Latin American democratisation and currency crises (1975–2008)

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Abstract

Latin America experienced a deep political transformation from authoritarianism to democracy in the recent decades. During the same period, many countries in the region also suffered severe currency crises. We contend that these two phenomena are causally related. Specifically, we argue that democratic transitions increase political demand for public spending, leading to budget deficits, and this increases investors' propensity to liquidate local currency holdings. Moreover, we note an important 'threshold' effect, in which democratisation is particularly likely to lead to currency crises when the pre-existing fiscal deficits are already relatively high. Statistical analysis confirms these arguments in a sample of twenty-five Latin American countries in the period from 1975 to 2008.

Keywords: budget deficit; currency crises; democratisation; herding; Latin America; political regime.

Why did many Latin American countries suffer from currency crises immediately following democratisation? It is hard to find a direct answer to this question despite the plethora of empirical studies on Latin American exchange rates in both political science and economics (Thies and Arce 2009; Pop-Eleches 2008; Frenkel and Ros 2006; Edwards 2003; Ahmed 2003; Frieden and Stein 2001). From this recent literature, we know that macroeconomic fundamentals influence the probability of a currency crisis, as do political events such as elections and cabinet changes. Nobody, however, has yet posed and tested the obvious hypothesis that democratisation itself explains Latin America's currency crises.

This lacuna is surprising given the enormous amount of attention to regime type in the comparative political economy literature. Dozens of studies have examined whether democratic or authoritarian regimes perform better economically, and more recently a few studies have examined the effect of *democratisation* on economic performance.[1] None of this literature, however, has focused on the important public policy problem of currency crisis.

In this paper, we therefore provide a comprehensive and multi-faceted analysis of the nexus between Latin American democratisation and currency crisis. Our analysis contains three novelties. First, whereas no previous study has, to our knowledge, linked these two important phenomena, we demonstrate that Latin American democratisation and currency crises are in fact tightly related, both theoretically and empirically. Second, unlike most political economy analyses, we explicitly explore the intervening processes, demonstrating that budget deficits are the primary link tying democratisation to currency crises. Third, unlike previous statistical studies of 'new democracy' more generally, we note that the economic effect of this peculiar regime type is highly conditional on the surrounding economic context. We test this multi-faceted political economy model in a sample of twenty-five Latin American countries from 1975 to 2008.

The article is comprised of five sections. The following section motivates our argument by noting its roots in the existing qualitative literature on Latin American political economy. The second section articulates the theoretical logic through which democratisation generates currency

crises. The third section introduces the empirical model and variables employed. The fourth section reports the primary findings, while the fifth section discusses the implications of our study.

Motivation

Although our argument has never been tested, it must be intuitive to historically-orientated scholars of Latin America, many of whom have long noted that democratisation led to economic instability. This line of reasoning often begins by noting that 'bureaucratic authoritarian' regimes in Argentina, Brazil, Chile, and Uruguay excluded labor politically and economically, generating substantial inequality in an attempt to finance capital accumulation (Schamis 1991). Similarly, in Central America, military regimes excluded popular sectors, sometimes including long civil wars pitting elites against peasants (McCleary 1999).

By the 1980s, the citizens of Latin America, therefore, embodied considerable pent-up demand for redistribution and public spending, and these demands were rather suddenly released during the democratisation process. Unlike in older democracies, where demands for social spending are tempered by concerns with budget deficits, most political analysts note that citizens in new Latin American democracies demanded that politicians address the serious and ongoing problem of socio-economic inequality. Following Brazilian democratisation, for instance, President Sarney was 'under strong pressure to respond quickly to the expansionary aspirations of populist and leftist groups in the PMDB and the unions that had long been in opposition to the outgoing military government. Consequently, his administration adopted measures that stimulated consumption […], clashed bitterly with the local business class [and] broke off relations with the IMF' (Kaufman and Stallings 1989: 209).

A vast array of case studies similarly support the conclusion that Latin American democratisation exacerbated economic difficulties because these new regimes were unable to process strong pressures for greater economic equality. Kaufman and Stallings (1989), for instance, compare nine major Latin American countries and conclude that the 'transitional democracy' is the

regime type most likely to yield macroeconomic instability because democratisation unleashed popular demands for economic expansion and redistribution. Our goal is to formalise and extend these arguments, and then subject the resulting hypotheses to statistical tests, focusing on one particularly important economic outcome, namely currency crisis.

Theory

We define currency crisis in conventional fashion as a sudden, reluctant, and large-scale devaluation of a country's currency. The proximate cause is capital flight, where a large number of traders decide to liquidate their local currency holdings in favour of alternative currencies. Governments frequently try to prevent devaluation by using their foreign reserves to buy up the local currency – *i.e.* by pegging the currency – but when capital flight is severe, such reserves are often insufficient. The resulting large-scale depreciation of the currency is the hallmark of a currency crisis (Eichengreen *et al.* 1997; Frankel and Rose 1996). Some well-known examples include the Mexican 'Tequila' crisis (1994), the East Asian financial crisis (1997), and the Argentine peso crisis (2002).

Our central argument is that democratisation increases the probability of a Latin American country suffering a currency crisis. Our analysis builds on two conventional wisdoms in the economics literature. First, it is known that fiscal deficits are a central cause of currency crises. We extend this logic by noting that fiscal deficits are best seen as an intervening process, themselves partially determined by democratic transition. Second, economists are increasingly aware that currency speculators engage in herd behaviour, where investors are relatively unconcerned until objective economic indicators reach a 'tipping point', after which a sudden and massive collapse in confidence can occur. We extend this logic by noting that democratisation's negative effects are therefore partially conditional, occurring more frequently when a country is already near a dangerous level of fiscal deficits.

New democracy and fiscal deficits

Economists put fiscal deficits at the center of their explanations of currency crises. First-generation models suggest straightforwardly that currency crises are generated by suboptimal economic policy, and in particular expansionary fiscal policies and budget deficits (Krugman 1979; Flood and Marion 1999; Flood and Garber 1984). These budget deficits usually necessitate foreign borrowing, and since foreign debt must be repaid, the country faces a serious shortage of foreign exchange reserve. When the day of reckoning approaches, currency traders initiate a speculative attack.

Second-generation economic models continue to posit that budget deficits cause currency crises, but add that the deficit does not have to be realised in order to have this effect. Obstfeld (1986; 1994), for instance, argues that crises are 'self-fulfilling' given that investors' expectation that future deficits might lead to a future currency crisis can trigger a pre-emptive attack in the present. This explains why crises occur even when budget deficits have not yet reached unsustainable levels (see also Eichengreen 1999).

Given that budget deficits, whether actual or merely anticipated, play a central role in the strictly economic understanding of currency crises, our theoretical and empirical models focus squarely on the political cause of these budget deficits. Essentially, we view the standard fiscal policy explanation as – at least partially – an intervening explanation. We accept the standard story that budget deficits increase the probability of currency crises, but we extend this conventional story by noting that democratisation is a cause of such deficits.

We emphasise the importance of *democratisation* (becoming a democracy) rather than *democracy* (being a democracy), given that it is widely recognised that newly democratising regimes yield distinctively different macroeconomic performances than democracy in general (*e.g.* Gasiorowski and Poptani 2006; Papaioannou and Siourounis 2008).

To understand the effects of *democratisation*, however, it is important to first articulate the conventional wisdom on *democracy*. On the one hand, democracy provides a potentially powerful avenue for poorer citizens to seek greater social spending, which in turn can lead to high levels of

government spending and budget deficits. Given that the distribution of income in all societies is unequal, it is rational for the median citizen to vote for politicians who advocate taxing the wealthy in order to finance larger welfare spending for the poor (Meltzer and Richard 1981). Empirical studies of Latin America support this perspective, noting that under democratic rule social welfare spending has tended to rise compared to what occurred under authoritarian rule (*e.g.* Kaufman and Segura-Ubiergo 2001; Brown and Hunter 2004; Avelino *et al.* 2005; Haggard and Kaufman 2008).

On the other hand, democracy's propensity towards increased social spending and budget deficits is moderated by countervailing tendencies (Peltzman 1992). Returning to Meltzer and Richard's formal model, for instance, it is often forgotten that it yields an equilibrium in which the median voter does not support taxation and spending indiscriminately, but rather moderates his or her demand for spending once the marginal cost of higher taxes (*i.e.* decreased economic efficiency) exceeds the marginal benefits of higher government social spending (*i.e.* increased redistribution).

Whereas the literature on *democracy* suggests that voters balance the costs and benefits of increased spending and deficits, the literature on *democratisation* suggests that this balance is heavily tilted towards increased government spending and budget deficits (*e.g.* Nelson 1990).

