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POLITICS AND THE DETERMINANTS OF BANKING CRISES: THE EFFECTS OF POLITICAL CHECKS AND BALANCES

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POLITICS AND THE DETERMINANTS OF BANKING CRISES: THE EFFECTS OF POLITICAL CHECKS AND BALANCES

Philip Keefer
The World Bank

Resumen
Una amplia literatura ha generado importantes ideas respecto de las causas financieras y macroeconómicas de las crisis bancarias. Muchas de estas causas - desde los lapsos en la regulación financiera hasta determinados esfuerzos por mantener un tipo de cambio fijo - tienen en común sus orígenes como decisiones de política de actores políticos. Numerosos criterios no técnicos, desde la identidad e intereses de distritos electorales políticos hasta las instituciones políticas y electorales, condicionan los incentivos de quienes toman las decisiones políticas para hacer o corregir "errores" políticos. Este trabajo explora el rol de una importante institución política, la presencia o ausencia de pesos y contrapesos de poder político. Los pesos y contrapesos influencian la independencia de los reguladores, el valor y el costo de pagos de intereses especiales hacia los hacedores de política, y los incentivos políticos individuales para evitar fallas de política colectivas. La evidencia sugiere que las causas financieras y económicas de las crisis, consistentes con estos argumentos, difieren significativamente en países que exhiben pocos o muchos pesos y contrapesos de poder político.

Abstract
A large body of research has provided significant insights into the financial and macroeconomic causes of banking crises. Many of these causes - ranging from lapses in financial regulation to determined efforts to maintain a fixed exchange rate - have in common their origins as policy decisions of political actors. Numerous non-technical criteria, ranging from the identity and interests of political constituencies to political and electoral institutions, condition the incentives of political decision makers to make or correct policy "mistakes". This paper explores the role of one significant political institution, the presence or absence of political checks and balances. Checks and balances influence the independence of regulators, the value and cost of special interest payoffs to policy makers, and individual political incentives to avoid collective policy failures. The evidence suggests that the financial and economic causes of crisis, consistent with these arguments, differ significantly in countries that exhibit few or many political checks and balances.

This paper is a chapter of the forthcoming book Banking, Financial Integration, and International Crises, edited by Leonardo Hernández and Klaus Schmidt-Hebbel, Banco Central de Chile, Santiago, 2002.
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Politics and the Determinants of Banking Crises: The Effects of Political Checks and Balances

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There is likely to be little disagreement with the observation that political interference has exacerbated the problems associated with bank insolvencies. Nevertheless, most of the analytical attention given to bank crises has focused on technocratic mistakes (inappropriate regulatory choices), exogenous shocks, contagion effects, and other purely economic determinants of crisis. The implicit political economy assumption underpinning this work is that politicians in different countries generally respond similarly to political opportunities in the financial sector, and to crises in the financial sector, so that one need not control for political parameters when examining financial sector crises. This assumption is helpful in isolating the relationships among economic variables. However, as a factual matter, the incentives of political actors differ significantly across countries. One way in which they differ, and which is the focus of this paper, is in the extent of checks and balances that they exhibit in government decisionmaking.[1]

Without implicating them in any shortcomings of the analysis, the author wishes to thank the expert and essential assistance of Anqing Shi; the helpful comments and valuable data of Asli Demirgüç-Kunt; the suggestions of Gerard Caprio, Robert Cull, and Mary Shirley; and comments of seminar participants.

1. Numerous other institutional differences among countries could matter for the speed with which they respond to bank insolvencies, the ease with which they adjust to exogenous events that could precipitate crisis, and the credibility with which their actions are viewed by markets. These include whether the electoral systems of countries exert severe or moderate fundraising pressures on candidates and parties; the extent to which political decisionmakers respond to narrow or broad constituencies; the horizons of political leaders; the extent to which political leaders or society as a whole are ideologically polarized; and the distribution of different economic constituencies among key decisionmakers.

Differences such as these have implications both for the speed with which political actors respond to incipient crisis situations, and for the sorts of regulatory and economic policies that they follow that influence whether crises develop in the first place.

Politicians and government officials in all countries have found it convenient, for a number of reasons, to protect imprudent banks, but the extent to which they do this varies significantly across countries. In Venezuela the governor of the central bank was allowed to maintain his ownership of Banco Latino, whose rapid growth eventually precipitated that country's massive crisis. In the United States, members of Congress exercised influence on regulators to protect their savings and loan constituents, but with much more modest effects. The Albanian pyramid schemes, certainly a phenomenon that flowered with significant government support, generated a financial collapse that, relative to that country's GDP, dwarfed the consequences of even the worst-case predictions for the Japanese banking sector. These examples suggest that institutional and social differences between countries certainly do affect how politicians handle the financial sector. Nevertheless, this less-than-adventurous claim has not been examined in any detail.[2]

The extent of checks and balances affects the probability of bank crisis in two ways. First, checks and balances may directly influence the magnitude and probability of financial crises, for example through their effect on intragovernmental negotiating costs that slow the response to an incipient crisis. Second, checks and balances may indirectly influence the probability of banking crises by changing the effects of other determinants of crisis, such as interest rate liberalization. Evidence reported in the empirical section of this paper suggests a strong indirect effect of checks and balances on banking crises: policy variables such as fiscal deficits, deposit insurance, and interest rate controls have a substantially different effect on crisis outcomes in countries where checks and balances are extensive than in countries where they are not.

2. This is not to say that the politics of financial sector reforms in different countries has not been the focus of attention. Considerable work has identified the political causes of crisis in the United States (for example, Romer and Weingast, 1991), but there has been little or no analysis of whether the political causes of crisis differ systematically across countries.

1. Checks and Balances as an Aggravating Factor in Financial Crisis

Checks and balances prevail in a country when multiple players with different interests, each of whom holds veto power, must approve policies as a condition of their implementation. A variety of institutional arrangements give rise to multiple veto players. One common example is that of coalition governments, which are composed of different parties each of which can, by withdrawing its support, cause a government to fall. A second is systems where executive and legislative power are divided, or where the legislature has two chambers, so that the cooperation of multiple bodies is required for legislation to be approved.[3]

This section summarizes several bodies of research that predict a negative influence of checks and balances on economic outcomes. The following section considers arguments that conclude that the presence of checks and balances may mitigate financial sector crises. The third section evaluates the indirect effects.

