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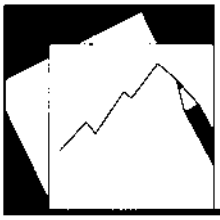

IMF Working Paper

"Mother, Can I trust the Government?" Sustained Financial Deepening - A Political InstitutionsView

Marc Quintyn and Geneviève Verdier

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IMF Institute and African Department

"Mother Can I trust the Government?" [1]
Sustained Financial Deepening - A Political Institutions View

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Authorized for distribution by Marc Quintyn

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Abstract

Only a minority of countries have succeeded in establishing a developed financial system, despite widespread financial liberalization. Confronted with this finding, the "political institutions view" claims that sustained financial deepening is most likely to take place in institutional environments where governments effectively impose constraints on their own powers in order to create trust. This paper identifies over 200 post-1960 episodes of accelerations in financial development in a large cross-section of countries. We find that the likelihood of an acceleration leading to sustained financial development increases greatly in environments that have high-quality political institutions.

JEL Classification Numbers: G18, G28, N20, O16

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I. INTRODUCTION

An old debate in the economics profession centers on whether financial development leads, follows, or matters at all for economic growth. Empirical evidence in support of the view that financial development spurs growth has been accumulating at a rapid pace in recent years (see for example Levine, 1997 and 2005, Rajan and Zingales, 1998). In light of this mounting evidence as well as observed large variations in financial development across countries, one is forced to ask: why are governments not doing more in support of financial development to reap its growth and development dividends (Haber, 2010)?

Answering such a question would require knowledge of the set of policies or the type of environment conducive to financial deepening.[3] Our hypothesis is that financial development not only depends on the prevailing macroeconomic environment, policy design and institutions such as property rights and contract enforcement, but even more so on the quality of the political systems that ensure the protection of these institutions. We identify episodes of financial accelerations—measured by the growth rate of the credit-to-GDP ratio—and find that the past 50 years have witnessed a large number of take-offs worldwide —approximately 210 such episodes in a sample of about 160 countries. However, a majority of these take-offs stalled after a number of years, others resulted in financial crises, and only a minority has led to sustained financial development. Our results suggest that most episodes of financial take off result in long-lasting financial deepening in countries with high-quality political systems, i.e. systems with checks and balances.

The search for factors that could help jumpstart financial deepening is not new. First, after a few decades of financial repression, financial liberalization was considered the key to success from the mid-to-late 1970s onward. In light of the mixed success of financial liberalization—particularly in developing countries—research started to emphasize the role of the institutional framework as a (co)determinant of financial development. An important body of research has focused on differences in legal origin among countries but there is no strong consensus on their importance as empirical results have been inconclusive (see Beck and Levine, 2004 and Spamann, 2008). Effective enforcement of property rights has also been singled out as an institution contributing to financial development (Acemoglu and Johnson, 2005). Strong empirical evidence has fostered a growing consensus that institutions that protect property rights have greater effects on long-run financial development than other legal institutions.

This finding, however important, begs the question: what is the ultimate source of effective protection of property rights? A number of authors argue that political institutions are crucial: effective protection of property rights can only be established in an environment where political institutions are willing to limit their own powers, through systems of checks and balances (Haber and North, 2008). According to this view, the quality of a country's political institutions emerges as the ultimate determinant that spurs financial development.

[3] In this paper we will use financial development and financial deepening interchangeably.

This paper sheds new light on this debate and the findings lend support to the political-institutions view. We analyze the conditions under which financial accelerations have taken place in a large sample of countries since the early 1960. Juxtaposing short-lived periods of financial deepening (credit accelerations and credit booms) and long periods allows us to compare the prevailing economic and institutional conditions at the start of a financial acceleration. We limit the analysis to the conditions that prevail around the take-off to find out which ones increase the likelihood of such an event.[4]

Our main conclusions—and contributions to the literature—are as follows: (i) only about one-quarter of all financial accelerations in the past 50 years have led to long-term financial deepening; (ii) short-term accelerations are intimately associated with financial liberalization, but are in general negatively associated with the quality of prevailing political institutions (iii) long-term phases, on the contrary, are positively and closely linked with the quality of political institutions before and at the time of the start of the acceleration. Durability of political systems with checks and balances raises the likelihood of long-term financial deepening. Such systems seem to offer the necessary assurances that financial promises will be kept and the government will not overrule property rights.

The paper is structured as follows. Section II discusses the motivation of this paper in reference to the related literature. Section III presents the methodology for identifying episodes of financial acceleration and analyzes some descriptive statistics. Section IV presents the empirical findings. Section V concludes.

II. MOTIVATION AND RELATED LITERATURE

This paper is motivated by the finding that, despite growing evidence about the importance of financial development for economic growth and development, (i) the levels of financial development (measured as the ratio of credit to the private sector over GDP) vary widely across countries (Figure 1), and (ii) many governments seem to fail in their efforts to jumpstart their country's financial development. These findings have led to a decades-long search among scholars for the right policies and institutional features conducive to financial development.

Disappointed with the outcomes of state-led financial development policies in the first post-Second World War decades (baptized as episodes of "financial repression" by McKinnon, 1973 and Shaw, 1973), countries started to implement a number of financial reforms, promoting liberalization in order to give the financial system a more prominent role in supporting long-term economic growth and development. Industrialized countries led this effort in the late 1970s, followed by many middle- and low-income countries in the 1980s and 1990s.

[4] An analysis of what happens afterwards—such as additional learning leading to further liberalization and thus to a self-nurturing virtuous cycle—see for example Abiad and Mody (2005)—is beyond the scope of this paper.

Initially, the effects of financial liberalization were evaluated in case studies or in comparative studies on small groups of countries, without enabling researchers to draw generalized conclusions about the effects of these reforms. [5] More recently, the construction of indices of financial liberalization (e.g. Abiad and Mody, 2005 and Tressel and Detragiache, 2008), has opened the door to more detailed analyses of the effect of liberalization in panel data. The main conclusion emerging from those studies is that, while liberalization has fostered some financial deepening in a number of countries, the results have been generally disappointing. Despite a host of reform measures, financial systems in several countries have remained small and underdeveloped by most standards. [6]

Rather than focusing solely on the policy framework, a growing number of authors have explored the historical and institutional environment in which financial liberalization is taking place. La Porta et al. (1998) have argued that legal origin plays a key role in explaining differences in financial development across countries. However, several authors have found that their findings were not robust to, among other things, the type of financial institutions under study or the use of time. [7]

Another strand of the literature has emphasized the role of contracting right institutions (Djankov, MacLiesh, and Shleifer, 2007) and the protection of property rights institutions. Acemoglu and Johnson (2005) provide evidence that institutions which ensure the protection of property rights are more important than contracting institutions for both financial development and economic growth. In fact, a number of studies support the finding that the effective protection of property rights is a central institution on the way to financial development. [8]

The political institutions school (Haber and North, 2008, Keefer, 2008 and Haber, 2010) goes one step further. While agreeing on the essential role of effective protection of property rights, proponents of this view argue that the ultimate source of such protection is the quality of the political institutions. Property rights, the argument goes, are only effective when there is a government strong enough to enforce them. However, when a government is strong enough to enforce laws, it is also strong enough to break them (in the absence of checks and balances on the government's power). [9] As a result, financial development is best served by a

[5] A comprehensive overview can be found in Williamson and Mahar, 1998.

[6] For an overview, see Tressel and Detragiache (hereafter called TD), 2008.

[7] See for example Beck and Levine (2004). For a summary of the criticism, see Haber (2008) and (2010). Essentially their findings are criticized on the grounds that (i) legal origin matters more for stock market development than for banking sector development. Since most countries are bank-based, the legal origin case is weakened; (ii) legal origin is by definition time-invariant and can therefore not explain the great reversals in financial development that characterize our world, as demonstrated in Rajan and Zingales (2003); and (iii) some authors have also questioned coding and measurement methods (Spamann, 2008).

[8] See among others, TD, 2008, and Singh et al., 2010 for Sub-Saharan Africa.

[9] See Haber , North and Weingast, 2008, Haber, 2008 and 2010.

government that puts constraints on its own power. If a government fails to tie its own hands, the financial sector is unlikely to deepen because (i) banks will always fear expropriation; [10] (ii) the government will try to limit the number of banks, thereby curbing competition; (iii) banks will face high costs to make borrowers honor their contracts, and thus continue to lend to a small circle of well-known customers; and (iv) depositors will fear that the banks will behave imprudently and that the government will expropriate them.

Only the government can align these incentives, but the government faces a conflict of interest: with respect to the financial system, it is at the same time the supervisor and an interested party. Constraining its own power can only happen through the creation of political competition, including free elections, competitive political parties, and separation of powers, leading to a system of checks and balances. These institutional features carry the greatest guarantee for economic agents that laws will be applied and enforced. In other words, a governmental style based on checks and balances instills confidence that property rights are effectively protected.

So far, only a limited number of authors have provided empirical evidence supporting the political institutions view, including Bordo and Rousseau (2006), Keefer (2008), Roe and Siegel (2008) and TD (2008). [11] Bordo and Rousseau (2006) find that political variables such as proportional representation election systems, frequent elections, universal female suffrage and infrequent revolutions are linked with larger financial sectors. TD (2008) come to the conclusion that effective protection of property rights is an important determinant of sustained financial development. [12] Our contribution comes closest to those of Keefer (2008) and Roe and Siegel (2008) but offers additional evidence. Keefer (2008) tests the political-institutions view directly. He instruments effective protection of property rights on political institutions variables and finds that the component of secure property rights that is explained by political institutions variables is a significant determinant of financial sector development. Roe and Siegel (2008) use indices of political instability to show that there is a consistent and significant link between them and financial backwardness. Our work is complementary to theirs in that they use measures of political *instability*, while we show that, the higher the democratic content *and* the stability of the system, the more likely it is that a country will experience episodes of financial deepening.

An interesting narrative underscoring the prevalence of the political institutions for financial development is Malmendier (2009), who shows that during the Roman Empire, financial

[10] Haber (2008) explains that such expropriation need not necessarily be nationalization, but can take subtler forms as high taxes, or negotiating below-market interest rates on its borrowing from the banking sector.

[11] Some other papers have also approached financial development from a political economy viewpoint but started from a different political model. For instance, Braun and Raddatz (2007) and Baltagi, Demetriades, and Law (2007) test the hypothesis of Rajan and Zingales (2003), that financial development tends to occur when economies are open to foreign competition, so that the rents of incumbents are eroded.

[12] We consider that TD 2008 belongs to this strand of the literature since they proxy property rights protection with a political institutions variable (constraints on the executive, from Polity IV).

deepening took place when political stability prevailed and not when the legal system was at its strongest. Closely related to our work is also Campos and Coricelli (2009) who highlight the interactions between the early stages of democracy and financial development in Eastern Europe. Financial development in their view is slow, or absent because the early stages of democracy often lack political stability. The empirical results presented in our paper yield support to this view but use a larger range of country experiences.

Our paper is also related to the strand of the literature on lending booms and financial crises. Starting from the observation that financial liberalization since the 1980s has led to short-term lending booms, often followed by crises, this literature has analyzed conditions leading to financial booms, the anatomy of these events and their disastrous end (see for instance Gourinchas et al. 2001, Mendoza and Terrones, 2008, Barajas et al. 2008, and more specifically focused on Eastern Europe, Cottarelli et al. 2003, and Hilbers et al. 2005). [13] Our paper allows us to shed additional light on the conditions under which such episodes occur and to contrast them with long-term accelerations leading to financial deepening.