Building upon this literature, we argue, first, that citizen preferences in new democracies are more inclined than in established democracies to favour increases in social spending and, in addition, are less concerned with the costs of budget deficits. In established democracies, citizen demands have already largely been met through the democratic process, such that *ceteris paribus* citizens prefer approximately the same spending as the previous year. In new democracies, by contrast, median voters have not yet had their demands met and want to elevate wages and spending substantially to compensate for previous decades of economic exclusion.[2] In essence, these nations were 'out of equilibrium' when they entered democratisation, with considerable pent-up demands compared to established democracies. To use the terms of Bueno de Mesquita *et al.* (2003: 163), one should expect 'a significant increase in government expenditure as one moves from the smallest coalition systems to the largest coalition systems'.

Moreover, citizens in new democracies are less inclined to worry about budget deficits than citizens in established democracies. This is partially so because it is easier for citizens in a new democracy to see the benefits of higher wages and increased spending, and it is only after living with these democratic policy outcomes for a while that citizens come to appreciate the negative consequences, such as budget deficits, indebtedness, and inflation. Low levels of information and transparency, moreover, exacerbate this relative inattention to deficits:

> In *new democracies*, citizens have less information about fiscal outcomes, as well as less understanding of the political process generating fiscal policy. This would reflect experience with the electoral process by voters, the establishment of the institutions that would collect and provide the relevant data, and experience by media in disseminating and analyzing this information. (Brender and Drazen 2007: 6, emphasis added; see also Alt and Lassen 2006)

Perhaps most importantly, citizens in new Latin American democracies had not yet experienced the consequences of serious deficit spending. Kahler (1990), for instance, notes that new Latin American democracies engaged in substantial 'social learning' during the mid- to late 1980s, in which citizens came to realise that excessive spending without adequate taxation led to hyper-inflation and economic collapse in Argentina, Brazil, Peru, and Bolivia.[3]

Indirect evidence supports this general point that citizens in new democracies are less concerned with budget deficits than established democracies. Political business cycle studies frequently note that whereas politicians increase budget deficits to get elected in new democracies, in established democracies voters are increasingly 'conservative' and no longer reward such behaviour (Peltzman 1992; Rogoff 1990; Bender and Drazen 2005; 2007; 2009). Even more to the point, Barbeira and Avellino (2011) have recently demonstrated this same difference in contemporary Latin America.

A second important mechanism linking new democracy to budget deficits is that weak political institutions in many new democracies made it difficult for governments to resist these pent-

up societal demands and/or to bring interest groups together to moderate their demands. In general terms, this point has been around since Huntington (1968), who argued that in developing countries a rapid rise in societal demands outstrips the ability of nascent political institutions to process these demands in an effective and orderly fashion. Political and economic order requires integrating and moderating social demands, but in a 'politically backward society lacking a sense of political community, each leader, each individual, each group pursues and is assumed to be pursuing its own immediate short-run material goals without consideration for any broader public interest' (Huntington 1968: 31).

Katzenstein's (1985) influential work in many ways articulates the polar opposite situation, in which high levels of political institutionalisation encourage competing interest groups to moderate their demands and achieve policies which maximise the public interest. Democratic corporatism in small European nations represented a high level of political institutionalisation which brought labour and capital into close coordination, resulting in many flexible compromises, in which labour accepted limits on wage increase in the interest of international competiveness, while business accepted higher than normal taxation, which financed generous welfare transfers to workers.

New democracies in Latin America are more likely to accord with Huntington's portrait of weak and chaotic institutions than with Katzenstein's portrait of complex coordinated institutions. Political party systems, for instance, are vital for interest articulation and coordination, and it is generally accepted that party systems are unstable and polarised in new democracies, including those in Latin America (Roberts and Wibbels 1999).

Haggard and Kaufman (1995) document at length how these unstable and polarised party systems undermined economic policy in many new Latin American democracies, including generating larger budget deficits. A particularly interesting commonality is that party systems were unable to generate compromise, such that labour parties refused to moderate demands for wages increases and spending, while conservative parties refused to accept the higher taxation needed to finance spending. Kaufman and Stallings (1989: 210) similarly conclude that, 'unlike more

established democracies, economic policy choices [in new democracies] were not moderated by long-standing patterns of consultation between executive and legislature, competing parties, or major interest groups'.

To sum up, for two general reasons investors have good grounds for fearing that democratisation will weaken domestic currencies by engendering budget deficits. On the demand side, the pent-up desire for social spending was suddenly released when citizens received voting rights, especially since the median voter had not yet 'learned' or been informed to moderate their spending demands in light of the dangers of excessive budget deficit. On the supply side, these weak political institutions, and more specifically fragmented and polarised party systems, prevented the necessary moderation and compromises needed to reduce pressure on spending and/or to generate the tax revenues necessary to prevent deficits. For all of these reasons, we hypothesise:

(H_1): Currency crises are more likely under new democracy than other regime types.

Investor herding

So far, our analysis has been grounded in first and second generation economic models, noting that the fiscal deficits so emphasised in the economics literature are more likely to arise in the years after democratisation. We now extend this framework to incorporate additional insights from the economics literature, such as the notions of 'multiple equilibria' and 'herd behaviour'. Extending these intuitions, we suggest that democratisation's effect on currency traders should be conditional on the pre-existing budget deficits, such that democratisation will be particularly worrisome to investors when it accompanies a pre-existing deficit.

This line of reasoning begins with a common assumption in economic theories of investor behaviour, namely that markets exhibit 'multiple equilibria' (*e.g.* Morris and Shin 1998). The intuition is that traders are concerned about their peers' behavior as well as government policy actions. For instance, if investor A believes that other investors are going to panic, then it is rational to suspect that the government cannot withstand the speculative pressure and investor A will

therefore liquidate his/her local holding of local currency. Alternatively, if investor A believes that other investors are *not* going to panic, it is rational to suspect that the government can defend the currency relatively easily, and investor A will *keep* his/her currency holdings. The key point is that the decision to divest is driven not merely by economic fundamentals, but by *perceptions* of other actors. A given set of economic conditions can lead to either a positive or negative equilibrium, depending on the nature of investor perceptions.

Multiple equilibria can occur in any financial market context, which explains sudden stock market crashes and other forms of herd behaviour, but most scholars view multiple equilibria as most common in developing countries, and particularly in new democracies. The intuition is that economic policy in such countries is less transparent and more uncertain, such that investors have a weaker sense of the objective 'economic fundamentals' and therefore take a stronger cue from other investors' behaviour (*e.g.* Morris and Shin 1998, Haggard 2000; MacIntyre 2001; Hays *et al.* 2003).

The concept of 'herd behaviour' captures nicely the reality that investors react *en masse*. Herd animals react to the possible risk of a predator with increased wariness but do not actually run until a certain fear threshold is met, at which point the entire herd panics and flees at top speed. Analogously, in a multiple equilibria framework, as economic fundamentals worsen investors do not abandon currencies until some threshold is reached at which point investors panic *en masse*, resulting in a massive sell-off even when the fundamentals have only worsened slightly.

In this sense, currency crisis is somewhat of a dichotomous process (Chari and Kehoe 2004). A medium risk of a crisis generates little fear because investors believe they live in a positive equilibrium situation, but even slightly worse economic conditions can push investors over the edge into a negative equilibrium expectation, suddenly throwing the entire investor community into a speculative attack.

We suggest that the most obvious conditioning variable is simply current budget deficits. If a country currently suffers from relatively high budget deficits, investors will likely conclude that the additional pressure from democratisation will result in dangerously high deficits, which would push

the country over the edge into the 'risky equilibrium'. But if current budget deficits are not overly high, then investors would take a relatively sanguine approach to democratisation, even if they are aware that budget deficits might rise somewhat. We therefore hypothesise:

> (H_2): Democratisation is more likely to generate a currency crisis when budget deficits are relatively high rather than when budget deficits are relatively low.

