Consistent with the empirical evidence presented so far, the results confirm the existence of negative duration in financial markets' shutdowns. Therefore, as these periods become "older", they are more likely to end.

[INSERT TABLE 9 HERE.]

In Table 10, we report the effect of crisis episodes on the duration of markets' re-access. We can see that only banking crises appear to impact significantly: the coefficient associated with this type of crisis episodes is positive, thus, banking crises increase the likelihood of the end of markets' re-access.

In what concerns the other control variables, we find that economic growth makes markets' re-access more likely to last longer, while an increase in the number of government crisis episodes or witnessing default episodes in the past is responsible for a shorter period of markets' re-access.

Finally, we keep uncovering the lack of duration dependence in markets' re-access. Therefore, the length of these periods does not depend on its own past duration, but rather on key set of economic, political and reputational drivers.

[INSERT TABLE 10 HERE.]

6.4. Regional effects

In another evaluation of the sensitivity of the results for our baseline model, we analyze the importance of regional effects. More specifically, we add a regional dummy variable at time to our duration models and investigate if it helps to explain the duration of financial markets' shutdown and re-access. We consider the following regional blocks: 1) Asia-Pacific; 2) Latin America; 3) Middle East; 4) Africa; 5) Europe; and 6) North America. We also estimate the models with the inclusion of the OECD membership dummy variable among the set of explanatory variables. Indeed, the "original sin" problem or not being part of the "developed country club" might lead to differences in investors' reactions to international capital markets' shutdowns by developed and developing countries, which we also investigate. These exercises are also a way of dealing with potential unobserved heteroskedasticity.

Table 11 provides the evidence for markets' shutdowns. The empirical results show that the coefficient associated with Middle East is positive and significant, while the coefficient associated with North America is negative and significant. Thus, while being in the Middle East block speeds up the end of markets' shutdowns, being part of the North American region tends to make periods of markets' shutdowns longer. While this result appears to be somewhat surprising, one needs to bear in mind that 100% of the markets' shutdowns in North America were accompanied by defaults (see Table 7). In addition, the frequency of markets' shutdowns in the Middle East (26) is larger than in North America (9). For these reasons, periods of markets' shutdown tend to last longer in North America than in the Middle East even though the frequency of their occurrence is substantially lower.

When we account for the OECD membership, the results do not corroborate the existence of a statistically significant impact of this variable in the duration of markets' shutdown. Despite this, its coefficient is positive, suggesting that developed countries are faster in getting out of a period of financial markets' shutdown.

As for the evidence relative to the remaining variables included in the model, it is broadly consistent with our previous findings. Therefore, the likelihood of an end in markets' shutdown increases when GDP growth rises and when the external position of the country (as expressed by the ratio of reserves to total external debt) improves. By contrast, periods of markets' shutdown tend to last longer when the number of years the chief executive has been in office or the country has been through episodes of default in the past. The empirical results also unequivocally confirm the existence of negative duration dependence in periods of markets' shutdown.

[INSERT TABLE 11 HERE.]

Table 12 provides the findings for markets' re-access. We can see that being in the Middle East region or in the European block significantly lowers the likelihood of the end of markets' re-access, while countries in Africa typically have shorter periods of markets' re-access. Consequently, holding everything else constant, it seems that countries in the Middle East and in Europe are more prone in re-gaining access to international capital markets faster than African countries. Additionally, the OECD membership does not exert a significant effect on the duration of markets' re-access, but its coefficient is negative which highlights that periods of re-access to international capital markets tend to last over longer time spans in industrialized countries.

Looking at the other control variables, the results are qualitatively and quantitatively similar to those reported in the baseline model. Thus, they confirm the role played by output growth in making periods of markets' re-access longer and the importance of the government crises and the default history in increasing the likelihood of the end of markets' re-access. As before, the evidence on duration dependence in markets' re-access is weaker.

[INSERT TABLE 12 HERE.]

6.5. Political risk

In order to further investigate the role played by the political setup, we replace our political indicators (i.e. years in office (*YrsOffice*), government crises (*GovCrises*) and regime durability (*RegimeDur*) with a variable capturing the political risk rating (*PoliticalRiskRating*).[9] The data for this variable come from the International Country Risk Guide (ICRG), and a higher value denotes a better rating of political risk. Indeed, as suggested by Forbes and Warnock (2012), global risk, which incorporates both risk aversion and economic uncertainty, is significantly related with various waves of international capital flows. Moreover, higher political instability may also generate higher inflation and, thus, affect optimal policy (Aisen and Veiga, 2006).

Column 1 of Table 13 provides the evidence for markets' shutdown, while Column 2 summarizes the results for markets' re-access. As can be seen, a better political risk rating helps shortening the duration of periods of financial markets' shutdown - as expressed by a positive and significant coefficient associated with *PoliticalRiskRating* - and increases the length of periods of financial markets' re-access - the coefficient associated with *PoliticalRiskRating* is negative, significant and almost twice as large as that found during markets' shutdown. Thus, the empirical results confirm the importance of the political environment in explaining the timing under which countries are shut out from or re-gain access to international capital markets.

Although the evidence regarding the impact of economic growth, the importance of the default history and the role played by the ratio of reserves to total external debt in markets' shutdown is weaker (in terms of statistical significance) that in our baseline

[9] We also accounted for the importance of several fiscal variables in our sensitivity analysis, namely: (i) the cash surplus/deficit (in percentage of GDP); (ii) the central bank government debt (in percentage of GDP); (iii) the budget balance (in percentage of GDP); (iv) the general government debt (in percentage of GDP); and (v) the government bond yield. Unfortunately, these variables are available for a much smaller set of countries than that considered in our baseline model. As a result, this empirical assessment imposes a loss in usable data points of between 72.1% and 84.9% in the case of markets' shutdowns and between 73.3% and 88.2% in the case of markets' re-access, thus, rendering the estimates unreliable. For these reasons, we do not report the results in the paper, but they are available upon request.

model - which mainly accrues to the discrepancy in the number of usable data points -, we still uncover the existence of negative duration dependence for markets' shutdown and the lack of duration dependence in the case of markets' re-access.

[INSERT TABLE 13 HERE.]

6.6. Money market conditions

Fernandez-Arias (1996) finds that the fall in international interest rates tends to impact positively on a country's creditworthiness. De Paoli (2009) also shows that the configuration of asset markets significant influences the conduct of monetary policy. On the other hand, Sá and Wieladek (2014) uncover a positive and persistent effect of shocks to capital inflows (especially, those driven by "savings gluts") on real house prices and real residential investment.

In order to account for changes in monetary policy and the dynamics of money market conditions, we also considered the potential relevance of other control variables such as: (i) the domestic credit provided by the banking sector in percentage of GDP (*BankCredit*); (ii) the domestic credit to the private sector in percentage of GDP (*DomesticCredit*); (iii) the liquid liabilities (M3) in percentage of GDP (*LiquidLiabilities*); and (iv) the lending interest rate (*LendingRate*). The data are sourced from the World Development Indicators (WDI) of the World Bank.

A summary of the results is presented in Table 14. Columns 1-4 report the findings for markets' shutdown and Columns 5-8 describe the empirical results for markets' re-access. As can be seen, none of these variables seem to impact on the length of periods of markets' shutdown and re-access in a significant manner. In fact, although these additional control variables can capture the occurrence of credit booms/busts and the health of banking system, the results of our baseline model remain qualitatively and quantitatively unchanged.

Additionally, we uncover evidence supporting the existence of negative duration dependence in markets' shutdown, but not in the case of markets' re-access. Moreover, while the real GDP growth rate and the default history impact significantly (albeit with a different sign) on both periods, changes in the ratio of reserves to total external debt are more relevant for the dynamics of periods of shutdown from international capital markets, while government crisis episodes are key for the adjustments in the length of periods of re-access to financial markets.

Finally, it is important to highlight that the inclusion of the liquid liabilities (M3) in percentage of GDP and the lending interest rate imposes a large loss in the number of usable data points as data for these indicators are not readily available or do not cover a long sample period for a reasonably large number of countries. Yet, our baseline findings remain robust to their inclusion.

[INSERT TABLE 14 HERE.]

6.7. External factors

In this Section, we explore further the importance of external factors and changes in global trends. Borio et al. (2011) show that the rapid growth of foreign currency and cross-border sources of credit (in particular, US dollar credit) raise important challenges for the conduct of economic policy in small European countries, but also large emerging market economies. For instance, Moreno (2011) highlights that interest rate increases aimed at dampening imbalances associated with capital flows may further attract foreign capital and intensify domestic currency appreciation. Forbes and Warnock (2012) argue that global factors - such as, the tequila/Russian/Asian tigers crises of the late nineties, the 2007-2010 financial crisis, the savings glut/investment draught or the great moderation - are all secular trends that are likely to generate important changes in the direction and volatility of flows over time. Bruno and Shin (2013a) develop a model with cross-border banking and show that low funding rates raise credit supply. However, the initial shock is amplified via the “risk-taking channel” of monetary policy, whereby greater risk-taking and currency appreciation create a feedback loop. Bruno and Shin (2013b) formulate a model of the international banking system and find that local currency appreciation is associated with higher leverage of the banking sector. Consequently, the bank leverage cycle influences the transmission of cross-border financial conditions via banking sector capital flows.

In this context, changes in external conditions may be relevant to explain foreign capital flows, in particular, extreme capital flow episodes. Consequently, we extend our baseline model with: (i) the lending rate of the US (*USLendingRate*); and a measure of global liquidity, which is proxied by the domestic credit to the private sector in the G-7 countries in percentage of GDP (*GlobalLiquidity*). The data for these variables are gathered from World Development Indicators (WDI) of the World Bank. The main idea of this exercise is to investigate to which extent the speed of markets' shutdown and re-access also depends on the need of a country to obtain external financing and on the changes of worldwide liquidity conditions.