III. Identifying Episodes of Financial Accelerations

A. Methodology

Our yardstick for financial development is the ratio of private sector credit to GDP, the most commonly used measure. We prefer private-sector credit to other measures such as bank deposits to GDP, because it gives a better indication of the banks' role as intermediaries of financial resources in the economy. Admittedly, it is less complete than a measure that would also take into account other features of financial sector development such as the quality of financial services (see for instance Campos and Coricelli, 2009) or stock market development. However, since most financial systems in the world are bank-dominated, and private-sector credit is readily available for a wide range of countries, we opted for this variable which, we believe, captures the broad developments in the larger part of the world.

Figure 1 brings evidence of a well-known stylized fact: the large cross-country disparity in credit-to-GDP ratios. Over the years, countries with well-developed financial systems went through a diversity of experiences to get to the level where they are now, one of them being periods of prolonged and accelerated financial deepening (as defined below). While such accelerations offer no guarantee of financial deepening (since they can be followed by reversals), their high concentration (dark bars in the chart) in the group of well-developed financial systems is a strong indication of their importance.

[13] This strand in the literature is also linked to the one on determinants of financial crises. See for instance, Demirgüç-Kunt and Detragiache, 1999 who analyze the claims that financial liberalization has been associated with a higher incidence of banking crises.

Given the importance of such acceleration episodes, a closer analysis of the conditions under which they are likely to occur is justified. Since we are concerned with the start of acceleration episodes, our first task is to develop a methodology for identifying such events. The literature generally identifies three types of financial accelerations (see Hilbers et al. 2005):

- Type 1 - At beginning of a cyclical upturn, credit typically expands faster than output, due to the need to finance investments and working capital. These episodes are typically associated with the working of the conventional accelerator;
- Type 2 - "Credit booms" may result from inappropriate responses of market participants to changes in risks over time, sometimes following financial liberalization. Once risk perceptions change, asset prices and collateral values may decline. This reverses the financial accelerator and raises the borrowers' indebtedness. In the best case, the boom comes to a soft landing, in the worst case it results in a banking (and real sector) crisis;
- Type 3 - During longer periods of "financial deepening", the rate of expansion of the financial system is typically lower than for types 1 and 2, but sustainable for a longer period of time, leading to a more sophisticated financial system that accompanies, or contributes to, economic growth.

At the onset of an episode of faster financial growth, it is difficult, if not impossible, to distinguish between these three types of episodes. When the ratio of credit to GDP starts to rise, policymakers cannot know whether the country is experiencing a permanent take-off, or a transitory boom that may or may not end in a crisis. Figure 2 illustrates this point by comparing three episodes from our dataset rebased to start in the same year "t". Financial growth in Australia started to accelerate in 1983 and lasted for over 20 years according to the criteria defined below. Australia's credit-to-GDP ratio was close to 25 percent at the beginning of the episode and close to 100 percent at the end—among the highest in the world. By our definition this qualifies as a type-3-period of sustained financial deepening. Egypt experienced a shorter episode of financial acceleration starting in 1980 and dying out after 7 years when the rate of financial growth returned to a lower level. The level of credit to GDP was close to 20 percent at the onset and was back to that level a few years after the end of the episode, illustrating a soft landing with no lasting effect on financial development. Finally, Sweden presents a classic example of a rapid type-2 credit boom (following financial liberalization), ending in a banking crisis (1992-93). The ratio of credit to GDP rose rapidly form just under 40 to 55 percent and, due to the crisis, fell back to a level below the take-off level.

In this paper we identify such takeoff episodes between 1960 and 2005 for a sample of about 160 countries by defining criteria that allow a distinction between episodes of types 1 and 2 on the one hand, and three on the other hand. Our objective is to examine the economic and institutional conditions under which such different types of episodes are likely to take off.

We characterize an episode of financial deepening according to two defining criteria: the growth rate of credit to GDP and the length of the episode. Let $\Delta \frac{C_k}{Y_k}$ denote country *k*'s three-

year moving average of its credit-to-GDP ratio's annual growth rate. Financial accelerations are defined and characterized as follows:

i. Country *k* is experiencing a financial takeoff if $\Delta \frac{C_k}{Y_k} \geq 2\ \%$;

ii. This episode of financial acceleration lasts as least 5 years and is labeled "sustained financial deepening" if it lasts at least 10 years.

Choosing a 2-percent threshold is somewhat arbitrary. It is low for credit booms during which annual growth rates of 30 – 40 percent are not unthinkable. However it seems reasonable for longer periods of sustained deepening.[14] Applying a centered three-year moving average allows us to avoid "accidents" or fluke one-year changes. For example, real GDP growth could accelerate in a given year while credit growth catches up the next year. This could incidentally push the ratio below two percent for one year, a problem resolved by using a moving average.

Our approach differs from methodologies developed in related lines of research. The business cycle literature has employed well-known and effective methods for estimating economic cycles from data from tracking the behavior of macroeconomic variables over consecutive periods (e.g. NBER business-cycle dating) to filtering techniques to identify high and low frequency components of time series (see King, Plosser, Rebelo (1988) for an early example). The credit boom literature has typically used such dating or deviation-from-trend methodologies (Gourinchas et al. 2001, Hilbers et al. 2005, Mendoza and Terrones, 2008, and Barajas et al., 2008). This approach is appropriate for detecting credit booms or short-term accelerations, but would not work for our purposes because it would not allow us to detect periods of sustained development. By its very nature, during long periods of financial deepening, the trend adjusts itself to the new slope.[15] We seek to identify *sustained take-off*s in the trend, not short-lived cycles.

Our second criterion concerns the length of an episode. Two questions need to be addressed here. First, what should be the minimum number of years to qualify as an "acceleration"? Second, how long should an episode of financial acceleration last before it qualifies as a period of sustained financial development as opposed to a short lending boom? On the first question, we set the minimum length at 5 years in order to eliminate 'incidental' very short-lived accelerations. On the second question, an acceleration period qualifies as sustainable if it lasts longer than 10 years. This cut-off is based on the lending-boom literature. Gourinchas et al. (2001) estimate that the average lifetime of a lending boom is 6.7 years, with a standard deviation of 3.6. Hilbers et al. (2005) find that credit booms ending in a crisis last on average 6.8 years, while those ending without a crisis have a lifetime of, on average 9.6 years. Thus,

[14] We also experimented with a 3-percent threshold and the differences in the total number of episodes identified, and in their classification between short and long periods, are minimal.

[15] Application of the rolling Hodrick-Prescott filter as Gourinchas et al. (2001) and Hilbers et al. (2005) did, allowed us to identify the same boom-episodes as they did, but did not yield much insight in the identification of longer periods, as could be expected.

in this paper, we present our results for episodes lasting between 5 and 10 years, and for episodes lasting more than 10 years.

B. Data and Descriptive Statistics

With these two criteria at hand, we identify 209 periods of financial accelerations in a sample of about 160 countries for the period 1960 – 2005, of which 161 between 5 and 10 years and 48 longer than 10 years (Table 1). Appendix I provides the detailed list of the country episodes. The appendix demonstrates the wide variety of country experiences: several countries in the sample had more than one short acceleration during the 45 years of our sample, others experienced only one long episode, while some others lived through both long and short episodes. Some countries however, never experienced any financial acceleration.[16]

Inspection of Table 1 reveals that the 1960s are the least populated among the complete decades for 5 – 10 year periods, and the 1990s the most densely with 44 percent of the total. The 1970s and 1980s each witnessed about 30 episodes. The 1960s-episodes precede the financial-liberalization period, a likely explanation of the low incidence of 5 – 10 year episodes. The majority of these episodes took place in middle (MIC) and low (LIC) income countries and often coincided with independence from colonial powers. A great number of 1990s-episodes were in LICs and lower middle-income countries (LMIC) in sub-Saharan Africa, Asia and the Western Hemisphere. In addition, many Eastern European countries and countries of the former Soviet Union enjoyed financial accelerations in the 1990s following political and economic reforms. More generally, favorable macroeconomic conditions combined with financial liberalization could explain part of this surge in the number of accelerations in the 1990s compared to other decades. Of the 70 episodes of the 1990s and the 9 that started after 2000, a total of 30 are still unfinished and some of them could thus potentially evolve into long periods. For that reason we treat them separately in the econometric analysis. Of these unfinished periods, a third are in CIS or CEE countries and another fourth in Sub-Saharan Africa.

Sub-Saharan Africa has the highest incidence of short episodes, mainly occurring in the 1970s and 1990s, followed by Western Hemisphere and the Asia/Pacific region. Both regions are relatively well represented in each decade (with the exception of the Western Hemisphere in the 2000s).

Turning to longer episodes, the 1970s witnessed the lowest number of sustained deepening periods. Interestingly, the 1960s—the pre-financial liberalization era—was the decade in which more than 25 percent of all long episodes started. These episodes were concentrated in Europe and the Western Hemisphere. In the 1990s, Europe hosted 50 percent of the long episodes occurring during that decade. More generally, Europe, Asia/Pacific and the Western Hemisphere together account for 80 percent of all long events.

[16] These countries are not listed in Appendix I.

Inspection of the totals indicates that Asia/Pacific and the Western Hemisphere account each for about 20 percent of the short periods and 25 percent of the long ones. The Middle East and North African region is the great absent in the long events and also ranks low in the short events (CIS states and CEE together count for more short term events, and they only appeared on the stage in the 1990s).

The lower panel of Table 1 shows that MICs account for approximately 50 percent of all short episodes. As indicated above, some of these started in the 1990s and may ultimately turn into longer episodes. This income category also accounts for close to 50 percent of long episodes, with the other 50 percent occurring in high-income countries (HIC). This country group has a strong presence in the 1960s and 1990s episodes. LICs count for less than 20 percent of the short episodes and only 6 percent of the long episodes.

The descriptive statistics in tables 2a, b and c shed additional light on the nature of these financial development episodes. The average length of the short periods is just under 7 years (Table 2a). Periods of sustained deepening, on the other hand, are on average twice as long. The average level of the credit-to-GDP ratio at the beginning of short and sustained episodes is very similar and take-offs, both short and sustained, can start at ratio levels as low as 1 percent and as high as 120 to 130 percent. As could be expected, the average growth rate in short episodes is slightly higher than in sustained episodes, but the extremes for both can go over 100 percent per annum.

Table 2b brings out the importance of episodes of deepening for long-term financial sector development. We see that on average, the initial level of the credit-to- GDP ratio is nearly the same in countries that experienced no accelerations, and those that experienced episodes lasting 5-10 years or over 10 years (around 19 to 22 percent). However, in countries that never experienced an acceleration, the average 2005 level is still very close to the initial level as expected. Countries that experienced one or more short term acceleration have, on average, doubled their ratio, while countries that experienced at least one long episode, on average more than tripled their credit-to-GDP ratio.

Finally, Table 2c presents some additional statistics on countries that experienced a sustained period of financial acceleration, more specifically on what happened after the end of the acceleration. The main message from this table is that a period of sustained deepening is no guarantee that a country's financial system will remain developed. The financial system continued to grow in almost 50 percent of the cases (in another 19 percent it is too early to judge because the growth period finished shortly before 2005, the last year of our sample). However, in 33 percent of the cases, the gains from the deepening episodes were partly or completely reversed. Most frequently, these reversals were correlated with political instability following regime changes (either positive or negative regime changes) (Dominican Republic, Fiji, Ivory Coast, Nigeria and the Philippines), war (Kuwait) and financial crises followed by slow recovery (Indonesia and Finland).