Research design

Variables

Our dependent variable is 'currency crisis'. This variable is coded 1 if there is a currency crisis in a given year, otherwise 0. The measure of the incidence of a currency crisis follows the definition of Frankel and Rose's seminal study (1996: 3): 'a nominal depreciation of the currency of at least 25 per cent that is also at least a 10 per cent increase in the rate of depreciation.' Accordingly, utilising the nominal exchange rate data for each country (Heston *et al.* 2011), we find 43 currency crises in the available sample of 650 country-years. The data spans from 1975 to 2008 including the cases of 25 Latin American countries.[4]

As with all panel data, temporal dependence in the dependent variable and potential serial correlation of the error term must be addressed. To account for temporal dependence, following Carter and Signorino (2010), we include variables counting the number of the previous crises as well as the cubic polynomial approximation of the preceding non-crisis years – *i.e.* t, t^2 and t^3. These terms also take into account the issue of recurrent crises prevalent in Latin America as they capture various modes through which the latest crisis affects the probability of the current one.[5]

The explanatory variable is 'new democracy'. This concept captures country-years where a country just experienced democratisation or is still affected by democratisation. The literature has struggled with how to operationalise the concept of 'new democracy' since it is evident that all definitions are somewhat arbitrary. For comparability, we follow Remmer (1990), Gasiorowski and Poptani (2006), Bender and Drazen (2005), and Rodrik and Wacziarg (2005) by measuring new

democracy as a dummy variable set equal to 1 for all country-years within a certain time span after democratisation. Specifically, we follow Rodrik and Wacziarg (2005) by considering 'new democracy' to begin with the year of democratisation and to prevail for five additional years. As Rodrik and Wacziarg's five-year cut-off point is somewhat arbitrary, we demonstrate in our online appendix (**Table C1**) that the results are not sensitive to alternative cut-offs.[6]

We measure 'democracy' with Cheibub *et al.*'s (2010) dataset, which corrects and updates Przeworski *et al.* (2000). Since debates continue as to the most appropriate way to proxy democracy, we additionally utilise POLITY as an alternative measure of regime. Consistent with previous studies (Bender and Drazen 2005; Easterly 2001), we measure central government budget balance as tax revenue minus grant and total expenditure expressed as a percentage of GDP. Budget balance data are from the IMF's Government Financial Statistics (GFS) and the World Bank's World Development Indicators (2011). As a form of sensitivity analysis, we also use the Inter-American Development Bank's (IDB) budget balance data, which are available from 1991 to 2011 with few missing values, as well as the change, not the level, of fiscal balance (see **Table C3** in the online appendix for the results).

To ward against omitted variable bias, we include a set of control variables suggested by Frankel and Rose (1996), which is heavily cited and utilised in both the economic and political science literatures on currency crises (*e.g.* Leblang and Satyanath 2006). These variables address three sets of crisis determinants. First, contemporary debt stocks (expressed as a percentage of GDP) influence crises: 1) the amount of debt lent by commercial banks, 2) the amount that is concessional, 3) the amount that is variable-rate, 4) the amount that is public sector, 5) the amount that is short-term, 6) the amount lent by multilateral development banks and 7) the flow of foreign direct investment (FDI) expressed as a percentage of the debt stock. Secondly, as measures of vulnerability to external shocks, we include: 1) the ratio of total debt to GNP, 2) the ratio of reserves to monthly import values, 3) the current account surplus (+) or deficit (-) expressed as a percentage of domestic output, and 4) the degree of overvaluation. We define the latter simply as

the deviation from Purchasing Power Parity. Third, given that overall economic health influences crises, we examine: 1) the domestic credit growth rate; and 2) the growth rate of real GDP *per capita*. Finally, we use the percentage growth rate of real OECD output (in American dollars, at 2000 exchange rates and prices) as a measure of the advanced countries' demand and construct the 'foreign interest rate' as the average of short-term interest rates for the United States, Germany, Japan, France, the United Kingdom and Switzerland.

We also follow the literature by proxying contagion effects with the number of currency crises in the world in the given year (Eichengreen *et al.* 1997).[7] All these control variables are derived or computed from the World Development Indicators of the World Bank (2011) unless otherwise specified.[8] One variable we do not include in our baseline line model is budget deficits, given that we explicitly hypothesise that democratisation influences currency crisis precisely through the mechanisms of budget deficits.

Model

Given that currency crisis is a dichotomous variable, we utilise binary probit regression with standard errors clustered by country for the benchmark specification. We test our first hypothesis (that new democracy increases the probability of a currency crisis) by including the 'new democracy' variable in a replication of Frankel and Rose's (1996). Our second hypothesis is that democratisation has a larger effect when preexisting budget deficits are large. This sort of conditional expectation is traditionally tested by interaction models (Kam and Franzese 2007). When one variable (budget deficits) causes another variable (democratisation) to become more salient, then the product of these two variables should be statistically significant, and we model our hypotheses in this fashion.

Put more formally, for our hypotheses to be confirmed, in the following simplified models we expect γ_{16} to be significantly positive in **Model 1** (Hypothesis 1) and δ_{18} to be significant in **Model 2** (Hypothesis 2).

Model 1: probit[p(crisis=1)] = $\alpha + \gamma_j$[control variables] + $\gamma_{16} newdemocracy_{it} + e_{it}$

Model 2: probit[p(crisis=1)] = $\alpha + \delta_j$[control variables] + $\delta_{16} newdemocracy_{it} + \delta_{17} budget + \beta_{18} newdemocracy \times budget + e_{it}$

Results

Table 1 presents the estimates of a probit model, using Frankel and Rose (1996) as a baseline specification for the control variables.

[Table 1 here]

Model 1 tests the hypothesis that new democracies experience a higher rate of currency crises than other regime types. Our first hypothesis is again confirmed, in that the coefficient of the new democracy variable is positive and significant ($p<.05$). Given that probit coefficients are not readably interpretable, we provide the marginal effect of democratisation in **Figure 1**, which suggests that the impact of democratisation on currency crisis is not only statistically significant but also substantially large. Specifically, holding other variables at their median, the likelihood of a currency crisis in a new democracy is about 25 per cent whereas the likelihood of a currency crisis in other regimes is less than the half of that (11.25%). Put differently, a country that has democratised recently is about twice more likely to experience currency crisis than those that have not yet democratised or those that democratised a relatively long time ago.

[Figure 1 here]

Turning to the control variables, consistent with previous studies (*e.g.* Kaminsky *et al.* 1998), we find that falling FDI, deteriorating current account balances, slower GDP growth, increasing commercial bank debt, and a higher number of currency crises around the world are all good

predictors of currency crisis for Latin American countries. On the other hand, we also find that most of the debt variables are insignificant or even negatively significant, consistent with Frankel and Rose's (1996) own analysis of Latin American countries.

Fiscal deficits as an intervening process

Clearly, democratisation is associated with significantly higher chances of a currency crisis. We further argued in the previous section, however, that fiscal deficits are an important intervening process in this relationship. If this holds empirically, two additional relationships should obtain. First, democratisation should have a significant effect on *budget deficits*. Second, once we control for this intervening process, the effect of democratisation should *weaken*.

We test for democratisation's effect on budget deficits in **Table 2**. Budget balance is the dependent variable and the new democracy is again the independent variable of theoretic interest. We include a standard array of control variables.[9] During the period as a whole, the coefficient is negative, as expected, but the relationship is not significant (Column 1). Given that this contradicts previous studies, which generally find that democratisation does increase budget deficits (*e.g.* Block *et al.* 2003), we examine the relationship more carefully by disaggregating across decades.

As shown in Columns 2–4, democratisation did have a significant negative effect on fiscal deficits in the period from 1975 to 1985, as well as from 1985 to 1995. Given that our argument is that investors view democratisation as a cause of budget deficits, it is notable that democratisation worsened budget deficits during the early and middle decades, such that it was eminently rational for investors to assume that democratisation was a potential cause of deficits (and hence currency crises).

It is interesting to note that this relationship becomes insignificant during the last decade in our sample, from 1995 to 2008. We interpret this result as a consequence of the 'learning effect' of the countries with recurrent crises (Kahler 1990). Political leaders update their information on the status of their economies from their own or neighbours' economic failures and change their policy

orientations to maximize the probability of them staying in power (Simmons and Heinmueller 2005). In the Latin American context, the complete meltdown of the regional economies during the 1980s including hyperinflations and debt crises and the subsequent collapse of political regimes had taught the leaders important lessons on the cataclysmic political consequences of naïve fiscal policies. Having learned that the effect of lax public spending spilt well beyond the realm of economic policies so as to threaten the survival of political leaders, many, if not most, Latin American countries shifted toward fiscal tightening during the 1990s (Weyland 2002).

[Table 2 here]

If budget deficits are the primary intervening process between democratisation and currency crises, then we additionally expect that once we control for this effect, the statistical relationship between democratisation and currency crisis should weaken since the primary causal effect is being partialled out of the democratisation variable (see, for instance, King *et al.* 1994: 78). We test this relationship in **Model 2** of **Table 1** and, as expected, the democracy variable is no longer significant, suggesting that, once we take into account democratisation's effect on budget deficits, there is little additional negative effect from democratisation on currency crisis.

A threshold effect

Having confirmed our first hypothesis, namely that democratisation causes currency crises through the intervening process of budget deficits, we now turn to our second hypothesis, namely that there is a 'threshold' effect in this relationship. Again, the central intuition is that democratisation does not frighten investors until some critical threshold in the economic fundamentals is reached, at which point investors suddenly panic as a 'herd', rapidly shifting from relative calm to massive capital flight. Given that budget deficits are clearly at the heart of economic theories of currency crisis, we posited above that when budget deficits are high, democratisation is likely to lead to a

currency crisis, but when deficits are low, investors would not panic even when democratisation occurs.

