# Smoke with Fire: Financial Crises, Institutional Reform, and the Future of EU Democracy

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The handling of the sovereign debt crisis in the European Union (EU) has raised fears that decision making in supranational organization and its member states has become less democratic and that European Central Bank now calls the shots in Europe. This article confronts this pessimistic speculation with systematic evidence of the institutional consequences of past financial crises. We advance an adapted modernization argument and expect in contrast to the renewed debate over the "Democratic deficit" of the EU that severe economic crises have increased the level of both democracy and central bank independence. Panel regression models support the double conjecture that growing democratic *and* technocratic decision making should be a consequence of severe economic crises. We qualify in light of these findings the widespread pessimism that the EMU crisis has depleted the power of the European legislatures. Our assessment of the reform potential of the EU boils down to the contention that treaty amendments need to rectify the potential for supranational agenda setting that that the Treaty of Lisbon has created and that the Fiscal Compact Treaty has further strengthened.

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There's no smoke without fire,
Baby, baby you're a liar
Duffy, *Smoke without Fire*

**Introduction**

The political economy literature still disagrees over the conditions under which a country introduces political reforms following a severe economic and social crisis. The initial proposition within this body of research boiled down to the functionalist expectation that no government would launch policy reforms without the pressure from a severe crisis. Rodrik (1996: 27) pointed out that this thesis borders on a tautology, arguing "That policy reform should follow crisis, then, is no more surprising than smoke following fire." Others have, however, uncovered the considerable delay in which many countries implement urgent reforms (Alesina and Drazen 1991), thus invoking at least for a certain period of time the possibility of "smoke-free fire" and thus crises that do not lead to any real reforms. Indeed, Greek decision makers provoked in the beginning of the seemingly unending European sovereign debt crisis several wars of nerves until they reluctantly accepted some of the austerity measures designed by the European Union and the International Monetary Fund.

The frequency with which the Greek and other member state governments have broken deadlines and postponed decisions on key austerity measures has reinvigorated the fear (or, for some, hope) that the European Union has reached its nadir, having fallen victim to a final and deadly bout of what Giersch (1985) had described as "Eurosclerosis". As the inertia supposedly prevents the organization from introducing institutional reforms that would enable it to deal with the crises effectively, the end of the integration project seemed closer than ever before in the history of the supranational organization. A renewed debate over the alleged "democratic deficit" of the organization accompanied the pessimistic view that the supranational organization is unable to confront the historical challenges successfully. Leading European intellectuals like Jürgen Habermas and Anthony Giddens have complained *in unison* that the handling of the European sovereign debt crises undermines European democracy, identifying a trend towards technocratic and autocratic decision making. "What about the fate of democracy in all this? Those who have assumed the mantle of the

saviors of the EU – Angela Merkel and Nicolas Sarkozy, together with the "technocrats" in Greece and Italy – are largely bypassing the decision-making agencies of the union" (Giddens 2012).  Fearing the "real possibility of a failure of the European project", Habermas (2011:97, own translation) advanced the hope that the crisis has a cathartic effect and that the EU will establish a "transnational democracy".

Addressing the question whether smoke follows fires in a new context, this article examines in light of these concerns the institutional consequences of banking, currency, and sovereign debt crises theoretically and empirically. We argue based on the modernization literature (Lipset 1959, Prezeworski and Limongi 1997, Acemoglu et al. 2008), coalition building arguments (Bueno de Mesquita et al. 2003) as well as some political economy contributions (Drazen and Grilli 1993) that both states and a supranational organization like the EU could introduce in the wake of a severe financial crisis substantial institutional changes that are more beneficial than the status quo. A first dimension of reform deals with the extent to which the (supra)-national parliament, the population or both are able to restrain executive and bureaucratic decision-making. The second choice is about the degree to which a government is enabled to delegate decision making power to autonomous agencies like central banks. While changes along the first dimension alter the legitimacy of a decision, rendering bureaucratic agents more power affects its efficiency. Obviously, the two options are to some extent at loggerheads with each other as the second choice lowers the control possibilities of the legislative actors.  However, both reform possibilities share the goal of curtailing the discretion of governmental actors.

We expect based on our theoretical framework that severe economic crises have in the past affected the *reform capacity* along these two dimensions positively and that, more precisely, crises *have increased the level of democracy and strengthened the autonomy of the central bank*. Both conjectures are grounded in the argument that voters hold primarily governments that were at the helm in the beginning of the crisis responsible for the economic turmoil. As this government or a possible successor face the demand for institutional changes that lower the risk of a new crisis, they will respond through the introduction of reforms that strengthen democratic control over their

activities and/or that increase the autonomy of the central bank. Panel regression results support the optimistic double hypothesis derived from modernization theory and the political economy literature of economic reforms. We find for the period from 1950 to 2007 that countries which have experienced banking or currency crises or which had in the past five years a cumulatively high debt-to-GDP ratio have increased the autonomy of the central bank.  We also establish with recourse to the Polity data set that past debt crises have increased the chance for democratization. We discuss the implications of these findings for the debates over the future of the European Monetary Union (EMU) and the European Union based on an analysis of the relevant rules that were introduced through the Lisbon Treaty. Our main expectation is that future intergovernmental treaties will have to rectify the biased unanimity decision making setup that this last change in the institutional structure of the EU has brought about and which was strengthened through the introduction of the Fiscal Compact Treaty (officially, the "Treaty on Stability, Coordination and Governance in the Economic and Monetary Union").

**Financial Crises, Democracy, and Delegation**

*The New Debate on the "Democratic Deficit:"* One of the key features in the history of the European Union has been the stop-and-go nature in which the organization has institutionally evolved over time (Schneider and Cederman 1994). Observers have frequently described the periods in which attempts to widen and deepen the process of European integration largely failed as crises which might herald the end of the integration process altogether. The inability of the European Council - and thus the intergovernmental forum of the Heads of States and Prime Ministers - to deal with the sovereign debt crisis in a timely and effective manner has reinvigorated such fears. Several European leaders have taken up the doomsday rhetoric of earlier periods of stagnation and tried to convince their electorates that a failure to resolve the debt crisis would result in an irreparable breakdown of the European institutions and the escalation towards a situation in which the specter of a European war would loom large.

While some saw such developments as a welcome chance to reduce the integration project to the alleged core function of a free-trade area, leading European intellectuals rather believed that more formalized cooperation is needed to tackle the problems of the integration process. Habermas (2011) most vigorously voiced the latter position, complaining that one institutional consequence of the crises, the strengthening of "executive federalism", has led to an intergovernmentalist hollowing out of democracy in Europe and a destruction of the ambition to establish transnational cosmopolitanism through the integration project.  In Habermas´ (2011: 37-38, own translation) vision, the EU „can be understood as a decisive step on the way to politically constitutionalized world society."

The claim that the financial crises of several EU member states has undermined the legitimacy of decision making in the supranational institutions and its member states has re-launched the discussion over the so-called democratic deficit and the measures that could be taken to resolve it.[1] Although we do not want to rehash here the rich discussion over this continuing challenge, we need to briefly identify the key dimensions of disagreement. Moravcsik (2002) and Majone (1996, 1998) contend, to begin with the most controversial position, that there is no real deficit as the ambition of the integration project is a more technocratic one. The EU, in other words, is a highly efficient bureaucratic machine that produces efficient technical solutions in less politicized arenas and that a lack of democracy is, therefore not really a problem for the organization. Føllesdal and Hix (2006), by contrast, contend that the decision making power of the European Union reach far beyond a level where only technocratic expertise is required and that decisions over these issues are done by government delegates who cannot base their position on a clear popular mandate. Hix (2008) has therefore called for a strengthening of democracy in the EU  through open contestation for public offices, more transparent decision making in the Commission and through a move away from consensus in parliamentary agenda setting.

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1 These concerns have also led to a plethora of subsequent contributions such as the "Manifesto for re-building Europe from the bottom-up" which called for "A European Year of Volunteering for Everyone" (http://manifest-europa.eu/?lang=en, 13/9/2012)

We believe that these diverging positions are irreconcilable as they are based on diverging understanding of what the EU should do and whether decisions by independent technocrats or by democratically legitimized actors dominate day-to-day affairs in the supranational organizations. Empirically, however, we agree with Hix (2008) that some decisions of the organization have severe redistributive consequences that require democratic control and transparency. One can obviously maintain the position that some of the pet ideas advanced in the discussion on the democratic deficit – like the creation of a European public sphere or the introduction of EU-wide referenda – would be appropriate means to legitimize EU decision making. However, the realization of such projects is not imminent so that we need to examine how decisions on the financial crisis are made and whether there is room to increase the legitimacy and efficiency of these choices. We contend that the European Union is still a predominantly intergovernmentalist institution which decides on the fiscal crises through negotiations between the heads of state or government and through a largely independent agency like the European Central Bank (ECB). Our discussion of the institutional consequences of the financial crisis of the European Union will consequently focus on the two interrelated questions of how much parliamentary scrutiny the intergovernmental decision making should receive and how independent the European Central Bank shall be. While exposing the intergovernmental crisis decision making to more democratic control, empowering the ECB in the wake of the crisis increases the "democratic deficit." In other words, the two reform options through which the organization could resolve the institutional conundrum behind the Eurozone crisis contradict each other through the opposing effects changes would have on the legitimacy of EU decision making. However, increasing the democratic control through parliaments and granting the ECB more power are both means to reduce the pre-dominance of intergovernmental institutions in fiscal and monetary affairs.