IV. Explaining Episodes of Financial Accelerations

A. Methodology

What is the probability of a financial take-off in a given country? How does an episode of financial acceleration become a period of financial deepening? We consider the hypothesis that a set of factors gathered in a vector **x**— macroeconomic variables, financial reforms, the quality of institutions— explain the probability of a take-off at time *t*:

$$Prob(Financial\ Acceleration_t) = F(\beta x)$$

The dependent variable is a dummy that takes the value of 1 in the years associated with a financial acceleration identified in the previous section, and 0 otherwise. We make a number of adjustments to the data following similar work on growth accelerations by Haussmann, Pritchett and Rodrik (2005). First, for each episode of financial acceleration, we assign a value of 1 to the year of financial take-off, as well as the year before and after the take off to minimize the possibility that we have mis-timed the beginning of an episode. Thus, for each episode that starts at time t, our dummy takes on the value of 1 at times t-1, t, and t+1. Second, for an ongoing episode, we drop data corresponding to years t+2 until the end of the episode. This ensures that whenever our dependent variable is 0 for country *i*, this corresponds to a year in which country *i* is not experiencing a take-off rather than in the midst of an ongoing acceleration. Third, we consider the determinants of both short and longer accelerations in three broad groups: economic variables, measures of financial liberalization and institutional variables. All variables are lagged to reduce the risk of endogeneity. We estimate the following baseline specification with a probit:

$$\begin{aligned} &Prob(Financial\ Acceleration\ of\ duration\ n) \\ &\quad = F\Big(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} \\ &\quad + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Pol\ Inst_{t-j} \\ &\quad + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t\Big) \end{aligned}$$

where *F(.)* is the standard normal distribution.

B. Data and Summary Statistics

We consider the following groups of determinants:

- ***Macroeconomic and structural variables.*** The assumption is that macroeconomic conditions are likely to have an impact on the possibility of a financial acceleration. We use a range of macroeconomic variables (see data Appendix): real GDP growth, inflation, the government's fiscal position, and real exchange rates. Structural variables include GDP per capita, initial credit-to-GDP, and trade openness.

- ***Financial liberalization***. A key variable in the analysis is the degree of financial liberalization of a country. We selected the index of financial liberalization developed in

TD (2008). We consider this the most complete index developed so far. The authors rate a set of 21 indicators to determine a country's degree of financial liberalization. This index is available for 85 countries for the period 1975 – 2006. We expanded the index into the 1960s. We singled out bank supervision from the index and constructed a separate index for the quality of bank supervision in order to assess the independent impact of this variable on financial accelerations. [17]

- ***Institutional variables.*** Our key source for political institutions is the Polity IV dataset (Marshall and Jaggers, 2008) for three main reasons. First, this dataset covers a wide range of countries. Secondly, it is available for the entire period covered by our analysis (which is not the case for most other political variables databases). Thirdly and most importantly, this dataset has a relatively high degree of internal consistency, which is not the case with several other datasets. [18] Although no database measuring concepts of democracy and autocracy is perfect or totally transparent in defining its variables, we prefer to stay as much as possible with variables originating from the same database. Polity IV contains proxies for most of the features of political institutions important for the hypotheses underlying our paper (creation of political competition, including free elections, competitive political parties, and separation of powers, leading to a system of checks and balances). The following variables are used in this paper:

  - *Polity* – a variable which synthesizes the autocratic and democratic elements in a polity regime on an increasing scale from – 10 and +10. The closer to + 10, the higher the democratic contents of a polity regime.

  - *Durability of democratic and autocratic regimes* – two variables that measure the length in years of the stability of democratic and autocratic regimes. A regime is considered stable as long as the polity variable has not changed by more than 3 points (on the scale from – 10 to + 10) in either direction.

  - *Quality of political institutions* – a variable composed of three conceptual elements among the polity variables reflecting the essential preconditions for a government imposing constraints on its power as outlined in Haber (2008): (i) constraints on the executives, (ii) competition and openness in the access to political mandates, and (iii) competitiveness of the parties and the election process. [19] We use the sum of these three variables, which individually range from 0 to 10.

[17] Variables from other sources, assessing the quality of bank supervision are only available since the 1990s.

[18] For a comparison of political variables databases and assessments of their qualities and weaknesses, see Munck and Verkuilen, 2002. The authors point out, among other things, key qualitative differences between several databases.

[19] Several authors only select the variable "constraints on the executive" as a proxy for the effective protection of property rights in a society. Reflecting the logic behind the Haber-model we include all elements necessary for a government to self-impose constraints on its exercise of power.

- *Positive and negative regime change* – these are two dummy variables constructed on the basis of the Polity IV database. The variables take the value 1 when a significant positive (negative) regime change took place in the five years preceding the start of a financial acceleration episode. A significant change is defined as being at least 3 points in the Polity variable.

Finally, we also include dummies for legal origin (English, French, German and Scandinavian).

Table 3 presents the correlation matrix for key variables. Table 4 offers a preliminary assessment of the predictive power of some variables of interest. We find that a slightly higher percentage of short periods was preceded by a significant financial reform—defined as a 0.13 basis points-jump in the liberalization index during the four years preceding the take-off—than long periods. [20] Likewise, just over 30 percent of short-term take-offs were preceded by a significant improvement in the quality of banking supervision, as defined in the liberalization index—and only a quarter of the long term episodes.

Turning to political institutions-variables, 56 percent of the sustained take offs were preceded by at least 5 years during which the polity-level was six or higher (on a scale from – 10 to + 10). For short episodes, the corresponding percentage is 34 percent. Almost half of the sustained deepening periods took place in an environment defined by democratic institutions that had not dramatically changed over the preceding 10 years. [21] For short periods, this holds in only about one fifth of the cases. An almost equal proportion of short episode-take offs took place in political environments that had been autocratic for more than 10 years. In contrast, only 15 percent of sustained developments started in stable autocratic environments. Short growth episodes respond more quickly to political changes: one fourth took hold within 5 years of a positive polity change (defined as a change of at least 3 points) and 14 percent took place following a negative polity change. The high number in response to positive polity changes is influenced by the take-offs in CIS and CEE countries following political reforms in the early 1990s,. In contrast, sustained developments do not seem to take off in the immediate wake of either positive or negative polity changes (with a few exceptions).

The two final indicators in the table show that almost 9 percent of all short episodes ended in a financial crisis. The corresponding percentage for long episodes is 4 percent. Five percent of the short episodes took place following a financial crisis (indicative of some roller-coaster behavior where policymakers do not seem to have learned from previous mistakes). In contrast, none of the longer episodes took off in the years following a financial crisis.

[20] For the calculation that defines a 0.13 basis points jump as a "significant" reform, we refer to TD, 2008.

[21] If we lower the threshold to 5 years of durability, the percentage for the long periods would be 54.

C. Empirical results

Our baseline regressions are as follows:

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\Big(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 Ln\ y^c_{t-1} + \beta_2 Ln\ \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Ln\ Pol\ Inst_t + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t\Big)$$

where $\Delta y_{t-1,t-2}$ is average real GDP growth between t-1 and t-2, $y^c_{t-1}$is GDP per capita t t-1, $\frac{C_{t-1}}{Y_{t-1}}$, is the ratio of private credit to GDP at t-1, π_{t-j} is inflation at t-j, , $\Delta Fin.lib.Index_{t-j}$ is the change in TD's financial liberalization index at t-j, $\Delta Bank\ sup.Index_{t-j}$ is the change in the bank supervision index, $Pos.Change_{t,t-5}$ and $Neg.Change_{t,t-5}$ dummies corresponding to positive and negative regime changes in the preceeding five years and $Year - effect_t$ are year-fixed effects as a catch-all for common external shocks. The political institutions variable is measured alternatively by Polity $_{t,\ t-5}$ (average of polity2 variable over preceding five years) or durability (in years) of democratic and autocratic regimes.

All results are shown for different durations of financial accelerations: all accelerations, completed accelerations lasting between 5 and 10 years, all accelerations between 5 and 10 years, including those that are still ongoing, and completed accelerations lasting more than 10 years. Table 5 shows the marginal effects of control variables on the dependent variable.

The first four columns of Table 5 show the results when controlling for the polity score. Our attention goes in particular to the second column (completed short episodes) and the fourth (long episodes). Macroeconomic variables have expected signs. Real GDP growth in previous years increases the probability of a financial acceleration by 2 percentage points. The coefficient on the ratio of private sector credit to GDP is negative indicating that countries with high levels of financial development are less likely to experience takeoffs. GDP per capita has a positive and significant coefficient, which indicates that the likelihood of a take-off increases with higher levels of GDP per capita. This effect appears fairly robust to the length of the financial acceleration.

Financial liberalization has a significant and large impact on the probability of a take-off. However, the effect differs according to the duration of the take-off. The likelihood of a short episode increases significantly following successive efforts to liberalize the financial system. In contrast, contemporaneous financial liberalization matters more for episodes lasting more than 10 years. On the whole, the impact of improved bank supervision is rather weak across the board. Improved supervision increases the likelihood of take-offs with a lag, and the effects are more robust for sustained accelerations.

The most interesting results concern the impact of institutional variables. The Polity variable has a significant and negative effect on the probability of a take-off lasting less than ten years but this effect is significant and positive on the probability of sustained episodes of financial development. This suggests that countries with high institutional quality are less likely to experience short-lived financial accelerations but more likely to experience genuine financial deepening. Recent regime changes (either positive or negative) do not seem to increase the likelihood of short or long acceleration episodes. This finding is consistent with Campos and Cortelli (2009), who find that financial development did not take off in the first years of the transition to democracy in CIS and CEE countries, because quite often political conditions were more chaotic in those years than in the preceding years. This supports the view that political stability is important for financial development. [22]

The last four columns show the results of the regression when our measure of political institutions is the durability of a political regime. This evaluates the possibility that what matters for financial development is the stability of a political regime whether or not it places constraints on executive power. The results show that the durability of a democratic regime (in other words, a combination of stability and quality of the polity) greatly increases the probability of a sustained period of financial development. Autocratic regimes have opposite signs, but on the whole are not significant.

Overall, our results suggest that (i) the likelihood of all types of financial accelerations increases when the economy is growing; (ii) financial liberalization emerges as the main driver of short-lived accelerations, which predominantly seem to take place in environments characterized by low-quality of political institutions; (iii) in contrast, the likelihood that an acceleration becomes sustained is high when the political institutions have a higher democratic content. In such environments, financial liberalization is likely to give the final push to the acceleration. The results appear statistically significant and lend strong support to the political-institutions school. The likelihood ratio test cannot reject the hypothesis that all coefficients are zero. Another measure of goodness of fit is the model's predictive ability. Consider the following prediction rule: the probability of a takeoff is equal to one if the model's predicted probability is greater than 50 percent. Using this standard prediction rule, the model correctly classifies *at least* 80 percent of observations (bottom line of table 5).

D. Robustness

To determine whether our results are driven by our choice of control variables, we run a number of robustness checks with different variables measuring institutional quality, legal origins, domestic economic policy and external factors.

[22] These findings also contrast with the economic growth literature. Haussmann, Pritchett and Rodrik (2005) find that the likelihood of economic growth accelerations increases shortly after regime changes (positive or negative). What we find is that, for financial accelerations to occur, more time is needed after a regime chance, most likely because building confidence in the system is more important for financial deepening than for economic growth.

Institutions. The baseline regression is re-estimated using alternative measures of institutional quality as shown in Table 6. Overall our results are robust to the measure of institutional quality. Countries with more checks and balances, as measured by the quality of political institutions (constraints on the executive and political competition), are less likely to experience financial accelerations that last less than 10 years. The coefficient on this variable becomes positive and significant at the 10 percent level for episodes lasting more than 10 years. We also isolated the effects of constraints on the executive (because it is often used in the literature as a proxy for effective protection of property rights) and find similar results.

Legal origins. A large body of literature argues that cross-sectional differences in financial development and growth stem from differences in legal origins. According to this view, whether a country has English, French, German or Scandinavian legal roots determines its ability to protect private property rights which form the basis of financial development. Table 7 presents the results of estimation while controlling for legal origin. Our results are robust to this addition as political institutions and the durability of a democratic regime remain positive and significant only for long-lasting financial episodes.