We test this hypothesis with an interaction term capturing any synergistic effect of pre-existing deficits and democratisation in **Model 3**, **Table 1**. The significant coefficient for the interaction term confirms that democratisation's negative effect is significantly moderated by budget deficits. To provide a better sense of this interactive relationship, in **Figure 2** we graph the marginal effect of new democracy at different levels of budget balance. When there are severe budget deficits (the left side of the graph), the transition to democracy increases the probability of a currency crisis and this effect is statistically significant. When budget deficits shrink, however, the marginal effect of democratisation falls substantially to the level at which the probability of currency crises is indistinguishable between young democracies and other regimes.

[Figure 2 here]

Concerning statistical significance, the cut-off point for budget balance is about –2% of GDP. This indicates that when deficits are larger than 2% of GDP, democratisation leads to a significantly higher probability of currency crises, but once budget deficits fall to less than 2% of GDP or smaller, the effect not only declines but is also statistically insignificant.

The substantive effect of this interaction variable is rather large. For example, when the budget deficit is about 7%, the probability of a currency crisis is 60% for a new democracy while it is only 3.8% for an established democracy or an autocracy. The new democracy in Peru illustrates this relationship, where deficits were around 7.5% of GDP in 1984 and the country suffered a currency crisis in the following year. When deficits are as high as 13%, as it occurred in Brazil (1986), the predicted chances of a currency crisis are even higher, at about 81%, and not surprisingly, Brazil suffered a currency crisis in the following year. These results support the idea that pre-existing budget deficits significantly condition investors' reaction to democratisation.

We conducted a number of sensitivity analyses against possible alternatives to our models and measurement (see **Appendix C** for the results). They test if our results are robust to different measures of new democracy. Also examined in this robustness check is whether or not including potentially influential variables such as dummy variables for the 1980s, election periods, leftist governments, inflation and central bank independence change our result presented in **Table 1**. Finally, the appendix also reports the result of testing whether or not a 'new autocracy' variable has the same effect as new democracy.

Endogeneity

There is one methodological question that deserves to be addressed, namely the possibility that our results might be contaminated by endogeneity. Indeed, many case studies on Latin America suggest that the global economic crisis of the early 1980s led to a decade of democratisation (Haggard and Kaufman 1995; Epstein 1984; Richards 1986).

To some extent, the analyses provided above address the endogeneity concerns. For instance, if a generalised economic crisis in the 1980s led to democratisation as well as currency crises, then controlling for 'generalised economic crisis' should have eliminated these effects, which is why we controlled for economic growth and outstanding debt. We also adopted the standard procedure of lagging all independent variables by one year to mitigate the endogeneity concerns.

[Table 3 here]

Nonetheless, given the theoretical reasons to suspect endogeneity, we additionally model explicitly whether or not a reverse causation is taking place. **Table 3** provides a model in which democratisation is the *dependent variable*, and currency crisis is the *independent variable*. We include a standard array of control variables (Column 1). The variables in the model relate to democratisation as predicted in the literature, and pseudo R^2 is reasonably high, but the more

important point for our purposes is that currency crisis does *not* have any significant effect on the probability of democratic transition. We additionally estimate a more parsimonious model that excludes all other economic variables to ensure that the currency crisis variable was not at all weakened by any potential collinearity, and again find that currency crisis has no effect on democratisation (Column 2 of **Table 3**). It seems reasonable, therefore, to conclude that the significant correlations between democratisation and currency crises in **Table 3** reflect solely the effect from regime transition to currency crisis, not the reverse. This finding is consistent with Chuwieroth and Walter's recent research (2010), which shows that while debt and banking crises have an effect on executive turnover, currency crises do not.

Conclusion

This study provides an analysis of how democratisation causes currency crises. We find that new Latin American democracies unleash popular pressure for expansionary economic policies and that in addition new democracies are not sufficiently institutionalised to moderate these demands without generating budget deficits. The result is an increased probability of currency crises. We further demonstrate that this effect is conditional on the current state of public policy, such that democratisation's effect on currency crises will be more severe when combined with pre-existing budget deficits. In the same vein, we show that this effect weakened when Latin American policymakers learned the hard lessons from the catastrophic consequences of fiscal expansion and accordingly reined in public spending in the 1990s and 2000s.

These findings have implications for various bodies of literature. Most obviously, future studies on currency crises should take into account the importance of regime change. Given its prominent role in most political economy analyses, scholars have previously tested the effects of democracy *per se* and generally found no effect on currency markets (*e.g.* Leblang and Satyanath 2008). While *democracy* may not be relevant, *democratisation* matters both theoretically and

empirically. Future research should therefore broaden its current focus on elections and cabinet crises to a broader focus on regime type itself.

Secondly, our findings inform the broader literature on the political economy of investment. Conventional wisdom within the foreign direct investment (FDI) literature, for instance, suggests that democracy influences capital flows (Jensen 2003; Li and Resnick 2003). Again, an emphasis on *democratization* provides an important new insight into these FDI effects, given that the uncertainties and policy problems associated with democratisation should influence FDI in a manner analogous to that of currency markets.

Finally, our results present policymakers with an important policy lesson. Given that investors engage in forward thinking and herd behaviour, policy signals matter greatly. We found, consistent with common sense, that democratisation is profoundly concerning to investors when it occurs in the context of a pre-existing budget deficit. On the other hand, when countries enter a transition with a budget surplus, as did several Latin American countries after learning from the mistakes of their predecessors, the democratisation effect weakens. The obvious yet important implication is that policymakers should strain to balance budgets when undergoing a democratic transition.

Notes

[1] The evidence is decidedly mixed for young democracies (Remmer 2002; Rodrik and Waziarg 2005; Gasiorowski and Poptani 2006; Papaioannous and Siourounis 2008).

[2] This by no means implies that new democracy is the only political regime in which the citizenry demands public spending. Morrison (2011), for instance, notes that even authoritarian regimes face pressure for public spending. As most scholars note, however, such pressures are generally stronger under democratic than authoritarian regimes.

[3] This is not to argue that public demand for expansion is unique to new democratic regimes in Latin America. In fact, nondemocratic populist regimes were also known for lax government

spending to accommodate their constituents' strong appetite for public spending. By focusing on the strong popular demand for expansion in new democracies, we highlight that prudent fiscal policies expected of democracies are hard to come by until the regime matures.

[4] The list of countries is provided in the online appendix. Although usually not considered 'Latin America' strictly speaking, we include the former British colonies in the sample to obtain the largest sample size possible. Excluding these countries does not alter our main findings (see **Table C8** in the online appendix).

[5] In addition, we also experimented on adding a count variable for the number of crises that happened in the country up to the present time, namely, 'past crises'. While somewhat significant in itself, adding this variable does not alter our main result (see **Table C5** in the online appendix).

[6] Theoretically, it is plausible that investors react to the preludes of democratisation such that currency crises are triggered before the first year of new democracy, in which case we suffer a measurement error. We ran a sensitivity analysis to see if including the year preceding democratisation in our measure of new democracy makes any difference in the result and found no substantive difference (see **Table C4** in the online appendix).

[7] We also tested whether adopting alternative measures for this variable such as the number of currency crises in Latin America or the number of crises in the past two years change the result; however, we did not find any of such change (see **Table C5** of the online appendix for result).

[8] Descriptive statistics are provided in the online appendix.

[9] Our control variables draw upon the literature on budget studies, such as Roubini and Sachs (1989).

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Table 1: New democracy and currency crisis (1975–2008): probit estimates

	(1)	(2)	(3)
new democracy	0.507**	-0.278	0.475†
	(0.222)	(0.567)	(0.662)
budget balance$_{t-1}$		0.024	0.038†
		(0.021)	(0.026)
new democracy*budget $_{t-1}$			-0.160***
			(0.054)
credit change $_{t-1}$	0.067	-1.103	-1.120
	(0.360)	(1.094)	(0.988)
reserve $_{t-1}$	-0.147***	-0.096	-0.088*
	(0.032)	(0.059)	(0.052)
current account $_{t-1}$	-0.048**	-0.117***	-0.117***
	(0.021)	(0.038)	(0.040)
growth rate $_{t-1}$	-0.056**	-0.061**	-0.058**
	(0.025)	(0.028)	(0.028)
overvaluation $_{t-1}$	-0.009***	-0.037**	-0.038**
	(0.003)	(0.017)	(0.016)
OECD growth rate $_{t-1}$	0.006	0.007	0.009
	(0.080)	(0.157)	(0.152)
foreign interest rate $_{t-1}$	0.099*	0.069	0.054
	(0.051)	(0.079)	(0.083)
commercial debt $_{t-1}$	0.523	4.505***	4.742***
	(0.533)	(1.158)	(1.142)
concessional debt $_{t-1}$	-0.018**	-0.011	-0.012
	(0.008)	(0.013)	(0.014)
variable debt $_{t-1}$	-0.044	-0.021	-0.020
	(0.038)	(0.111)	(0.097)
public debt $_{t-1}$	-0.123	-2.157	-2.265
	(0.515)	(1.371)	(1.381)
short-term debt $_{t-1}$	-0.035***	-0.049***	-0.049***
	(0.012)	(0.015)	(0.017)
multilateral debt $_{t-1}$	-0.007	-0.029	-0.029
	(0.011)	(0.018)	(0.018)
FDI $_{t-1}$	-0.515***	-0.961**	-0.987***
	(0.176)	(0.405)	(0.352)
total debt $_{t-1}$	-0.071***	-0.190***	-0.206***
	(0.016)	(0.060)	(0.068)
contagion $_{t}$	0.027*	0.051*	0.053*
	(0.014)	(0.031)	(0.030)
Constant	-0.149	-0.150	0.040
	(1.098)	(1.044)	(1.065)
observations	650	334	334
countries	25	19	19
log pseudolikelihood	-118.43653	-48.749764	-48.323786
pseudo R^2	0.2582	0.3560	0.3616