*Institutional Effects of Crises:* Although the political ramifications of the Eurozone crisis go far beyond the borders of a single country, other polities have faced a comparable constitutional dilemma in the aftermath of economic shocks. We will therefore in the following examine the institutional responses to severe financial crises. To start with, the modernization literature lets us expect that the prospects

of democratization grow with economic development. Some tests of this thesis, originally advanced by Lipset (1959), have, however, led to inconclusive results (Prezeworski and Limongi 1997, Prezeworski et al. 2000, Epstein et al. 2006, Acemoglu et al. 2008). On the contrary, Kennedy (2010: 785) bluntly notes that "(e)conomic development generally increases the stability of authoritarian regimes." While development does not spur the chance of democratic transitions, it helps at least and in line with Prezeworski and Limongi (1997) to consolidate it (Alemán and Yang 2011) or to turn institutional changes in the democratic direction at least in cases an economy is sufficiently developed (Kennedy 2010). However, the limited impact of development on democratization does not imply that economic factors do not affect the potential for institutional reform. Ulfelder (2009:28) for instance shows, in a careful evaluation of 43 transitions, that economic shocks rather than development are a key driver of political liberalization: "In most instances, poor economic growth produced declines in living standards that spurred popular rebellion. Threatened by these uprisings and often hobbled by an accompanying fiscal crisis that also undermined the loyalty of key elites, dictators sometimes responded with political liberalization." Acharya (1999, 432) similarly suggests, based a survey of south Asian countries after the economic crisis of the late 1990s, "that economic downturns can precipitate the breakdown of authoritarian rule".

As financial crises often precede periods of economic stagnation, this application will focus on the effects of sovereign debt, banking and currency crises on the chance of democratization. We generally expect that citizens who had to endure the negative effects of financial turmoil will try to punish their leaders for the hardship that they had to endure. Bueno de Mesquita et al. (2003) provide solid evidence that leaders who have not been economically successful face a higher chance of being outvoted or overthrown in a revolt and that authoritarian turns are more likely when governments are not threatened. Smith (2008, 792) argues that democratization helps pressurized leaders to find a compromise between the competing demands of the supporting political elite and the citizens as "increases in coalition size shift the policy focus of the winning coalition closer to the policy goals of those outside of the coalition". Bueno de Mesquita and Smith (2010) show furthermore that the negative effect of GDP growth on government turnover is especially

pronounced in autocracies or, to use their parlance, where the size of the winning coalition is small.[2]

Note, however, that citizens will not automatically punish government leaders for economic

hardship. Without being able to directly account for the originator of the economic troubles, Alesina

et al. (2011) show for the OECD countries that the electoral consequences of severe austerity

measures are smaller than is often suggested. We nevertheless maintain that the chance of

democratic transitions grows after a country went through a financial crisis.

Government leaders often try to shield themselves against public protest during periods of economic

stress by pointing out that the source of the troubles is located outside the country or by pointing

their fingers at their colleagues in the finance ministries or the central bank. Frankel (2005) shows for

a sample of developing countries that the risk that a central banker or finance minister loses her job

after a currency crises is over 60 per cent higher in the year after the economic shock in comparison

to a less turbulent year. However, firing the underlings does not completely banish the danger for

the government leader to be forced out of office. According to Frankel´s calculation, this risk is more

than 30 percent higher following the devaluation in the preceding year compared to a normal year.

Sacking the allegedly responsible policy makers is nevertheless only a short-term response to an

economic crisis. A more long-term response would consist of institutional changes that reduce the

risk of future financial crises. The European Union and most industrialized states has unsurprisingly

reacted with new banking regulations to the crisis in this industry and with sharper fiscal rules in

response to the sovereign debt troubles that affected some of its member states profoundly. The

introduction of unorthodox policy measures have also strengthened the role of the ECB considerably,

which had already enjoyed the same level of independence that the German Bundesbank had

possessed since the 1980s. However, the policy reforms in some of the Eurozone states that the crisis

hit particularly hard were rather timid and piecemeal, supporting the notion of Alesina and Drazen

that the redistributive fight over who should carry the costs of the adaptation process delays the

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2 Some historical evidence on the linkage between debt and institutional chance is offered in
Stasavage´s (2011) sweeping analysis. He shows that "the development of public credit did indeed
tend to accompany the development of representative institutions, but this phenomenon happened[2]
almost exclusively within city-states".

implementation process. The social costs of the crisis can nevertheless sometimes be so overpowering that they enable rather than prevent drastic policy reforms. Drazen and Grilli (1993) show formally that that major economic distortions can be "beneficial" and induce necessary economic reforms: "The extreme welfare loss that each agent suffers in a crisis dwarfs the loss he may associate with an unfavorable distribution of the burden of a major policy change".

However, Drazen and Grilli offer only some illustrative evidence for the thesis that severe crisis might lead to substantial reforms of the economic institutions. There is nevertheless some evidence that countries under economic stress have in the past increased the discretion of their central banks in the wake of economic crises. An encompassing empirical study by Crowe and Meade 2008: 766) suggests that past inflationary experience increase central bank independence, suggesting that "reform has been prompted by the failure of past anti-inflation. A further important determinant of this form of institutional change is political stress which in itself might be spurred by economic crises. While inflation negatively affects the risk of growing central bank independence, an index of political instability is positively associated with it (Polillo and Guillén 2005).[3] Bernhard (2002) furthermore shows that governments which have to fear to be punished for a mismanagement of the economy have an increased tendency to delegate more power to central banks.

We maintain along these lines that citizens who have experienced a financial crisis hold primarily the government accountable for the economic turmoil. Besides demanding more democracy, they will also ask for institutional reforms that limit the interference of the government in economic affairs. In sum, we contend that electorates will demand institutional changes in the wake of severe financial crises. They will ask especially for further controls on the executive and for a reduction in the government´s discretion over the central bank. More democracy and increased technocratic decision making are thus, in a nutshell, the average and partly contradictory responses to the economic

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3 The negative impact of inflation on central bank independence could be a consequence of a simultaneity problem. Hielscher and Markwardt (2012) for instance demonstrate that only significant steps towards further independence lower inflation and that the leeway granted to the central banks reforms has to be embedded into a political system with high quality institutions to make the reforms effective.

stagnation financial crises create. Note that our optimistic conjecture about possible institutional benefits of economic crisis is in considerable contrast to some historical work that traces the authoritarian transitions of the 1930s to the Great Depression (e.g. Kindleberger 1986). More recent comparative studies demonstrate that not only economic factors contributed to the rise of fascism in the Western Europe of the early 1930s (e.g. de Bromhead et al. 2012, Zimmermann and Saalfeld 1988).

**Research Design**

We will test our hypotheses on the nexus between financial crises, central bank independence and democratization through a longitudinal research design and then discuss how the current economic turmoil might affect the institutional setup of the EU in the medium term. The quantitative tests are the basis for our discussion of what these results imply for the future institutional architecture of the European Union.  The time span for the statistical examination is from 1950 and 2007. We use longitudinal fixed effect OLS (change in central bank independence) and logit (democratization, autocratization) models to test the hypotheses. We detail the Hausman tests that demonstrate the appropriateness of these models plus extensive robustness checks in the online appendix.

Operationalization:

*Dependent variables*: We examine the influence of financial crises on three indicators of institutional reform. *Change in central bank independence*, the first outcome variable, is adapted from Sadeh´s (2010) update of the classic Cukierman et al. (1992, see also and Cukierman, Miller and Neyapti ) measure. Note that we integrated information from Jácome & Vázquez (2005) on the historical independence of Latin American banks as well as Guthmann´s (2011) extension of the Sadeh update. We have multiplied the CBI measure with its range between 0 and 1 with the factor 100 so that the score goes from perfect dependence (0) to perfect independence (100).  As we examine the change in independence from one year to another one, we calculated this indicator's lag for the rate of change of central bank independence. We then magnified it so to have a theoretical range going from -100 (complete loss of central bank independence) to +100 (complete gain of central bank

independence). *Democratization* and *autocratization* refer to the change in the Polity score from the previous to the current year. Based on the combined scores of the Polity IV dataset, we created two binary variables where the value 1 stands changes on this indicator above a value of 3 (democratization) and below -3 (autocratization), respectively. The online appendix reports similar results with alternative thresholds.

*Explanatory variables*:  As we are agnostic about the timing of institutional reforms following an economic shock, we observe whether a financial crisis occurred during a half decade. We employed two IMF sources to account for the presence of a financial crisis, distinguishing between banking crises, currency and sovereign debt crises.  Based on the Laeven and Valencia (2008, 2012) dataset, two dummy variables, *banking crisis* and *currency crisis,* assign a value of 1 to the case if at least this type of crisis occurred at least once throughout the past five years.  A banking crisis can be observed, according to Laeven and Valencia (2012:4), through significant "financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations)" and "banking policy intervention measures in response to significant losses in the banking system". Laeven and Valencia (2012:11) follow standard practice and define a  currency crisis as a "nominal depreciation of the currency vis-à-vis the U.S. dollar of at least 30 percent that is also at least 10 percentage points higher than the rate of depreciation in the year before" (ibid.: 11). Note that we also conducted the analysis through count variables that number the times a particular sort of crisis occurred within five years.  The results with these variables are included in the Webappendix.

*Cumulated debt to GDP* comes from the public debt database by Abbas et al (2011). We obtained our indicator by summing the values of the lags for five years of debt. As we are interested mainly in the "surplus" of debt rather than the lack thereof, we assign a zero for all cases where debt is not recorded. Note that we also included the binary sovereign debt default and restructuring indicator of Laeven and Valencia (2008, 2012) for descriptive purposes in some parts of the analysis.