Domestic and external factors. The literature on lending booms—which broadly corresponds to episodes lasting less than 10 years— has found that such booms are associated with developments in a host of macroeconomic variables. For example, Gourinchas et al., 2001 find that lending booms are associated with real currency appreciation, fiscal deficits and declines in trend output. Tables 8 and 9 show the results of estimating our baseline regression while controlling for these variables—respectively fiscal balance, changes in the real effective exchange rate, as well as in the country's economic openness. The inclusion of these variables does not seem to change our results, with the exception of the real exchange rate which weakens the impact of financial reform and polity. Our sample size, however, is halved by the inclusion of this variable due to a lack of consistent long-term series making this estimate significantly less reliable and difficult to interpret.

V. CONCLUSIONS

Cross-country disparities in financial development are wide and a majority of countries still have underdeveloped financial systems. In this paper, we examine the prevailing economic and institutional conditions that contributed to financial takeoffs which, in turn, lead to financial deepening. Structural economic measures such as financial liberalization were for a long time considered a cure-all for financial backwardness. Disappointment with their impact led researchers to find a more complete (and as it turns out, more complex) explanation of the differences in financial development among countries in the quality of institutional variables such as a country's legal origin, the effective protection of property rights, the interests of elites, or the quality of political institutions.

The results in this paper lend great support to the view that the quality of a country's political institutions (as a guarantee that private property will be *effectively* protected) increases the likelihood of financial deepening. We identified 209 episodes of financial accelerations in a

wide sample of countries since 1960. Many short-term accelerations are lending booms which overheat the system and may or may not end in financial crises. Their long-term impact on financial development is in many cases negligible. In contrast, long-term accelerations tend to slowly push the financial system to higher levels of activity and sophistication.

The contribution of this paper to our understanding of financial development can be summarized as follows: financial liberalization emerges as a very strong driver for short-term financial accelerations but is not sufficient for sustained deepening of the financial sector. It is the quality of political institutions and the stability of such institutions that strongly increases the probability of long-term financial deepening. This result is robust to the measure of political institutions, controlling for legal origins and domestic and external factors. In other words, while financial liberalization ignites accelerations, they only become long-term events in an environment where political competition and checks and balances provide enough guarantees to market participants that their property rights will be effectively respected. As a corollary, our results also indicate that short-term accelerations are more likely to emerge in weak(er) political environments.

Our results point to a number of unanswered questions. What happens as countries develop and financial development as measured by credit slows down? As financial development is transformed into non-bank finance and capital markets, do political institutions play the same role in maintaining effective financial intermediation? Our paper is largely silent on these crucial questions which we hope will be the subject of future research.

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Figure 1. Cross-country disparities in the ratio of credit to private sector to GDP (2005)

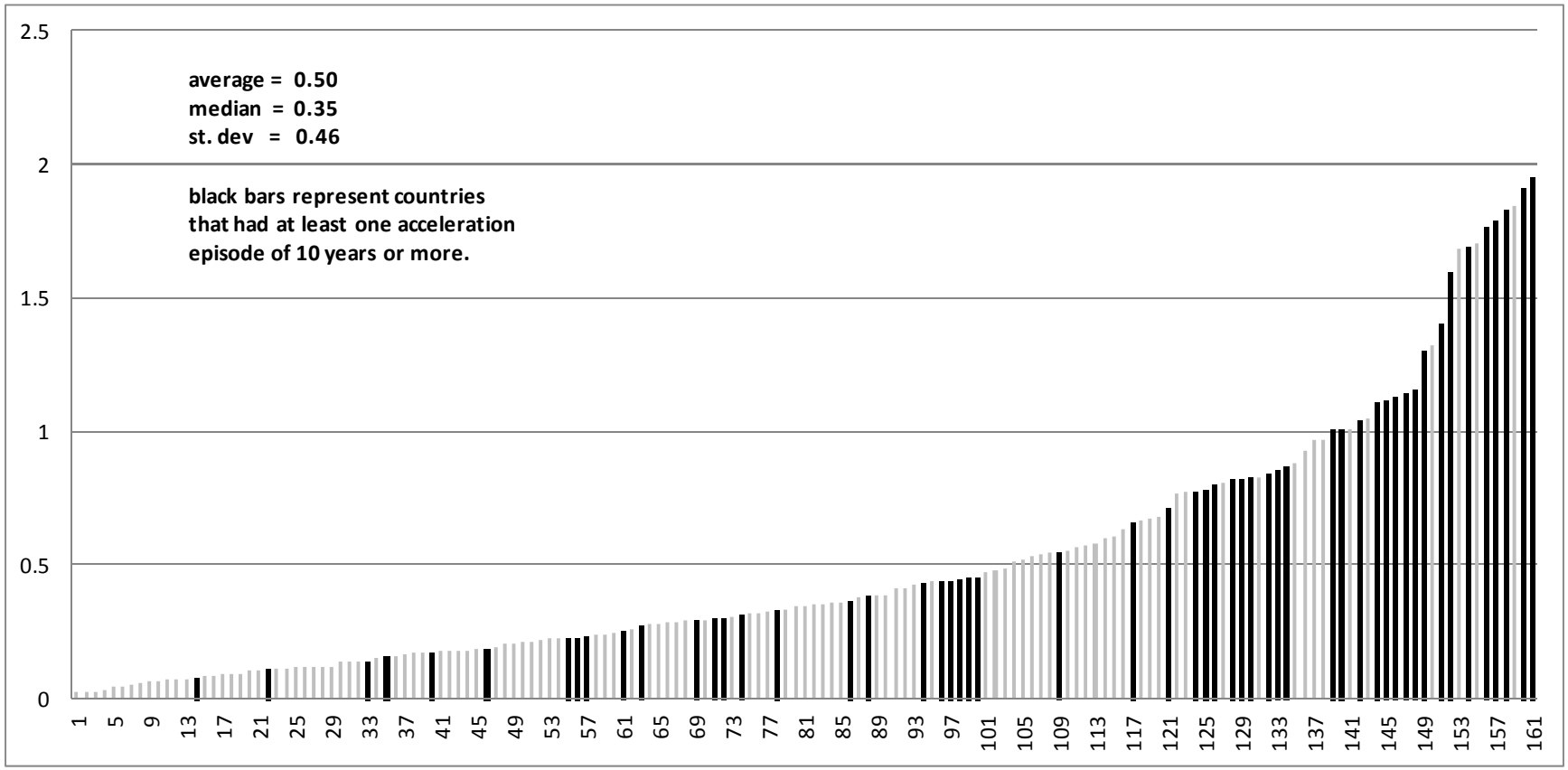

Figure 2. Types of acceleration episodes

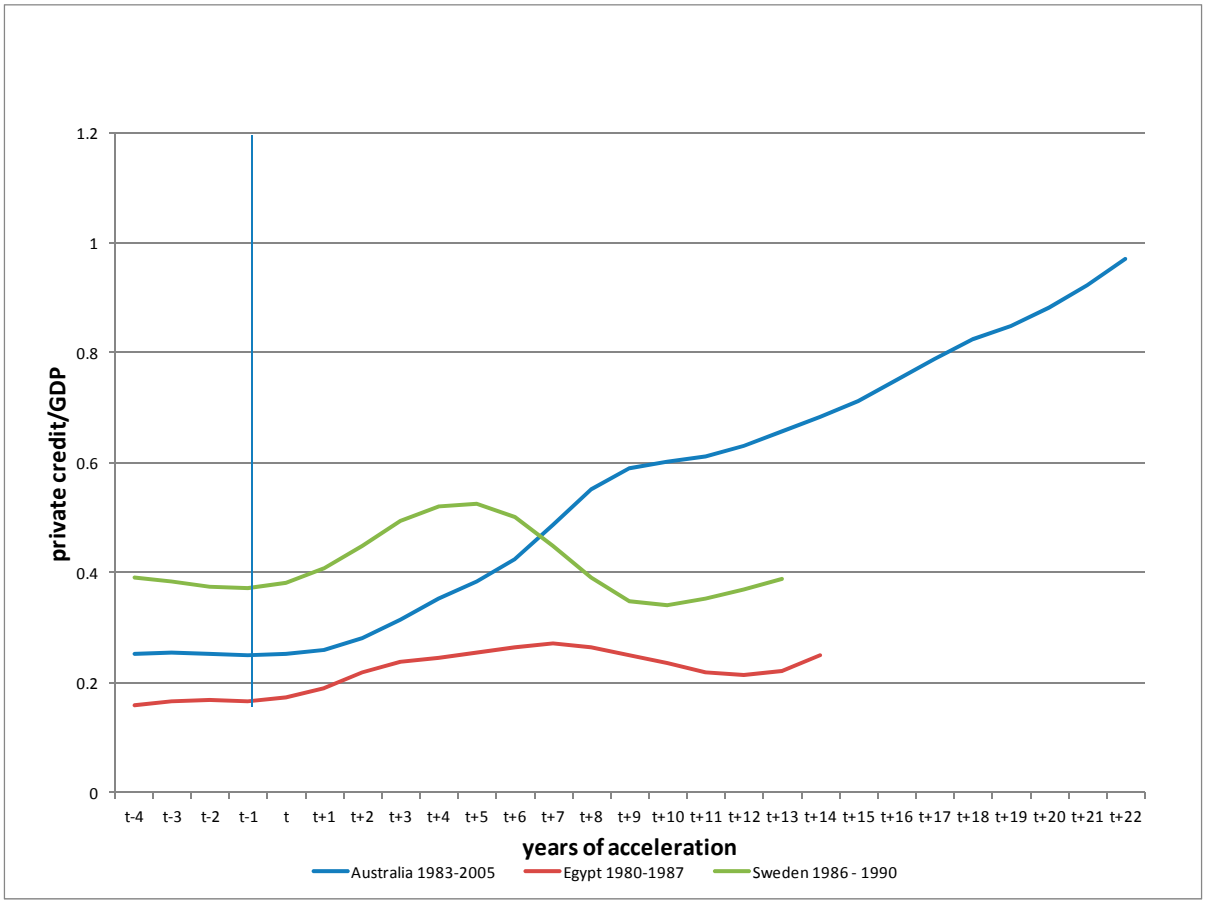

Table 1. Financial Deepening Episodes

		1960 -69	1970 - 79	1980 - 89	1990- 99	2000 - 00	**Total**
AFR	5 – 10 yrs	3	11	3	20	1	**38**
	> 10 yrs	*2*	*1*	*3*	*0*	*0*	***6***
ASIA/PAC	5 – 10 yrs	7	4	7	11	4	**33**
	> 10 yrs	2	3	5	1	0	**11**
CEE	*5 – 10 yrs*	*1*	*0*	*1*	*7*	*2*	***11***
	> 10 yrs	0	0	1	0	0	**1**
CIS	5 – 10 yrs	0	0	0	5	0	**5**
	> 10 yrs	*0*	*0*	*0*	*1*	*0*	***1***
EUR	5 – 10 yrs	3	2	9	7	1	**22**
	> 10 yrs	*4*	*1*	*4*	*5*	*0*	***14***
MENA	5 – 10 yrs	1	4	3	8	0	**16**
	> 10 yrs	0	2	0	0	0	**2**
WHD	5 – 10 yrs	5	9	9	12	1	**36**
	> 10 yrs	*5*	*1*	*4*	*3*	*0*	***13***
Total	**5 – 10 yrs**	**20**	**30**	**32**	**70**	**9**	**161**
	> 10 yrs	***13***	***8***	***17***	***10***	***0***	***48***
High income	5 – 10 yrs	7	4	14	19	3	**47**
	> 10 yrs	*6*	*4*	*6*	*7*	*0*	**23**
Upper middle	5 – 10 yrs	2	5	4	17	1	**29**
income	*> 10 yrs*	*3*	*2*	*4*	*2*	*0*	**11**
Lower middle	5 – 10 yrs	7	12	11	18	3	**51**
income	*> 10 yrs*	*3*	*2*	*5*	*1*	0	**11**
Low income	5 – 10 yrs	4	9	3	16	2	**34**
	> 10 yrs	*1*	*0*	*2*	*0*	*0*	**3**
Total	**5 – 10 yrs**	**20**	**30**	**32**	**70**	**9**	**161**
	> 10 yrs	***13***	***8***	***17***	***10***	***0***	**48**