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%. † jointly significant at 95%

Table 2: New democracy and budget balance

DV: budget balance	(1)	(2)	(3)	(4)
time period	full	1975-1984	1985-1994	1995-2008
new democracy	-0.947	-2.507*	-2.320**	1.015
	(0.938)	(1.516)	(1.083)	(1.895)
GDP growth rate $(\%)_{t-1}$	-0.031	-0.200*	0.101	0.096**
	(0.060)	(0.103)	(0.069)	(0.041)
log (GDP per capita) $_{t-1}$	2.497	8.056***	1.034	1.218*
	(1.535)	(1.979)	(2.390)	(0.669)
gov't consumption $_{t-1}$	-0.308***	-1.158***	-0.266***	-0.305***
	(0.110)	(0.151)	(0.089)	(0.043)
public debt $_{t-1}$	1.227	3.700	6.452	-0.765
	(1.909)	(3.072)	(3.927)	(1.181)
short-term debt $_{t-1}$	-0.017	-0.141***	-0.068	0.044
	(0.029)	(0.050)	(0.050)	(0.030)
current account $_{t-1}$	0.072	0.167	0.011	0.028
	(0.069)	(0.104)	(0.075)	(0.048)
currency crisis $_{t-1}$	-1.067*	0.178	-2.885***	-0.481
	(0.618)	(0.815)	(1.064)	(1.004)
constant	-20.110	-57.104***	-11.557	-8.856
	(12.614)	(16.585)	(22.115)	(5.831)
observations	396	112	159	122
number of code	22	17	20	17
R-square	0.1488	0.7366	0.3563	0.4210

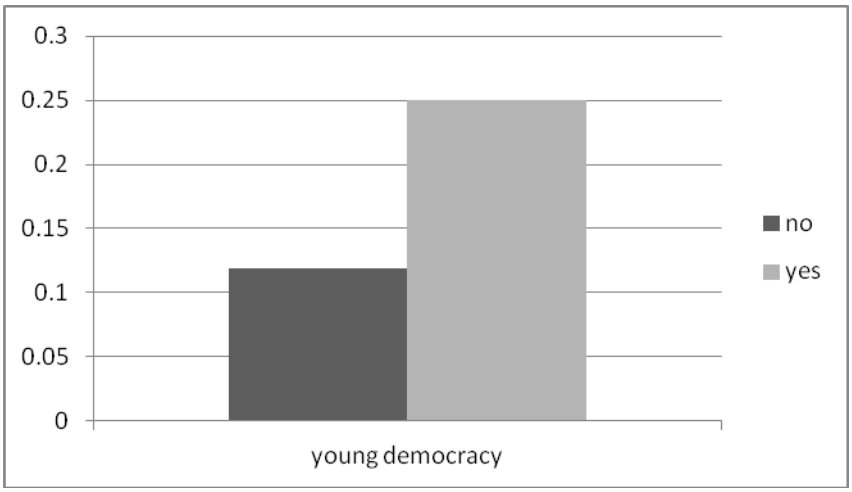
Cell entries are OLS estimates with panel-corrected standard errors in parentheses. First-order autocorrelation (AR(1)) applied. * significant at 10%; ** at 5%; *** at 1%.

Table 3: Reverse causality?

dependent variable: democratisation		
	in-sample	saturated model
$crisis_{t-1}$	0.312	-0.516
	(0.489)	(1.017)
$growth_{t-1}$	-0.013	
	(0.037)	
$GDPpc_{t-1}$	-0.231	
	(0.541)	
$debt_{t-1}$	0.059	
	(0.046)	
current $account_{t-1}$	0.049	
	(0.030)	
budget $balance_{t-1}$	-0.010	
	(0.039)	
total $democracy_{t-1}$	-0.559***	-0.086***
	(0.177)	(0.039)
Δtotal $democracy_t$	0.296**	0.003
	(0.125)	(0.094)
year	-0.346***	0.147*
	(0.124)	(0.083)
constant	682.225***	-291.147*
	(253.291)	(164.3048)
observations	334	999
pseudo R^2	0.2698	0.0537
log pseudolikelihood	-19.113763	-85.292461

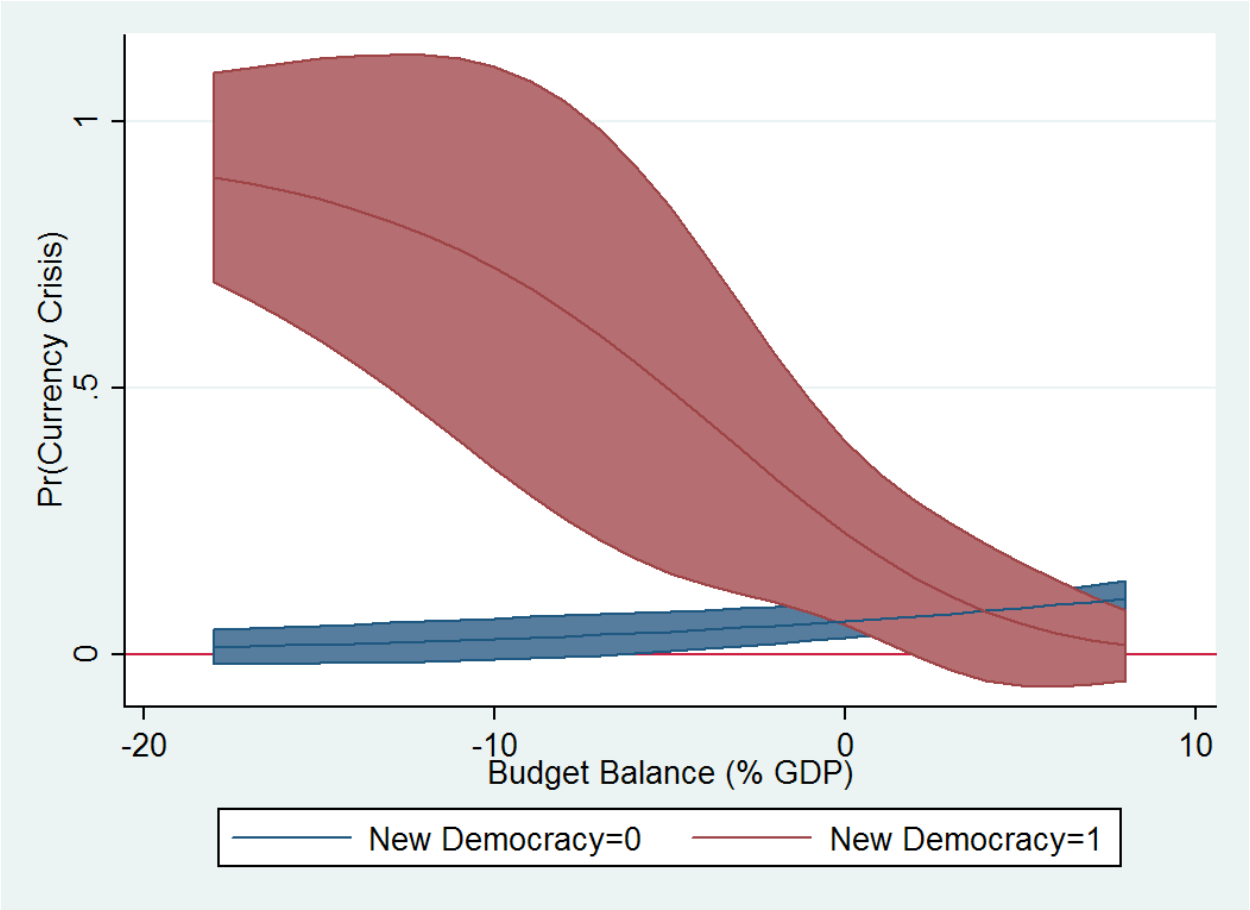
Cell entries are logit coefficients. Standard errors (in parentheses) are clustered by country. * significant at 10%; ** at 5%; *** at 1%.

Figure 1: Likelihood of currency crisis



NOTE: Based on Model 1 in Table 1. Values of all other variables are fixed at their median.