Finally, the dataset also includes *GDP per capita* as well as *GDP growth,* taken from the Penn World Table (2012), and the *inflation rate*, which we drew from the IMF World Economic Outlook dataset. Note that the multivariate tests reported below only refer to the impact of the crises indicators and

not the effect of these economic factors on institutional changes. The online appendix, however,

provides tests that account for the endogeneity of the economic variables following the financial

crises. The robustness checks in which we use the indicators of the financial crises as instruments

confirm that there is a direct link between the economic shocks and the institutional changes.

**The Institutional Correlates of Financial Crises and their Implications for EU Decision Making**

This section examines the institutional consequences of financial crises. The descriptive analysis of

the period from 1950 to 2007 quickly evinces that financial crises often live up to the dire prediction

of Murphy´s law that bad luck rarely comes alone. Of the 9551 country half-decades included in the

data set, 68 stand according to the Laeven and Valencia (2008, 2012) dataset for triple crises. 276

country half-decades include both a currency and a banking crises, 164 cases stand for the co-

occurrence of for debt and currency crises, and there are 82 overlaps of banking and debt crises. Of

course, not all of these crises are genuine crises. The period covers 63 starting years for a debt, 123

beginnings of severe banking and 206 commencements of currency crises.

The temporal order between the crises is not always clear.  For instance, in eight cases a currency

crisis started in the year before a sovereign debt default and restructuring occurred, while four

sovereign debt crises escalated in the year prior to a currency crisis. There is, however, a clear

temporal link between crises exist if we regress the occurrence of one type of crisis within the past

five years onto the risk that another form of crisis occurs in the current year. The odds that a country

will experience a banking crisis in the current year is 3.9 (with 2.6 and 5.7 being the upper and lower

estimate in the 95% confidence interval) in the presence of a currency crisis in the past five years, as

a bivariate random effect longitudinal logit model evinces. The analogous figures for the relationship

between a sovereign debt default and the occurrence of a currency crisis respectively a banking crisis

are 2.8 (1.6; 5.0) and 2.4 (1.2; 5.0).[4]

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4 Obviously, some crises have a regional or, in some instances, even a global nature. Regressions that take this temporal interdependence into account and that we report in the online appendix do, however, not change the results reported below.

While economic crises seldom come alone, it is unclear what form of political repercussions they have. Table 1 examines the impact that the three forms of financial crisis included in our analysis have on central bank independence. In line with our modernization argument, we expect that citizens accept less government interference following situations of grave financial stress.

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The empirical analysis clearly shows that financial crises in the past have institutional consequences and increase the power of technocrats vis-à-vis their political masters. This is most pronounced for countries that have experienced a banking crisis in the past five years. Different models show that there was an average increase between 1 and 2% in the level of central bank interdependence following this type of crisis. For example, the 1991 banking crisis in Georgia, which led the new independent government to join the World Bank the year after, resulted in a stark increase of central bank independence in 1995. Similarly, the financial credit problems recorded In Armenia' and Estonia's banking sector in the early 1990s influenced the increase in independence to the central bank as well as the democratic institutional increment registered in 1994 and 1998, respectively.[5]

The effect of sovereign debt crisis is much more modest, but shows in some models in the same direction, while currency crisis do not have a clear impact. According with these general trends, there is no country with a cumulated debt exceeding 500% of the GDP which decreased the leeway of the central bank, while Bulgaria (1998), Chile (1990) and Italy (1994) increased the independence of this government agent in sovereign debt crises of a similar magnitude.

Figure 1 nevertheless unravels that these relationship are often more involved and that the positive relationship between the cumulated debt indicator and the central bank independence measure only holds for the countries which are in a strong, but not yet extreme sovereign debt crisis where the cumulated debt of five years approaches or surpasses 1000% of the GDP. A similar relationship holds, as Figure 1B reveals, for the interaction between debt and banking crisis.

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5 Obviously, one could also link such reforms to the general transformation that the post-communist world underwent in this period. As Bodenstein and Schneider (2006) argue, however, in an analysis of these reforms based on a formal model, it is, however, impossible to evaluate whether the hen (general political transformation) or the egg (economic crisis) came first.

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Figure 1 about here
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We examine in the following also whether financial crises foster the level of democracy. Table 2

reports for cases whether the three types of economic shock considered in this paper influence the

chance of democratization or the risk of autocratization. Note that such institutional changes are rare

events. Among all the cases covered in the subsequent analysis, there were only 161 instances of

democratization and 98 autocratizations.

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Table 2 about here
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The results presented in Table 2 strongly support our expectation that financial crises only increase

the chance of democratization and not the risk of autocratization. On the contrary, if financial crisis

are related in any systematic way, they reduce the probability of an authoritarian translation as

models 4 and 7 marginally demonstrate in Table 2B. This double result supports similar findings by

Ulfelder (2009) who in contrast to the original modernization argument reports a strong link between

economic shocks and democratic transitions. Our study particularly shows that sovereign debt and

currency crisis increase the chance of democratization. Interestingly, there is not a single case of a

country which became more autocratic after experiencing five years with a cumulated debt through

GDP ratio above 500%. There are, however, five countries which underwent  a political liberalization

under the same condition (Chile, 1990; Guyana, 1992; Haiti, 1994; Hungary, 1990; Nicaragua, 1984;

Sierra Leone, 1996).

Figure 2 illustrates that different types of financial crisis can jointly increase the chance that a

country democratizes further. The upper Figure shows the marginal effects of past banking crises as

the level of the cumulative debt increases. The corresponding effect for autocratization, shown in

Figure 2B, is much smaller.

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**The Sovereign Debt Crisis and the Future of Democracy in the EU**

The double finding that financial crises strengthen democracy and increase the independence of central banks does not directly address the concerns raised in the renewed debate over the democratic deficit in the European Union. To offer some forecasts about the possible institutional consequences of the crisis, we need to analyse the conditions under which the key intergovernmental actor, the European Council, agrees on an institutional reform. The original debate on the feasibility of reforms started out with the pessimistic speculation by Scharpf (1988) that the European Union finds itself in a "joint decision making trap". In his view, there are always governments which profit from the current status quo which renders it impossible to change the rules of the game. The prediction is, however, based on the rather restrictive assumption that the status quo is located inside the core and thus the set of outcomes that, depending on the threshold used, cannot be beaten by either a qualified majority or a unanimous alternative (Schneider 1997). As the EU has in many instances been able to reform itself and even in situations when the electorates back home were highly sceptical, we need to inquire how far the reform potential is (Schneider and Cederman 1994, Finke et al. 2012). Figure 3 illustrates based on Veen´s (2011) collection of Euromanifesto data the positions of the member state governments on the European Monetary Union and the further shift of competencies to "Brussels". While the EMU dimension is based on two categories (Positive or negative mentions of the ECB (4087; 4086) as well as the corresponding assessments of EMU and the Euro (3151; 3141), respectively), the delegation dimension comprises government attitudes to three topics (European Community/Union (110; 108); Transfer of Power to the EC/EC (3011; 3021); Competencies of the European Parliament (307; 306). The multidimensional scaling analysis of these government positions evinces that the potential of reform is restricted to non-EMU countries (in red in Figure 3, without Finland) and to one dimension only. There are only four countries in the upper right quadrant and thus in the area where the assessment of both dimensions is positive. We could therefore expect that the institutional response of the EU to its sovereign debt crisis is either restricted to a subset of its member countries – as it is the case with the European Fiscal compact – or that the reforms either curtail the powers of the

European Central Bank or increase the power of either the European Parliament or the national

legislatures in fiscal policy making.

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However, such conjectures about the institutional reforms of the EU in light of the current crisis

remain largely speculatory as the composition of the European Council can quickly change. To assess

the reform potential, we need therefore a more theoretical analysis of the impact that the rules

governing the interactions within the European Council have. The deliberations of the member states

in this intergovernmental setting are still based on unanimity voting. This lends the most

conservative country veto power in case that the all other member states wish to change the

prevailing status quo, but this laggard government is against any kind of reform. If this maverick only

wants a minimal change, a modest reform or a more fare reaching policy change without the consent

of the recalcitrant are possible outcomes (Schneider and Cederman 1994). As Colomer´s (1999)

general analysis of the unanimity rule shows, the implications of this decision making procedure

reach, however, beyond the expectation that the members which are closest to the status quo are

able to dictate decision making. This is especially the case for the European Union since the Lisbon

Treaty which has brought a supranationalist twist to the intergovernmental negotiations.  As Article

9B of the Treaty of Lisbon makes clear, the President does not depend on the laggard members of

the organization: "The European Council shall elect its President, by a qualified majority, for a term of

two and a half years, renewable once." This increases the chance that a President pursues interests

that are not in line with the most nationalist member states, but rather opts for policy outcomes

which the member states with supranationalist leanings like.

Obviously, our expectation that the introduction of a Council Presidency has introduced a decision

making bias in favour of the group of countries supporting the President rests on the assumption that

the Presidency and the countries supporting it have an informational advantage over the less

integration inclined members of the organization. If such an asymmetry really exists, supranational

agenda setting, delimited by the unanimity rule, is feasible. Note in this context that unanimity or

(qualified) majority agenda setting are not the same. While the latter form of exploiting the agenda is independent of the location of the status quo, the reform potential in a unanimity setting depends on this fallback position of the committee members. [6]

Colomer (1999) makes usage of the so-called preferred-to-set concept (the policy outcomes an actor prefers over the status quo) and visualizes the preferences as circular indifference curves around the ideal points, implicitly assuming that the two considered dimensions are equally important for the actors. The intersection of the preferred-to-sets is the unanimity winset, while socially optimal choices are located within the Pareto optimum set which is, given Eucledian preferences, the minimal convex set containing all ideal points. The outcome within the Pareto optimum set that minimizes the committee members´ distance from the ideal points represents what Colomer calls the "social utility optimum point" (ibid.: 546).