The empirical findings are summarized in Table 15, where Columns 1-2 provide evidence for markets' shutdown and Columns 3-4 focus on markets' re-access. The results show that an increase in the lending rate in the US significantly raises the likelihood of an end in markets' re-access. Thus, a tightening of credit market conditions in the US is likely to shorten periods of re-access to international capital markets in a significant manner. By contrast, changes in the US lending rate do not seem to exert a significant impact on the length of episodes of shutdown from financial markets. Similarly, changes in global liquidity do not appear to influence the duration of both periods. Thus, our results are in accordance with the empirical findings of Forbes and Warnock (2012) who do not find a significant relationship between extreme episodes of capital flows and global liquidity.

Despite some evidence corroborating the role played by the US lending rate in markets' re-access, the empirical results associated with our baseline model remain unaltered. Thus, we find negative duration dependence in markets' shutdown, but do not detect significant duration dependence in markets' re-access. The coefficients associated with the economic, external, political, reputational and circumstantial control variables also remain very similar (in terms of magnitude and statistical significance) to those linked with the baseline model. Consequently, our results are not affected by missing information about the dynamics of external factors.

[INSERT TABLE 15 HERE.]

6.8. Capital controls

Changes in capital control policies are another potentially important determinant of the likelihood of capital flow episodes beginning or ending. In fact, some countries mostly forbid inflows or outflows of capital even though the literature on capital controls does not provide a consensual view. For example, De Gregorio et al. (2000) investigate the effectiveness of controls, such as the use of the unremunerated reserve requirement, on interest rates, real exchange rate, and the volume and composition of capital inflows. The authors do not find a significant long-run effect on interest rates, detect a small impact on the real exchange rate, and uncover a persistent and significant effect on the composition of capital inflows, which is tilted towards longer maturities. Using firm-level data, Prati et al. (2005) evaluate the effects of capital account liberalisation. The authors show that, in the case of firms without revenues in foreign currency, capital controls can be particularly dramatic, as they limit the access to and raise the cost of foreign currency debt. Forbes and Warnock (2012) find a weak relationship between capital controls and the probability of episodes of “surges” and “stops” in gross foreign capital inflows, even though episodes of "flights" and "retrenchment" in gross foreign capital outflows are more likely to occur in countries with greater capital controls. Thus, overall, capital controls do not seem insulate economies against capital flow waves.

With the aim of assessing whether capital controls are potential key for the duration of periods of shutdown from and re-access to international capital markets, we extend the set of control variables of our baseline models to include a measure of the capital account restrictions (*CapitalControls*). This measure is obtained from a novel dataset gathered by Schindler (2009) and a higher score indicates a less regulated or restricted capital account, thus, less stringent capital controls. Moreover, the capital account restrictions index allows for a distinction between the restrictions on capital account transactions by residents (*ResCapitalControls*) and the restrictions on capital account transactions by non-residents (*NonResCapitalControls*), therefore, providing another source of useful information about the type of constraints impacting on the duration of financial markets' shutdown and re-access. The measure of capital controls that we use is also highly correlated with alternative indicators, such as those developed by Quinn (1997), Mody and Murshid (2005), Chinn and Ito (2007) and IMF (2008).

A summary of the empirical results can be found in Table 16. Columns 1-3 report the evidence for markets' shutdown and Columns 4-6 present the findings for markets' re-access. Interestingly, the results show that capital controls matter for the duration of episodes of shutdown from international financial markets, but do not play a significant role on the length of periods of re-access to international capital markets. Thus, in line with the economic theory, the coefficient associated with *CapitalControls* is positive and significant in the regressions for markets' shutdown, implying that when the capital account becomes less regulated, the probability a period of markets' shutdown ending increases. By contrast, *CapitalControls* does not enter significantly in the regressions for markets' re-access.

Moreover, when we focus on periods of financial markets' shutdown, we can see that it is mainly the restrictions on capital account transactions faced by non-residents and not those affecting residents that can impact significantly on the length of such periods. Thus, a movement towards less stringent capital controls faced by non-residents can significantly reduce the duration of periods of shutdown from international capital markets, but a similar structural change at the level of the external capital account affecting residents does not significantly impact on the duration of markets' shutdown. Consequently, capital flows are particularly sensitive to the behaviour of foreign investors over time.

Additionally, we show that the results of our baseline models remain qualitatively and quantitatively unchanged. In particular, in what concerns the issue of duration dependence, we find evidence showing that, as time goes by, the probability of financial markets' shutdown ending decreases - i.e. there is negative duration dependence - but there is only weak support for the length of financial markets' re-access to depend on its past duration. As for the other control variables: (i) economic growth has an impact on both periods albeit with a different sign; (ii) the ratio of reserves to total external debt enters significantly in the duration of markets' shutdown; (iii) government crisis episodes is significant in the case of re-access to markets; and (iv) the default history also matters even though its coefficient differs by type of episode under consideration. All in all, accounting for the existence of capital controls does not reverse the main results found so far.

[INSERT TABLE 16 HERE.]

6.9. Endogeneity

As a final exercise of our sensitivity analysis, we consider the existence of potential endogeneity. For instance, GDP growth could be driven by investment that results from capital inflows or expectations about future capital inflows, rather than the other way around. Alternatively, while we find that relatively poor economic growth is a main driver of markets' shutdown and re-access, the notion of causality could run the other way i.e., poor economic growth can be partly explained by lack of access to capital markets.

With these questions in mind, we present, in Table 17, the results where we consider the lag of the potentially endogenous variables. Column 1 reports the evidence for markets' shutdown, while Column 2 presents the evidence from markets' re-access.

As can be seen, the results are very similar to those reported in the baseline model. Thus, while there is negative duration dependence in markets' shutdown, the duration dependence parameter is not significant for markets' re-access. Additionally, real GDP growth remains a key determinant of the length of both types of episodes: if anything, the coefficients associated with this variable become somewhat larger in magnitude than those reported in the baseline model. The same applies to the default history, which remains significant and exerts a larger impact on the duration of markets' shutdown and re-access. Similarly, the external position of the country still emerges as a relevant driven of the length of spells of markets' shutdown. The main difference vis-a-vis the baseline model is that government crisis episodes loose statistical significance in explaining the duration of markets' shutdown, which may be related with the smaller number of data points included in the estimation.

All in all, the empirical evidence does not suggest that endogeneity or reverse causality significantly question the validity of the results of our baseline model.

[INSERT TABLE 17 HERE.]

6.10. Nonlinearity

In this Section, we employ a polynomial-in-time specification for the hazard function. Apart from granting more flexibility in terms of modelling, this framework allows us to assess the extent to which the hazard function may exhibit some nonlinearity over time. In fact, one could argue that the Weibull model is somewhat restrictive regarding the shape of the hazard function, as it imposes that it can only increase or decrease monotonically. Therefore, in Table 18 we test some polynomial-in-time specifications (linear (i.e. Columns 1 and 4), quadratic (i.e. Columns 2 and 5) and cubic (i.e. Columns 3 and 6) for the hazard function in the cloglog framework for markets' shutdown and re-access, respectively.[10]

[10] The estimation of a more flexible specification that imposes no constraints on the shape of the hazard function, i.e. a fully non-parametric piecewise or time-dummies specification with a dummy variable for each year, could help to clarify potential doubts about its configuration. However, as Beck et al. (1998) note, a possible drawback of using dummy variables in these models is that the estimated hazard function may display a "zig-zag" pattern over time.

While the estimations suggest some nonlinearity in the hazard function in the case of markets' re-access, they clearly support linearity in the hazard function for markets' shutdown. Indeed, the two coefficients of the quadratic polynomial specification are highly significant in the case of periods of re-access to international capital markets. However, the polynomial of order two is not significant for periods of shutdown from financial markets. As for the three coefficients in the cubic polynomial specification, they are not significant for both periods of markets' shutdown and periods of markets' re-access. Finally, the polynomial of order one is significant in both the linear and the quadratic polynomial specifications for the hazard function of markets' shutdown.

In what concerns the other control variables, their significance and signs associated with the coefficients remain unchanged, thus, they are in line with the baseline model. This is particularly true for the real GDP growth rate, the ratio of reserves to total external debt, the government crisis episodes and the default history.

Summing up, the empirical findings clearly show that the information contained in our baseline model is robust to the presence of nonlinearity in the hazard function: when we account for such type of nonlinearity, the empirical results remain qualitatively and quantitatively similar to those reported for the baseline model; if anything, we only find some evidence of a quadratic-type of specification for the hazard function in periods of markets' re-access, but the linear specification is still the best characterization of the hazard function in most of the cases under consideration.

[INSERT TABLE 18 HERE.]

6.11. Accounting for potential outliers

We now take into account the presence of potential outliers which could eventually bias our findings. We perform this exercise in two ways.

First, we drop from the sample the countries with the longest span of markets' shutdown or re-access. The rationale for doing so is simple: as these countries may be classified as being in a long running shut-out or re-access episode, the presence of negative duration dependence could ultimately imply that some countries end up with a nil chance of leaving their current regime. Moreover, the presence of these countries in the sample - such as countries that have never had access to financial markets - could result in more negative duration dependence than would be the case otherwise. The obvious caveat of this strategy is that the number of usable data points is reduced, thus, rendering the estimates potentially imprecise.