One literature argues that multiple veto players confront a collective action problem in devising a response to shocks, since none of them bears all of the costs of large deficits, but all bear the full costs of budget cuts incurred by their constituencies. McCubbins (1991) and others argue that spending will fall less in response to shocks when a party in favor of more spending controls one of the veto gates (the decisionmaking bodies charged with approving spending decisions). Since an increase in the number of veto gates (checks and balances) raises the probability that such a party will control at least one of the veto gates, checks and balances should delay the response to crisis.

Alesina and Drazen (1991) also begin with the collective action problem confronting multiple actors.[4] They argue that information asymmetries among the actors delay their response to shocks. Decisionmakers have asymmetric information about the costs of adjustment of their opposition; waiting to respond to a crisis therefore has value, because it reveals additional information about the opposition. Outside of their model, however, it is plausibly the case that

3. Differences in interests can emerge from numerous sources: the constituencies that they represent, their time horizons, their personal financial activities, and so forth.

4. Although they do not explicitly discuss divided government, they do assume that agreement on policy change must be approved by two groups with different interests.

problems of asymmetric information worsen with the number of decisionmakers, exacerbating the delay. Spolaore (1993) shows explicitly that inefficiency in the reaction to budget shocks increases with the number of veto players.[5]

The conclusions of this literature, if not its specific assumptions, have found empirical support. Roubini and Sachs (1989) find that most member countries of the Organization for Economic Cooperation and Development (OECD) held to relatively sound fiscal policies until the oil crisis of the early 1970s. With the onset of that crisis, those governments that were divided failed to make rapid fiscal adjustments and experienced higher inflation. Roubini and Sach do not address the overall efficiency of fiscal policy except to observe that, before the crisis, most countries, with or without divided government, tended to have fairly balanced fiscal policies, albeit with significantly different levels of government spending as a fraction of GDP.

The extension of the conclusions of this literature to the analysis of government responses to bank insolvencies is straightforward. All of the different conditions that in the literature are argued to generate delay in responding to fiscal crisis are generally present as well in financial sector crises. First, a delayed response to financial sector insolvencies, like that to fiscal shocks, is detrimental. Unresolved insolvencies create opportunities for insolvent or near-insolvent banks to "gamble for resurrection," as Akerlof and Romer describe it. Second, as with fiscal policy, a response to financial crisis generally requires the agreement of all primary government decisionmakers; more checks and balances increase the likelihood that the interests of imprudent banks will be protected by at least one of the checks, delaying intervention in insolvent institutions. Third, decisions must also be made in the face of considerable uncertainty not only about which institutions are insolvent, but also about the costs and benefits for the constituencies of decisionmakers and their political opponents.

Since the initial conditions in the analysis of banking crises match those assumed in the literature on fiscal adjustment and checks and balances, the predictions of this literature ought to apply as well to banking crises. Governments that operate with more numerous checks and balances are likely to delay in responding to early warning signs of bank crisis, intervening late in insolvent institutions and leaving inappropriate regulatory frameworks intact for too long. For example, prudent financial regulation often demands that regulators

5. A social planner, implicitly representing the median voter in a country, responds ideally to the shock.

shut insolvent financial institutions down. This typically requires financial resources, for which regulators may have to appeal to the political authorities. Approval for such resources is likely to be delayed when checks and balances are extensive and more political actors must agree on them. This effect of checks and balances should raise the probability of a severe or systemic bank crisis.

To summarize, the existing literature implies that more numerous checks and balances should increase the probability of bank crisis.

2. Checks and Balances as a Mitigating Factor in Financial Crisis

Although checks and balances may introduce bargaining costs that exacerbate the costs of a crisis, they may also have the opposite effect of making it more difficult for governments to shift the costs of financial sector crises onto unrepresented sectors in society. By this logic, checks and balances can give rise to pressures, which would not otherwise exist, to correct regulatory shortcomings or to intervene in insolvent institutions.

There is ample evidence that the absence of checks and balances, particularly outside of the OECD, is associated with lack of political representation for large segments of society. There is good reason to expect such an association, since institutional checks are a (usually explicit) constitutional device to ensure that no single interest can control the reins of government. Multiple groups attempt to ensure that, in postconstitutional lawmaking, their interests will not be prejudiced. They do this by granting themselves or their representatives veto power over legislation. If a single interest group controlled the constitutional process and desired to govern exclusively, it would find it counterproductive to introduce checks and balances.

The importance of this for economic policymaking is straightforward. Since political decisionmakers in any system first seek to have their projects paid for by groups with no representation in the policymaking process, the larger are any unrepresented constituencies, the easier it is to adopt highly inefficient policies. Excess inefficiencies can be shifted to the unrepresented groups, raising the net benefits of these policies to those constituencies that do exercise influence over veto players in the government.

This suggests that the existence of checks and balances, because of their association with more complete representation of

interests in a society, can also moderate inefficiencies such as those that give rise to bank crises.[6] Decisionmakers who cannot shift a sufficiently large share of the costs of their policies onto unrepresented interests are less likely to approve inefficient fiscal or regulatory decisions than decisionmakers that can.

The notion that checks and balances are benign, or even beneficial, is not foreign to the political economy literature. Spolaore (1993) uses logic similar to that presented above to conclude that a single veto player—a single-party government—will protect its constituency and overreact to crisis, imposing excessive costs on the economy. His model, nevertheless, yields the result that multiple decision makers are less efficient. Alesina and Rosenthal (1995) suggest that divided government is a mechanism used by voters to ensure that parties, even though polarized by the activists that control them, pursue moderate goals. They take for granted the existence of multiple veto points and suggest that voters rationally distribute control of government to multiple parties with different preferences. To the extent that moderate goals are consistent with prudent regulation of the financial sector, their arguments are also consistent with the conclusions of this section.

To summarize, then, there are reasons to expect checks and balan-ces to have both positive and negative effects on the probability of bank crises. This paper examines whether, as an empirical matter, the net effect of these offsetting influences is zero, or whether one or the other set of effects predominates.

3. The Interaction among the Political, Economic, and Financial Causes of Bank Crises

Policymakers and researchers have typically focused on economic and financial sector variables and policy instruments in the analysis of financial sector crises. The effect of most of these, however, can be influenced by government decisions, in at least two ways. First, financial sector regulators can potentially mitigate the impact of these

6. McGuire and Olson (1996) argue that stable dictators with an encompassing interest in their domain (for example, complete ability to tax all economic activity) will approve, as they describe it, surprisingly efficient taxation policies. The assumption in this paper is that the extent to which governments collectively have an encompassing interest over the whole country is related to the number of decisionmakers. The evidence presented regarding the financial sector is, in any case, consistent with this assumption.

variables on the probability of banking crises. The presence of checks and balances, in turn, affects the discretion with which financial sector regulators can act. For this reason, one would expect the specific impact of different financial and economic sector variables on a crisis to vary depending on the level of checks and balances.