The configuration of the Pareto optimum and the unanimity set depend considerably on the location of the status quo. In Colomer´s (1999: 548) words, "a large distance from the status quo to the actors' ideal points offer many possibilities for choice to the decision-makers and may make the decision relatively open and uncertain" (Colomer 1999:. 548). This indeterminacy offers a potential for biased decision making if the reform potential is limited and thus if status quo is relatively close to the unanimity winset. To illustrate this, Colomer introduces the uncertainty set and thus "the set of points  which are farther away from each ideal point than the most distant ideal point from it" (ibid.) A committee can according to his analysis only reach a socially optimal outcome if the status quo is located within the uncertainty set. This leaves a part of the decision making space open for biased decision making and thus changes of the status quo that are not socially optimal. Such outcomes are located within the Bias set which contains all outcome not located either in the Uncertainty set or the Pareto set. Colomer (1999: 551-552, italics in original) calculates that the Bias

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[6] This difference casts a doubt on Tsebelis´(2012:59, see also Yataganas and Tsebelis 2005) analysis that Valéry Giscard d´ Estaing and the Presidium of the European Convention were successful agenda setters and led the delegates to the Convention for a constitutional treaty "to an outcome that simplified the previous treaties, was internally consistent, and produced institutions that could function in an enlarged EU".

set is at least eight times larger than the Pareto set and concludes that only "from a status quo placed outside this very large area is it possible to reach *any* point inside the Pareto optimum-set". The "paradox" of unanimous decision making uncovered by Colomer implies the imposition of outcomes which are not socially optimal for all member states as long as the member states are not sufficiently dissatisfied with the current state of affairs. The introduction of the Presidency through the Lisbon Treaty guarantees that these biased outcomes will reflect the interest of those EU actors who are able to influence the position of the President of the European Council. As the Commission and the European Central Bank possess an informational advantage over the intergovernmental institution, it seems possible to conclude that the lack of representativeness of EU decision making during the sovereign debt crisis has to do with the imbalance the Lisbon Treaty has brought about in EU affairs. Ironically, this last intergovernmental treaty which has been ratified by all 27 member states was initially described as a success of the member states. Kurpas´ (2007:3) for instance believes that: "…those who see the Union as another tool in the box of the nation state have clearly won the case, which is unlikely to be without consequence for the prospect of future integration". Dougan (2008, p. :698) moreover maintains that "a relative resurgence in intergovernmental influence within the functioning of the Union" is possible. As we have shown, these observations are, however, only partially correct as the introduction of a new actor who can be elected against the wishes of some member states has introduced the possibility of supranational agenda setting. The possibility to move the outcomes closer to the ideal points of EU agents like the ECB adds to the frustration of those who generally believe that the organization suffers from a democratic deficit and that increased legitimization of its policy outcomes is mandatory in times of crisis and crisis decision making.

**Conclusion**

The financial crisis in the Eurozone has led to considerable disenchantment and the anger that the decision making by the EU and its member states will destroy the very vision on which the integration project is built. We have examined this claim through a historical examination of the

institutional effects that banking, currency and sovereign debt crises had since World War II and through an institutionalist analysis of the reform potential of the supranational organization. The statistical evidence that we have assembled clearly shows that severe economic distortions may not only result in beneficial policy changes, as Drazen and Grilli (1993) demonstrate formally, but that grave economic distortions can also have institutional consequences. As past crises were rather followed by an increase in central bank independence rather than augmented government discretion and by democratization instead of autocratization, we have some reason for the optimist conclusion that the hollowing out of parliaments from the crisis decision making processes in the Eurozone was an episode. We nevertheless conclude from an analysis of the decision making rules introduced by the Lisbon Treaty that the introduction of the Presidency of the European Council has increased the potential for biased decision making in the European Union. While key decision still follow the unanimity rule, some reform proposals will benefit some member states more than others. In our view, the Union can only rectify this imbalance through the decision to delegate the drafting of the next intergovernmental conference to institutions and actors which have not profited from the most recent institutional reforms to a disproportional extent. In other words, national parliaments and delegates from all member states should develop the ideas how the drift of executive power to "Brussels" can be curtailed and how a European fiscal policy can be democratically legitimized. Such a scenario obviously assumes that the EU-skeptical shift in the public preferences we are witnessing since more than a decade does not dramatically accelerate. A growing heterogeneity of the preferences would indeed render adequate institutional reforms in the European Union unfeasible.

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**Tables and Figures**

Figure 1: The effect of cumulated debt (1A) and of the interaction between banking crisis and cumulated debt (1B) on change in central bank independence

1A:
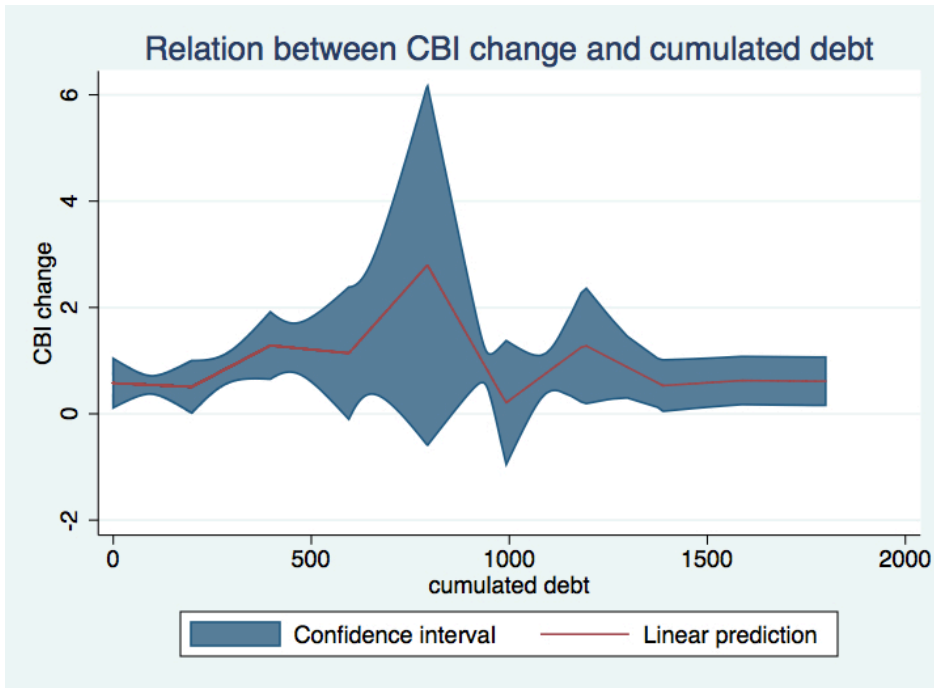


1B:
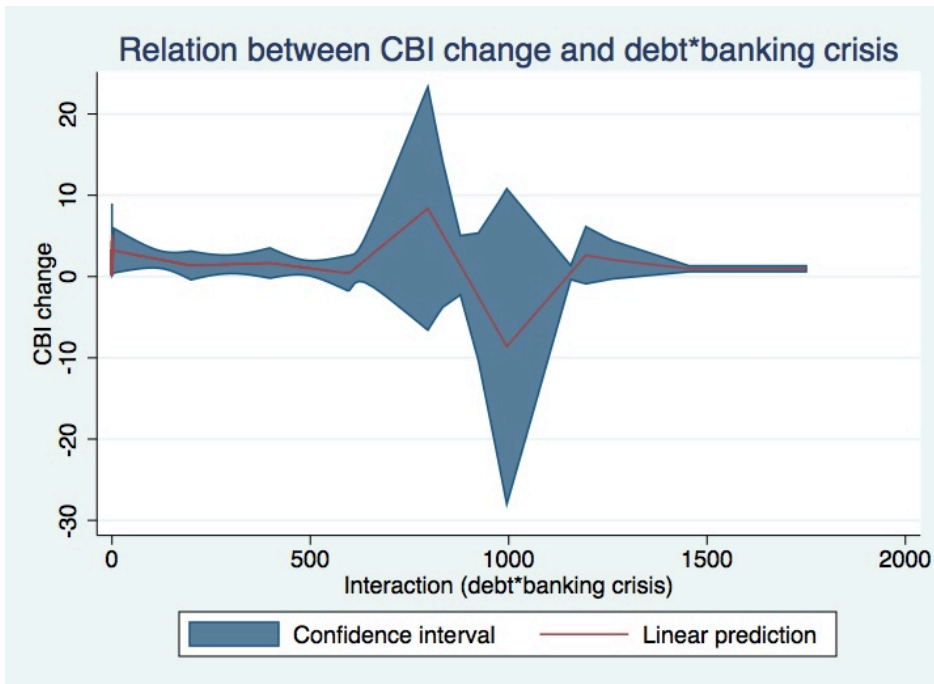
Figure 2:      The impact of economic crises on the risk of democratization (2A) and autocratization (2B)