Table 2a. Episodes of financial deepening - Descriptive Statistics

	5-10 years	10 years+
Average duration of episode (years)	6.9	14.7
Average Credit/GDP at beginning of episode	0.25 (-0.27)	0.24 (-0.22)
Lowest Credit/GDP at start of episode	0.011 [1/]	0.008 [2/]
Highest Credit/GDP at start of episode	1.317 [3/]	1.248 [4/]
Average Credit/GDP growth rate during episodes (in pct)	11.5 (-13.6)	9.6 (-14)
Peak Credit/GDP growth rate during episode (in pct)	109.5 [5/]	165.2 [6/]
Average Credit/GDP at the end of episode	0.422 (-0.372)	0.692 (-0.489)

Standard deviation in parentheses

1\ Angola

2\ Rwanda

3\ Hong Kong

4\ United States

5\ Lao PDR

6\ Cape Verde

Table 2b. Average Credit to GDP

Countries experiencing:	At start of period under review	At end (2005)
No financial acceleration	0.224	0.214
5-10 year accelerations	0.215	0.402
10-year+ accelerations	0.186	0.683

Table 2c. Post-acceleration Credit/GDP of countries experiencing 10-year+ episodes

Credit/GDP (2005)	Number of countries	Percent of total
Higher than at the end of episode	23	48
Same as at the end of episode [1/]	9	19
Lower than at the end of episode	16	33
Gain loss (percent)	**Number of countries**	
less than 49 percent	12	
50-99 percent	3	
more than 100	1	

1/ Mainly countries whose episodes ended close to 2005

Table 3 - Correlation Matrix of Variables

	$\Delta y_{t-1, t-2}$	π_{t-1}	Δ Fin. Lib index $_t$	Δ bank sup index $_t$	Duration democracy	Duration autocracy	ln credit/GDP t-1, t-2	Δ pos regime $_{t, t-5}$	Δ neg regime $_{t, t-5}$	ln GDP per cap $_{t-1}$	polity $_{t-1, ..., t-5}$	constr on exec $_{t, ..., t-5}$	legal origin English	legal origin French	legal origin German	legal origin Scandinavian	quality pol. Inst $_{t, ..., t-5}$	openness $_{t-1, t-2}$	govt fisc balance $_{t-2}$	real effect exch rate $_{t-2}$
$\Delta y_{t-1, t-2}$	1																			
π_{t-1}	-0.1133	1																		
Δ Fin. Lib index $_t$	-0.1453	0.12	1																	
Δ bank sup index $_t$	-0.0665	0.0208	0.0796	1																
duration democracy	-0.0437	-0.0333	-0.0285	0.0242	1															
duration autocracy	0.1172	-0.0368	-0.0233	-0.029	-0.2698	1														
ln credit/GDP t-1, t-2	-0.0358	-0.0546	-0.0684	0.0252	0.5713	-0.1143	1													
Δ positive regime $_{t, t-5}$	-0.0789	0.0595	0.0884	0.0688	-0.1034	-0.1755	-0.102	1												
Δ negative regime $_{t, t-5}$	0.0343	0.0385	-0.0268	-0.0305	-0.1262	-0.1006	-0.1379	-0.0833	1											
ln GDP per capita $_{t-1}$	-0.0274	-0.0347	-0.0234	0.0623	0.5758	-0.0755	0.7061	-0.1014	-0.1229	1										
polity $_{t-1, ..., t-5}$	-0.0798	0.0089	0.0349	0.0743	0.5888	-0.6084	0.3971	0.2091	-0.1623	0.3613	1									
constr on exec $_{t, ..., t-5}$	-0.0661	-0.0137	0.0345	0.079	0.5949	-0.513	0.4214	0.1721	-0.2228	0.3844	0.9372	1								
legal origin English	0.0361	-0.0466	-0.0374	-0.0124	0.2277	-0.0367	0.0264	-0.0749	0.0334	-0.0046	0.1245	0.1353	1							
legal origin French	0.0037	0.0211	-0.0199	-0.0523	-0.2515	0.0106	-0.1764	0.0138	0.0134	-0.1311	-0.1866	-0.2402	-0.6279	1						
legal origin German	-0.003	-0.014	-0.0252	-0.0061	0.2488	-0.1091	0.3876	-0.0144	-0.0355	0.224	0.2134	0.2101	-0.1256	-0.1554	1					
legal origin Scandinavian	-0.0263	-0.0127	-0.0076	0.0001	0.2018	-0.0996	0.0987	-0.0542	-0.0355	0.2918	0.2324	0.2342	-0.1144	-0.1415	-0.0283	1				
quality pol. Inst $_{t, ..., t-5}$	-0.0586	-0.0102	0.0371	0.0751	0.5908	-0.5727	0.4117	0.2079	-0.2104	0.3703	0.9777	0.9542	0.1022	-0.1759	0.2181	0.2348	1			
openness $_{t-1, t-2}$	-0.0112	-0.0311	0.0379	-0.0044	0.0017	-0.0057	0.018	0.0012	-0.0093	0.0164	0.0136	0.0119	-0.013	-0.0028	0.0061	-0.0035	0.0121	1		
govt fiscal balance $_{t-2}$	0.0552	0.0281	0.0649	0.0153	-0.0031	0.0079	-0.0184	0.0035	-0.0037	0.0104	0.0013	-0.0002	-0.0104	0.005	-0.003	0.0062	0.0015	-0.0286	1	
real effect exch rate $_{t-2}$	-0.0224	-0.0226	-0.0034	0.0031	0.0223	-0.0171	0.0273	0.0368	-0.115	0.0244	0.0514	0.0487	-0.0119	0.0017	0.0072	0.0075	0.0485	-0.0742	0.0035	1

Table 4. Predictability of Financial Acceleration Episodes

Episodes accompanied by:	5-10 years	10 years+
Financial liberalization [1/]	39.1	36.0
Improvements in supervision [2/]	32.2	24.0
Quality political institutions [3/]	34.1	56.0
Democratic regime of at least 10 years before takeoff	25.2	46.0
Autocratic regime of at least 10 years before takeoff	23.8	15.0
Positive regime change in last 5 years	26.4	0.5
Negative regime change in last 5 years	14.0	1.0
Financial crisis within 5 years following takeoff [4/]	8.7	4.2
Financial crisis within 5 years before takeoff [4/]	5.0	0.0

1/ A rise in the index of at least 0.13 basis points in the 4 years before the takeoff

2/ A rise in the index of at least 0.13 basis points in the 4 years before the takeoff

3/ Polity higher than 6 for at least 5 years before takeoff

4/ Episodes of financial crises are taken from Gourinchas et. al (2004) and Detragiache and Giang Ho (2010)

Table 5. Baseline Regressions

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\Big(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Pol.Institution_{t,t-j} + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t\Big)$$

Dependent variables	Episodes							
	controlling for polity				controlling for regime duration			
	all	5-10 years	5-10 years +	> 10 years	all	5-10 years	5-10 years +	> 10 years
$\Delta y_{t-1,\ t-2}$	0.0217***	0.0142***	0.0183***	0.00356**	0.0222***	0.0146***	0.0185***	0.00344**
	(0.00347)	(0.00282)	(0.00316)	(0.00169)	(0.00355)	(0.00295)	(0.00326)	(0.00164)
π_{t-1}	4.77e-05	4.41e-05	4.57e-05	1.08e-05	4.69e-05	4.10e-05	4.28e-05	1.12e-05
	(3.76e-05)	(3.63e-05)	(4.12e-05)	(1.05e-05)	(3.85e-05)	(3.69e-05)	(4.15e-05)	(1.06e-05)
Δ Fin. Lib index $_t$	0.689***	0.519***	0.551***	0.181**	0.670***	0.485***	0.514***	0.185**
	(0.196)	(0.164)	(0.182)	(0.0773)	(0.195)	(0.165)	(0.182)	(0.0750)
Δ Fin. Lib index $_{t-1}$	0.575***	0.474***	0.501***	0.0884	0.559***	0.444***	0.470**	0.0880
	(0.201)	(0.164)	(0.182)	(0.0794)	(0.201)	(0.166)	(0.183)	(0.0755)
Δ Fin. Lib index $_{t-2}$	0.568***	0.564***	0.501***	0.162*	0.562***	0.547***	0.484***	0.165**
	(0.195)	(0.163)	(0.179)	(0.0879)	(0.196)	(0.166)	(0.180)	(0.0839)
Δ bank sup index $_t$	0.183	-0.0123	0.0720	0.0616	0.173	-0.0211	0.0608	0.0605
	(0.114)	(0.104)	(0.107)	(0.0408)	(0.114)	(0.107)	(0.108)	(0.0381)
Δ bank sup index $_{t-1}$	0.315***	0.130	0.238**	0.0692	0.303***	0.139	0.234**	0.0693
	(0.117)	(0.110)	(0.108)	(0.0478)	(0.117)	(0.112)	(0.109)	(0.0447)
Δ bank sup index $_{t-2}$	0.437***	0.205*	0.329***	0.126***	0.428***	0.208*	0.322***	0.117***
	(0.112)	(0.107)	(0.104)	(0.0474)	(0.113)	(0.110)	(0.105)	(0.0452)
ln credit/GDP t-1, t-2	-0.169***	-0.0930***	-0.131***	-0.0517***	-0.173***	-0.0940***	-0.134***	-0.0478***
	(0.0174)	(0.0148)	(0.0159)	(0.00964)	(0.0176)	(0.0153)	(0.0162)	(0.00995)
ln GDP per capita $_{t-1}$	0.0871***	0.0625***	0.0739***	0.0202***	0.0700***	0.0447***	0.0576***	0.0175***
	(0.0125)	(0.0111)	(0.0115)	(0.00625)	(0.0116)	(0.0102)	(0.0106)	(0.00571)
polity $_{t-1,\ ...,\ t-5}$	-0.00512**	-0.00795***	-0.00740***	0.00251**				
	(0.00222)	(0.00186)	(0.00203)	(0.00112)				
duration democracy					0.000476	-0.000366	-5.68e-05	0.000416***
					(0.000375)	(0.000350)	(0.000371)	(0.000150)
duration autocracy					0.00172	0.00143	0.00198*	-0.00122
					(0.00132)	(0.00107)	(0.00117)	(0.00101)
Δ positive regime $_{t,\ t-5}$	0.0229	0.0496	0.0464	-0.0160	0.0221	0.0159	0.0274	-0.00877
	(0.0366)	(0.0364)	(0.0362)	(0.0101)	(0.0370)	(0.0322)	(0.0346)	(0.0125)
Δ negative regime $_{t,\ t-5}$	0.0701	0.0416	0.0489	0.0541	0.117*	0.0979*	0.107*	0.0360
	(0.0603)	(0.0473)	(0.0539)	(0.0540)	(0.0644)	(0.0563)	(0.0615)	(0.0428)
Observations	1433	1291	1374	938	1434	1292	1375	939
R^2	0.197	0.169	0.193	0.229	0.196	0.155	0.185	0.247
p-value	0	0	0	0	0	0	0	0
percentage of correctly classified observations	81.12	87.07	84.22	94.33	80.91	86.99	83.93	94.55

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6. Political institutions: Quality of Institutions and Executive Constraints

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\left(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Pol.Institution_{t,t-j} + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t\right)$$

