What Triggers a Systemic Banking Crisis?

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Summary:

A systemic banking crisis is one in which all or substantially all of the banking capital in a country is wiped out. You might have expected that such crises would be rare events, but researchers at the World Bank have compiled a listing of 113 such crises in 93 countries during 1975–99. They are nearly universal, hugely expensive and should be a public policy issue of the first magnitude. Never before in history have banking crises been so frequent or so devastating.

In general, such crises go through two phases. In the first or silent phase, banks make a great many bad loans, for any number of reasons alone or in combination, and consequently develop a large number of non-performing loans (NPLs) on their balance sheets. Generally these are not publicly acknowledged nor reported; they simply build up, quietly destroying the banks' capital base. Then in the second or critical stage it is publicly acknowledged that the banks are insolvent and agents take action to remedy the situation as best they can.

The two-phase structure arises because governments typically protect banks by guaranteeing their deposits and often by concealing the depth of their problem loans. In principle, a government can go on doing this for a very long time—so long as the government's credibility is not in doubt, people will continue to hold government-guaranteed deposits. So the question arises, why does the first phase ever give way to the second? What finally triggers the crisis? This is an important question for those eager to spot the next crisis or to assess the financial stability of countries.

My answer is that any one of four agents can trigger the crisis: depositors, government, external lenders and intergovernmental financial institutions, because each is a supplier of bank funding. To put it simply, the crisis is triggered when a significant funder withdraws support.

I review the entire list of 113 crises and classify them according to their triggering events. Depositors can trigger the crisis in those situations where the government's deposit guarantee is either flawed or loses credibility. The government itself may trigger the crisis at any significant regime change, so that the previous regime can be blamed for the problem. External lenders can trigger the crisis whenever the banking system is significantly dependent on external funding; for example, the East Asia crisis of 1997–98 can be viewed as a run on Asian banks by international banks. Finally, intergovernmental financial institutions such as the World Bank and IMF (which often work in concert) can trigger the crisis for any country significantly dependent on their funding.

I. Introduction

Caprio and Klingebiel (1999) provide a list of 113 *systemic banking crises* that have occurred since the late 1970s in 93 countries. This updates a similar list that Caprio and Klingebiel first made available in 1996. Systemic banking crises, in their definition, are those in which *much or all of the banking capital in the country* is exhausted. These might sound like rare events, but such crises have in fact occurred so frequently, in so many countries, and at such great public cost, that they must be considered a global public policy issue of the first magnitude. They are a sobering reminder that the modern world is far from stable financially.

Because such crises occur more frequently and with much greater severity today than in previous eras, they constitute a relatively new object of study. In fact, Caprio and Klingebiel create the first formal listing of them, so that we may now begin to compare them. In doing so, however, we have relatively little theory to guide us. A number of economists have modeled the connection between certain banking crises and currency crises (the "twin crises"), of which the Asian crisis of 1997–98 is the most prominent example.[1] Furthermore, currency crises alone have received considerable attention. But we have very little theory of how systemic banking crises as such evolve.

Honohan (1997) tries to distinguish between banking crises caused by macroeconomic factors, those caused by poor microeconomic management and crises that are endemic to a government-dominated banking system. Yet these three factors often occur in combination and seem to provide little theoretical traction.

Kane (1999) proposes six stages of a regulation-induced banking crisis, and this is somewhat closer to the spirit of the present paper. Kane is particularly concerned with the incentive conflicts in government policy and regulation. His six stages are: (1) Generation of multiple zombie banks through poor government policy, (2) Escalating silent runs, (3) Palpable bureaucratic breakdown in the government's support system, (4) Recapitalization of government stabilization funds, (5) Clean-up of zombie institutions, and (6) Blame distribution and banking policy change.

I would like to propose a simpler and more general framework for analysis. Although the role of government is usually quite important, other agents play a role as well. In the framework I propose there are two phases and four sets of agents: depositors, government, external lenders and intergovernmental financial institutions.