2A:
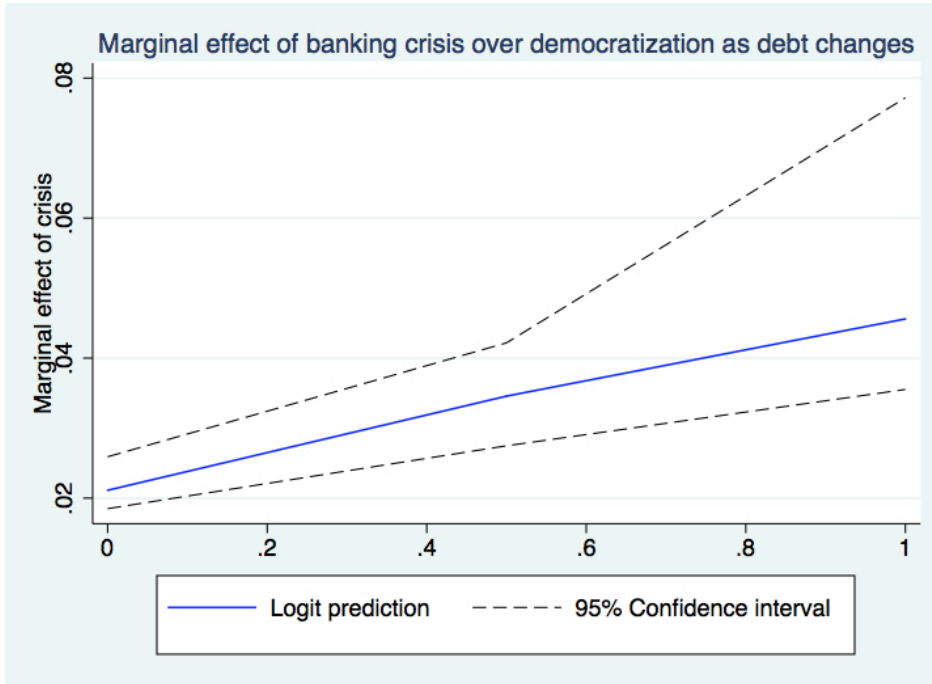


2B:
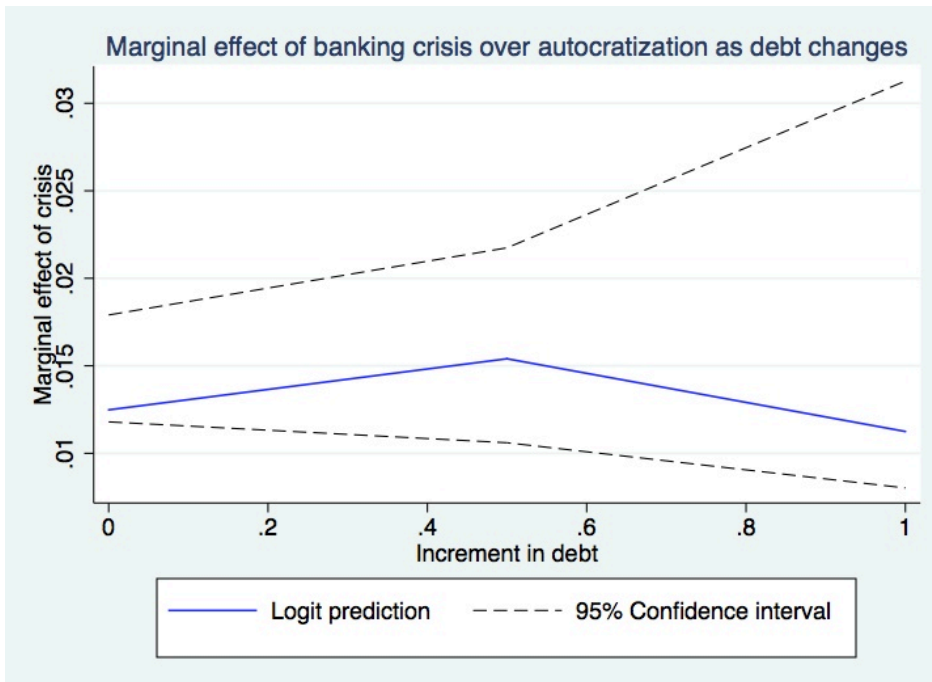
Figure 3: The preferences of the EU and EMU member states over central bank independence and the strengthening of democracy in the EU (without Bulgaria and Romania)
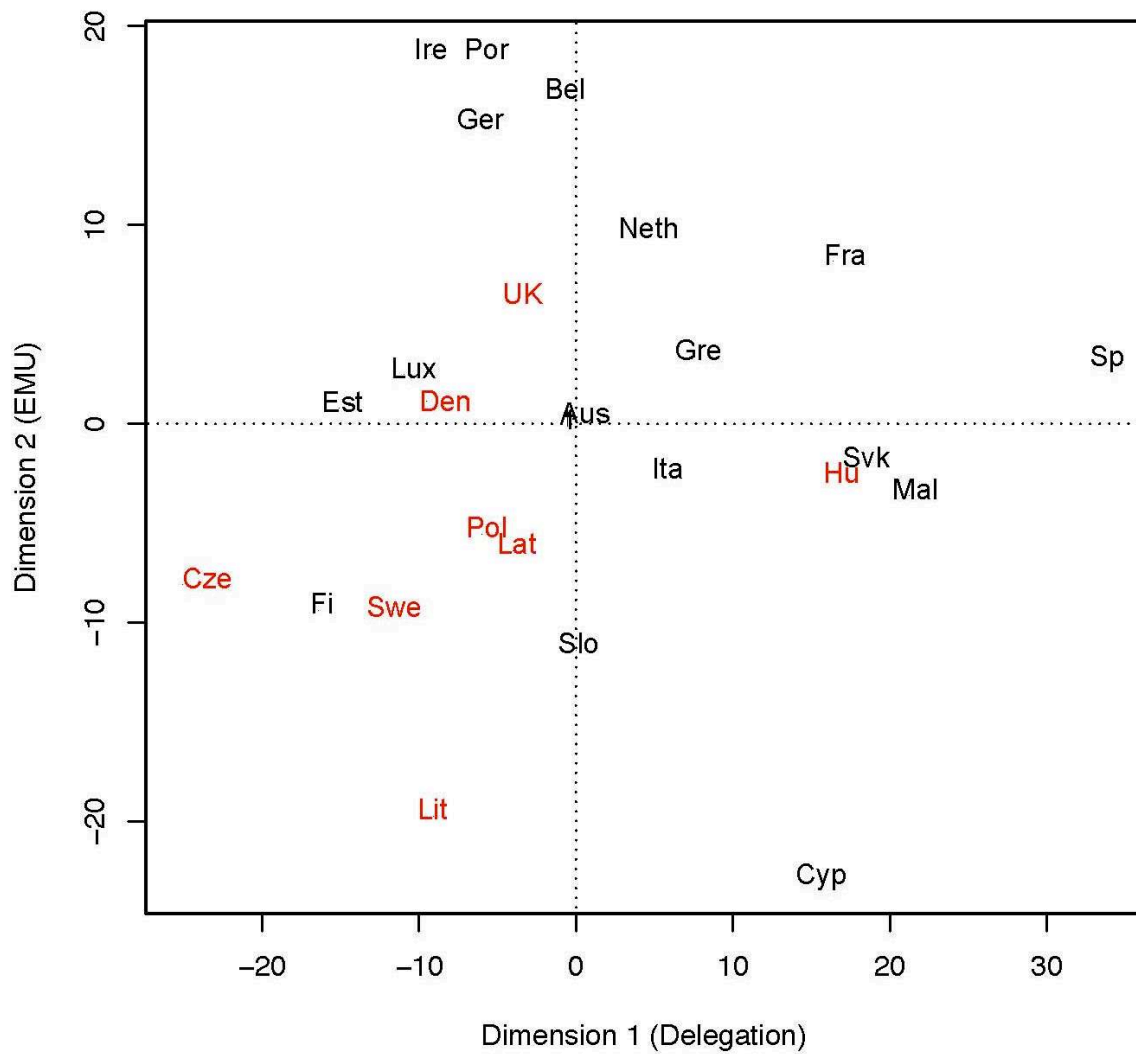


Note: Stress value = 5.43e-13.

Table 1: Effect of three types of financial crises on changes in central bank independence (fixed effect longitudinal linear regression models)

| Variable/Model | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Cumulated | 0.001* | | | 0.001* | 0.001** | | 0.0009 |
| Debt | (0.0006) | | | (0.0006) | (0.0006) | | (0.0006) |
| Banking crisis | | 1.47*** | | 2.08*** | | 1.12** | 1.63*** |
| | | (0.32) | | (0.45) | | (0.43) | (0.37) |
| Currency crisis | | | 0.18 | | 0.55 | -0.53 | -0.19 |
| | | | (0.31) | | (0.44) | (0.37) | (0.34) |
| Interaction debt and banking crisis | | | | -0.003** (0.001) | | | |
| Interaction debt and currency crisis | | | | | -0.002 (0.001) | | |
| Interaction currency and banking crises | | | | | | 1.06 (0.70) | |
| Threeway crises interaction | | | | | | | -0.001 (0.001) |
| Constant | 0.53*** | 0.56*** | 0.72*** | 0.30* | 0.44* | 0.63* | 0.40* |
| | (0.16) | (0.11) | (0.12) | (0.17) | (0.18) | (0.12) | (0.17) |
| $R^2$ within (between) | 0.001 (0.10) | 0.008 (0.08) | 0.0001 (0.012) | 0.01 (0.03) | 0.002 (0.07) | 0.009 (0.08) | 0.009 (0.01) |
| $R^2$ overall | 0.000 | 0.009 | 0.0006 | 0.01 | 0.0004 | 0.01 | 0.008 |
| F-Statistic | 3.07* | 20.58*** | 0.35 | 8.84*** | 1.65 | 7.86*** | 5.93*** |
| N (countries) | 2781 (93) | 2781 (93) | 2781 (93) | 2781 (93) | 2781 (93) | 2781 (93) | 2781 (93) |