Dependent variables	Episodes							
	controlling for quality of institutions				controlling for constraints on the executive			
	all	5-10 years	5-10 years +	> 10 years	all	5-10 years	5-10 years +	> 10 years
$\Delta y_{t-1, t-2}$	0.0217***	0.0143***	0.0183***	0.00359**	0.0221***	0.0146***	0.0187***	0.00349**
	(0.00346)	(0.00281)	(0.00315)	(0.00170)	(0.00348)	(0.00285)	(0.00318)	(0.00171)
π_{t-1}	4.77e-05	4.38e-05	4.55e-05	1.09e-05	4.83e-05	4.56e-05	4.66e-05	1.08e-05
	(3.75e-05)	(3.62e-05)	(4.11e-05)	(1.07e-05)	(3.75e-05)	(3.66e-05)	(4.13e-05)	(1.09e-05)
Δ Fin. Lib index $_t$	0.694***	0.527***	0.558***	0.181**	0.678***	0.504***	0.534***	0.189**
	(0.196)	(0.164)	(0.182)	(0.0778)	(0.196)	(0.165)	(0.183)	(0.0796)
Δ Fin. Lib index $_{t-1}$	0.578***	0.478***	0.504***	0.0880	0.570***	0.468***	0.493***	0.0906
	(0.201)	(0.164)	(0.182)	(0.0800)	(0.201)	(0.165)	(0.183)	(0.0823)
Δ Fin. Lib index $_{t-2}$	0.573***	0.570***	0.506***	0.162*	0.561***	0.553***	0.490***	0.166*
	(0.195)	(0.163)	(0.179)	(0.0885)	(0.195)	(0.164)	(0.180)	(0.0909)
Δ bank sup index $_t$	0.185	-0.0111	0.0742	0.0626	0.182	-0.00870	0.0727	0.0654
	(0.114)	(0.104)	(0.107)	(0.0411)	(0.114)	(0.105)	(0.107)	(0.0421)
Δ bank sup index $_{t-1}$	0.316***	0.130	0.239**	0.0705	0.313***	0.128	0.236**	0.0741
	(0.117)	(0.109)	(0.108)	(0.0482)	(0.117)	(0.111)	(0.109)	(0.0494)
Δ bank sup index $_{t-2}$	0.438***	0.205*	0.330***	0.128***	0.434***	0.205*	0.326***	0.130***
	(0.112)	(0.107)	(0.104)	(0.0477)	(0.113)	(0.109)	(0.104)	(0.0486)
ln credit/GDP t-1, t-2	-0.168***	-0.0922***	-0.130***	-0.0526***	-0.167***	-0.0893***	-0.128***	-0.0545***
	(0.0174)	(0.0147)	(0.0159)	(0.00962)	(0.0174)	(0.0149)	(0.0159)	(0.00969)
ln GDP per capita $_{t-1}$	0.0886***	0.0644***	0.0753***	0.0208***	0.0818***	0.0549***	0.0668***	0.0231***
	(0.0125)	(0.0111)	(0.0115)	(0.00630)	(0.0120)	(0.0107)	(0.0111)	(0.00622)
quality pol. Inst $_{t, ..., t-5}$	-0.00522**	-0.00793***	-0.00734***	0.00223**				
	(0.00211)	(0.00176)	(0.00192)	(0.00105)				
constr on exec $_{t, ..., t-5}$					-0.0117*	-0.0202***	-0.0177***	0.00614*
					(0.00684)	(0.00576)	(0.00626)	(0.00344)
Δ positive regime $_{t, t-5}$	0.0240	0.0509	0.0473	-0.0156	0.0147	0.0353	0.0341	-0.0147
	(0.0367)	(0.0364)	(0.0362)	(0.0104)	(0.0353)	(0.0339)	(0.0343)	(0.0112)
Δ negative regime $_{t, t-5}$	0.0638	0.0330	0.0412	0.0551	0.0710	0.0392	0.0494	0.0568
	(0.0598)	(0.0458)	(0.0528)	(0.0548)	(0.0613)	(0.0477)	(0.0547)	(0.0569)
Observations	1433	1291	1374	938	1433	1291	1374	938
R^2	0.198	0.171	0.194	0.228	0.196	0.163	0.189	0.224
p-value	0	0	0	0	0	0	0	0

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7. Robutsness test - Legal origin

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\Big(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Pol\ Inst_{t-j} + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t + \beta_{10}\ Legal\ origin\Big)$$

Dependent variables	Episodes							
	legal origin and polity				legal origin and regime duration			
	all	5-10 years	5-10 years +	> 10 years	all	5-10 years	5-10 years +	> 10 years
$\Delta y_{t-1,\ t-2}$	0.0217***	0.0136***	0.0181***	0.00337*	0.0223***	0.0139***	0.0184***	0.00367**
	(0.00347)	(0.00276)	(0.00315)	(0.00180)	(0.00357)	(0.00289)	(0.00325)	(0.00182)
π_{t-1}	4.98e-05	4.01e-05	4.76e-05	1.27e-05	4.82e-05	3.65e-05	4.44e-05	1.33e-05
	(3.86e-05)	(3.70e-05)	(4.31e-05)	(1.11e-05)	(3.91e-05)	(3.74e-05)	(4.34e-05)	(1.13e-05)
Δ Fin. Lib index $_t$	0.710***	0.537***	0.562***	0.192**	0.683***	0.505***	0.523***	0.199**
	(0.196)	(0.162)	(0.183)	(0.0813)	(0.195)	(0.162)	(0.182)	(0.0817)
Δ Fin. Lib index $_{t-1}$	0.575***	0.459***	0.490***	0.0986	0.552***	0.429***	0.456**	0.0975
	(0.201)	(0.162)	(0.183)	(0.0832)	(0.201)	(0.163)	(0.183)	(0.0832)
Δ Fin. Lib index $_{t-2}$	0.563***	0.548***	0.490***	0.161*	0.547***	0.532***	0.469***	0.166*
	(0.195)	(0.161)	(0.179)	(0.0926)	(0.195)	(0.163)	(0.181)	(0.0922)
Δ bank sup index $_t$	0.151	-0.0318	0.0429	0.0557	0.144	-0.0380	0.0351	0.0554
	(0.115)	(0.107)	(0.110)	(0.0428)	(0.116)	(0.109)	(0.111)	(0.0423)
Δ bank sup index $_{t-1}$	0.288**	0.130	0.221**	0.0634	0.283**	0.139	0.220**	0.0660
	(0.118)	(0.109)	(0.109)	(0.0502)	(0.118)	(0.111)	(0.110)	(0.0495)
Δ bank sup index $_{t-2}$	0.410***	0.211**	0.309***	0.121**	0.407***	0.215**	0.307***	0.120**
	(0.114)	(0.107)	(0.105)	(0.0505)	(0.114)	(0.109)	(0.107)	(0.0501)
ln credit/GDP t-1, t-2	-0.182***	-0.109***	-0.141***	-0.0510***	-0.185***	-0.111***	-0.145***	-0.0494***
	(0.0183)	(0.0153)	(0.0169)	(0.0104)	(0.0186)	(0.0158)	(0.0172)	(0.0107)
ln GDP per capita $_{t-1}$	0.0909***	0.0635***	0.0696***	0.0248***	0.0733***	0.0471***	0.0526***	0.0242***
	(0.0134)	(0.0118)	(0.0125)	(0.00701)	(0.0132)	(0.0114)	(0.0123)	(0.00708)
polity $_{t-1,\ \ldots,\ t-5}$	-0.00529**	-0.00748***	-0.00723***	0.00209*				
	(0.00227)	(0.00187)	(0.00207)	(0.00116)				
duration democracy					0.000371	-0.000277	3.22e-05	0.000229
					(0.000416)	(0.000369)	(0.000402)	(0.000187)
duration autocracy					0.00149	0.00163	0.00191	-0.00131
					(0.00135)	(0.00107)	(0.00120)	(0.00105)
Δ positive regime $_{t,\ t-5}$	-0.00749	0.0214	0.0132	-0.0183	-0.0128	-0.00344	-0.00230	-0.0159
	(0.0364)	(0.0346)	(0.0351)	(0.0122)	(0.0362)	(0.0309)	(0.0335)	(0.0133)
Δ negative regime $_{t,\ t-5}$	0.0553	0.0291	0.0373	0.0567	0.101	0.0815	0.0939	0.0343
	(0.0587)	(0.0450)	(0.0522)	(0.0575)	(0.0632)	(0.0543)	(0.0602)	(0.0441)
legal origin English	-0.0879*	-0.0598	-0.0952**	-0.00173	-0.0975*	-0.0558	-0.0960**	-0.0117
	(0.0496)	(0.0471)	(0.0407)	(0.0355)	(0.0504)	(0.0498)	(0.0424)	(0.0330)
legal origin French	-0.131**	-0.0574	-0.112**	-0.0324	-0.125**	-0.0479	-0.102**	-0.0359
	(0.0565)	(0.0564)	(0.0504)	(0.0425)	(0.0572)	(0.0575)	(0.0513)	(0.0440)
legal origin German	-0.0198	0.0593	0.0150		-0.0141	0.0793	0.0290	
	(0.0635)	(0.0821)	(0.0641)		(0.0663)	(0.0902)	(0.0696)	
legal origin Scandinavian	-0.110***	-0.0767**	-0.0724*	-0.0265**	-0.109***	-0.0779**	-0.0718*	-0.0265**
	(0.0377)	(0.0313)	(0.0389)	(0.0110)	(0.0385)	(0.0325)	(0.0401)	(0.0108)
Observations	1433	1291	1374	867	1434	1292	1375	868
R^2	0.206	0.184	0.205	0.250	0.204	0.172	0.198	0.252
p-value	0	0	0	0	0	0	0	0

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8. Robustness test - macro variables and polity

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\left(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 Polity_{t,t-5} + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t + \beta_{10} Macro\right)$$