Table 19 summarizes the findings. In Columns 1 and 3, we drop one outlier for markets' shutdown and markets' re-access, respectively. In Columns 2 and 3, we drop three outliers, i.e. the three countries with the longest periods of shutdown from international capital markets and re-access to financial markets, respectively. As can be seen, the empirical findings are very close to those reported in the baseline model (Tables 3 and 4). In fact, consistent with our previous results, we find: (i) negative duration dependence in markets' shutdown; (ii) a key role for economic growth and the default history both during periods of markets' shutdown and periods of markets' re-access; (iii) a positive and significant effect of the ratio of reserves to total external debt on the likelihood of an end of markets' shutdown; and (iv) a positive and significant impact of government crisis episodes on the probability of the end of markets' re-access.

[INSERT TABLE 19 HERE.]

Second, one could argue that our sample is likely to include countries that have always exported or always imported capital. As a result, our findings would suffer from the so-called Lucas (1990) paradox. Put it differently, the estimation is not only for countries that have borrowed and defaulted a few times, but also for countries that have been capital exporters or importers for a long time. This is likely to be unrepresentative of the median country in the sample. If this is the case, then, the results of the duration model would merely reflect that some countries have had flows in the same direction for many years instead of providing valuable information about the length of default episodes or about a country's reputation.

In order to tackle this potential econometric issue, we create two dummy variables. The first dummy variable (*CapitalExporters*) takes the value of one if a country has always exported capital throughout the sample period, and zero otherwise. The second dummy variable (*CapitalImporters*) takes the value of one if a country has always imported capital throughout the sample period, and zero otherwise. In accordance with the IMF definition, a country is labelled as a "capital exporter" when its current account exhibits a surplus, and a country is considered to be a "capital importer" when its current account displays a deficit. The data for the current account are sourced from the World Development Indicators (WDI) of the World Bank. Then, we extend our baseline model and include one of these dummy variables among the set of regressors.

Table 20 summarizes the findings. In Columns 1 and 2, we present the results for markets' shutdown, while Columns 3 and 4 report the evidence for markets' re-access. We can see that the dummy variables are never statistically significant. Therefore, the fact that a country has always exported or imported capital does not change the length of markets' shutdown or re-access *per se*. Moreover, the evidence for the other variables remains in line with that reported for the baseline model even after accounting for this type of outliers. Indeed, while the likelihood of an end of markets' shutdown significantly depends on its own history and the dependence duration parameter is negative, we do not find evidence of duration dependence in the case of markets' re-access. As in the baseline model, the economic growth, the external position of the country, the occurrence of government crisis episodes and the default history are the main drivers of the duration of periods of shutdown from and re-access to international capital markets.

[INSERT TABLE 20 HERE.]

6.12. An alternative identification of markets' shutdown/re-access

We also consider an alternative identification of markets' shutdown and re-access. Specifically, we consider not only for bank transfers or bond flows but also portfolio equity flows. Therefore, we identify markets' shutdowns as periods when the sum of net bank or bond transfers from private creditors to either the public and the publicly guaranteed sector or the private sector and portfolio equity flows is negative. Similarly, markets' re-access occurs when the sum of net bank or bond transfers from private creditors to either the public and the publicly guaranteed sector or the private sector and portfolio equity flows is positive. This definition is based on the idea that domestic agents may raise capital through the sale of both debt and equity. Indeed, these financing instruments may not be mutually exclusive, but instead bond and equity flows may work both as a substitute and a complement. Therefore, we develop this measure using net flows of debt and equity. Data for portfolio equity net inflows

("BX.PEF.TOTL.CD.WD") are collected collected from the Global Development Finance - World Development Indicators (GDF-WDI) database of the World Bank.

At this stage, the discussion of a series of related issues is warranted. First, we highlight that, in contrast to the private sector which may raise capital through the sale of both debt and equity (and for which bond and equity flows may work both as a substitute and complement), public authorities generally raise capital via the issuance of debt in the form of bonds. Consequently, accounting for equity flows is unlikely to alter dramatically the overall capital flows included in the original definition. Moreover, our original categorization of the exchange of domestic and external debt is also in line with the work of Sturzenegger and Zettelmeyer (2007).

Second, contagion or negative external/global shocks may obviously play a role in the capital flows that we account for when measuring periods of markets' shutdown or re-access. Put it differently, it could be the case that such capital flows turn negative or positive independent of the country characteristics, but rather in response to changes in the external environment. However, in the light of the various sensitivity checks that we presented so far, this is less likely to be problematic, as the results associated with the baseline model remained qualitatively and quantitatively robust to the presence of additional external factors.

Third, a more nuanced measure for identifying periods of markets' shutdown could be computed by looking at one or two standard deviations away from the sample mean of net transfers. The problem with measure is that it is vulnerable to "level" effects, i.e. the magnitude of the capital flows involved - larger (smaller) mean capital flows mechanically imply larger (smaller) standard deviations - , thus, making "relative" measures such as the ones that we consider in the paper more appropriate to deliver a better identification.

A summary of the empirical findings associated with the alternative definition is reported in Columns 1 (markets' shutdown) and 2 (markets' re-access) of Table 21. The results are broadly similar to those found for the original identification procedure. Therefore, we uncover the presence of (negative) duration dependence in markets' shutdown, but not in markets' re-access. Moreover, while economic growth significantly shortens the periods of markets' shutdown, it extends the episodes of markets' re-access. Additionally, an improvement in the external position of a country (as expressed by the ratio of reserves to total external debt) helps reducing the length of markets' shutdown, and the existence of a default history speeds up the end of markets' shutdown.

When compared to the baseline model, the default history looses statistical significance in explaining the duration of markets' shutdown and the same applies to government crisis episodes in the context of markets' re-access. However, there is now evidence (albeit weak, from a statistical point of view) suggesting that some political variables, such as the number of years in office and the regime durability, play a role in shaping the length of markets' re-access.

Summing up, even when we consider an alternative definition of periods of shutdown from and re-access to international capital markets that also accounts for portfolio equity net inflows, the results remain fairly robust. Some discrepancies in the statistical significance of the control variables emerge, but they accrue notably to the differences in the number of the usable data as a result of the fewer observations for portfolio equity net inflows.

7. Conclusion

In this paper, we argue that the likelihood of markets’ shutdown and markets’ re-access ending changes as they become older. More specifically, we build on a database of episodes of markets' shutdown and markets' re-access, and employ a discrete-time version of a Weibull duration model allowing for the presence of economic, external, political, reputational and circumstantial effects.

Using data for 121 countries over the period 1970-2011, we find evidence of negative duration dependence for episodes of shutdown from international capital markets. This means that the likelihood of the end of such situations after a certain duration decreases the longer they last. Put it differently, the probability of the end of a period of markets' shutdown falls as it becomes 'older'. By contrast, the evidence on duration dependence for episodes of markets' re-access is weaker. In fact the country's economic, external, political, reputational and circumstantial fundamentals seem to be the key drivers of these events. From a policy perspective, this indicates that the build up of a certain bad (or good) reputation contributes to the permanence in (the exit from) a state of markets' shutdown.

Regarding the set of control variables, we show that economic growth, the health of the external position, political (in)stability and the default history are the main determinants of the duration of markets' shutdown or markets' re-access. In the one hand, markets' shutdown episodes tend to be longer when there is negative economic growth and when the ratio of reserves to total external debt falls, when the chief executive has been in office for long periods, and when the country has a history of defaults. On the other hand, markets' re-access spells are longer when economic growth improves, when there are neither government crises nor government instability, and when the country does not have a history of defaults.

Controlling for periods of 'high' (positive) versus 'low' (negative) growth, the empirical results highlight that the length of markets' shutdown is particularly shortened when economic growth is positive or above the average. Consequently, growth is a key catalyst for reducing the length of markets' shutdown.

We also condition the duration of a period of markets’ shutdown on the occurrence of a default episode. Our empirical findings suggest that international investors appear to focus more on the stability of political environment than on the ‘green shots’ of economic performance when a country has been shutdown from financial markets associated to a default.

Additionally, the empirical evidence shows that the occurrence of stock market crashes make periods of markets' shutdown longer and banking crisis episodes shorten the spells of markets' re-access.

While the OECD membership does not seem to impact significantly on the duration of markets' shutdown and re-access, some regional effects are captured in our analysis: being part of the North American region extends the duration of markets' shutdowns; and being part of the European block increases the likelihood of re-gaining access to international capital markets.

When we consider additional control variables, we show that: (i) a country's political risk rating affects the duration of both events; (ii) domestic money market conditions do not significantly affect the length of periods of markets' shutdown and re-access; (iii) a tightening of credit market conditions in the US shortens the periods of re-access to international capital markets, but changes in global liquidity do not exert a significant influence; and (iv) capital controls significantly impact on the duration of episodes of shutdown from international capital markets.

Finally, our results do not seem to be affected by eventual endogeneity nonlinearity in the hazard function, and are robust after controlling for potential outliers (such as countries with "abnormally" long events or countries that have always exported or imported capital), and an alternative identification procedure that takes into account the dynamics of portfolio equity net inflows.

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List of Tables

Table 1. Descriptive statistics.