Figure 2: Marginal effect of new democracy on currency crisis



Note: Each solid line is the marginal effect of the new democracy (and non-new democracy) on currency crisis and the coloured area is its 95% confidence intervals, both of which are calculated from Model 3 (Table 3). The horizontal axis indicates the budget balance as percentage values of GDP. Positive (negative) values refer to budget surplus (deficit). The vertical axis indicates the marginal effect of new democracy on the probability of currency crisis. Values of all other variables are fixed at their median.

Appendix A: Sample

The countries are Argentina, Belize, Bolivia, Brazil, Colombia, Chile, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, Uruguay, and Venezuela. The cases that adopted 'dollarisation' – Panama, Ecuador (2000–), and El Salvador (2001–) – are not included. The years cover all periods for which data is available, with earlier periods being impossible to study due to low coverage for important control variables, such as concessional debt, short-term debt, and FDI. In total, our sample of 650 country-years covers more than 76% of the possible sample of 850 country-years, which is comparable to other political economy studies. As usual, it is the smaller countries which tend to have the most missing observations.

Appendix B: Descriptive statistics

variable	mean	SD	min	max
currency crisis	0.060	0.237	0	1
young democracy	0.074	0.263	0	1
budget balance	-2.114	3.843	-18.571	8.766
domestic credit change	0.245	0.203	-0.193	1
reserve	4.592	3.173	0.311	16.206
balance of account	-3.822	5.706	-29.504	19.803
GDP growth rate	3.471	4.688	-11.800	23.545
real exchange rate overvaluation	0.234	8.558	-70.582	80.884
OECD GDP growth rate	2.767	1.174	0.210	4.800
foreign interest rate	8.116	2.217	3.900	12.709
commercial debt (GDP %)	0.159	0.151	0.000	0.740
concessional debt (GDP %)	20.096	21.015	0.060	91.640
variable debt (GDP %)	3.031	2.033	0.000	13.241
public debt (GDP %)	0.694	0.182	0.169	1.000
short-term debt (GDP %)	15.955	10.087	0.000	52.970
multilateral debt (GDP %)	22.558	17.063	0.300	83.386
FDI (GDP %)	0.974	3.021	-1.963	32.455
total debt service (GDP %)	5.818	3.774	0.640	27.903
time since the last crisis	15.497	15.161	0	54
contagion	9.249	5.848	0	27
number of obs	650			
number of countries	25			

Appendix C: Sensitivity analyses

We evaluate the sensitivity of the findings to alternative specifications. The core analyses testing Hypotheses 1 and 2 are Columns 1 and 3 of Table 1, respectively, so we evaluate the robustness of these two findings in all sensitivity analyses below. To preview the discussion, we find that both results are robust to all alternative specifications.

[Table C1 here]

First, we assess whether or not the results depend on our choice of a five-year cut-off for 'new democracy'. While we follow previous literature using this cut-off, it is nonetheless admittedly arbitrary, so in Table C1, we examine the sensitivity of the results to alternative cut-offs, ranging from't+1' to 't+6'. As shown in the table, the new democracy variable (Hypothesis 1) and the interaction effect (Hypothesis 2) are significant no matter which cut-off point is chosen. In other words, our findings are not driven by particular years but rather capture a generalised pattern of currency crises in the period (however defined) following democratisation.

Second, and related, it might be possible that the result is sensitive to the measure of democracy. We therefore use an alternative measure of democratisation, namely the heavily utilised POLITY IV measure (Marshall *et al.* 2014). We first dichotomise the polity score, setting a value of 7 as the minimum requirement for democracy, following the practice of previous studies (Epstein *et al.* 2006).[1] Columns 1 and 6 of Table C1 confirm that our finding is not sensitive to a different measure of democracy.

[Table C2 here]

Our third sensitivity test arises from the disturbing fact that standard economic measures of budget deficits are incomplete and surprisingly uncorrelated. We compare our WDI data with the

Inter-American Development Bank (IDB) Macro Watch Data on deficits, and find that the Pearson correlation coefficient is only 0.57. Although this calls into question the reliability of all previous research on budget deficits, it does at least give us an excellent opportunity to test the sensitivity of our analyses with a substantially different measure. Columns 2 and 8 of Table C2 show that the results remain robust.

Fourth, we test whether or not our finding is driven by potential collinearity between the explanatory variables. Columns 3 and 8 of Table C2 presents a parsimonious model, retaining only variables that met a p-value of .5 or better in the original models, and again, the results remain robust.

Fifth, given that the 1980s were a period of particularly high economic volatility, we include a dummy variable for the 1980s, which essentially controls for any possible '1980s effect'. Column 4 of Table C2 confirms that the 1980s were a period of greater currency crises, but the new democracy variable remains independently significant.

Sixth, we control for a variety of other political factors which might be related to democratisation. Specifically, following the political business cycle literature (*e.g.* Alesina *et al.* 1997), we address partisanship, electoral pressure, and central bank independence. We proxy these concepts with World Bank data on 'leftist governments' and 'election years' (Beck *et al.* 2001), as well as the recently developed data on 'Central Bank dependence' (Dreher *et al.* 2008). As shown in Columns 5 and 10 of Table C2, the addition of these variables has little effect on the findings.[2]

Table C1: Robustness of new democracy variable: alternate time frames

Panel A: Hypothesis 1						
	(1)	(2)	(3)	(4)	(5)	(6)
time period	t_0-t_1	t_0-t_2	t_0-t_3	t_0-t_4	t_0-t_5	t_0-t_6
new democracy	0.603***	0.701**	0.596**	0.655**	0.507**	0.635**
	(0.251)	(0.299)	(0.279)	(0.296)	(0.222)	(0.259)
constant	-0.587	-0.556	-0.579	-0.686	-0.149	-0.751
	(0.898)	(0.881)	(0.880)	(1.218)	(1.098)	(1.265)
observations	650	650	650	650	650	650
pseudo R^2	0.2240	0.2258	0.2239	0.2281	0.2582	0.2299
log pseudolikelihood	-117.019	-116.741	-117.050	-116.379	-118.43	-116.096

Panel B: Hypothesis 2						
	(7)	(8)	(9)	(10)	(11)	(12)
time period	t_0-t_1	t_0-t_2	t_0-t_3	t_0-t_4	t_0-t_5	t_0-t_6
new democracy	1.353*†	1.004*†	1.044†	0.941†	0.475†	0.384†
	(0.692)	(0.599)	(0.699)	(0.764)	(0.662)	(0.625)
balance $_{t-1}$	0.025	0.019	0.029†	0.028†	0.038†	0.036†
	(0.019)	(0.016)	(0.028)	(0.028)	(0.026)	(0.025)
interaction	-0.255***	-0.211***	-0.247***	-0.237***	-0.160***	-0.175***
	(0.058)	(0.063)	(0.080)	(0.075)	(0.054)	(0.061)
constant	1.492	1.406	-0.057	-0.004	0.040	-0.008
	(1.177)	(1.202)	(1.071)	(1.068)	(1.065)	(1.065)
observations	334	334	334	334	334	334
pseudo R^2	0.3890	0.3916	0.3587	0.3588	0.3616	0.3634
log pseudolikelihood	-46.683	-45.442	-48.547	-48.537	-48.323	-48.188

Cell entries are probit coefficients. The result for other control variables is not reported to save space. Standard errors (in parentheses) are clustered by country. * significant at 10%; ** at 5%; *** at 1%. † jointly significant at 95%. Panel A and Panel B are robustness tests for Column 1 and 3 in Table 1, respectively.

Table C2: Additional robustness check

Panel A: Hypothesis 1					
	(1) Polity	(2) IDB	(3) simple	(4) the 80s	(5) political
new democracy	1.143	0.391**	0.601***	0.434**	1.086***
	(0.813)	(0.196)	(0.186)	(0.215)	(0.331)
balance	0.072				
	(0.078)				
1980s				1.273**	
				(0.517)	
election					0.282
					(0.307)
leftist government					-0.222
					(0.252)
CBI					0.018
					(0.448)
constant	-4.162*	-0.639	-0.057	0.912	0.886
	(2.528)	(0.919)	(0.706)	(1.217)	(1.795)
observation	303	650	661	650	334
pseudo R^2	0.4698	0.3419	0.2674	0.3149	0.3689
log pseudolikelihood	-30.072385	-104.188	-124.210	-116.158	-67.965

Panel B: Hypothesis 2					
	(6) Polity	(7) IDB	(8) simple	(9) the 80s	(10) political
new democracy	0.544†	-0.923†	0.487†	-0.007†	1.325**†
	(0.407)	(0.942)	(0.629)	(0.724)	(0.671)
balance	0.082*†	-0.234**†	0.038†	0.016†	0.058***†
	(0.048)	(0.109)	(0.026)	(0.023)	(0.022)
interaction	-0.318***	-2.283***	-0.156***	-0.148**	-0.285***
	(0.092)	(0.582)	(0.059)	(0.073)	(0.104)
1980s				1.627**	
				(0.801)	
election					0.527
					(0.423)
leftist government					-0.041
					(0.281)
CBI					0.551
					(0.544)
constant	-0.317	-5.359*	-0.063	0.812	1.120
	(1.014)	(3.108)	(1.330)	(1.621)	(1.918)
observations	334	303	334	334	236
pseudo R^2	0.3412	0.4864	0.3614	0.4219	0.4103
log pseudolikelihood	-49.11571	-24.27799	-48.34128	-43.76019	-37.51287

Cell entries are probit coefficients for the 'new democracy' variable. The results for other control variables are not reported to save space. Standard errors (in parentheses) are clustered by country. * significant at 10%; ** at 5%; *** at 1%. † jointly significant at 95%. Panel A and Panel B are robustness tests for Columns 1 and 3 in Table 1, respectively.