Second, the belief of private sector actors that government policies will be sustained into the future also influences whether these policies have a large or a small effect on the probability of banking crises. Checks and balances have a significant impact on the ability of governments to reverse policies or to renege on policy announcements. Again, checks and balances should significantly influence the effects of those variables for which the credibility of government matters.

Private credit provides an example of the regulatory effect of checks and balances. An increase in private credit as a fraction of GDP is more likely to result in an increased volume of high-risk loans in the absence of sound prudential regulation. Similarly, the liberalization of interest rates permits bankers to attract funds by raising deposit rates of interest and to use these funds to make high-interest, high-risk loans that they otherwise would not extend, increasing the probability of bank crisis. Their ability to do this is restricted when regulators are free to limit the risk of bank portfolios and to shut down insolvent institutions. The impact of both of these variables on the probability of bank crisis should therefore be different in countries that exhibit extensive checks and balances than in countries that do not.[7]

Exchange rate changes offer an example of the credibility effects of checks and balances. Bankers are unlikely to take on substantial liabilities denominated in foreign currency if their government cannot make credible promises regarding the exchange rate. Consequently, exchange rate movements should have less of an impact on banking crises when governments exhibit few checks and balances.

The remainder of this section presents in greater detail the different economic and financial sector variables that are thought to influence crises, and the likely effects that regulatory independence

7. Two assumptions underlie this conclusion. The first is that the regulators do not need to appeal to political authorities for additional funding to carry out their regulatory function. The second is that regulators are more interested than political actors in maintaining the solvency of the financial system. In many countries, of course, regulators have been found to have a financial interest in the institutions they regulate. This naturally dulls their incentive to act vigorously in defense of the solvency of the system.

(and therefore checks and balances) are likely to have on them. The various economic and financial determinants of systemic bank crises are comprehensively reviewed in Demirgüç-Kunt and Detragiache (1997). Economic variables thought to be important for the financial sector include those that describe the general health of the economy. Among these are real GDP growth, inflation, and income per capita; shocks, such as movements in the terms of trade; and macroeconomic variables that are more directly susceptible to policy intervention. These include exchange rate movements, short-term interest rates, budget deficits, and the ratio of the money supply to foreign reserves held by the central bank. Specific financial sector variables include the ratio of credit to the private sector as a fraction of GDP, the growth of credit to the private sector, the presence or absence of deposit insurance, and the presence or absence of controls on interest rates.

The remainder of this section reviews each of the different economic and financial sector variables used in the analysis, their predicted effect on financial crisis, and the influence of checks and balances on this predicted effect.

3.1 Real GDP Growth

Faster real GDP growth is generally predicted to reduce the probability of banking crises, since borrowers are less likely to default when growth is rapid and their activities are more profitable. Ideal-ly, a regulatory system would mute the effects of the business cycle on the quality of lending portfolios, so that the effects of real GDP growth would be greater in countries with poor regulatory systems (for example, where checks and balances are few) and weaker in more stringent regulatory environments, where regulators keep a tight rein on portfolio risk. However, economy-wide risks are the most difficult to diversify against, and this limits the effectiveness of regulatory intervention. It is certainly a well-observed phenomenon that portfolio risk moves with the business cycle even in the best-regulated countries. Therefore one expects the presence of checks and balances to make little difference to the impact of growth on crisis.

3.2 Inflation

Inflation increases the risk that banks will be forced to raise nominal deposit rates to attract funds. If their nominal returns on

long-term assets are fixed or respond sluggishly to the increased cost of funds, an increase in deposit rates reduces profitability, increasing the threat of systemic insolvency. The perfect bank regulator would ensure that portfolios are not excessively weighted with long-term fixed-rate loans, to minimize the effect of inflation. As with GDP growth, this is a formidable regulatory challenge. We would therefore expect the effect of inflation on a crisis in the absence of checks and balances to be the same as or greater than the effect of inflation in the presence of checks and balances.

3.3 Real Income per Capita

Higher real income per capita is expected to reduce the threat of banking crises in several ways. First, wealthier countries are more likely to be able to afford the costs of efficient financial sector regulation. Second, banks in these countries are more likely to be able to diversify their lending portfolios, in part because wealthier countries are more attractive locations for (better diversified) international banks.

Checks and balances have an ambiguous effect here. On one hand, the presence of checks and balances drives up the incentives of political actors to adopt good regulation, independent of the wealth of a country. Consequently, in countries that already exhibit more extensive checks and balances, the effect of additional wealth on the establishment of sound prudential regulation could be modest. This would suggest that the impact of wealth on banking crises should be greater in countries that lack checks and balances.

On the other hand, property rights are stronger in the presence of checks and balances (see, for example, North and Weingast, 1989, and Keefer and Knack, 1997). International banks are therefore more likely to move into wealthy countries where checks and balances prevail (and where they can therefore be more confident that government policies will not be changed in ways that might devalue their investment). This would suggest that the moderating effect of income per capita on banking crises should be stronger where checks and balances are greater.

3.4 Budget Deficits

Larger government budget deficits are expected to increase the probability of crisis for at least two reasons. First, when the

budget deficit increases, countries are less able to undertake fiscally costly interventions in insolvent banks. By failing to intervene in scattered insolvent institutions early, they increase the chances of a systemic crisis later. Second, governments confronting severe fiscal difficulties are more likely to use the financial sector as an off-budget source of funding for government objectives, by pressuring banks to direct loans to favored borrowers. Since securing repayment of loan obligations from these borrowers is typically a difficult proposition for banks, these pressures can translate into solvency difficulties for the financial system.

For reasons set out earlier, the effect of checks and balances on the impact of budget deficits is ambiguous. On one hand, as the literature on divided government suggests, governments that exhibit more checks and balances always confront greater intragovernmental bargaining costs before making the decision to intervene; these costs conceivably rise with the magnitude of fiscal deficits. In this case, the effect of deficits on raising the probability of financial crisis would be exacerbated where checks and balances are more extensive.