Variables	**Obs.**	**Mean**	**S.D.**	**Min.**	**Max.**
			Markets' shutdown		
DurMktShutDown	1989	4.18	4.07	1	30
GDP	1898	3.53	5.31	-27.16	34.50
Trade	1897	58.43	31.90	6.42	203.04
Reserves	1877	53.50	182.08	0.09	3151.70
YrsOffice	1715	8.04	8.13	1	46
GovCrises	1464	0.16	0.55	0	7
RegimeDur	1604	13.64	14.62	0	100
DefaultHist	1340	0.43	0.49	0	1
IMFProg	1989	0.61	0.49	0	1
			Markets' re-access		
DurMktReAccess	684	2.24	1.70	1	11
GDP	673	5.20	5.19	-16.40	39.49
Trade	678	63.30	31.24	4.95	182.37
Reserves	660	35.21	33.51	0.11	347.39
YrsOffice	565	7.21	7.20	1	40
GovCrises	480	0.11	0.39	0	3
RegimeDur	564	15.52	15.19	0	95
DefaultHist	452	0.13	0.33	0	1
IMFProg	684	0.60	0.49	0	1

Notes: Table 1 reports the number of observations (Obs.), the mean duration (Mean), the standard deviation (S.D.), the minimum (Min.) and the maximum (Max.) duration for each spell. Similar statistics are reported for the various regressors. The data are annual and comprise 121 countries over the period 1970-2011.

Table 2. Distributional analysis.

	Markets' shutdown		Markets' re-access	
Region	# years	Frequency (%)	# years	Frequency (%)
Asia-Pacific	375	37.58	148	14.83
Latin America	543	55.07	221	22.41
Middle-East	138	38.44	39	10.86
Africa	800	42.9	142	7.61
Europe	110	29.33	124	33.07
North America	23	54.76	10	23.81
OECD	52	41.27	44	34.92
Total	1989	43.01	684	14.79

Table 3. Duration of markets' shutdown.

	(1)	(2)	(3)	(4)	(5)
p	0.7114$^{\theta}$	0.7491$^{\theta}$	0.7105$^{\theta}$	0.6984$^{\theta}$	0.7780$^{\theta}$
	(0.0599)	(0.0631)	(0.0748)	(0.0834)	(0.0719)
GDP		0.0388***	0.0416**	0.0472**	0.0432***
		(0.0109)	(0.0165)	(0.0200)	(0.0161)
Trade		-0.0024	-0.0009	-0.0002	
		(0.0015)	(0.0018)	(0.0019)	
Reserves		0.0001	-0.0001	0.0062***	0.0003
		(0.0001)	(0.0005)	(0.0014)	(0.0003)
YrsOffice			-0.0217**	-0.0179	-0.0197**
			(0.0092)	(0.0112)	(0.0095)
GovCrises			-0.1146	-0.0051	
			(0.1613)	(0.1821)	
RegimeDur			0.0068	0.0050	
			(0.0046)	(0.0045)	
DefaultHist				-0.3646***	-0.3842***
				(0.1306)	(0.1221)
IMFProg				0.0151	
				(0.1434)	
Constant	-1.0037***	-1.0678***	-1.0114***	-1.1063***	-0.9733***
	(0.0706)	(0.1188)	(0.1646)	(0.2757)	(0.1344)
Observations	1,989	1,770	1,127	885	1,168
Censored	480	418	265	197	265
Log-Likelihood	-1085	-948.9	-596.3	-441.6	-603.5
LL0	-1099	-967.5	-614.7	-469.2	-625.4
SBIC	2186.0	1935.1	1248.8	951.3	1249.3
LRI	0.012	0.019	0.030	0.059	0.035

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 4. Duration of markets' re-access.

	(1)	(2)	(3)	(4)	(5)
p	0.7284$^{\theta}$	0.7620$^{\theta}$	0.7943$^{\theta}$	0.7666$^{\theta}$	0.8475
	(0.1002)	(0.1015)	(0.1178)	(0.1417)	(0.1409)
GDP		-0.0641***	-0.0663***	-0.0696***	-0.0708***
		(0.0132)	(0.0194)	(0.0265)	(0.0192)
Trade		-0.0026	-0.0010	-0.0029	
		(0.0022)	(0.0029)	(0.0037)	
Reserves		-0.0074***	-0.0072**	-0.0044	-0.0036
		(0.0024)	(0.0034)	(0.0053)	(0.0044)
YrsOffice			0.0082	0.0108	
			(0.0086)	(0.0114)	
GovCrises			0.5379***	0.3908**	0.4113***
			(0.1495)	(0.1876)	(0.1575)
RegimeDur			-0.0005	0.0031	
			(0.0046)	(0.0062)	
DefaultHist				0.6167***	0.7250***
				(0.2337)	(0.2048)
IMFProg				0.1457	
				(0.2056)	
Constant	-0.4951***	0.2217	0.1609	0.0053	-0.0790
	(0.0824)	(0.1652)	(0.2389)	(0.3663)	(0.1874)
Observations	684	644	363	255	312
Censored	279	267	174	127	146
Log-Likelihood	-458.7	-413.0	-232.5	-161.6	-197.8
LL0	-462.4	-436.9	-251.3	-176.8	-215.6
SBIC	930.4	858.3	512.2	378.7	430.0
LRI	0.008	0.055	0.075	0.085	0.083

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 5. Economic growth during markets' shutdown and re-access.

Sample period: 1970-2011			
Region	Average GDP growth rate during markets' shutdown (A)	Average GDP growth rate during markets' re-access (B)	(B)-(A)
Asia-Pacific	4.14	6.08	1.94
Latin America	3.45	4.41	0.96
Middle-East	5.05	4.36	-0.69
Africa	3.81	5.75	1.94
Europe	2.89	5.15	2.26
North America	3.06	5.48	2.42
OECD	2.99	5.19	2.2
Total	3.69	5.2	1.51

Table 6. Economic growth and markets' shutdown/re-access.

	Markets' shutdown			Markets' re-access		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
p	0.7026^{θ}	0.7060^{θ}	0.7068^{θ}	0.7672^{θ}	0.7754	0.7583^{θ}
	(0.0840)	(0.0852)	(0.0840)	(0.1405)	(0.1378)	(0.1432)
GDP>0	0.0622**			-0.0675		
	(0.0269)			(0.0422)		
GDP<0	0.0131			-0.0762		
	(0.0441)			(0.0764)		
GDP>smpl_mean		0.0575***			-0.0602*	
		(0.0219)			(0.0307)	
GDP<smpl_mean		0.0181			-0.1120**	
		(0.0315)			(0.0526)	
GDP>ctry_mean			0.0620***			-0.0741**
			(0.0205)			(0.0312)
GDP<ctry_mean			0.0104			-0.0592*
			(0.0299)			(0.0303)
Trade	-0.0003	-0.0003	-0.0003	-0.0029	-0.0031	-0.0029
	(0.0019)	(0.0019)	(0.0019)	(0.0038)	(0.0038)	(0.0036)
Reserves	0.0059***	0.0059***	0.0058***	-0.0045	-0.0049	-0.0041
	(0.0013)	(0.0013)	(0.0013)	(0.0056)	(0.0056)	(0.0054)
YrsOffice	-0.0183	-0.0180	-0.0183*	0.0107	0.0104	0.0101
	(0.0113)	(0.0112)	(0.0111)	(0.0119)	(0.0113)	(0.0115)
GovCrises	-0.0188	-0.0230	-0.0282	0.3927**	0.4064**	0.3875**
	(0.1809)	(0.1823)	(0.1811)	(0.1890)	(0.1935)	(0.1828)
RegimeDur	0.0050	0.0050	0.0055	0.0031	0.0032	0.0033
	(0.0045)	(0.0045)	(0.0045)	(0.0062)	(0.0063)	(0.0063)
DefaultHist	-0.3729***	-0.3745***	-0.3818***	0.6150***	0.5941**	0.6236***
	(0.1311)	(0.1314)	(0.1329)	(0.2385)	(0.2405)	(0.2320)
IMFProg	0.0183	0.0133	0.0074	0.1415	0.1007	0.1585
	(0.1445)	(0.1448)	(0.1441)	(0.2137)	(0.2191)	(0.2075)
Constant	-1.1792***	-1.1355***	-1.1398***	-0.0011	0.0203	-0.0003
	(0.2991)	(0.2799)	(0.2712)	(0.3536)	(0.3724)	(0.3684)
Observations	885	885	885	255	255	256
Censored	197	197	197	127	127	128
Log-Likelihood	-441.2	-441.1	-440.5	-161.6	-161.3	-161.6
LL0	-469.2	-469.2	-469.2	-176.8	-176.8	-177.4
SBIC	957.1	956.8	955.6	384.2	383.5	384.3
LRI	0.060	0.060	0.061	0.085	0.088	0.089

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 7. Markets' shutdown conditional on sovereign defaults.

	Markets' shutdown conditional on sovereign defaults	
Region	#years	Frequency (%)
Asia-Pacific	55	57.29
Latin America	234	75.48
Middle-East	26	50
Africa	228	51.01
Europe	18	43.9
North America	9	100
OECD	17	70.83
Total	570	59.69

Table 8. Duration of markets' shutdown during default periods.