*Note:* Standard errors in parentheses. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Table 2: Effect of three types of financial crises on changes in the level of democracy (fixed effect longitudinal logit models)

A: *Democratization*

| Variable/Model | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Cumulated Debt | 0.0008** (0.0003) | | | 0.001*** (0.0003) | 0.001*** (0.0003) | | 0.0009*** (0.0003) |
| Banking crisis | | 0.68 (0.22) | | 0.85*** (0.22) | | 0. .96*** (0.28) | 0.62*** (0.24) |
| Currency crisis | | | 0.38* (0.20) | | 0.48* (0.24) | 0.46* (0.24) | 0.22 (0.22) |
| Interaction debt and banking crisis | | | | -0.0009* (0.0004) | | | |
| Interaction debt and currency crisis | | | | | -0.0007 (0.0004) | | |
| Interaction currency and banking crises | | | | | | -0.94** (0.48) | |
| Threeway crises interaction | | | | | | | -0.0009* (0.0005) |
| Log likelihood | -526.13 | -526.44 | -528.90 | -521.17 | -523.93 | -523.95 | -521.17 |
| LR chi$^2$ | 8.87*** | 8.26** | 3.34* | 18.80*** | 13.27*** | 13.25*** | 18.72*** |
| N (countries) | 3522 (80) | 3522 (80) | 3522 (80) | 3522 (80) | 3522 (80) | 3522 (80) | 3522 (80) |

B: *Autocratization*

| Variable/Model | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| Cumulated Debt | -0.0007 (0.0004) | | | -0.0009* (0.0005) | -0.0007 (0.0005) | | -0.0009* (0.0005) |
| Banking crisis | | -0.11 (0.35) | | -0.22 (0.42) | | -0.41 (0.60) | -0.25 (0.41) |
| Currency crisis | | | 0.46 (0.26) | | 0.16 (0.34) | 0.009 (0.30) | 0.11 (0.29) |
| Interaction debt and banking crisis | | | | 0.0008 (0.0007) | | | |
| Interaction debt and currency crisis | | | | | -0.0002 (0.0009) | | |
| Interaction currency and banking crises | | | | | | .47 (0.78) | |
| Threeway crises interaction | | | | | | | 0.001 (0.0007) |
| Log likelihood | -334.82 | -336.05 | -336.08 | -334.36 | -334.70 | -335.81 | -333.77 |
| LR chi$^2$ l | 2.55 | 0.10 | 0.03 | 3.47 | 2.79 | 0.56 | 4.65 |
| N (countries) | 2740 (62) | 2740 (62) | 2740 (62) | 2740 (62) | 2740 (62) | 2740 (62) | 2740 (62) |

*Note:* Standard errors in parentheses. * Significant at 10 per cent; ** significant at 5 per cent; *** significant at 1 per cent.

Online Appendix

# "Smoke with Fire: Financial Crises, Institutional Reform, and the Future of EU Democracy"

Gerald Schneider and Federica Genovese

This Webappendix is composed of seven parts. First we offer some descriptive statistics on the countries under examination. We thereby show cross-tabulations of the two dependent variables (historical CBI changes and regime changes, see Descriptive Table 1) and cross-tabulations of each individual dependent variable with the independent variables of interest (banking crises and cumulated debt, see Tables 2-5).

Second we report the Hausman tests that we ran to check the correlation of the error term with the two dependent variables. The tests show that fixed effects are (slightly) preferable. We then report the full results obtained from running the two types of fixed effects regressions (xtreg for those on the CBI changes, and xtlogit for those on regime change, respectively). As the significance of the Hausman test for the regime change regressions is weaker, in the third section we report the results when we run the same regression with random effects.

The fourth part shows the instrumental variable analysis that we perform to address the possible endogeneity of the results. GDP per capita, GDP growth and inflation are the macroeconomic variables we instrument with, as we consider them suitable means to test for endogeneity. We first ran regressions where the macroeconomic indicators are included as independent variables, and then ran the IV regressions where the macroeconomic indicators are the instrumented variables. The results show an insignificant link between macroeconomic variables and crises in explaining the dependent variables. Note that the almost-significant link between the macroeconomic indicators and democratization/autocratization disappears when gdp and inflation are measured at the 5-year lag and crises at 4-year lag.

In the fifth section we report the results from the same regression analyses when democratization and autocratization are measured at a higher Polity score (+/-4).

In the sixth section we present the regressions results if we control for possible regional spillovers. The controls are dummy variables that we assign to country-years for four different crisis events that occurred across regions in the time span covered by our dataset. The four events (lagged by 5 years) are the Asian crisis of 1997; the energy crisis that attacked Western economies in 1973; the Latin American crisis of 1982; and the fall of the Soviet Union. The results show that the independent variables of interest maintain significance even when regional spill over effects are controlled for.

In the seventh and final section, we show the results from regression on the CBI levels that control for the path-dependency of these values. We focus on the first occurrence of the CBI observations (i.e. the entry of a country with CBI values in our dataset). The findings point to the robustness of our general results.

## A1: Descriptive tables

### Table 1. Cross tabulation of historical CBI changes and regime change

|  | *Loss (<20)* | | *Gain (>51)* | |
|---|---|---|---|---|
| *Democratization* | Spain<br>Spain<br>Spain<br>Spain | 1975<br>1976<br>1977<br>1978 | Armenia<br>Congo<br>Djibouti<br>Greece<br>Guatemala<br>Mexico<br>Peru<br>Peru | 1998<br>1991<br>1999<br>1974<br>1986<br>1994<br>1993<br>2000 |
| *Autocratization* | Uruguay | 1971 | Belarus<br>Belarus<br>Guatemala<br>Peru | 1995<br>1996<br>1974<br>1992 |

### Table 2. Cross tabulation of historical CBI changes and banking crisis

|  | *CBI Loss (<1)* | | *CBI Gain (>51)* | |
|---|---|---|---|---|
| *Crisis* | Costa Rica<br>Finland | 1996<br>1994 | Armenia<br>Estonia<br>Georgia | 1997<br>1994<br>1995 |
| *No crisis* | Austria<br>France<br>Portugal<br>Singapore<br>Egypt | 1972<br>1972<br>2002<br>2000<br>1972 | Bosnia Hzg<br>France | 1998<br>1994 |

Table 3. Cross tabulations of historical CBI changes and cumulated debt

|  | CBI Loss (<10) | | CBI Gain (>30) | |
|---|---|---|---|---|
| High debt (>600) | – | | Bulgaria | 1998 |
|  | | | Chile | 1990 |
|  | | | Italy | 1994 |
| Low debt (<50) | Georgia | 1994 | Armenia | 1997 |
|  | Spain | 1969 | Estonia | 1994 |
|  | | | Georgia | 1995 |
|  | Spain | 1970 | | |
|  | | | Lithuania | 1997 |

Table 4. List of historical banking crises by regime change

| Autocratization | | Democratization | |
|---|---|---|---|
| Albania | 1996 | Albania | 1997 |
| Algeria | 1992 | Argentina | 1983 |
| Armenia | 1995 | Armenia | 1998 |
| Armenia | 1996 | Bangladesh | 1991 |
| Burundi | 1996 | Congo | 1992 |
| Belarus | 1995 | DRC | 1992 |
| Belarus | 1996 | Croatia | 1999 |
| Chad | 1984 | Benin | 1990 |
| Guinea Bissau | 1998 | Indonesia | 1999 |
| Zambia | 1996 | Madagascar | 1991 |
| | | Jordan | 1989 |
| | | Mali | 1991 |
| | | Mexico | 1994 |
| | | Nepal | 1990 |
| | | Nicaragua | 1990 |
| | | Panama | 1989 |
| | | Philippines | 1986 |
| | | Romania | 1990 |
| | | Spain | 1977 |
| | | Spain | 1978 |
| | | Turkey | 1983 |
| | | Uruguay | 1985 |

Table 5. Cross tabulation of regime change and cumulated debt

| | Autocratization | | Democratization | |
|---|---|---|---|---|
| **High debt (>600)** | | | Burundi | 1998 |
| | | | Chile | 1988 |
| | Guyana | 1980 | Chile | 1989 |
| | Haiti | 1991 | Congo | 1991 |
| | Guinea Bissau | 1998 | Congo | 1991 |
| | Guinea Bissau | 2003 | Guinea Bissau | 1994 |
| | Zambia | 1996 | Guinea Bissau | 2005 |
| | | | Nicaragua | 1984 |
| | | | Nicaragua | 1990 |
| | | | Tanzania | 1995 |
| | | | Zambia | 1991 |
| **Low debt (<50)** | Argentina | 1976 | Argentina | 1973 |
| | Armenia | 1995 | Brazil | 1974 |
| | Belarus | 1995 | Benin | 1970 |
| | Chile | 1973 | Cambodia | 1998 |
| | Guatemala | 1954 | Taiwan | 1987 |
| | Kenya | 1969 | Iran | 1979 |
| | Philippines | 1965 | Jordan | 1989 |
| | Uruguay | 1971 | Madagascar | 1991 |
| | Congo | 1997 | Madagascar | 1992 |
| | Syria | 1963 | Mozambique | 1994 |
| | Thailand | 1958 | Panama | 1955 |
| | Uganda | 1966 | Peru | 1956 |
| | Burkina Faso | 1980 | Poland | 1989 |
| | | | Romania | 1989 |
| | | | Burkina Faso | 1977 |
| | | | Sierra Leone | 1968 |
| | | | South Korea | 1960 |
| | | | Lesotho | 1993 |
| | | | Tajikistan | 1998 |
| | | | Uruguay | 1952 |