Table C3: Change of budget deficit

	(1)	(2)
young democracy	-0.228	-1.299
	(0.563)	(0.936)
$\Delta budget_t$	-0.00840	0.0119
	(0.0559)	(0.0654)
youngdem×Δbudget		-0.412**
		(0.210)
credit change $_{t-1}$	-1.125	-1.145
	(1.182)	(1.029)
reserve $_{t-1}$	-0.124*	-0.107**
	(0.0657)	(0.0544)
current account $_{t-1}$	-0.115***	-0.116***
	(0.0334)	(0.0358)
growth rate $_{t-1}$	-0.0656**	-0.0619**
	(0.0282)	(0.0292)
overvaluation $_{t-1}$	-0.0630**	-0.0606**
	(0.0251)	(0.0238)
OECD growth rate $_{t-1}$	0.0194	0.0247
	(0.165)	(0.158)
foreign interest rate $_{t-1}$	0.0730	0.0699
	(0.0808)	(0.0826)
commercial debt $_{t-1}$	4.718***	4.756***
	(0.971)	(0.946)
concessional debt $_{t-1}$	-0.00983	-0.00944
	(0.0148)	(0.0162)
variable debt $_{t-1}$	-0.00282	0.000418
	(0.107)	(0.0882)
public debt $_{t-1}$	-2.343*	-2.397*
	(1.363)	(1.405)
short-term debt $_{t-1}$	-0.0498***	-0.0490***
	(0.0154)	(0.0171)
multilateral debt $_{t-1}$	-0.0320	-0.0328
	(0.0201)	(0.0207)
FDI $_{t-1}$	-1.061**	-1.119***
	(0.448)	(0.386)
total debt $_{t-1}$	-0.179***	-0.175***
	(0.0565)	(0.0601)
contagion $_t$	0.0466	0.0471
	(0.0321)	(0.0305)
constant	-0.108	-0.126
	(1.022)	(1.045)
observations	312	312
number of countries	19	19
pseudo R-squared	0.356	0.367

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%.

Table C4: Eve of democratisation

	(1)	(2)	(3)
eve of democratisation	0.288	-0.470	0.327
	(0.194)	(0.596)	(0.650)
budget balance$_{t-1}$		-0.022	0.035
		(0.021)	(0.026)
eve × budget			-0.182***
			(0.058)
credit change $_{t-1}$	0.204	-1.306	-1.456*
	(0.367)	(0.941)	(0.794)
reserve $_{t-1}$	-0.132***	-0.0976*	-0.0865*
	(0.0277)	(0.0566)	(0.0521)
current account $_{t-1}$	-0.0514***	-0.113***	-0.117***
	(0.0194)	(0.0381)	(0.0451)
growth rate $_{t-1}$	-0.0591**	-0.0561**	-0.0566**
	(0.0233)	(0.0277)	(0.0281)
overvaluation $_{t-1}$	-0.0109***	-0.0357**	-0.0343**
	(0.00274)	(0.0152)	(0.0147)
OECD growth rate $_{t-1}$	0.0166	0.00338	-0.00107
	(0.0791)	(0.154)	(0.152)
foreign interest rate $_{t-1}$	0.105**	0.0652	0.0597
	(0.0501)	(0.0841)	(0.0826)
commercial debt $_{t-1}$	0.558	4.269***	4.420***
	(0.511)	(1.178)	(1.090)
concessional debt $_{t-1}$	-0.0206***	-0.00725	-0.00705
	(0.00798)	(0.0160)	(0.0161)
variable debt $_{t-1}$	-0.0732*	0.00170	0.0142
	(0.0419)	(0.0941)	(0.0892)
public debt $_{t-1}$	-0.213	-2.040	-2.073
	(0.487)	(1.304)	(1.316)
short-term debt $_{t-1}$	-0.0365***	-0.0473***	-0.0463***
	(0.0119)	(0.0162)	(0.0170)
multilateral debt $_{t-1}$	-0.00608	-0.0319*	-0.0341*
	(0.0112)	(0.0186)	(0.0189)
FDI $_{t-1}$	-0.525***	-0.950**	-1.046***
	(0.172)	(0.407)	(0.367)
total debt $_{t-1}$	-0.0738***	-0.178***	-0.176***
	(0.0174)	(0.0649)	(0.0671)
contagion $_{t}$	0.0526	0.0527	0.0548*
	(0.0324)	(0.0325)	(0.0311)
constant	-0.0356	-0.183	-0.192
	(1.002)	(1.135)	(1.093)
observations	650	334	334
number of countries	25	19	19
pseudo R-squared	0.241	0.358	0.357

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%.

Table C5: Past crisis

	(1)	(2)	(3)
young democracy	0.499**	-0.244	0.512
	(0.224)	(0.532)	(0.680)
budget balance $_{t-1}$		-0.0227	-0.0348
		(0.0220)	(0.0268)
youngdem×budget			0.165***
			(0.0577)
credit change $_{t-1}$	0.142	-0.656	-0.673
	(0.387)	(1.065)	(0.978)
reserve $_{t-1}$	-0.151***	-0.0757	-0.0734
	(0.0336)	(0.0643)	(0.0550)
current account $_{t-1}$	-0.0465**	-0.117***	-0.116***
	(0.0221)	(0.0418)	(0.0435)
growth rate $_{t-1}$	-0.0536**	-0.0648**	-0.0627**
	(0.0241)	(0.0277)	(0.0273)
overvaluation $_{t-1}$	-0.00948***	-0.0413**	-0.0423**
	(0.00280)	(0.0184)	(0.0179)
OECD growth rate $_{t-1}$	-0.00625	0.0167	0.0177
	(0.0837)	(0.159)	(0.155)
foreign interest rate $_{t-1}$	0.0805	0.0485	0.0365
	(0.0576)	(0.0846)	(0.0892)
commercial debt $_{t-1}$	0.369	3.893***	4.088***
	(0.621)	(1.298)	(1.353)
concessional debt $_{t-1}$	-0.0170**	-0.0167	-0.0175
	(0.00755)	(0.0125)	(0.0136)
variable debt $_{t-1}$	-0.0458	-0.0402	-0.0427
	(0.0386)	(0.109)	(0.0993)
public debt $_{t-1}$	-0.0338	-2.090	-2.183
	(0.549)	(1.347)	(1.345)
short-term debt $_{t-1}$	-0.0372***	-0.0534***	-0.0530***
	(0.0119)	(0.0157)	(0.0166)
multilateral debt $_{t-1}$	-0.00876	-0.0345*	-0.0341*
	(0.0119)	(0.0197)	(0.0197)
FDI $_{t-1}$	-0.712**	-0.831**	-0.845**
	(0.295)	(0.421)	(0.404)
total debt $_{t-1}$	-0.0796***	-0.206***	-0.221***
	(0.0174)	(0.0603)	(0.0690)
contagion $_{t}$	0.0550*	0.0559*	0.0570*
	(0.0300)	(0.0313)	(0.0299)
past crises	-0.0272	-0.142**	-0.135**
	(0.0635)	(0.0631)	(0.0631)
constant	0.178	0.667	0.851
	(1.256)	(1.143)	(1.183)
observations	649	334	334
pseudo R-squared	0.257	0.366	0.371

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%. † jointly significant at 95%.