	(1)	(2)	(3)	(4)	(5)
p	0.6959$^{\theta}$	0.7518$^{\theta}$	0.7733$^{\theta}$	0.7741$^{\theta}$	0.7325$^{\theta}$
	(0.0935)	(0.0975)	(0.0995)	(0.0992)	(0.0945)
GDP		0.0184	0.0077	0.0079	0.0106
		(0.0198)	(0.0253)	(0.0255)	(0.0244)
Trade		0.0018	0.0021	0.0022	
		(0.0020)	(0.0023)	(0.0024)	
Reserves		0.0140***	0.0279***	0.0279***	0.0292***
		(0.0050)	(0.0070)	(0.0071)	(0.0067)
YrsOffice			-0.0108	-0.0108	
			(0.0094)	(0.0095)	
GovCrises			-0.4556*	-0.4550*	-0.4930**
			(0.2470)	(0.2458)	(0.2382)
RegimeDur			0.0067	0.0066	
			(0.0060)	(0.0061)	
IMFProg				0.0209	
				(0.1739)	
Constant	-0.7769***	-1.2137***	-1.3479***	-1.3651***	-1.1914***
	(0.1176)	(0.1885)	(0.2965)	(0.3241)	(0.1747)
Observations	570	523	456	456	473
Censored	167	146	125	125	134
Log-Likelihood	-339.8	-299.5	-251.5	-251.5	-265.1
LL0	-344.7	-309.7	-267.8	-267.8	-281.9
SBIC	692.3	630.3	551.9	558.0	561.1
LRI	0.014	0.033	0.061	0.061	0.060

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 9. Duration of markets' shutdown and crisis episodes.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
p	0.7607^{θ}	0.7613^{θ}	0.7522	0.7619^{θ}	0.7693^{θ}	0.7598^{θ}	0.7605^{θ}
	(0.1126)	(0.1124)	(0.1793)	(0.1126)	(0.1148)	(0.1105)	(0.1108)
GDP	0.0850***	0.0849***	0.0873***	0.0854***	0.0848***	0.0827***	0.0816***
	(0.0216)	(0.0214)	(0.0259)	(0.0211)	(0.0214)	(0.0207)	(0.0215)
Trade	-0.0022	-0.0021	-0.0080***	-0.0020	-0.0019	-0.0011	-0.0024
	(0.0027)	(0.0028)	(0.0027)	(0.0027)	(0.0027)	(0.0027)	(0.0027)
Reserves	0.0055***	0.0056***	0.0067***	0.0056***	0.0055***	0.0052***	0.0052***
	(0.0013)	(0.0013)	(0.0016)	(0.0013)	(0.0013)	(0.0012)	(0.0012)
YrsOffice	-0.0044	-0.0045	0.0122	-0.0042	-0.0034	-0.0042	-0.0043
	(0.0124)	(0.0125)	(0.0139)	(0.0127)	(0.0125)	(0.0121)	(0.0118)
GovCrises	0.0509	0.0495	0.2759	0.0442	0.0509	0.0691	0.0893
	(0.1968)	(0.1979)	(0.2038)	(0.1964)	(0.1959)	(0.1969)	(0.1953)
RegimeDur	-0.0007	-0.0006	-0.0087	-0.0003	-0.0004	-0.0001	-0.0015
	(0.0041)	(0.0042)	(0.0062)	(0.0042)	(0.0042)	(0.0042)	(0.0040)
DefaultHist	-0.5091***	-0.5088***	-0.5614***	-0.5413***	-0.2468	-0.5301***	-0.3547*
	(0.1632)	(0.1655)	(0.2114)	(0.1773)	(0.2819)	(0.1628)	(0.1926)
IMFProg	-0.0553	-0.0583	-0.2178	-0.0595	-0.0529	-0.0603	-0.0495
	(0.1735)	(0.1733)	(0.2766)	(0.1727)	(0.1734)	(0.1736)	(0.1732)
Currency crises	-0.0968						
	(0.1500)						
Inflation crises		-0.0776					
		(0.1915)					
Stock market crashes			-0.4448*				
			(0.2342)				
Domestic debt crises				0.0871			
				(0.3985)			
External debt crises					-0.3263		
					(0.3489)		
Banking crises						-0.3614	
						(0.2420)	
Crisis tally							-0.1289*
							(0.0727)
Constant	-1.0570***	-1.0669***	-0.7801*	-1.1040***	-1.1155***	-1.0498***	-0.9336***
	(0.3326)	(0.3376)	(0.4432)	(0.3238)	(0.3286)	(0.3132)	(0.3252)
Observations	604	604	334	604	604	604	604
Censored	147	147	81	147	147	147	147
Log-Likelihood	-310.6	-310.7	-167.0	-310.7	-310.5	-309.4	-309.4
LL0	-335.2	-335.2	-185.0	-335.2	-335.2	-335.2	-335.2
SBIC	691.7	691.8	397.9	691.9	691.4	689.2	689.3
LRI	0.073	0.073	0.098	0.073	0.074	0.077	0.077

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(*k*/2)Log*N*], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 10. Duration of markets' re-access and crises episodes.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
p	0.7816	0.7628	0.7967	0.7707	0.7660	0.7933	0.7672^{θ}
	(0.1414)	(0.1470)	(0.1440)	(0.1467)	(0.1445)	(0.1414)	(0.1393)
GDP	-0.0683**	-0.0775**	-0.1005***	-0.0788***	-0.0767**	-0.0632**	-0.0701**
	(0.0306)	(0.0304)	(0.0317)	(0.0293)	(0.0302)	(0.0305)	(0.0311)
Trade	0.0001	-0.0009	0.0011	-0.0004	-0.0004	-0.0003	0.0002
	(0.0039)	(0.0039)	(0.0058)	(0.0039)	(0.0039)	(0.0040)	(0.0038)
Reserves	-0.0040	-0.0047	-0.0021	-0.0046	-0.0045	-0.0040	-0.0043
	(0.0055)	(0.0059)	(0.0077)	(0.0058)	(0.0057)	(0.0058)	(0.0055)
YrsOffice	0.0085	0.0093	0.0223	0.0067	0.0091	0.0118	0.0105
	(0.0141)	(0.0125)	(0.0203)	(0.0134)	(0.0127)	(0.0123)	(0.0132)
GovCrises	0.4263**	0.4706***	0.4327	0.4579***	0.4607**	0.5512***	0.4300**
	(0.1904)	(0.1791)	(0.2636)	(0.1775)	(0.1793)	(0.1790)	(0.1941)
RegimeDur	0.0023	0.0006	-0.0020	0.0010	0.0010	0.0041	0.0026
	(0.0068)	(0.0066)	(0.0158)	(0.0065)	(0.0067)	(0.0065)	(0.0065)
DefaultHist	0.4103	0.4964*	0.9035**	0.2836	0.5942*	0.4935*	0.3531
	(0.2724)	(0.2583)	(0.4387)	(0.3566)	(0.3364)	(0.2711)	(0.2781)
IMFProg	0.2184	0.1853	0.4147	0.1433	0.1830	0.2844	0.2232
	(0.2237)	(0.2165)	(0.3493)	(0.2223)	(0.2140)	(0.2346)	(0.2257)
Currency crises	0.3413						
	(0.2308)						
Inflation crises		-0.1256					
		(0.1737)					
Stock market crashes			-0.0159				
			(0.1633)				
Domestic debt crises				0.7998			
				(0.5533)			
External debt crises					-0.1450		
					(0.3811)		
Banking crises						0.6853**	
						(0.2900)	
Crisis tally							0.1011
							(0.0876)
Constant	-0.2722	0.0008	-0.4698	-0.0144	-0.0655	-0.4381	-0.2875
	(0.4211)	(0.3779)	(0.5226)	(0.3698)	(0.3713)	(0.4010)	(0.4146)
Observations	233	233	147	233	233	233	233
Censored	115	115	67	115	115	115	115
Log-Likelihood	-147.4	-148.4	-87.90	-147.6	-148.5	-145.1	-147.9
LL0	-161.5	-161.5	-101.3	-161.5	-161.5	-161.5	-161.5
SBIC	354.8	356.7	230.7	355.2	357.0	350.3	355.5
LRI	0.087	0.081	0.132	0.086	0.080	0.101	0.084

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(*k*/2)Log*N*], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 ($LRI=1-LogL/LogL_0$, where L_0 is the likelihood of the model with only a constant term).

Table 11. Duration of markets' shutdown and regional effects.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
p	0.6948^{θ}	0.7085^{θ}	0.7165^{θ}	0.7106^{θ}	0.6971^{θ}	0.7228^{θ}	0.7068^{θ}
	(0.0843)	(0.0825)	(0.0851)	(0.0800)	(0.0831)	(0.0849)	(0.0833)
GDP	0.0499**	0.0488**	0.0471**	0.0463**	0.0466**	0.0461**	0.0473**
	(0.0200)	(0.0200)	(0.0196)	(0.0196)	(0.0199)	(0.0201)	(0.0199)
Trade	0.0008	0.0001	-0.0004	-0.0007	-0.0002	-0.0002	0.0000
	(0.0020)	(0.0019)	(0.0018)	(0.0020)	(0.0019)	(0.0019)	(0.0019)
Reserves	0.0062***	0.0063***	0.0061***	0.0062***	0.0061***	0.0061***	0.0062***
	(0.0015)	(0.0014)	(0.0013)	(0.0013)	(0.0014)	(0.0014)	(0.0014)
YrsOffice	-0.0187*	-0.0148	-0.0233**	-0.0146	-0.0175	-0.0202*	-0.0171
	(0.0112)	(0.0116)	(0.0103)	(0.0116)	(0.0112)	(0.0112)	(0.0113)
GovCrises	0.0300	-0.0101	-0.0017	-0.0389	-0.0127	-0.0431	0.0021
	(0.1841)	(0.1807)	(0.1816)	(0.1837)	(0.1744)	(0.1890)	(0.1806)
RegimeDur	0.0063	0.0050	0.0054	0.0034	0.0054	0.0098**	0.0057
	(0.0050)	(0.0043)	(0.0046)	(0.0043)	(0.0046)	(0.0049)	(0.0047)
DefaultHist	-0.3949***	-0.3968***	-0.3404***	-0.3641***	-0.3564***	-0.3416**	-0.3513***
	(0.1326)	(0.1403)	(0.1301)	(0.1310)	(0.1340)	(0.1339)	(0.1313)
IMFProg	0.0087	0.0027	0.0114	-0.0040	0.0129	0.0390	0.0269
	(0.1426)	(0.1437)	(0.1391)	(0.1444)	(0.1438)	(0.1451)	(0.1452)
Asia-Pacific	-0.2789						
	(0.1808)						
Latin America		0.1984					
		(0.1662)					
Middle East			0.5776***				
			(0.1727)				
Africa				-0.2311			
				(0.2139)			
Europe					0.1808		
					(0.3996)		
North America						-1.1968***	
						(0.3120)	
OECD							0.3098
							(0.2508)
Constant	-1.1270***	-1.2260***	-1.1312***	-1.0051***	-1.1225***	-1.1826***	-1.1785***
	(0.2769)	(0.2999)	(0.2756)	(0.2677)	(0.2785)	(0.2828)	(0.2959)
Observations	885	885	885	885	885	885	885
Censored	197	197	197	197	197	197	197
Log-Likelihood	-440.8	-440.8	-439.6	-440.7	-441.4	-440.1	-441.1
LL0	-469.2	-469.2	-469.2	-469.2	-469.2	-469.2	-469.2
SBIC	956.3	956.2	953.9	956.1	957.5	948.1	956.8
LRI	0.060	0.061	0.063	0.061	0.059	0.062	0.060