## A2: Hausman tests

Linear model regression of CBI change on cumulated debt, banking crisis and currency crisis (where Ho is that the difference in coefficients is not systematic)

$$\text{chi2(3)} = 6.91$$
$$\text{Prob>chi2} = 0.073$$

Linear model regression of CBI change on cumulated debt and banking crisis

$$\text{chi2(3)} = 6.56$$
$$\text{Prob>chi2} = 0.0376$$

Logit model regression of democratization change on cumulated debt, banking crisis and currency crisis

$$\text{chi2(3)} = 13.46$$
$$\text{Prob>chi2} = 0.0037$$

Logit model regression of autocratization change on cumulated debt, banking crisis and currency crisis

$$\text{chi2(3)} = 123.28$$
$$\text{Prob>chi2} = 0.0000$$

## A3: Random effects for xtlogit models

Democratization model

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Cumulated debt | 0.000495* | 0.000837** | 0.000817** | 0.000680** | | 0.000873** |
| | (2.21) | (3.24) | (3.10) | (2.77) | | (3.17) |
| Banking crisis | 0.601* | 0.947*** | | 0.704** | 1.062*** | 1.283*** |
| | (2.57) | (3.64) | | (2.97) | (3.90) | (3.78) |
| Currency crisis | 0.303 | | 0.629** | 0.361 | 0.627** | 0.7417* |
| | (1.42) | | (2.63) | (1.70) | (2.73) | (2.53) |
| Interaction debt-baking | | -0.000792 | | | | -0.001082 |
| | | (-1.69) | | | | (-1.45) |
| Interaction debt-currency | | | -0.000606 | | | -0.000712 |
| | | | (-1.39) | | | (-1.17) |
| Interaction banking-currency | | | | -0.000793 | | -0.001087 |
| | | | | (-1.38) | | (-2.21) |
| Threeway interaction | | | | | -1.021* | -1.2576 |
| | | | | | (-2.20) | (1.02) |
| Constant | -4.191*** | -4.240*** | -4.221*** | -4.249*** | -4.137*** | -4.28*** |
| | (-28.45) | (-27.57) | (-27.48) | (-27.57) | (-29.72) | (-27.34) |
| Log Likelihood | -0.597 | -0.527 | -0.550 | -0.568 | -0.671 | -0.596 |
| | (-1.69) | (-1.54) | (-1.59) | (-1.62) | (-1.85) | (-1.63) |
| N | 6568 | 6568 | 6568 | 6568 | 6568 | 6568 |
| chi2 | 21.585576 | 22.957472 | 16.42547 | 24.075724 | 21.456424 | 30.410886 |

t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001

Autocratization model

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Cumulated debt | -0.000466 | -0.000601 | -0.000316 | -0.000736 | | -0.000265 |
| | (-1.05) | (-1.16) | (-0.62) | (-1.45) | | (-0.49) |
| Banking crisis | -0.0619 | -0.0804 | | -0.229 | -0.420 | -0.317 |
| | (-0.17) | (-0.20) | | (-0.58) | (-0.70) | (-0.42) |
| Currency crisis | 0.494 | | 0.599 | 0.470 | 0.361 | 0.982* |
| | (1.82) | | (1.77) | (1.69) | (1.21) | (2.47) |
| Interaction debt-banking | | 0.000735 | | | | -0.0002934 |
| | | (0.97) | | | | (-0.14) |
| Interaction debt-currency | | | -0.000535 | | | -0.00283 |
| | | | (-0.53) | | | (-.30) |
| Interaction banking-currency | | | | 0.00103 | | 0.00331 |
| | | | | (1.43) | | (1.74) |
| Threeway interaction | | | | | 0.571 | -0.28171 |
| | | | | | (0.75) | (1.40) |
| Constant | -4.425*** | -4.365*** | -4.450*** | -4.380*** | -4.479*** | -4.434*** |
| | (-24.66) | (-23.60) | (-24.24) | (-24.02) | (-26.54) | (-24.04) |
| Log Likelihood | -0.669 | -0.517 | -0.682 | -0.659 | -0.692 | -0.696 |
| | (-1.29) | (-1.09) | (-1.30) | (-1.27) | (-1.32) | (-1.32) |
| N | 6568 | 6568 | 6568 | 6568 | 6568 | 6568 |
| chi2 | 3.9885387 | 1.4527415 | 4.3731166 | 5.3835859 | 3.3488657 | 9.5395683 |

t statistics in parentheses
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

## A4: IV analysis

First we ran the regressions where the macroeconomic indicators are included as independent variables (note that there is some multicollinearity across the control variables; the results with the inclusion of inflation rate have the caveat of reducing the sample, however they show the same findings).

```
-----------------------------------------------------------------
                 CBI change    democratization   autocratization
-----------------------------------------------------------------

Cumulated debt    0.000229       0.000706*        -0.000204
                   (0.37)         (2.51)           (-0.48)

Banking crisis    1.373***        0.482             0.0191
                   (4.05)         (1.93)            (0.05)

Currency crisis  -0.238          0.210             0.414
                  (-0.74)        (0.94)            (1.40)

Gdp (lag)        0.0000917***   -0.0000817        -0.000432***
                   (4.15)        (-1.79)           (-3.48)

Growth gdp pc    -0.000841**    -0.0000560         0.0000913
                  (-3.23)        (-0.12)            (0.16)

Constant          0.191
                   (0.92)
-----------------------------------------------------------------
N                  2719           3339              2650
-----------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

Second we ran the I.V. regressions where each of the macroeconomic indicators become the instrumented variables (in other words, in each regression the control variable, e.g. GDP, is instrumented for the three variables "cumulated debt", "banking crisis" and "currency crisis")

CBI change (*xtivreg* command)

```
-------------------------------------------------------------
                    (1)              (2)              (3)
-------------------------------------------------------------
Gdp (lag)          0.000127
                    (1.72)

Growth gdp pc                       -0.00317
                                    (-1.71)

Inflation                                            0.168
                                                    (1.33)

Constant           -0.162           1.904**          0.242
                   (-0.30)          (2.74)          (0.40)
-------------------------------------------------------------
N                    2733             2719             1951
chi2            53.591853         50.60302        51.773511
-------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

The above table shows that there is an Insignificant link between macroeconomic variables and crises in explaining CBI change.

Democratization (*ivprobit* command with country-clustered standard errors)

```
-------------------------------------------------------------
                    (1)              (2)              (3)
-------------------------------------------------------------
Gdp            -0.0000618
                   (-1.01)

Growth gdp pc                     -0.00112***
                                    (-5.48)

Inflation                                           0.0242
                                                    (1.01)

Constant        -1.710***         -0.984**        -1.950***
                   (-3.87)          (-2.77)         (-23.77)
```

```
------------------------------------------------------------------
------------------------------------------------------------------
```

**Gdp**

| | | | |
|---|---|---|---|
| Currency crisis | -2310.2*** | | |
| | (-4.25) | | |
| | | | |
| Banking crisis | -146.5 | | |
| | (-0.26) | | |
| | | | |
| Cumulated debt | 2.244 | | |
| | (1.51) | | |
| | | | |
| Constant | 4771.0*** | | |
| | (9.56) | | |

```
------------------------------------------------------------------
```

**Growth gdp pc**

| | | | |
|---|---|---|---|
| Currency crisis | | -141.1*** | |
| | | (-3.89) | |
| | | | |
| Banking crisis | | -111.8*** | |
| | | (-3.81) | |
| | | | |
| Cumulated debt | | 0.0376 | |
| | | (0.61) | |
| | | | |
| Constant | | 283.4*** | |
| | | (9.74) | |

```
------------------------------------------------------------------
```

**Inflation**

| | | | |
|---|---|---|---|
| Currency crisis | | | 4.786*** |
| | | | (4.60) |
| | | | |
| Banking crisis | | | 0.250 |
| | | | (0.29) |
| | | | |
| Cumulated debt | | | 0.00116 |
| | | | (1.29) |
| | | | |
| Constant | | | 4.507*** |
| | | | (12.00) |

```
------------------------------------------------------------------
```

| | | | |
|---|---|---|---|
| athrho | 0.144 | 1.005** | -0.385 |
| | (0.28) | (2.88) | (-1.31) |

```
------------------------------------------------------------------
```

| | | | |
|---|---|---|---|
| lnsigma | 8.961*** | 6.643*** | 2.445*** |
| | (113.34) | (36.64) | (11.73) |

```
------------------------------------------------------------------
```

| | | | |
|---|---|---|---|
| N | 6278 | 6133 | 3657 |

```
------------------------------------------------------------------
```