On the other hand, checks and balances can also mitigate the effects of budget deficits on the probability of crisis. Governments with more extensive checks and balances are likely to be more credible and therefore better positioned to issue debt to finance public sector deficits. They can more easily avoid raids on the resources of the financial sector to finance fiscal exigencies. In addition, advocates of a sound financial system, who are more likely to be in the government when checks and balances are more extensive, can block government actions that threaten banks. They can stop coercive government actions meant to persuade banks to lend to particular risky borrowers. They can also insulate regulators from pressure to overlook imprudent banking practices that would flow from decisions to lend to government-favored risky borrowers. For either reason, then, increased checks and balances might reduce the impact of budget deficits on the probability of a bank crisis. The net influence of checks and balances on the relationship between deficits and banking crises is therefore ambiguous.

3.5 Short-Term Interest Rates

Rising short-term real interest rates increase the probability of bank crises in two ways. First, like inflation, they raise the cost of short-run funds to banks, hurting profits when returns on long-term assets are fixed. Second, they may presage a deterioration in the

quality of bank assets if the increases are the result of interbank competition to finance risky loans. In either case, successful regulation (and therefore checks and balances) should mitigate the effect of changes in interest rates on the probability of bank crisis.

3.6 Currency Devaluation

Devaluation makes foreign currency obligations more expensive, triggering crises among those banks or bank borrowers with significant offshore exposure. The effects of checks and balances on this variable are mixed, however. On one hand, in a lax regulatory environment banks are more likely to be insufficiently diversified against the risk of devaluation. This would suggest that devaluation would have a greater effect where there are fewer checks and balances. On the other hand, devaluation has serious implications for the financial sector only to the extent that firms or financial institutions take on foreign currency liabilities to acquire local currency-denominated assets in the first place. They will do this only if they believe the exchange rate guarantees announced by the government. Since governments with checks and balances are likely to be more credible, this would argue for the opposite effect: devaluation would have a greater effect where there are more checks and balances.

3.7 Ratio of the Money Supply to Foreign Reserves Held by the Central Bank

The argument for an effect of the money supply-reserves ratio is similar to the argument regarding exchange rates. An increase in the money supply (M2) relative to foreign reserves increases the vulnerability of countries to sudden capital outflows and, ultimately, to a rapid collapse of the exchange rate. This can precipitate a financial crisis when the financial sector holds substantial liabilities denominated in foreign currency. The effect of checks and balances on this variable is identical to its effect on currency devaluation: that is, the effect is ambiguous.

On one hand, excessive holdings of foreign currency-denominated liabilities can be viewed as a product of regulatory failure, which should be more likely in countries with fewer checks and balances. This suggests that the effect of this ratio on the probability of bank crisis should be lower when checks and balances are strong. However, sudden capital outflows are most likely to occur when previously credible governments, and in particular the promises of government to

maintain a particular exchange rate, come to be seen as noncredible. Governments with few checks and balances are less likely to be viewed as credible in the first place, so the amount of hard currency that private actors will risk in such countries is lower for every level of the M2-reserves ratio. This suggests that the effect of this ratio would be *greater* in countries with more checks and balances.

3.8 Terms-of-Trade Changes

Even prudent banks find it difficult to diversify against the threat of terms-of-trade shocks, which are expected to increase the risk of bank crisis. However, the potential for diversification and prudent management to mitigate these shocks is never zero (see Wilson, Caprio, and Saunders, 1997, on Mexico), and countries that exhibit checks and balances are likely to encourage greater diversification for two different reasons.

First, where checks and balances are greater, governments are more credible, and better-diversified international banks are more likely to enter countries that are more vulnerable to terms-of-trade shocks. Second, where checks and balances are greater, the quality of regulation is likely to be better, and the extent of bank preparation against the eventuality of a shock is likely to be greater. This again mitigates the influence of shocks on bank crises. Although terms-of-trade shocks should have a positive association with bank crises in all countries, this association should be still higher in countries with few checks and balances.

3.9 Lending to the Private Sector and the Rate of Credit Growth

Since banks would normally prefer low-risk loans to high-risk loans, both an increase in lending to the private sector as a fraction of GDP and an increase in the rate of credit growth might be associated with growing risk in bank portfolios, increasing the risk of systemic insolvency. However, following earlier arguments, where checks and balances are more extensive, and regulation therefore is presumably stronger, these effects should be mitigated.

3.10 Ratio of Bank Cash and Reserves to Bank Assets

The ratio of bank cash and reserves to bank assets is an important policy lever used by regulators to control the risk of bank failure.

The vulnerability of banks to crisis is usually predicted to fall when this ratio rises, since greater cash reserves presumably cushion a bank against a rash of nonperforming loans. The effect of political structure on this variable is ambiguous, however.

Banks always gain by overstating their cash reserves, since this builds up the confidence of depositors and other bank creditors. Checks and balances and a stronger regulatory structure are likely to inhibit banks from such overstatement, however. On the other hand, if regulators require banks to maintain larger cash holdings than they prefer, banks, in response, may attempt to offset the low profits from these holdings by extending more risky, high-return loans than they otherwise would have. The net effect of this portfolio shift can, in principle, be a net increase in the riskiness of the portfolio.

In addition, a spurious positive relationship between cash holdings and crisis probability is possible if regulators, in response to other signals of impending systemic insolvency, require a significant increase in the cash holdings of banks. Since this action will be followed by, or coincide with, bank crises in many instances, empirical work could reveal (and does reveal in the regressions that follow) a contemporaneous association between high cash reserves and the probability of bank crises.

3.11 Deposit Insurance

Two policy variables specific to the financial sector have also been used as predictors of financial crisis. One of these is the presence of deposit insurance, and the other, discussed below, is the liberalization of interest rates. Theory suggests two offsetting effects of deposit insurance. On one hand, it can lower the probability of bank crisis by reducing the likelihood of bank runs. However, deposit insurance also increases moral hazard problems in the financial sector by relieving depositors of the need to monitor the operations of their bank, in turn encouraging bank owners to make imprudent loans. The effects of deposit insurance on bank crisis are therefore ambiguous.

The effect of checks and balances is similarly ambiguous. On one hand, if the absence of checks and balances means that governments are not credible, depositors will be disinclined to rely on government promises to indemnify their savings in the event of bank failure. The introduction of deposit insurance should therefore have more modest effects when checks and balances are absent than when they are present.

On the other hand, there are two reasons to expect a stronger positive association between deposit insurance and bank crises when checks and balances are absent. First, the regulatory environment is more likely to be deficient when checks and balances are few, increasing the possibilities for abuse of the deposit insurance system by banks. Second, the announcement of a deposit insurance program is one possible response to bank crisis, intended to build depositor confidence and forestall bank runs (see Cull, 1998). However, such an announcement is more difficult in the presence of significant checks and balances. This would lead to a stronger association of deposit insurance with bank crises in the absence of checks and balances.