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(*k*/2)Log*N*], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 12. Duration of markets' re-access and regional effects.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
p	0.7592^{θ}	0.7546^{θ}	0.7624^{θ}	0.8280	0.7419^{θ}	0.7651^{θ}	0.7760
	(0.1404)	(0.1427)	(0.1406)	(0.1452)	(0.1368)	(0.1418)	(0.1426)
GDP	-0.0712***	-0.0691***	-0.0702***	-0.0700***	-0.0736***	-0.0694***	-0.0671**
	(0.0263)	(0.0266)	(0.0260)	(0.0271)	(0.0277)	(0.0266)	(0.0267)
Trade	-0.0033	-0.0017	-0.0029	-0.0044	-0.0008	-0.0030	-0.0036
	(0.0038)	(0.0037)	(0.0036)	(0.0037)	(0.0037)	(0.0038)	(0.0040)
Reserves	-0.0048	-0.0047	-0.0053	-0.0025	-0.0046	-0.0042	-0.0046
	(0.0057)	(0.0052)	(0.0054)	(0.0049)	(0.0052)	(0.0053)	(0.0053)
YrsOffice	0.0101	0.0130	0.0174	0.0027	0.0028	0.0119	0.0084
	(0.0112)	(0.0118)	(0.0109)	(0.0143)	(0.0121)	(0.0118)	(0.0118)
GovCrises	0.3857**	0.3903**	0.3814**	0.3959**	0.3980**	0.3941**	0.3728*
	(0.1878)	(0.1839)	(0.1867)	(0.1939)	(0.1749)	(0.1878)	(0.1923)
RegimeDur	0.0031	0.0031	0.0026	0.0058	0.0019	0.0011	0.0028
	(0.0063)	(0.0065)	(0.0061)	(0.0062)	(0.0057)	(0.0097)	(0.0062)
DefaultHist	0.6139***	0.5852**	0.5529**	0.6438***	0.5606**	0.6224***	0.5900**
	(0.2341)	(0.2313)	(0.2385)	(0.2390)	(0.2229)	(0.2380)	(0.2294)
IMFProg	0.1384	0.1740	0.1194	0.0998	0.2384	0.1401	0.1282
	(0.2081)	(0.2140)	(0.2098)	(0.2146)	(0.2111)	(0.2055)	(0.2178)
Asia-Pacific	0.1397						
	(0.2286)						
Latin America		0.1286					
		(0.1817)					
Middle East			-0.6863***				
			(0.2516)				
Africa				0.5273**			
				(0.2422)			
Europe					-0.8753***		
					(0.2465)		
North America						0.2682	
						(0.5438)	
OECD							-0.2916
							(0.2115)
Constant	0.0422	-0.1364	0.0607	-0.0427	0.0311	0.0248	0.1013
	(0.3734)	(0.4425)	(0.3671)	(0.3603)	(0.3827)	(0.3792)	(0.4182)
Observations	255	255	255	255	255	255	255
Censored	127	127	127	127	127	127	127
Log-Likelihood	-161.5	-161.5	-160.7	-160.0	-158.6	-161.6	-161.2
SBIC	-176.8	-176.8	-176.8	-176.8	-176.8	-176.8	-176.8
SBIC	384.0	384.0	382.3	381.0	378.2	378.6	383.4
LRI	0.086	0.086	0.091	0.095	0.102	0.086	0.088

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 13. Duration of markets' shutdown/re-access and political risk.

	Markets' shutdown	**Markets' re-access**
p	0.7371^{θ}	0.8022
	(0.0825)	(0.1907)
GDP	0.0323	-0.0311
	(0.0211)	(0.0270)
Trade	-0.0010	-0.0046
	(0.0018)	(0.0038)
Reserves	-0.0001	-0.0163***
	(0.0001)	(0.0049)
PoliticalRiskRating	0.0161**	-0.0384***
	(0.0074)	(0.0123)
DefaultHist	-0.1484	0.1702
	(0.1320)	(0.3399)
IMFProg	-0.0414	0.0161
	(0.1419)	(0.2533)
Constant	-2.0383***	2.9563***
	(0.4988)	(0.8442)
Observations	945	247
Censored	204	103
Log-Likelihood	-479.9	-149.0
LL0	-492.9	-167.8
SBIC	1014.6	342.1
LRI	0.026	0.112

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 14. Duration of markets' shutdown/re-access and money market conditions.

	Markets' shutdown				Markets' re-access			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
p	0.6968$^{\theta}$	0.6848$^{\theta}$	0.8433	0.7346$^{\theta}$	0.7996	0.7831	1.1966	0.5978$^{\theta}$
	(0.0814)	(0.0823)	(0.1465)	(0.0888)	(0.1597)	(0.1692)	(0.3100)	(0.1599)
GDP	0.0490**	0.0508**	0.1094***	0.0412	-0.0755***	-0.0761***	-0.1307***	-0.1044**
	(0.0200)	(0.0204)	(0.0283)	(0.0261)	(0.0275)	(0.0275)	(0.0376)	(0.0413)
Trade	0.0001	0.0005	-0.0008	-0.0004	-0.0025	-0.0023	0.0047	-0.0074*
	(0.0025)	(0.0022)	(0.0042)	(0.0019)	(0.0037)	(0.0038)	(0.0110)	(0.0040)
Reserves	0.0062***	0.0063***	0.0069***	0.0054***	-0.0039	-0.0033	-0.0039	-0.0007
	(0.0014)	(0.0016)	(0.0024)	(0.0014)	(0.0052)	(0.0052)	(0.0070)	(0.0081)
YrsOffice	-0.0181	-0.0179	-0.0109	-0.0185	0.0126	0.0131	0.0015	0.0247
	(0.0117)	(0.0109)	(0.0184)	(0.0120)	(0.0118)	(0.0119)	(0.0291)	(0.0150)
GovCrises	0.0060	0.0152	-0.0400	-0.2078	0.4340**	0.4332**	0.8181***	0.5216***
	(0.1812)	(0.1812)	(0.2539)	(0.1937)	(0.1944)	(0.1981)	(0.2636)	(0.1682)
RegimeDur	0.0049	0.0051	0.0120	0.0059	0.0024	0.0028	-0.0018	0.0050
	(0.0046)	(0.0045)	(0.0086)	(0.0053)	(0.0063)	(0.0063)	(0.0263)	(0.0063)
DefaultHist	-0.3667***	-0.3773***	-0.3271	-0.2461	0.5496**	0.5445**	1.5443**	0.8358**
	(0.1329)	(0.1329)	(0.2750)	(0.1526)	(0.2393)	(0.2423)	(0.7550)	(0.3474)
IMFProg	0.0370	0.0564	0.3819	0.0370	0.0765	0.0767	-0.1349	0.3072
	(0.1458)	(0.1454)	(0.2714)	(0.1700)	(0.2029)	(0.2128)	(0.3670)	(0.2189)
BankCredit	-0.0004				-0.0020			
	(0.0026)				(0.0034)			
DomesticCredit		-0.0014				-0.0019		
		(0.0033)				(0.0040)		
LiquidLiabilities			-0.0017				0.0136	
			(0.0068)				(0.0153)	
LendingRate				-0.0004				-0.0024
				(0.0003)				(0.0046)
Constant	-1.1207***	-1.1334***	-1.8522***	-1.1518***	0.1079	0.0533	-0.9333	0.3572
	(0.2804)	(0.2771)	(0.5478)	(0.3235)	(0.3624)	(0.3573)	(1.0006)	(0.5002)
Observations	875	866	365	686	252	251	91	150
Censored	195	192	72	149	124	123	41	82
Log-Likelihood	-436.2	-429.5	-163.9	-342.5	-160.4	-159.6	-52.31	-87.45
LL0	-464.2	-458.2	-181.3	-359.0	-174.6	-173.9	-62.63	-103.3
SBIC	947.0	933.3	392.7	776.4	381.7	380.0	154.2	245.0
LRI	0.060	0.063	0.096	0.046	0.081	0.083	0.165	0.153

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 15. Duration of markets' shutdown/re-access and external factors.