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Autocratization (*ivprobit* command with country-clustered standard errors)

```
-------------------------------------------------------------
                        (1)              (2)              (3)
-------------------------------------------------------------
Gdp                -0.000181***
                     (-7.31)

Growth gdp pc                       -0.000985***
                                       (-3.42)

Inflation                                             0.0534**
                                                       (3.08)

Constant             -1.155*           -1.480**        -2.146***
                     (-2.43)           (-3.23)         (-9.41)
-------------------------------------------------------------
Gdp
Currency crisis    -2319.5***
                     (-4.34)

Banking crisis       -112.5
                     (-0.23)

Cumulated debt        2.240
                      (1.65)

Constant            4770.0***
                     (10.03)
-------------------------------------------------------------
Growth gdp pc
Currency crisis                      -153.9***
                                       (-4.68)

Banking crisis                       -90.44***
                                       (-3.41)

Cumulated debt                        0.0799
                                       (1.35)

Constant                             274.8***
                                       (9.67)
-------------------------------------------------------------
Inflation
Currency crisis                                       4.842***
                                                       (4.88)

Banking crisis                                         0.149
                                                       (0.19)

Cumulated debt                                         0.00103
```

```
                                                          (1.20)

Constant                                               4.547***
                                                        (12.23)
-------------------------------------------------------------
athrho               0.683            0.708            -0.721**
                    (1.86)           (1.86)            (-2.64)
-------------------------------------------------------------
lnsigma            8.961***         6.643***           2.445***
                  (113.35)          (36.65)            (11.73)
-------------------------------------------------------------
N                   6278             6133              3657
-------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

The two tables above with the IV regressions results for democratization and autocratization show that link between macroeconomic variables and crises is more significant.  However, this endogeneity could disappear if we take into consideration the temporal continuity between a crisis and institutional change. This is why below we run the same IV regressions on the regime change dependent variables **but** measuring when the macroeconomic indicators (here Gdp and inflation rate) are measured at the 5-year lag, while the crises (i.e. cumulated debt, as the others are omitted) are at the 4-year lag.

Democratization and autocratization at the one-year interval from the crises (*ivprobit* command with country-clustered standard errors)

| | democratization | autocratization | democratization | autocratization |
|---|---|---|---|---|
| Gdp (5yr) | -0.0000191 | -0.000135** | | |
| | (-0.61) | (-4.29) | | |
| Gdp growth (5yr) | | | -0.000139 | -0.000652** |
| | | | (-0.42) | (-3.01) |
| Constant | -1.409* | -0.488 | -1.616*** | -2.131*** |
| | (-2.43) | (-0.76) | (-7.45) | (-4.43) |
| **Gdp** | | | | |
| Cumulated debt | -6.578* | -6.578* | | |
| | (-2.09) | (-2.09) | | |
| Constant | 20869.2*** | 20869.2*** | | |
| | (7.28) | (7.28) | | |
| **Gdp growth** | | | | |
| Cumulated debt | | | -0.541*** | -0.541*** |
| | | | (-3.54) | (-3.54) |

```
Constant                                                    656.5***            656.5***
                                                            (4.56)              (4.56)
---------------------------------------------------------------------------------------
athrho                     0.0115            0.878**         0.0785              0.365
                          (0.02)            (2.68)          (0.30)              (1.49)
---------------------------------------------------------------------------------------
lnsigma                    9.810***          9.810***        6.824***            6.824***
                          (58.24)           (58.24)         (45.74)             (45.74)
---------------------------------------------------------------------------------------
N (countries)              155               155             152                 152
---------------------------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

The results show that for democratization the link between macroeconomic indicators and crises with respect to democratization disappears.

## A5: Analysis with democratization and autocratization at higher Polity score (+/-4)

Democratization

```
--------------------------------------------------------------------------------------------
                    (1)           (2)           (3)           (4)           (5)           (6)
--------------------------------------------------------------------------------------------
Cumulated debt   0.000758**                               0.000918**    0.000905**
                  (2.58)                                    (2.76)        (2.66)

Banking crisis                 0.723**                      0.887**                    0.847**
                                (2.95)                       (2.98)                     (2.60)

Currency crisis                              0.393                         0.452         0.347
                                            (1.74)                        (1.68)        (1.29)

Interaction                                              -0.000829
debt-banking                                              (-1.57)

Interaction                                                            -0.000518
debt-currency                                                           (-1.13)

Interaction                                                                            -0.488
Banking-currency                                                                       (-0.94)

--------------------------------------------------------------------------------------------
N                   3077          3077          3077          3077          3077          3077
--------------------------------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

## Autocratization

```
--------------------------------------------------------------------------------------------
                      (1)           (2)           (3)           (4)           (5)           (6)
--------------------------------------------------------------------------------------------
Cumulated debt    -0.000810                                  -0.000880     -0.000655
                  (-1.72)                                    (-1.70)       (-1.28)
Banking crisis                  -0.107                       -0.220                      -0.686
                                (-0.31)                      (-0.52)                     (-0.94)

Currency crisis                               0.0463                        0.161         0.0494
                                              (0.18)                        (0.48)        (0.16)

Interaction                                                  0.000785
debt-banking                                                 (1.04)

Interaction                                                                -0.000161
debt-currency                                                              (-0.17)

Interaction                                                                              0.702
banking-currency                                                                         (0.78)
--------------------------------------------------------------------------------------------
N                    2560          2740          2740          2740          2740          2560
--------------------------------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

## A6: Spill-over effect checks: regional crises

## A) CBI

```
--------------------------------------------------------------------
                      (1)          (2)          (3)          (4)
--------------------------------------------------------------------
Cumulated debt      0.00127*     0.00137*                  0.000894
                    (1.98)       (2.09)                    (1.46)

Banking crisis      2.180***                  1.119*       1.663***
                    (4.74)                    (2.57)       (4.51)

Debt*banking        -0.00289*
                    (-2.20)

Currency crisis                  0.626        -0.484       -0.114
                                 (1.39)       (-1.30)      (-0.34)

Debt*currency                    -0.00178
                                 (-1.35)

Banking*currency                              1.160
                                              (1.68)

Debt*banking*curr                                          -0.00134
                                                           (-0.94)

Asia 1990s          -0.463       0.381        -0.509       -0.385
                    (-0.31)      (0.26)       (-0.34)      (-0.26)

West 1970s          -0.857       -0.882       -0.995       -0.866
                    (-0.64)      (-0.66)      (-0.75)      (-0.65)

L.A. 1980s          -1.577       -1.296       -1.477       -1.409
                    (-1.87)      (-1.52)      (-1.74)      (-1.66)

Constant            0.318        0.451*       0.646***     0.412*
                    (1.83)       (2.50)       (5.27)       (2.35)
--------------------------------------------------------------------
N                   2781         2781         2781         2781
R2                  .01125       .00289       .01006       .00994
--------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

## B) Democratization

```
-------------------------------------------------------------------------
                     (1)           (2)           (3)           (4)
-------------------------------------------------------------------------
Cumulated debt    0.00101**      0.00102**
0.000947**
                    (3.25)         (3.22)                       (3.03)

Banking crisis     0.823**                      0.950***      0.611*
                    (2.95)                        (3.37)       (2.49)

Debt*banking      -0.000871
                    (-1.82)

Currency crisis                   0.431          0.432         0.197
                                  (1.70)         (1.82)        (0.89)

Debt*currency                    -0.000646
                                  (-1.48)

Banking*currency                                -0.988*
                                                 (-2.02)

Debt*banking*curr                                             -0.0008
                                                              (-1.64)

Asia 1990s         -0.416        -0.112         -0.0390       -0.401
                    (-0.37)       (-0.10)        (-0.03)       (-0.36)

L.A. 1980s          0.577         0.704          0.683         0.570
                    (1.10)        (1.36)         (1.29)        (1.08)

-------------------------------------------------------------------------
N                   3522          3522           3522          3522
chi2               20.06         14.90          14.74         19.95
-------------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

## C) Autocratization

```
----------------------------------------------------------------------
                    (1)            (2)            (3)            (4)
----------------------------------------------------------------------
Cumulated debt   -0.000854      -0.000630                     -0.000943
                  (-1.66)        (-1.23)                       (-1.87)

Banking crisis   -0.0753                        -0.408         -0.135
                  (-0.18)                       (-0.67)        (-0.33)

Debt*banking      0.00067
                  (0.88)

Currency crisis                   0.266          0.0392         0.167
                                  (0.78)         (0.13)         (0.58)

Debt*currency                   -0.00025
                                 (-0.27)

Banking*currency                                0.647
                                                (0.83)

Debt*banking*curr                                              0.00106
                                                               (1.44)

Asia 1990s       -13.27         -13.40         -13.71         -14.27
                  (-0.01)        (-0.01)        (-0.01)        (-0.01)

West 1970s       -13.18         -13.38         -13.62         -14.25
                  (-0.00)        (-0.00)        (-0.00)        (-0.00)

L.A 1980s        -13.25         -13.40         -13.68         -14.27
                  (-0.02)        (-0.02)        (-0.02)        (-0.01)

----------------------------------------------------------------------
N                 2740           2740           2740           2740
chi2              6.964          6.853          4.758          8.444
----------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

## A7: Checks on path dependency and first occurrence of CBI

```
---------------------------------------------------------------------
                    (1)          (2)          (3)          (4)
---------------------------------------------------------------------
Cumulated debt      0.0217       0.0174                    0.0180
                    (1.16)       (0.73)                    (0.96)

Banking crisis      43.66***                  16.96        43.45***
                    (4.26)                    (1.46)       (4.58)

Debt*banking        -0.0657
                    (-1.18)

Currency crisis                  14.87        -19.94*      -10.25
                                 (1.21)       (-2.46)      (-1.20)

Debt*currency                    -0.0620
                                 (-1.19)

Banking*currency                              40.04*
                                              (2.58)

Debt*banking*curr                                          -0.0399
                                                           (-0.62)

Constant            6.289        11.74        13.69***     7.509
                    (1.32)       (1.97)       (6.14)       (1.51)
---------------------------------------------------------------------
N                   129          129          129          129
R2                  .27269       .02565       .34320       .28762
---------------------------------------------------------------------
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```