3.12 Financial Liberalization

Recent research has also examined the role of financial liberalization in triggering bank crises (see especially Demirgüç-Kunt and Detragiache, 1998). Liberalization (defined as the lifting of interest ceilings on deposits) increases the risks to banks that the nominal costs of short-term liabilities will exceed their nominal returns from long-term assets. Liberalization also allows banks to compete for funds by raising deposit rates. This facilitates attempts by banks to expand their lending portfolios to include high-risk, high-interest loans, raising the probability of bank crisis in any given year.

Once again, political institutions are likely to affect whether financial liberalizations are associated with crisis. Demirgüç-Kunt and Detragiache (1998) point out that countries with poor regulation are more likely to suffer from the ill effects of financial regulation, and they find evidence of this. However, countries with fewer checks and balances are likely to have worse regulation. Financial liberalization should therefore be more strongly associated with bank crises in these countries.

All of the predictions reviewed above are summarized in the far right-hand column of table 1.

4. Testing Approach

4.1 Measurement of Crisis and Specification Issues

The hypotheses reviewed above have implications both for the magnitude of bank crises, measured for example by the magnitude of

Table 1. Financial and Economic Determinants of Bank Crises under Alternative Institutional Settings[a]

	Countries sorted according to score on executive constraints (EC) variable		*Countries sorted according to score on party fractionalization (PF) variable*		
Independent variable	*(1a) EC < median*	*(2a) EC > median*	*(1b) PF ≤ median*	*(2b) PF > median*	*Predicted results*
Real GDP growth	–0.0049 (0.033)	–0.0166 (0.0004)	–0.003 (0.169)	–0.013 (0.005)	|1| ≥ |2|
Change in terms of trade	–0.001 (0.22)	0.00003 (0.99)	–0.002 (0.029)	0.001 (0.637)	|1| > |2|
Inflation	0.0021 (0.03)	0.0024 (0.054)	0.0021 (0.068)	0.0012 (0.153)	|1| ≥ |2|
Fiscal deficit or surplus/GDP	0.00016 (0.34)	0.0002 (0.49)	0.0001 (0.46)	0.0024 (0.24)	Ambiguous
Real short-term interest rate	0.0028 (0.014)	0.0038 (0.02)	0.00204 (0.034)	0.0019 (0.126)	|1| > |2|
Rate of devaluation of exchange rate	0.00061 (0.09)	0.00049 (0.40)	0.0004 (0.15)	0.0004 (0.43)	Ambiguous
M2/foreign reserves held by central bank	0.00008 (0.90)	0.0023 (0.0001)	0.000004 (0.99)	0.0025 (0.0001)	Ambiguous
Cash and other liquid reserves/total bank assets	–0.0012 (0.23)	0.0062 (0.0017)	–0.0009 (0.26)	0.0028 (0.1182)	Ambiguous
Credit to the private sector/GDP	0.0048 (0.0001)	–0.00072 (0.331)	0.0047 (0.0001)	0.0011 (0.037)	|1| > |2|
Credit growth (two-year lag)	–0.0007 (0.38)	0.00119 (0.40)	0.00004 (0.58)	–0.0002 (0.916)	|1| > |2|
Real income per capita	–0.089 (0.001)	0.016 (0.0009)	–0.075 (0.0022)	–0.0044 (0.205)	Ambiguous
Deposit insurance (yes = 1)	0.097 (0.0003)	0.016 (0.684)	0.091 (0.0008)	0.0382 (0.33)	Ambiguous
Duration (time since last crisis)	–0.009 (0.0012)	–0.01 (0.0165)	–0.0087 (0.0135)	–0.011 (0.013)	None
Summary statistic					
No. of crises	52	59	39	72	…
No. of observations	232	351	188	395	…
Model chi-square (-2 log likelihood)	98.32	99.37	78.0	92.2	…

Source: Author's calculations. See text.

a. Results of a logistic estimation; the dependent variable is a dummy set to equal 1 in the presence of a bank crisis in a given year and 0 otherwise. Marginal effects at the means are reported in place of slope coefficients. Numbers in parentheses are p values.

unrecoverable loans in the banking system, and for whether a crisis occurs or not in a particular year. Since better data are available on the occurrence of crises, this paper focuses on the probability of crisis in any given year. Both the data on crises and the testing methodology are taken from Demirgüç-Kunt and Detragiache (1997). These authors classify any country as experiencing a financial sector crisis in a given year if, according to a series of other studies, the country meets at least one of the following four conditions:

- The ratio of nonperforming assets to total assets in the banking system exceeds 10 percent.
- A rescue operation is mounted costing at least 2 percent of GDP.
- Banking sector problems result in a large-scale nationalization of banks, or
- Extensive bank runs take place, or emergency measures such as deposit freezes, prolonged bank holidays, or generalized deposit guarantees are enacted by the government in response to the crisis.

The crisis data run from 1980 to 1994 and are available for sixty-five countries.

Since the dependent variable is dichotomous, with many zero observations (years in which no crisis occurs) and relatively few ones (years in which crises do occur), these authors adopt a multivariate logistic estimation strategy. Essentially they estimate a hazard model that indicates how the probability of a crisis occurring in any one year depends on a set of independent variables. Their approach is followed in this paper.

One notable difference between their work and the analysis here is in the treatment of years following the onset of crisis. Demirgüç-Kunt and Detragiache argue, reasonably, that the behavior and interaction of some explanatory variables may be fundamentally different during crises and that crises may influence these variables. Consequently, in their baseline regressions they eliminate all observations after the onset of the crisis. The approach in this paper is different because the entire sample is used, including both crisis and noncrisis years. The most important reason for this is that the arguments developed earlier generate predictions about whether crises will be resolved rapidly or not. To examine these, it is necessary to look at crisis as well as noncrisis years. In addition, although crises certainly can feed back into the political structure, this effect is likely to be less severe than with economic and financial variables.

In any case, most of the results below are robust to the use of a sample that omits all but the first crisis year in countries.

The earlier discussion suggests that checks and balances influence the probability of bank crises through many of the other independent variables. Such indirect effects can be captured with interaction terms, but these are impractical when the predicted interactions are as abundant as they are here, as they would give rise to widespread multicollinearity. Two approaches are therefore taken. First, regressions are run with the full set of economic and financial variables, but with the sample divided according to whether countries exhibit high or low values of the particular checks and balances variable under consideration. The experiment here asks whether the effect of all the economic and political changes is substantially different in countries with high than in countries with low checks and balances. The second experiment examines the direct and indirect effects of checks and balances, for the whole sample of countries, in a single regression with a more limited number of control variables.