	Markets' shutdown		Markets' re-access	
	(1)	**(2)**	**(3)**	**(4)**
p	0.6761$^{\theta}$	0.6917$^{\theta}$	0.7420	0.8231
	(0.0877)	(0.0870)	(0.1375)	(0.1450)
GDP	0.0446**	0.0470**	-0.0648**	-0.0671**
	(0.0202)	(0.0201)	(0.0267)	(0.0262)
Trade	-0.0005	-0.0005	-0.0024	-0.0045
	(0.0019)	(0.0020)	(0.0036)	(0.0038)
Reserves	0.0058***	0.0062***	-0.0053	-0.0041
	(0.0015)	(0.0014)	(0.0053)	(0.0056)
YrsOffice	-0.0175	-0.0175	0.0140	0.0156
	(0.0113)	(0.0113)	(0.0102)	(0.0110)
GovCrises	-0.0225	-0.0092	0.4459**	0.3728**
	(0.1793)	(0.1811)	(0.1980)	(0.1851)
RegimeDur	0.0047	0.0050	0.0023	0.0032
	(0.0045)	(0.0045)	(0.0062)	(0.0066)
DefaultHist	-0.3274**	-0.3469**	0.5795**	0.6446***
	(0.1357)	(0.1393)	(0.2413)	(0.2344)
IMFProg	0.0862	0.0473	0.0249	0.3061
	(0.1563)	(0.1767)	(0.2046)	(0.2706)
USLendingRate	-0.0441		0.0617**	
	(0.0301)		(0.0313)	
GlobalLiquidity		0.0016		0.0058
		(0.0038)		(0.0043)
Constant	-0.7311*	-1.3203**	-0.4699	-0.7967
	(0.3884)	(0.5769)	(0.4535)	(0.7403)
Observations	885	885	255	255
Censored	197	197	127	127
Log-Likelihood	-440.3	-441.5	-159.3	-160.4
LL0	-469.2	-469.2	-176.8	-176.8
SBIC	955.2	957.6	379.6	381.8
LRI	0.062	0.059	0.099	0.093.

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(*k*/2)Log*N*], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 16. Duration of markets' shutdown/re-access and capital controls.

	Markets' shutdown			Markets' re-access		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
p	0.7418$^{\theta}$	0.7368$^{\theta}$	0.7421$^{\theta}$	0.7177	0.7099$^{\theta}$	-0.7275
	(0.0878)	(0.0882)	(0.0867)	(0.1481)	(0.1450)	(0.1494)
GDP	0.0396*	0.0411*	0.0392*	-0.0859***	-0.0847***	-0.0866***
	(0.0216)	(0.0216)	(0.0215)	(0.0273)	(0.0269)	(0.0275)
Trade	-0.0002	-0.0006	0.0001	-0.0015	-0.0015	-0.0016
	(0.0023)	(0.0023)	(0.0023)	(0.0037)	(0.0038)	(0.0037)
Reserves	0.0062***	0.0061***	0.0062***	-0.0046	-0.0048	-0.0042
	(0.0014)	(0.0014)	(0.0015)	(0.0052)	(0.0053)	(0.0050)
YrsOffice	-0.0156	-0.0171	-0.0156	0.0174	0.0143	0.0198
	(0.0115)	(0.0114)	(0.0117)	(0.0122)	(0.0122)	(0.0123)
GovCrises	-0.0308	-0.0322	-0.0216	0.3724**	0.3743**	0.3720**
	(0.1792)	(0.1806)	(0.1793)	(0.1854)	(0.1855)	(0.1856)
RegimeDur	0.0042	0.0046	0.0038	0.0021	0.0028	0.0013
	(0.0051)	(0.0050)	(0.0050)	(0.0063)	(0.0063)	(0.0062)
DefaultHist	-0.3934***	-0.4109***	-0.3873***	0.6416***	0.6448***	0.6185***
	(0.1322)	(0.1316)	(0.1339)	(0.2405)	(0.2448)	(0.2378)
IMFProg	0.0826	0.0650	0.0987	0.2238	0.2117	0.2085
	(0.1480)	(0.1489)	(0.1461)	(0.2225)	(0.2287)	(0.2143)
CapitalControls	0.6199**			0.4966		
	(0.2860)			(0.3237)		
ResCapitalControls		0.3830			0.2856	
		(0.2578)			(0.2853)	
NonResCapitalControls			0.6906***			0.5899*
			(0.2655)			(0.3045)
Constant	-1.4673***	-1.2923***	-1.5462***	-0.3327	-0.1842	-0.3811
	(0.3473)	(0.3305)	(0.3471)	(0.4560)	(0.4584)	(0.4283)
Observations	794	800	794	244	244	244
Censored	186	186	186	122	122	122
Log-Likelihood	-406.7	-408.3	-406.0	-151.7	-152.2	-151.3
LL0	-432.2	-433.8	-432.2	-169.1	-169.1	-169.1
SBIC	886.8	890.1	885.4	363.9	364.9	363.1
LRI	0.059	0.059	0.061	0.103	0.100	0.105

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 17. Duration of markets' shutdown/re-access and potential endogeneity.

	Markets' shutdown	**Markets' re-access**
p	0.6690^{θ}	1.3351
	(0.1254)	(0.2835)
GDP	0.0614**	-0.0832**
	(0.0259)	(0.0361)
Trade	0.0003	-0.0052
	(0.0019)	(0.0048)
Reserves	0.0075***	-0.0100
	(0.0018)	(0.0062)
YrsOffice	-0.0135	0.0164
	(0.0131)	(0.0243)
GovCrises	-0.0525	-0.0979
	(0.1743)	(0.3715)
RegimeDur	0.0012	-0.0041
	(0.0061)	(0.0097)
DefaultHist	-0.4256***	1.2167***
	(0.1604)	(0.3688)
IMFProg	-0.0736	-0.3386
	(0.2012)	(0.2725)
Constant	-1.0353***	0.0756
	(0.3488)	(0.5688)
Observations	684	133
Censored	135	55
Log-Likelihood	-320.0	-79.44
LL0	-339.8	-90.19
SBIC	705.3	207.8
LRI	0.058	0.119

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(*k*/2)Log*N*], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 18. Duration of markets' shutdown/re-access and nonlinearity in the hazard function.

	Markets' shutdown			Markets' re-access		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
p_1	0.9381$^{\theta}$	0.8849$^{\theta}$	0.7828	0.9379	0.5067$^{\theta}$	0.6983
	(0.0187)	(0.0484)	(0.1126)	(0.0536)	(0.1893)	(0.6592)
p_2		1.0034	1.0184		1.0647$^{\theta}$	1.003
		(0.0030)	(0.0151)		(0.0236)	(0.2032)
p_3			0.9995			1.0054
			(0.0005)			(0.0167)
GDP	0.0466**	0.0468**	0.0476**	-0.0713***	-0.0661***	-0.0671***
	(0.0203)	(0.0200)	(0.0199)	(0.0264)	(0.0256)	(0.0250)
Trade	-0.0003	-0.0003	-0.0002	-0.0030	-0.0030	-0.0030
	(0.0019)	(0.0019)	(0.0019)	(0.0037)	(0.0037)	(0.0038)
Reserves	0.0060***	0.0061***	0.0063***	-0.0042	-0.0041	-0.0041
	(0.0014)	(0.0014)	(0.0014)	(0.0055)	(0.0052)	(0.0052)
YrsOffice	-0.0196*	-0.0184	-0.0177	0.0107	0.0100	0.0101
	(0.0114)	(0.0114)	(0.0112)	(0.0119)	(0.0115)	(0.0115)
GovCrises	-0.0277	-0.0126	-0.0049	0.3898**	0.3987**	0.4021**
	(0.1838)	(0.1840)	(0.1822)	(0.1939)	(0.1798)	(0.1795)
RegimeDur	0.0050	0.0051	0.0047	0.0027	0.0047	0.0047
	(0.0045)	(0.0044)	(0.0046)	(0.0064)	(0.0062)	(0.0062)
DefaultHist	-0.3832***	-0.3759***	-0.3609***	0.6432***	0.6272***	0.6253***
	(0.1301)	(0.1299)	(0.1315)	(0.2411)	(0.2327)	(0.2360)
IMFProg	-0.0117	0.0040	0.0187	0.1239	0.1591	0.1565
	(0.1469)	(0.1467)	(0.1475)	(0.2072)	(0.2067)	(0.2067)
Constant	-1.1177***	-1.0355***	-0.9244***	0.0335	0.4279	0.2890
	(0.2798)	(0.2839)	(0.3126)	(0.3948)	(0.4331)	(0.6566)
Observations	885	885	885	255	255	255
Censored	197	197	197	127	127	127
Log-Likelihood	-442.6	-442.0	-441.5	-162.3	-160.3	-160.2
LL0	-469.2	-469.2	-469.2	-176.8	-176.8	-176.8
SBIC	966.6	965.4	964.4	391.1	387.1	386.9
LRI	0.057	0.058	0.059	0.082	0.093	0.094

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term). The Cloglog regressions in Columns 1 and 4, 2 and 5 and 3 and 6 are performed using a linear, a quadratic and a cubic hazard function, respectively.

Table 19. Duration of markets' shutdown/re-access excluding potential outliers.