Dependent variables	Episodes											
	controlling for fiscal balance				controlling for real exchange rate				controlling for openness			
	all	5-10 years	5-10 years -> 10 years		all	5-10 years	5-10 years -> 10 years		all	5-10 years	5-10 years -> 10 years	
$\Delta y_{t-1,\ t-2}$	0.0198***	0.0122***	0.0158***	0.00355**	0.0317***	0.0200***	0.0245***	0.00592*	0.0223***	0.0144***	0.0187***	0.00377**
	(0.00367)	(0.00288)	(0.00327)	(0.00180)	(0.00603)	(0.00483)	(0.00532)	(0.00308)	(0.00357)	(0.00287)	(0.00323)	(0.00170)
π_{t-1}	3.98e-05	4.34e-05	4.87e-05	-1.98e-05	6.04e-05	-0.00128*	-0.00200**	0.000254	4.67e-05	4.32e-05	4.43e-05	1.04e-05
	(4.52e-05)	(3.37e-05)	(3.89e-05)	(5.00e-05)	(9.19e-05)	(0.000775)	(0.000921)	(0.000172)	(3.71e-05)	(3.62e-05)	(4.08e-05)	(1.03e-05)
Δ Fin. Lib index $_t$	0.538***	0.367**	0.357*	0.187**	0.425	0.332	0.289	0.147	0.696***	0.511***	0.555***	0.178**
	(0.204)	(0.167)	(0.188)	(0.0802)	(0.274)	(0.224)	(0.241)	(0.0990)	(0.197)	(0.163)	(0.182)	(0.0772)
Δ Fin. Lib index $_{t-1}$	0.453**	0.400**	0.346*	0.0950	0.475*	0.334	0.416*	0.0262	0.574***	0.465***	0.500***	0.0864
	(0.209)	(0.164)	(0.186)	(0.0818)	(0.276)	(0.220)	(0.234)	(0.0951)	(0.202)	(0.163)	(0.182)	(0.0788)
Δ Fin. Lib index $_{t-2}$	0.496**	0.529***	0.447**	0.135	0.447*	0.418*	0.250	0.248*	0.519***	0.520***	0.453**	0.164*
	(0.202)	(0.163)	(0.181)	(0.0935)	(0.266)	(0.219)	(0.233)	(0.129)	(0.196)	(0.163)	(0.179)	(0.0876)
Δ bank sup index $_t$	0.237**	0.0225	0.122	0.0641	0.141	-0.0319	-0.00482	0.0627	0.181	-0.0229	0.0700	0.0608
	(0.116)	(0.101)	(0.106)	(0.0428)	(0.143)	(0.126)	(0.128)	(0.0459)	(0.114)	(0.104)	(0.107)	(0.0404)
Δ bank sup index $_{t-1}$	0.387***	0.182*	0.310***	0.0696	0.270*	0.160	0.187	0.0657	0.317***	0.121	0.239**	0.0685
	(0.120)	(0.109)	(0.108)	(0.0501)	(0.148)	(0.129)	(0.129)	(0.0533)	(0.117)	(0.109)	(0.108)	(0.0473)
Δ bank sup index $_{t-2}$	0.482***	0.231**	0.364***	0.136***	0.409***	0.188	0.259**	0.111*	0.437***	0.196*	0.327***	0.125***
	(0.116)	(0.106)	(0.104)	(0.0508)	(0.142)	(0.126)	(0.126)	(0.0584)	(0.113)	(0.107)	(0.104)	(0.0473)
ln credit/GDP t-1, t-2	-0.170***	-0.0936***	-0.129***	-0.0533***	-0.194***	-0.0831***	-0.135***	-0.0615***	-0.173***	-0.0951***	-0.132***	-0.0537***
	(0.0181)	(0.0149)	(0.0162)	(0.0103)	(0.0269)	(0.0229)	(0.0239)	(0.0197)	(0.0177)	(0.0150)	(0.0161)	(0.0100)
ln GDP per capita $_{t-1}$	0.0956***	0.0682***	0.0794***	0.0234***	0.102***	0.0255	0.0531***	0.0424***	0.0952***	0.0676***	0.0809***	0.0221***
	(0.0132)	(0.0115)	(0.0119)	(0.00678)	(0.0222)	(0.0184)	(0.0190)	(0.0153)	(0.0129)	(0.0114)	(0.0119)	(0.00640)
polity $_{t-1, \ldots, t-5}$	-0.00550**	-0.00831***	-0.00771***	0.00222*	-0.000304	-0.00106	-0.000179	0.00309	-0.00615***	-0.00862***	-0.00849***	0.00243**
	(0.00230)	(0.00189)	(0.00207)	(0.00115)	(0.00399)	(0.00312)	(0.00333)	(0.00221)	(0.00232)	(0.00193)	(0.00211)	(0.00114)
Δ positive regime $_{t,\ t-5}$	0.0390	0.0608	0.0675*	-0.0165	-0.00920	-0.00644	-0.0101	0.0161	0.0209	0.0482	0.0446	-0.0160
	(0.0390)	(0.0376)	(0.0386)	(0.0107)	(0.0558)	(0.0444)	(0.0475)	(0.0337)	(0.0366)	(0.0363)	(0.0360)	(0.01000)
Δ negative regime $_{t,\ t-5}$	0.159**	0.107*	0.128*	0.0814	-0.150***	-0.114***	-0.133***	0.245	0.0429	0.0180	0.0203	0.0487
	(0.0761)	(0.0632)	(0.0704)	(0.0726)	(0.0547)	(0.0155)	(0.0166)	(0.336)	(0.0586)	(0.0440)	(0.0506)	(0.0514)
govt fiscal balance $_{t-2}$	-0.0731	-0.0166	-0.0527	-0.0751								
	(0.212)	(0.169)	(0.193)	(0.0909)								
real effect exch rate $_{t-2}$					0.000240*	0.000228**	0.000249**	1.19e-06				
					(0.000139)	(8.92e-05)	(0.000102)	(7.96e-05)				
openness $_{t-1,\ t-2}$									-9.95e-05	4.66e-05	-0.000109	-2.98e-05
									(0.000436)	(0.000379)	(0.000398)	(0.000191)
Observations	1292	1168	1244	853	664	593	638	475	1400	1261	1342	920
R^2	0.203	0.175	0.201	0.236	0.190	0.144	0.175	0.310	0.202	0.169	0.198	0.235
p-value	0	0	0	0	0	0	0	0	0	0	0	0

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9. Robustness test - macro variables and duration of polity

$$Prob(Financial\ Acceleration\ of\ duration\ n) = F\Big(cst + \beta_0 \Delta y_{t-1,t-2} + \beta_1 y^c_{t-1} + \beta_2 \frac{C_{t-1}}{Y_{t-1}} + \beta_3 \pi_{t-j} + \beta_4 \Delta Fin.lib.Index_{t-j} + \beta_5 \Delta Bank\ sup.Index_{t-j} + \beta_6 duration\ polity + \beta_7 Pos.Change_{t,t-5} + \beta_8 Neg.Change_{t,t-5} + \beta_9 Year - effect_t + \beta_{10} Macro\Big)$$

Variables	Episodes											
	controlling for fiscal balance				controlling for real exchange rate				controlling for openness			
	all	5-10 years	5-10 years -> 10 years		all	5-10 years	5-10 years -> 10 years		all	5-10 years	5-10 years -> 10 years	
$\Delta y_{t-1,\ t-2}$	0.0198***	0.0123***	0.0156***	0.00343**	0.0321***	0.0194***	0.0245***	0.00309	0.0221***	0.0146***	0.0184***	0.00352**
	(0.00375)	(0.00302)	(0.00337)	(0.00171)	(0.00632)	(0.00510)	(0.00566)	(0.00566)	(0.00362)	(0.00299)	(0.00331)	(0.00163)
π_{t-1}	3.87e-05	3.96e-05	4.50e-05	-1.46e-05	5.77e-05	-0.00130*	-0.00201**	0.000112	4.49e-05	3.86e-05	3.97e-05	1.09e-05
	(4.57e-05)	(3.44e-05)	(3.93e-05)	(4.49e-05)	(9.05e-05)	(0.000766)	(0.000906)	(0.000213)	(3.79e-05)	(3.66e-05)	(4.12e-05)	(1.08e-05)
Δ Fin. Lib index $_t$	0.526***	0.343**	0.333*	0.184**	0.480*	0.368	0.320	0.0738	0.678***	0.480***	0.517***	0.184**
	(0.202)	(0.168)	(0.187)	(0.0761)	(0.273)	(0.224)	(0.241)	(0.138)	(0.196)	(0.165)	(0.182)	(0.0744)
Δ Fin. Lib index $_{t-1}$	0.434**	0.366**	0.315*	0.0917	0.509*	0.356	0.436*	0.0186	0.554***	0.435***	0.464**	0.0864
	(0.208)	(0.167)	(0.186)	(0.0752)	(0.274)	(0.219)	(0.233)	(0.0548)	(0.202)	(0.166)	(0.183)	(0.0741)
Δ Fin. Lib index $_{t-2}$	0.492**	0.504***	0.427**	0.137	0.476*	0.434**	0.262	0.120	0.513***	0.506***	0.436**	0.167**
	(0.202)	(0.165)	(0.182)	(0.0864)	(0.265)	(0.219)	(0.232)	(0.220)	(0.197)	(0.166)	(0.181)	(0.0826)
Δ bank sup index $_t$	0.222*	0.00466	0.103	0.0624	0.126	-0.0509	-0.0198	0.0274	0.169	-0.0328	0.0569	0.0591
	(0.116)	(0.104)	(0.107)	(0.0388)	(0.142)	(0.126)	(0.127)	(0.0518)	(0.115)	(0.107)	(0.108)	(0.0375)
Δ bank sup index $_{t-1}$	0.367***	0.183*	0.297***	0.0694	0.250*	0.146	0.176	0.0314	0.304***	0.130	0.235**	0.0670
	(0.120)	(0.111)	(0.109)	(0.0455)	(0.146)	(0.127)	(0.128)	(0.0595)	(0.118)	(0.112)	(0.109)	(0.0442)
Δ bank sup index $_{t-2}$	0.467***	0.228**	0.352***	0.123***	0.395***	0.180	0.253**	0.0483	0.429***	0.199*	0.321***	0.113**
	(0.116)	(0.109)	(0.105)	(0.0475)	(0.141)	(0.125)	(0.124)	(0.0883)	(0.114)	(0.110)	(0.105)	(0.0448)
ln credit/GDP t-1, t-2	-0.177***	-0.0965***	-0.135***	-0.0489***	-0.201***	-0.0880***	-0.139***	-0.0278	-0.180***	-0.0972***	-0.138***	-0.0512***
	(0.0184)	(0.0155)	(0.0165)	(0.0108)	(0.0273)	(0.0232)	(0.0243)	(0.0494)	(0.0181)	(0.0156)	(0.0165)	(0.0105)
ln GDP per capita $_{t-1}$	0.0781***	0.0496***	0.0621***	0.0196***	0.0846***	0.0174	0.0450***	0.0183	0.0772***	0.0485***	0.0640***	0.0186***
	(0.0121)	(0.0104)	(0.0109)	(0.00611)	(0.0196)	(0.0156)	(0.0164)	(0.0331)	(0.0121)	(0.0105)	(0.0110)	(0.00578)
duration democracy	0.000592	-0.000196	0.000108	0.000408***	0.00141***	0.000678	0.000706	0.000220	0.000536	-0.000322	-5.24e-05	0.000466***
	(0.000381)	(0.000345)	(0.000367)	(0.000151)	(0.000504)	(0.000428)	(0.000447)	(0.000400)	(0.000385)	(0.000356)	(0.000378)	(0.000157)
duration autocracy	0.00242*	0.00224**	0.00267**	-0.00111	0.00158	0.00155	0.000837	-0.00302*	0.00284**	0.00201*	0.00300**	-0.000993
	(0.00137)	(0.00106)	(0.00119)	(0.000992)	(0.00233)	(0.00178)	(0.00192)	(0.00170)	(0.00139)	(0.00112)	(0.00123)	(0.00103)
Δ positive regime $_{t,\ t-5}$	0.0432	0.0331	0.0534	-0.00987	0.0190	0.00960	0.00429	0.0204	0.0229	0.0159	0.0269	-0.00745
	(0.0401)	(0.0345)	(0.0377)	(0.0122)	(0.0593)	(0.0473)	(0.0498)	(0.0418)	(0.0374)	(0.0323)	(0.0346)	(0.0130)
Δ negative regime $_{t,\ t-5}$	0.225***	0.193***	0.212***	0.0555	-0.149***	-0.112***	-0.131***	0.207	0.0997	0.0775	0.0863	0.0368
	(0.0795)	(0.0740)	(0.0782)	(0.0560)	(0.0521)	(0.0156)	(0.0166)	(0.326)	(0.0650)	(0.0552)	(0.0611)	(0.0434)
govt fiscal balance $_{t-2}$	-0.0333	0.0394	0.00310	-0.0900								
	(0.213)	(0.171)	(0.193)	(0.0874)								
real effect exch rate $_{t-2}$					0.000234*	0.000227***	0.000248**	-9.95e-06				
					(0.000134)	(8.78e-05)	(9.99e-05)	(4.68e-05)				
Δ openness $_{t-1,\ t-2}$									-5.88e-05	-4.31e-05	-0.000134	0.000116
									(0.000439)	(0.000384)	(0.000402)	(0.000182)
Observations	1293	1169	1245	854	664	593	638	475	1400	1261	1342	920
R^2	0.202	0.160	0.193	0.257	0.201	0.149	0.179	0.349	0.201	0.154	0.190	0.257
p-value	0	0	0	0	0	0	0	0	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

APPENDIX I – OVERVIEW OF EPISODES OF FINANCIAL DEEPENING (1960 – 2005)