4.2 Measuring Checks and Balances

The remaining empirical issue to be discussed is the measurement of checks and balances. Ideally we would want to know which decisionmakers in each country control financial sector policy, their incentives and their independence from each other, and whether or not each decisionmaker has veto power over any changes of policy. Such data are not available on a cross-country basis. Instead two proxy variables are used. One, called "executive constraints," is a subjective evaluation of the extent to which the executive branch of government is constrained. Collected by political scientists, this varia-ble comes from the Polity II data set compiled by Gurr, Jaggers, and Moore (1989). Its usefulness as a proxy for checks and balances is straightforward to describe. The variable ranges from 1 to 7, with 1 indicating that "there are no regular limitations on the executive's actions (as distinct from irregular limitations such as the threat or actuality of coups and assassinations),"and 7 indicating that groups such as a legislature or a ruling party have "effective authority equal to or greater than the executive in most areas of activity."

The second proxy for checks and balances in government used in this paper is called "party fractionalization." The presumption here is that, where parties are fractionalized, building coalitions for policy change requires the agreement of a greater number of independent

actors. That is, each party is a potential veto player; where the party system is fractionalized, the number of such veto players potentially rises. This is another form of checks and balances. The party fractionalization variable is assembled by Banks (1993) and is computed as the probability that any two legislators drawn from the legislature will not come from the same party. Thus a value of 0 would indicate no fractionalization, and a value of 1 complete fractionalization.

These variables are inevitably imperfect proxies for checks and balances. Apart from the issues raised earlier, the party fractionalization variable does not distinguish between countries with a fractionalized government and unitary opposition and countries with the reverse. Only the former would be predicted to lead to greater checks and balances. However, the inherent measurement error in the proxy biases the results against a finding that checks and balances matter for policy outcomes.

5. The Effect of Checks and Balances on the Economic Determinants of Crisis

The first experiment, then, is to observe the effect of the standard economic and financial determinants of bank crises under different institutional environments. Table 1 presents the results of this experiment. Rather than the slope parameters, this and all the tables in the paper report the marginal effects of the variables at their means (that is, the percentage increase in the probability of banking crises for a one-unit increase in the independent variable, measured at the means of all the variables).[8]

The first conclusion to be drawn from table 1 emerges from two rows near the bottom of the table, which report the number of crises and the number of observations. The ratio of crises to observations is nearly the same in columns 1b and 2b (20.7 percent versus 18.2 percent), and only slightly higher in column 1a than column 2a (22.4 percent versus 16.8 percent). This suggests that the effect of checks and balances is both to handicap and to assist countries in defusing bank crises. In practice, the offsetting effects appear to balance out.

8. Using ordinary least squares, the standardized estimate is simply the slope parameter estimate divided by the ratio of the standard deviation of the dependent variable to the standard deviation of the explanatory variable. However, since a nonlinearity multinomial logistic estimation strategy is used, the standardized estimate is the standard deviation of the underlying distribution (the inverse of the logistic function), evaluated at the mean of the independent variable.

The second conclusion to be drawn from table 1, and the central point of this paper, is that the determinants of bank crises are quite different in countries that exhibit checks and balances from those in countries that do not. In particular, movements in the terms of trade, the ratio of M2 to foreign reserves, the ratio of cash reserves held by banks to their assets, credit to the private sector, and the presence of deposit insurance have a much different impact across the two groups of countries.

Changes in the terms of trade are predicted to have a greater impact on the probability of bank crises in the absence of checks and balances, whether checks and balances are proxied by executive constraints or by party fractionalization. The effect of the terms of trade is insignificant in countries with more extensive checks and balances. In countries with few checks on the executive, improvements in the terms of trade have a statistically significant and negative impact on the probability of banking crises. The effect is not large, however: a 50-point decline in the terms of trade (the sample values range from –50 to 53) is associated in column 1a with a 5 percent increase in the probability of a bank crisis.

No unambiguous prediction about the ratio of money to foreign reserves in the central bank was possible, but the evidence suggests a significant difference across countries. One predicted effect was that the regulatory advantages of checks and balances would impede banks from overexposing their portfolios to foreign currency-denominated liabilities. This effect, however, turns out to be dominated by the second predicted influence: only where governments are credible do banks and firms build up large foreign currency liabilities in the first place. These large liabilities make substantial capital outflows possible when governments begin to lose the confidence of investors, increasing the ratio of money to foreign reserves. As a consequence, this variable is positive and highly significant only in countries exhibiting more extensive checks and balances: a 1-standard-deviation (40-point) increase in the ratio of money to foreign reserves is associated with a 10-point increase in the probability of crisis in the two subsamples with strong checks and balances.

The rate of devaluation is a similar variable that, most likely because of multicollinearity, exhibits a different pattern in table 1: in the executive constraints equations, it is borderline significant in the low-constraints subsample. However, the economic and statistical effects are nearly indistinguishable across the high- and low-checks-and-balances samples for both checks-and-balances variables

and are too weak to call into question the strong effects indicated for the money supply and foreign reserves.

The predicted effect of the ratio of cash and liquid reserves to bank assets is also ambiguous. In the absence of checks and balan-ces and sound regulation, one would expect banks to overstate their reserves, leading to a potentially positive relationship between reserves and the occurrence of crises in these countries. On the other hand, in countries with sound regulation, regulators might be effective in demanding higher reserves in the face of a crisis, leading to a spurious positive association between the two, or regulators might enforce the holding of excessive reserves, leading banks to increase the riskiness of their lending portfolio to compensate for the low returns to reserves.

The evidence suggests that some combination of the last two effects is dominant. Cash reserves have a modest, statistically insignificant, negative impact on crisis in countries with few checks and balances, in all likelihood suggesting that both good and bad banks report high returns in such countries, obscuring the statistical connection between reserves and solvency. In countries with extensive checks and balances, however, reserves have a positive and statistically significant association with bank crises.

Credit to the private sector and credit growth were both predicted to have a stronger positive association with crises in poorly regulated financial sectors of countries that exhibit few checks and balances. Evidence reported in table 1 supports this. Although all the coefficients for credit growth are statistically insignificant, the extent of credit to the private sector has a positive and statistically significant association with crisis in countries lacking checks and balances. An increase of 50 points in this variable (less than 1 standard deviation) is associated with a 25 percent increase in the probability of banking crises in the low-executive-constraints equation; a 1-standard-deviation increase in the low-fractionalization equation is associated with a 12 percent increase in the probability of crisis. In the case of the party fractionalization sample of countries, both subsample coefficients are statistically significant. However, the magnitude of the effect of credit to the private sector in the low-fractionalization subsample is four times greater than the effect in column 2b. Finally, as with other variables, it is not possible to make unambiguous predictions about the effect of deposit insurance. Two offsetting potential effects were suggested earlier.