	Markets' shutdown		Markets' re-access	
	(1) Excluding 1 outlier	**(2) Excluding 3 outliers**	**(3) Excluding 1 outlier**	**(4) Excluding 3 outliers**
p	0.7188^{θ}	0.7977^{θ}	0.7666	0.8000
	(0.0834)	(0.0733)	(0.1417)	(0.1395)
GDP	0.0452**	0.0381*	-0.0696***	-0.0663**
	(0.0197)	(0.0200)	(0.0265)	(0.0265)
Trade	-0.0001	-0.0004	-0.0029	-0.0022
	(0.0019)	(0.0020)	(0.0037)	(0.0036)
Reserves	0.0060***	0.0071***	-0.0044	-0.0040
	(0.0014)	(0.0022)	(0.0053)	(0.0052)
YrsOffice	-0.0161	-0.0188*	0.0108	0.0074
	(0.0112)	(0.0114)	(0.0114)	(0.0115)
GovCrises	-0.0125	-0.0657	0.3908**	0.3755**
	(0.1827)	(0.1820)	(0.1876)	(0.1880)
RegimeDur	0.0055	0.0036	0.0031	0.0021
	(0.0047)	(0.0047)	(0.0062)	(0.0062)
DefaultHist	-0.3399***	-0.3684***	0.6167***	0.6149***
	(0.1299)	(0.1295)	(0.2337)	(0.2292)
IMFProg	0.0078	-0.0145	0.1457	0.1731
	(0.1439)	(0.1486)	(0.2056)	(0.2043)
Constant	-1.1289***	-1.0659***	0.0053	-0.0288
	(0.2765)	(0.2759)	(0.3663)	(0.3663)
Observations	861	814	255	248
Censored	197	195	127	126
Log-Likelihood	-438.8	-427.0	-161.6	-158.4
LL0	-463.1	-448.2	-176.8	-171.9
SBIC	945.2	921.0	378.6	371.9
LRI	0.052	0.047	0.086	0.079

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, *k* is the number of parameters in the model and *N* is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 20. Duration of markets' shutdown/re-access and net exporters/importers of capital.

	Markets' shutdown		Markets' re-access	
	(1)	**(2)**	**(3)**	**(4)**
p	0.7107^{θ}	0.6937^{θ}	0.7768	0.7647
	(0.0834)	(0.0826)	(0.1454)	(0.1451)
GDP	0.0424**	0.0445**	-0.0649**	-0.0642**
	(0.0195)	(0.0200)	(0.0269)	(0.0273)
Trade	0.0016	0.0001	-0.0024	-0.0030
	(0.0022)	(0.0019)	(0.0037)	(0.0035)
Reserves	0.0072***	0.0057***	-0.0029	-0.0041
	(0.0016)	(0.0011)	(0.0057)	(0.0057)
YrsOffice	-0.0173	-0.0162	0.0112	0.0111
	(0.0112)	(0.0112)	(0.0112)	(0.0124)
GovCrises	0.0351	-0.0032	0.4411**	0.4289**
	(0.1906)	(0.1849)	(0.1894)	(0.1891)
RegimeDur	0.0033	0.0039	0.0028	0.0030
	(0.0043)	(0.0046)	(0.0064)	(0.0074)
DefaultHist	-0.4042***	-0.4103***	0.6296***	0.6255***
	(0.1315)	(0.1298)	(0.2374)	(0.2334)
IMFProg	-0.0288	-0.0005	0.1739	0.1419
	(0.1432)	(0.1455)	(0.2196)	(0.2083)
CapitalExporters	-0.6772		-0.2361	
	(0.4339)		(0.2047)	
CapitalImporters		0.1628		0.0247
		(0.1534)		(0.2278)
Constant	-1.0653***	-1.1383***	-0.0830	-0.0388
	(0.2829)	(0.3043)	(0.3773)	(0.4139)
Observations	864	864	252	252
Censored	194	194	125	125
Log-Likelihood	-430.6	-433.6	-159.6	-159.9
LL0	-460.2	-460.2	-174.7	-174.7
SBIC	935.6	941.6	380.0	380.6
LRI	0.064	0.058	0.086	0.085

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

Table 21. Duration of markets' shutdown/re-access and alternative identification procedure.

	Markets' shutdown	**Markets' re-access**
p	0.5856^{θ}	0.9100
	(0.0738)	(0.1407)
GDP	0.0363*	-0.0771***
	(0.0208)	(0.0257)
Trade	0.0030	-0.0037
	(0.0027)	(0.0033)
Reserves	0.0098***	-0.0057
	(0.0023)	(0.0056)
YrsOffice	-0.0144	0.0219**
	(0.0111)	(0.0097)
GovCrises	0.0087	0.3359
	(0.1834)	(0.2515)
RegimeDur	0.0037	0.0106*
	(0.0044)	(0.0058)
DefaultHist	-0.2202	0.4555*
	(0.1345)	(0.2577)
IMFProg	-0.2785*	0.1335
	(0.1558)	(0.1916)
Constant	-0.9405***	-0.1424
	(0.2777)	(0.3258)
Observations	727	251
Censored	180	120
Log-Likelihood	-380.2	-159.4
LL0	-406.9	-173.7
SBIC	826.3	374.1
LRI	0.066	0.082

Notes: Robust standard errors (clustered by country) for the estimated coefficients are in parentheses. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%; and *, 10%. The sign "θ" indicates that *p* is significantly lower than 1 using a 5% one-sided test with robust standard errors. "Censored" indicates de number of censored observations. The Schwartz Bayesian Information Criterion (SBIC) is computed as follows: SBIC=2[-LogL+(k/2)Log$N$], where LogL is the log-likelihood for the estimated model, k is the number of parameters in the model and N is the number of observations. LRI is the likelihood ration index or pseudo-R^2 (LRI=1-LogL/LogL_0, where L_0 is the likelihood of the model with only a constant term).

List of Figures

Figure 1. Survival function for markets' shutdown.

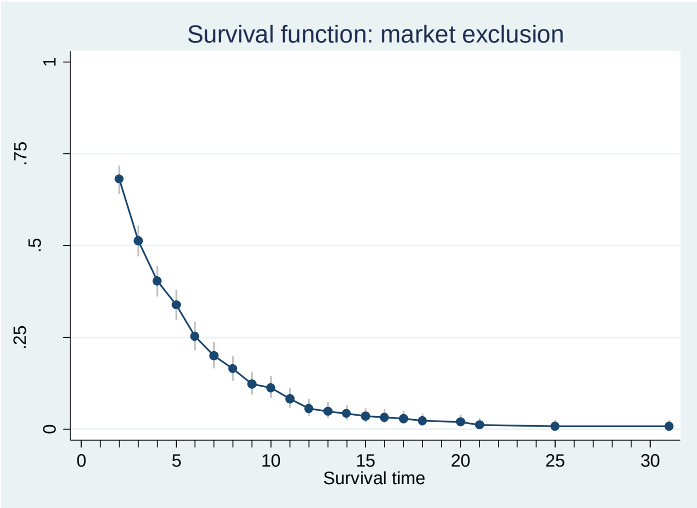
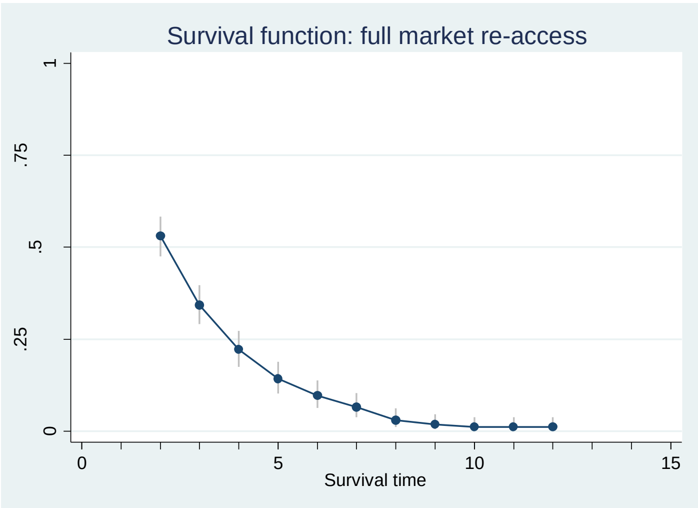


Figure 2. Survival function for markets' re-access.



Appendix

Table A. List of countries included in the sample.

Albania	Ecuador	Madagascar	Seychelles
Algeria	Egypt, Arab Rep.	Malawi	Sierra Leone
Angola	El Salvador	Malaysia	Solomon Islands
Argentina	Ethiopia	Maldives	Somalia
Armenia	Fiji	Mali	South Africa
Azerbaijan	Gabon	Mauritania	Sri Lanka
Bangladesh	Gambia, The	Mauritius	St. Lucia
Belarus	Georgia	Mexico	St. Vincent and the Grenadines
Belize	Ghana	Moldova	Sudan
Benin	Grenada	Mongolia	Swaziland
Bolivia	Guatemala	Montenegro	Tajikistan
Bosnia and Herzegovina	Guinea	Morocco	Tanzania
Botswana	Guinea-Bissau	Mozambique	Thailand
Brazil	Guyana	Myanmar	Togo
Bulgaria	Haiti	Nepal	Tonga
Burkina Faso	Honduras	Nicaragua	Tunisia
Burundi	India	Niger	Turkey
Cameroon	Indonesia	Nigeria	Turkmenistan
Cape Verde	Iran, Islamic Rep.	Pakistan	Uganda
Chad	Jamaica	Panama	Ukraine
Chile	Jordan	Papua New Guinea	Uruguay
China	Kazakhstan	Paraguay	Uzbekistan
Colombia	Kenya	Peru	Vanuatu
Comoros	Kyrgyz Republic	Philippines	Venezuela, RB
Congo, Dem. Rep.	Lao PDR	Romania	Vietnam
Congo, Rep.	Latvia	Russian Federation	Yemen, Rep.
Costa Rica	Lebanon	Rwanda	Zambia
Cote d'Ivoire	Lesotho	Samoa	Zimbabwe
Djibouti	Liberia	Sao Tome and Principe	
Dominica	Lithuania	Senegal	
Dominican Republic	Macedonia, FYR	Serbia	