Country	Region	Income Level	Episode Between 5 and 10 years		Episode Over 10 years	
			Period	Length	Period	Length
Aruba	WH	HIC	2000 – 2004	5		
Angola	AFR	LMIC	2000 – 2005	6 *		
Albania	CEE	LMIC	1997 – 2005	9 *		
Argentina	WH	HMIC	1992 – 1999	8		
Armenia	CIS	LMIC	1996 – 2000	5		
Australia	ASIA	HIC	1964 – 1968	5	1983 – 2005	23
Austria	EUR	HIC			1962 – 1981	20
Burundi	AFR	LIC	1968 – 1974	7		
			1978 – 1982	5		
			1987 – 1995	9		
			1999 – 2003	5		
Belgium	EUR	HIC	1987 – 1994	8	1962 – 1980	19
Benin	AFR	LIC	1998 – 2005	8 *		
Burkina Faso	AFR	LIC	1972 – 1978	7		
			1996 – 2005	10 *		
Bangladesh	ASIA	LIC	2000 – 2005	6 *		
Bulgaria	CEE	UMIC	2000 – 2005	6 *		
Bahrain	MENA	HIC	1981 – 1985	5		
			1991 – 1998	8		
Bahamas	WH	HIC			1990 – 2002	13
Belize	WH	LIC	1988 – 1992	5		
Bolivia	WH	LIC			1986 – 1999	14
Barbados	WH	HIC	1995 – 2001	7		
Bhutan	ASIA	LIC	1987 – 1994	8		
			2001 – 2005	5 *		
Botswana	AFR	UMIC	1998 – 2005	8 *		
Central African Republic	AFR	LIC	1999 – 2004	6		

Canada	WH	HIC			1963 – 1982	20
Switzerland	EUR	HIC	1981 – 1990	10		
Chile	WH	UMIC	1976 – 1983	8		
			1993 – 2002	10		
China, P.R.			1996 – 2003	8	1980 – 1992	13
Cote d'Ivoire	AFR	LMIC			1968 – 1981	14
Cameroon	AFR	LMIC	1972 – 1981	10		
			1999 – 2004	6		
Colombia	WH	UMIC	1993 – 1998	6		
Cape Verde	AFR	LMIC			1987 – 2003	17
Costa Rica	WH	UMIC	1970 – 1975	6	1996 – 2005	10*
Cyprus	EUR	HIC			1986 – 2002	17
Germany	EUR	HIC	1962 – 1968	7		
			1978 – 1982	5		
			1994 – 1999	6		
Dominica	WH	UMIC	1979 – 1983	5		
			1988 – 1996	9		
Denmark	EUR	HIC	1983 – 1989	7		
			1997 – 2005	9 *		
Dominican Republic	WH	UMIC	1993 – 2002	10	1963 – 1976	14
Algeria	MENA	UMIC	1981 – 1986	6		
			1999 – 2005	7 *		
Ecuador	WH	LMIC	1992 – 1999	8		
Egypt	MENA	LMIC	1980 – 1987	8		
			1993 – 2001	9		
Spain	EUR	HIC	1997 – 2005	9 *		
Estonia	CEE	HIC	1995 – 1999	5		
Ethiopia	AFR	LIC	1969 – 1973	5		
			1992 – 2000	9		
Finland	EUR	HIC	2000 – 2005	6 *	1981 – 1991	11
Fiji	ASIA	UMIC			1976 – 1994	18
France	EUR	HIC	1986 – 1991	6	1962 – 1980	19
Gabon	AFR	UMIC	1997 – 2002	6		

United Kingdom	EUR	HIC	1999 – 2005	7 *	1981 – 1991	11
Georgia	CIS	LMIC	1998 – 2005	8 *		
Ghana	AFR	LIC	1993 – 2000	8		
The Gambia	AFR	LIC	1977 – 1981	5		
			1998 – 2003	6		
Guinea Bissau	AFR	LIC	1993 – 1999	7		
Equatorial Guinea	AFR	HIC	1995 – 1999	5		
Greece	EUR	HIC	1967 – 1972	6	1995 – 2005	10 *
			1975 – 1980	6		
Grenada	WH	UMIC			1985 – 2001	17
Guatemala	WH	LMIC	1963 – 1967	5		
			1977 – 1984	8		
			1993 – 1999	7		
Hong Kong	ASIA	HIC	1994 – 1998	5		
Honduras	WH	LMIC	1983 – 1988	6	1964 – 1976	13
			1996 – 2000	5		
Croatia	CEE	HIC	2001 – 2005	5 *		
Haiti	WH	LIC	1964 – 1969	6		
			1971 – 1979	9		
			1987 – 1991	5		
Hungary	CEE	HIC	1985 – 1989	5		
			1998 – 2005	8 *		
Indonesia	ASIA	LMIC			1983 – 1997	15
India	ASIA	LMIC	1998 – 2005	8 *	1966 – 1986	21
Ireland	EUR	HIC			1994 – 2005	12 *
Iran	MENA	LMIC	1964 – 1970	7		
			1975 – 1981	7		
			1998 – 2005	8 *		
Iceland	EUR	HIC	1988 – 1993	6		
			1996 – 2005	10 *		
Israel	EUR	HIC			1992 – 2002	11
Italy	EUR	HIC	1988 – 1992	5		
			1998 – 2005	8		

Jamaica	WH	UMIC	1968 – 1974	7		
Jordan	MENA	LMIC	1979 – 1985	7		
Japan	ASIA	HIC	1981 – 1990	10		
Kazakhstan	CIS	UMIC	1998 – 2005	8 *		
Kenya	AFR	LIC	1970 – 1974	5		
Cambodia	ASIA	LIC	2001 – 2005	5 *		
Saint Kitts & Nevis	WH	UMIC	1988 – 1994	7		
Korea	ASIA	HIC	1978 – 1985	8		
			1996 – 2004	9		
Kuwait	MENA	HIC	1994 – 1999	6	1976 – 1987	12
Lao PDR	ASIA	LIC	1992 – 1997	6		
St Lucia	WH	UMIC			1988 – 2002	15
Sri Lanka	ASIA	LMIC	1962 – 1971	10		
Lesotho	AFR	LMIC	1978 – 1985	8		
			1989 – 1994	6		
Lithuania	CEE	UMIC	1998 – 2005	8 *		
Luxemburg	EUR	HIC	1987 – 1993	7		
Latvia	CEE	UMIC	1997 – 2005	9 *		
Morocco	MENA	LMIC	1972 – 1977	6		
			1991 – 2000	10		
Moldova	CIS	LMIC	1997 – 2005	9 *		
Maldives	ASIA	LMIC	1998 – 2005	8 *		
Mexico	WH	UMIC	1962 – 1968	7		
			1988 – 1994	7		
Mali	AFR	LIC	1996 – 2004	9		
Malta	CEE	HIC	1963 – 1971	9	1980 – 1993	14
			1997 – 2001	5		
Myanmar	ASIA	LIC	1995 – 2001	7		
Mongolia	CIS	LMIC	1999 – 2005	7 *		
Mozambique	AFR	LIC	1996 – 2000	5		
Mauritius	AFR	UMIC			1983 – 2000	18
Malaysia	ASIA	UMIC	1991 – 1998	8	1963 – 1986	24
Niger	AFR	LIC	1978 – 1983	6		

			1999 – 2005	7 *		
Nigeria	AFR	LMIC	1963 – 1968	5	1971 – 1982	12
			1997 – 2002	6		
Netherlands	EUR	HIC	1962 – 1967	6	1971 – 1981	11
					1986 – 1996	11
Norway	EUR	HIC	1982 – 1989	8		
Nepal	ASIA	LIC	1966 – 1974	9		
			1977 – 1982	6	1985 – 2000	16
New Zealand	ASIA	HIC	1995 – 1999	5	1973 – 1992	20
Oman	MENA	HIC	1994 – 1999	6		
Pakistan	ASIA	LMIC			1962 – 1972	11
Panama	WH	UMIC	1992 – 2000	9	1962 – 1975	14
Peru	WH	UMIC	1991 – 1999	9		
Philippines	ASIA	LMIC	1989 – 1997	9	1972 – 1982	11
Papua New Guinea	ASIA	LMIC	1979 – 1986	8		
Poland	CEE	UMIC	1996 – 2002	7		
Portugal	EUR	HIC			1963 – 1974	12
					1991 – 2002	12
Paraguay	WH	LMIC	1963 – 1971	9		
			1989 – 1996	8		
Russia	CIS	UMIC	1996 – 2005	10 *		
Rwanda	AFR	LIC			1968 – 1988	21
Saudi Arabia	MENA	HIC			1975 – 1988	14
Sudan	AFR	LMIC	1975 – 1979	5		
Senegal	AFR	LIC	1972 – 1979	8		
			1999 – 2005	7 *		
Singapore	ASIA	HIC	1969 – 1975	7		
			1978 – 1985	8		
Solomon	ASIA	LMIC	1984 – 1989	6		
El Salvador	WH	LMIC	1970 – 1974	5		
			1978 – 1985	8		
			1993 – 2000	8		
Suriname	WH	UMIC			1976 – 1986	11

Slovenia	EUR	HIC			1994 – 2005	12 *
Sweden	EUR	HIC	1986 – 1990	5		
			1997 – 2005	9 *		
Swaziland	AFR	LMIC	1975 – 1980	6		
Seychelles	AFR	UMIC			1990 – 2005	16 *
Syria	MENA	LMIC	1976 – 1984	9		
			1990 – 1994	5		
Togo	AFR	LIC	1973 – 1978	6		
Thailand	ASIA	LMIC			1968 – 1980	13
					1988 – 1998	11
Tonga	ASIA	LMIC	1980 – 1989	10	1993 – 2005	13
Trinidad & Tobago	WH	HIC	1982 – 1986	5	1962 – 1972	11
Tanzania	AFR	LIC	1999 – 2005	7 *		
Uganda	AFR	LIC			1988 – 2000	13
Uruguay	WH	HMIC	1978 – 1983	6		
			1994 – 2001	8		
USA	WH	HIC	1983 – 1988	6	1994 – 2005	12
Venezuela	WH	UMIC	1974 – 1978	5		
Vietnam	ASIA	LIC	1998 – 2005	8 *		
Vanuatu	ASIA	LMIC	1986 – 1993	8		
			2000 – 2004	5		
Samoa	ASIA	LMIC			1985 – 2005	21 *
South Africa	AFR	UMIC	1992 – 2000	9		

* unfinished episodes (30 short ones)

APPENDIX II – DATA SOURCES

Variable	Full name	Source
y_t	Real Gross Domestic Product (GDP)	World Development Indicators (WDI), GDP in constant prices
π_t	Rate of inflation	World Economic Outlook (WEO), annual rate of inflation as measured by consumer price index
credit/GDP	Ratio of Bank credit to private sector over GDP	WDI
GDP per capita	Real GDP per capita	WDI
Govt fiscal balance	Central government fiscal balance/GDP	WEO
Real effect exch rate	Real effective exchange rate	International Financial Statistics (IFS)
Openness	Openness of the economic measured as (exports+imports of goods and services)/GDP)	own calculations based on IFS
Fin lib index	Index of financial liberalization	Tressel-Detragiache (2008) and own calculations based on Tressel-Detragiache (2008). We took bank supervision out of the index.
Bank sup index	Index of financial supervisory reform	Extracted from the index of financial liberalization (TD, 2008 and own calculations) (see above).
Polity	Polity2	POLITY IV
Qual pol inst	Quality of political institutions	Own calculations based on POLITY 2 index, POLITY IV
Duration democracy and autocracy	Duration of democracy and autocracy	POLITY IV
Constr on Exec	Constraints on Executives	Subvariable of POLITY 2, POLITY IV
Δ Positive regime	Positive regime change	Own calculations based on POLITY IV. Dummy that takes value 1, if a positive change took place in four years before start of financial acceleration.
Δ Negative regime	Negative regime change	Own calculations based on POLITY IV. Dummy that takes value 1, if a negative change took place in four years before start of financial acceleration.
Legal origin English, French, German, Scandinavian	Legal origin (UK, France, Scandinavia and Germany) (dummy)	La Porta et al. 1999