On one hand, where regulation is poor (checks-and-balances are absent), we would expect deposit insurance to have a positive

association with crisis. On the other hand, where checks and balances are missing, we would also expect depositors to place less faith in government deposit guarantees, and therefore place fewer assets at risk. This would tend to minimize any crisis that might occur. Results from table 1 suggest that the first effect dominates. The effects of deposit insurance are statistically insignificant in high-checks-and-balances countries. In low-checks-and-balances countries, reinterpreting the results from table 1, the probability of a crisis rises 20 percent when deposit insurance is introduced.[9]

Coefficients on the six remaining variables are either statistically insignificant or insignificantly different across subsamples. Inflation and short-term interest rates were both expected to have a similar effect across subsamples, or a somewhat stronger impact in low-checks-and-balances countries. The evidence in table 1 shows little difference. Contrary to expectations, the effect of real GDP growth is statistically and economically much greater when checks and balances are high.[10] None of the coefficients are statistically significant in the case of fiscal deficits. The evidence is strong that, in countries with low checks and balances, real income per capita matters significantly in preventing crises (every additional $1,000 in income per capita reduces the risk of crisis by approximately 8 percent). The evidence is mixed on the effect of income on crisis in countries with high checks and balances.

6. Robustness Testing and the Direct Effects of Checks and Balances

The results of table 1 support the argument that, although checks and balances do not seem to affect the overall probability of a financial crisis occurring in a country, they do have a substantial effect on the causes of crisis. These results are obtained by splitting the sample according to the level of checks and balances exhibited by countries.

9. The marginal impacts are calculated at the means of the variables, which is awkward for a dummy variable like deposit insurance. The 20 percent figure is obtained instead by subtracting the marginal impact of deposit insurance when it is assumed to be 1 from the marginal impact when it is assumed to be 0.

10. This may be due to a third effect not described earlier but consistent with the main themes of this paper. In a poorly regulated environment, GDP growth is more likely to be associated with excessively risky expansion of lending; this offsets the positive effect that growth has in improving the ability of borrowers to repay loans.

To further examine these conclusions, this section reports the results of regressions that use the entire sample of countries and that include checks-and-balances variables directly, interacting them with key financial sector variables. In particular, the analysis here considers the interaction of the two measures of checks and balances with four financial sector variables: credit to the private sector, credit growth, financial sector liberalization, and cash reserves of banks as a fraction of total bank assets. These four variables are singled out because they are the ones most likely to be targeted by financial sector policymakers either as signals of latent difficulties in the financial sector, or as policy instruments that can be manipulated to avert a crisis.

The earlier discussion suggests that the inclusion of checks-and-balances variables in the full specification of table 1 would create severe multicollinearity problems, since the effects of most independent variables depend in turn on the level of checks and balances in a country. To minimize these, reduced specifications are employed with two additional control variables: income per capita and growth.

Table 2 is the first of two tables that report the results from these reduced specifications. The key variables in the four equations of this table are the interactions of executive constraints and party fractionalization with the ratio of credit to the private sector to GDP, and with the rate of growth of credit lagged two years. From the earlier discussion, one would expect these interaction terms to be negative: at higher levels of checks and balances, tighter regulation is more likely, and the positive association that these variables might have with bank crises is reversed. In all four cases, as predicted, the interaction effect is of the expected sign and from reasonably to very statistically significant.

This mitigating effect of checks and balances is also economically significant. At the highest levels of executive constraints, for example, credit to the private sector actually has a slightly negative impact on the probability of bank crisis, whereas at the lowest value of executive constraints the impact of credit is positive and twenty times greater than at the mean of executive constraints. An increase of 1 standard deviation in the ratio of credit to the private sector to GDP (a 38-point increase) is associated with a 10.7 percent increase in the probability of crisis at the lowest level of executive constraints (a value of 1), but a 3 percent *decline* in the probability of crisis at the highest level of executive constraints (a value of 7). Similarly, a 1-standard-deviation increase in credit growth (15 points) leads to a

Table 2. Results of Regressions with Variables Interacting Private Credit, Credit Growth, and Alternative Checks-and-Balances Measures[a]

	Interaction term			
Independent variable	*Executive constraints x private credit*	*Executive constraints x credit growth*	*Party fractionalization x private credit*	*Party fractionalization x credit growth*
Real GDP growth	–0.0086 (0.0004)	–0.0083 (0.0007)	–0.0068 (0.0056)	–0.0066 (0.009)
Real income per capita	–0.00087 (0.74)	–0.0023 (0.347)	–0.0075 (0.020)	–0.0010 (0.003)
Credit to private sector/GDP	0.0006 (0.02)	0.0006 (0.115)	0.0023 (0.0001)	0.0023 (0.001)
Credit growth (two-year lag)	0.0014 (0.047)	0.0008 (0.037)	0.0063 (0.483)	–0.00026 (0.038)
Executive constraints	–0.021 (0.75)	–0.016 (0.24)	... ...	... ...
Party fractionalization	... ...	... ...	0.02 (0.026)	0.025 (0.27)
Interaction (column heading)	–0.0006 (0.047)	–0.0009 (0.114)	–0.0046 (0.010)	–0.006 (0.031)
Summary statistic				
No. of crises	131	131	60	60
No. of observations	821	821	495	495
Model chi-square (-2 log likelihood)	30.77	28.7	29.83	26.44

Source: Author's calculations.

a. The dependent variable is a dummy set to equal 1 in the presence of a bank crisis in a given year and 0 otherwise. Coefficient estimates are marginal effects at the means; the direct effect of each component of an interaction term is calculated at the mean of the other; for example, in the first column, the direct effect of executive constraints is calculated as –0.021 –0.0006 * mean(credit to the private sector/GDP). Calculation of the significance level of direct components (for example, executive constraints, credit to the private sector/GDP) assumes, to the contrary, that the other interacted term is set to zero, not to its mean. Numbers in parentheses are p values.

4 percent increase in the probability of bank crisis when party fractionalization is at its lowest level (zero), but a 4 percent *decline* in the probability of crisis when party fractionalization is at its highest level (0.99).