Table C6: IMF

	(1)		(2)	
	coefficient	SE	coefficient	SE
young democracy	0.637***	(0.233)	-0.180	(0.557)
IMF program$_{t-1}$	-0.608**	(0.283)	-0.814**	(0.366)
youngdem × IMF			-0.259	(0.364)
credit change $_{t-1}$	-0.529*	(0.302)	-1.642*	(0.858)
reserve $_{t-1}$	-0.154***	(0.0278)	-0.113**	(0.0503)
current account $_{t-1}$	-0.0669**	(0.0274)	-0.106**	(0.0414)
growth rate $_{t-1}$	-0.0613**	(0.0281)	-0.0687**	(0.0310)
overvaluation $_{t-1}$	-0.00863***	(0.00271)	-0.0317**	(0.0141)
OECD growth rate $_{t-1}$	0.124	(0.110)	-0.0305	(0.158)
foreign interest rate $_{t-1}$	0.196*	(0.107)	0.0666	(0.120)
commercial debt $_{t-1}$	0.637	(0.693)	4.607***	(1.171)
concessional debt $_{t-1}$	-0.0209**	(0.00979)	-0.0217	(0.0138)
variable debt $_{t-1}$	-0.0659	(0.0478)	0.0187	(0.0955)
public debt $_{t-1}$	-0.834	(0.886)	-1.976	(1.590)
short-term debt $_{t-1}$	-0.0617***	(0.0132)	-0.0597***	(0.0186)
multilateral debt $_{t-1}$	-0.0207*	(0.0123)	-0.0235	(0.0195)
FDI $_{t-1}$	-0.890***	(0.304)	-0.942**	(0.409)
total debt $_{t-1}$	-0.0962***	(0.0295)	-0.174***	(0.0602)
contagion $_{t}$	0.0560***	(0.0178)	0.0512*	(0.0291)
constant	-0.324	(1.419)	0.266	(1.510)
observations	472		472	

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%. The baseline indicator for the independent variables of Column 2 is 'Non-Young Democracy, No IMF program'.

Table C7: IMF and budget balance

	(1)	(2)	(3)	(4)
time periods	All	1975-84	1985-94	1995-2008
non-youngdem, IMF_{t-1}	0.342	1.518	0.654	0.184
	(0.634)	(0.934)	(0.912)	(0.444)
youngdem, no IMF_{t-1}	0.179	5.217*	-1.891	1.514
	(1.510)	(3.111)	(1.395)	(1.436)
youngdem, IMF_{t-1}	-0.990	-3.640***	-1.427	-
	(0.844)	(1.389)	(1.128)	
growth $rate_{t-1}$	-0.0287	-0.109	0.122	0.0731
	(0.0686)	(0.104)	(0.0795)	(0.0517)
$log(GDPpc)_{t-1}$	1.201	5.023***	0.501	0.553
	(1.640)	(1.828)	(2.640)	(0.664)
government $spending_{t-1}$	-0.376***	-1.270***	-0.276***	-0.376***
	(0.129)	(0.170)	(0.0958)	(0.0638)
public $debt_{t-1}$	0.525	-0.296	6.617	-3.023**
	(2.457)	(2.538)	(4.422)	(1.434)
short-term $debt_{t-1}$	-0.0127	-0.0640	-0.0721	0.000962
	(0.0371)	(0.0507)	(0.0511)	(0.0285)
current account $balance_{t-1}$	0.0749	0.230**	0.0177	-0.0511
	(0.0822)	(0.109)	(0.0809)	(0.0368)
$crisis_{t-1}$	-0.812	0.970	-2.913***	0.805
	(0.685)	(0.821)	(1.075)	(1.161)
constant	-8.108	-29.77**	-7.319	-0.211
	(13.34)	(14.77)	(24.70)	(6.111)
observations	331	109	152	67
R-squared	0.146	0.776	0.354	0.510
number of countries	21	16	19	15

Cell entries are OLS coefficients with standard errors in parentheses. Standard errors are clustered by country. The dependent variable is 'Budget Balance'. * significant at 10%; ** at 5%; *** at 1%. All young democracies since 1995 in the sample participated in some sort of IMF programs and therefore there is no 'Young Democracy, IMF' variable in Column 4.

Table C8: Excluding British colonies

	(1)	(2)	(3)
young democracy	0.443**	-0.423	0.230
	(0.220)	(0.542)	(0.620)
budget balance$_{t-1}$		-0.0442	-0.0564
		(0.0456)	(0.0523)
youngdem×budget			0.147**
			(0.0625)
credit change $_{t-1}$	0.172	-1.189	-1.298
	(0.352)	(1.071)	(1.011)
reserve $_{t-1}$	-0.146***	-0.0889	-0.0761
	(0.0302)	(0.0628)	(0.0524)
current account $_{t-1}$	-0.0591***	-0.125***	-0.126***
	(0.0194)	(0.0455)	(0.0477)
growth rate $_{t-1}$	-0.0593**	-0.0598**	-0.0576*
	(0.0260)	(0.0294)	(0.0296)
overvaluation $_{t-1}$	-0.00962***	-0.0378**	-0.0374**
	(0.00279)	(0.0175)	(0.0162)
OECD growth rate $_{t-1}$	-0.00442	-0.0295	-0.0293
	(0.0843)	(0.176)	(0.168)
foreign interest rate $_{t-1}$	0.0880	0.114	0.0972
	(0.0573)	(0.0809)	(0.0799)
commercial debt $_{t-1}$	0.354	3.444***	3.701***
	(0.577)	(1.275)	(1.153)
concessional debt $_{t-1}$	-0.0150*	-0.00548	-0.00558
	(0.00806)	(0.0131)	(0.0137)
variable debt $_{t-1}$	-0.0785**	-0.0351	-0.0274
	(0.0343)	(0.123)	(0.109)
public debt $_{t-1}$	0.117	-1.586	-1.683
	(0.553)	(1.656)	(1.656)
short-term debt $_{t-1}$	-0.0384***	-0.0516***	-0.0506***
	(0.0129)	(0.0147)	(0.0157)
multilateral debt $_{t-1}$	-0.0109	-0.0371	-0.0387*
	(0.0114)	(0.0226)	(0.0230)
FDI $_{t-1}$	-0.595*	-0.919**	-0.998***
	(0.330)	(0.366)	(0.352)
total debt $_{t-1}$	-0.0829***	-0.148**	-0.157**
	(0.0280)	(0.0580)	(0.0661)
contagion $_{t}$	0.0384	0.0387	0.0425
	(0.0341)	(0.0344)	(0.0323)
constant	-0.0891	-0.598	-0.461
	(1.132)	(0.971)	(0.964)
observations	486	298	298
number of countries	18	16	16
pseudo R-squared	0.212	0.335	0.337

Cell entries are probit coefficients with standard errors in parentheses. Standard errors are clustered by country. The result for cubic polynomial is not reported to save space. * significant at 10%; ** at 5%; *** at 1%.

Appendix D: New autocracy effect?

	(1)	(2)	(3)	(4)	(5)
new autocracy	-0.588	-0.479	-0.007	0.025	0.006
	(0.542)	(0.711)	(0.590)	(0.638)	(0.591)
new democracy			0.473*	0.504*	0.486**
			(0.286)	(0.261)	(0.227)
established democracy		-0.473*		0.032	
		(0.286)		(0.317)	
established autocracy		-0.504*	-0.032		
		(0.261)	(0.317)		
constant	-0.495	-0.498	-0.970	-1.002	-1.002
	(0.883)	(1.084)	(1.098)	(1.131)	-1.135
log pseudolikelihood	-113.209	-113.209	-113.209	-113.209	-113.214
pesudo R2	0.3100	0.3100	0.3100	0.3100	0.3100
observations	650	650	650	650	650

Cell entries are probit coefficients for the 'new democracy' variable. The results for other control variables are not reported to save space. Standard errors (in parentheses) are clustered by country. * significant at 10%; ** at 5%; *** at 1%. † jointly significant at 95%

Appendix E: Cases of currency crisis and political regime

New Democracy		Established Democracy		Autocracy	
Argentina	1975	Jamaica	1978	Peru	1976
Bolivia	1982	Costa Rica	1981	Brazil	1979
Ecuador	1983	Jamaica	1984	Argentina	1981
Peru	1983	Venezuela	1984	Mexico	1982
Nicaragua	1985	Dominican Rep	1985	Chile	1983
Guatemala	1986	Ecuador	1986	Uruguay	1983
Argentina	1987	Trinidad and Tobago	1986	Mexico	1986
Brazil	1987	Venezuela	1987	Mexico	1995
Paraguay	1989	Dominican Rep	1988		
Guatemala	1990	Ecuador	1988		
		Peru	1988		
		Argentina	1989		
		Venezuela	1989		
		El Salvador	1990		
		Honduras	1990		
		Costa Rica	1991		
		Jamaica	1991		
		Venezuela	1994		
		Brazil	1999		
		Ecuador	1999		
		Argentina	2002		
		Paraguay	2002		
		Uruguay	2002		
		Venezuela	2002		
		Dominican Rep	2003		

Notes

[1] We also tested whether or not altering this threshold with different levels of democracy would change the result significantly and did not find any such changes.

[2] Each of these control variables was included separately in the model but doing so did not alter the result for our core variables. We also tested whether or not including alternative control variables such as trade and financial openness (Eichengreen and Leblang 2008 [REFERCE NOW ADDED]; Kaminsky *et al.* 1998) as well as the incidence of inter- and intrastate military

conflict could alter our findings but did not find any surprising result (results available upon request).