At the same time, the table confirms the mixed picture in table 1 of the effect of checks and balances themselves on financial sector crises. At mean values of the financial sector variables, a 1-standard-deviation increase in executive constraints is associated with an approximately 3 percent reduction in the probability of banking crises. The effect of party fractionalization is equally slight, but in the opposite direction, when evaluated at the mean values of the financial sector variables. At the same time, it is notable that the effects of

checks and balances rise with the levels of the financial sector variables. That is, in situations that are most likely to give rise to a crisis (explosive growth in credit, for example), the independent effect of political institutions is most noticeable and economically significant.

The remaining two financial sector variables, interest liberalization and the ratio of cash reserves held by banks to bank assets, are examined in table 3. Like table 2, table 3 presents regressions that control for growth and income per capita; credit growth lagged two years is retained from the last table as an additional control. Interest liberalization was not included in table 1; it is a variable that captures whether or not there are ceilings on interest rates (as presented in Demirgüç-Kunt and Detragiache, 1998).

The evidence is once again consistent with the earlier discussion and with the results in table 1. Interest liberalization has a significant association with the probability of crisis, with liberalization corresponding to a 22.7 percent increase in the probability of crisis when the executive constraints variable is at its mean value, and a 16.6 percent increase when party fractionalization is at its mean value. The effect of checks and balances is also economically significant. Moving from the highest to the lowest value of executive constraints, the association of interest liberalization with crisis increases from 20.9 percent to 27.4 percent. The effect is much larger with party fractionalization. At the lowest value of party fractionalization, interest liberalization is associated with a 39.6 percent increase in the probability of financial crisis; at the highest value of party fractionalization, liberalization is associated with a 6.0 percent decline in the probability of crisis.

The odd effect of cash reserves observed in table 1 is confirmed in table 3. The explanation, as before, is that, in countries with effective checks and balances, effective regulators are quicker to impose higher reserve requirements in the face of a crisis threat. This leads to a positive (and spurious) correlation between cash reserves and crisis.

7. Other Robustness Checks

The results in tables 1 through 3 embed a series of robustness checks. These include very different specifications and measures of checks and balances. The main finding of the paper, that the causes of bank crises vary with political institutions, are robust to these differences. The results are also robust to two other permutations.

Table 3. Results of Regressions with Variables Interacting Interest Liberalization, Cash Reserves, and Alternative Checks-and-Balances Measures[a]

	Interaction term			
Independent variable	*Executive constraints* x *interest liberalization*	*Executive constraints* x *cash reserves*	*Party fractionalization* x *interest liberalization*	*Party fractionalization* x *cash reserves*
Real GDP growth	–0.0104 (0.0006)	–0.00872 (0.001)	–0.0634 (0.027)	–0.0049 (0.05)
Real income per capita	–0.00035 (0.88)	0.00089 (0.74)	–0.0045 (0.06)	–0.0011 (0.70)
Credit growth (two-year lag)	0.0018 (0.014)	0.0015 (0.034)	0.00042 (0.68)	0.0016 (0.054)
Interest liberalization (1=yes)	0.227 (0.0002)	... ...	0.166 (0.0001)	... ...
Cash reserves/bank assets	... ...	0.000318 (0.021)	... ...	0.000181 (0.0439)
Executive constraints	–0.0076 (0.235)	–0.0052 (0.043)	... ...	... ...
Party fractionalization	... ...	... ...	0.0682 (0.0815)	0.096 (0.045)
Interaction (column heading)	–0.00035 (0.24)	0.0011 (0.016)	–0.0682 (0.0001)	0.011 (0.020)
Summary statistic				
No. of crises	122	130	58	59
No. of observations	659	758	418	501
Model chi-square (-2 log likelihood)	58.9	23.3	70.1	16.92

Source: Author's calculations.

a. The dependent variable is a dummy set to equal 1 in the presence of a bank crisis in a given year and 0 otherwise. Coefficient estimates are marginal effects at the means; the direct effect of each component of an interaction term is calculated at the mean of the other; for example, in the first column, the direct effect of executive constraints is calculated as –0.0076 –0.00035*mean(interest liberalization). The significance level of direct components (for example, executive constraints, interest liberalization) assumes, to the contrary, that the other interacted term is set to zero, not to its mean. Numbers in parentheses are p values.

The effects reported in table 1 are insensitive to the use of the median instead of the mean values of the checks-and-balances variables. They are also relatively insensitive to the exclusion of crisis observations after the first year of crisis (there is a loss of significance of the coefficients, but the magnitude and direction of differences between coefficients under high and low levels of checks are repeated).[11]

11. This test is in any case extreme, since it implies that subsequent crises are entirely determined by earlier crises.

8. Conclusion and Implications for Policy

The argument that "institutions matter" is an important one, but it is often difficult to translate into policy, particularly if one believes that the only policy advice that emerges from institutional analysis is that the institutions themselves must change. The analysis here points to a different implication of institutions: that traditional policy instruments and indicators used in the financial sector should be viewed differently in different institutional environments. Financial sectors in countries with strong checks and balances seem to respond very differently to changes in economic and financial variables that are widely considered to be important in the analysis of banking crises.

The major question confronting financial sector policymakers is the following: should they encourage the growth of the financial sector, for example by liberalizing interest rates, or should they reduce the risks of financial sector crisis by, for example, controlling interest rates? The evidence suggests that the dilemma confronted by policymakers is much greater in countries that lack checks and balances. On one hand, interest liberalization is substantially more risky in countries that lack checks and balances. On the other, credit growth and the amount of private credit relative to GDP are both more strongly associated with impending crisis in countries that lack checks and balances. Deposit insurance, intended to facilitate increased intermediation in a country and forestall the risk of banking crises, has instead been found to be associated with a significantly higher probability of bank crises in countries where checks and balances are weak.

The influence of economic variables, which policymakers might track in an attempt to anticipate crisis, also varies across political institutions. Terms-of-trade shocks, found to be of minor importance in previous literature, have a significant and discernible impact on the probability of crisis in countries lacking checks and balances. Conversely, precisely because of their lack of credibility, in countries lacking checks and balances the ratio of the money supply to foreign reserves is a weak indicator of impending crisis, but it is a very good indicator in countries that exhibit strong checks and balances.

Not only do political institutions have a significant effect on the causes of banking crises, but the effect is of a magnitude that frequently exceeds the effects of the more standard financial and economic variables that are usually the focus of attention. Taken together, then, the evidence suggests that the political origins of ban-king crises merit significant attention in the design of effective policies to forestall crisis, and to respond to crisis when it occurs.

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