In the first or silent phase, banks make a great many bad loans, for any number of reasons alone or in combination, and consequently develop a large number of non-performing loans (NPLs) on their balance sheets. Generally these are not publicly acknowledged nor reported; they simply build up, quietly destroying the banks' capital

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[1] Burnside, Eichenbaum and Rebelo (1999), Chinn and Kletzer (2000) and Schneider and Tornell (2000) are examples of twin crisis models.

base. Then in the second or critical stage it is publicly acknowledged that the banks are insolvent and agents take action to remedy the situation as best they can.

In Section II of this paper there is a brief discussion of why Phase 1 occurs, i.e., why entire banking systems sometimes destroy large amounts of economic value, and why this value destruction goes on for so many years without being stopped. But the main focus of this paper is on the transition to Phase 2; given that value destruction has occurred, what triggers public acknowledgement and resolution? I shall not be concerned with the various directions that Phase 2 can take, i.e., the various forms of resolution. The focus is simply on the events that trigger a shift from Phase 1 to Phase 2. In short, what triggers recognition and thereby turns a banking vulnerability into a systemic banking crisis?

In earlier eras the answer was simple: bank runs. As soon as depositors had reason to believe that a bank had destroyed its capital base, depositors would rush to withdraw their funds. But starting in the 1930s governments began, formally or informally, to protect banks from depositor runs by offering government guarantees on deposits. This practice became nearly universal by the late 20th century, in the sense of covering almost all deposits in almost all banks around the world. In this new environment, small levels of NPLs can build up to large levels without forcing the bank to close. Then, when the losses are finally acknowledged, they may be so large that the entire banking system collapses. Thus, the simultaneous rise of deposit insurance and systemic bank failure is no accident. Demirgüc-Kunt and Detragiache (1997) found that explicit deposit insurance increased the probability of a banking crisis more unambiguously than any other variable.

In this more complex setting, value destruction can in principle go on indefinitely. A good example today is China. Its unreformed state banking system is widely known to have very high levels of loans to state-owned enterprises that cannot be repaid. The officially acknowledged level of NPLs was recently raised from 11% of assets to 28%, but private estimates are more like 40%.[2] At this level, the banks are clearly insolvent. Yet depositors continue to leave their money in the banks because of their confidence that the government will ensure they are repaid. In other words, China has not yet entered Phase 2. Students of financial crises need to understand what kind of events might finally trigger an actual collapse in cases like this.

Section II sets out the analytic framework in more detail. Section III examines the data, fitting the cases into the framework as closely as the facts permit. The approach is taxonomic rather than econometric; my goal is simply to classify the crises according to the events that triggered them. This approach offers insight into factors that should be watched for in various kinds of future banking stress. Section IV applies the framework to two important countries that have resisted entering Phase 2: China and Japan. A fifth section concludes.

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[2] James Kynge in the *Financial Times*, New York edition, May 12, 2001, page 1.

II. A framework for analyzing banking crises

Phase 1

Systemic banking crises occur because banks destroy economic value on a scale large enough to represent a significant fraction of a country's GDP. Value destruction occurs when banks lend money to borrowers unable or unwilling to pay the cost of capital, typically because their projects have failed to earn the cost of capital. The puzzle is why such anti-economic behavior should occur on such a large scale.

Researchers have proposed innocent explanations and exploitative ones. Innocent explanations include poor management and macroeconomic shocks. Exploitative explanations include government exploitation and private exploitation of banks. Let us consider the innocent explanations first.

Bad loans are a common feature of banking. No banker has perfect insight into his clients, and bankers like other human beings make mistakes of judgment. However, in normal settings NPLs represent no more than 1–2% of total loans and are handled on an ongoing basis through loan loss provisions in the bank's accounts.

Researchers have frequently noted that financial liberalizations give rise to lending booms that are often followed by banking collapses. The innocent explanation is that bankers are inexperienced and make a great many mistakes. Yet it seems to strain credibility that an entire banking system should fall and billions of dollars be lost simply because of innocent errors.

Similarly, macroeconomic shocks are often invoked as an innocent explanation. Certainly small countries are often dependent on one or a few commodities whose price fluctuations can seriously disrupt the economy. Macroeconomic shocks do occur and are almost always harmful to banks since those who gain from the shock do not pay banks more than they promised while those hurt by the shocks often pay less. The countries in transition from communism during the 1990s experienced sudden institutional disruption and declines in GDP that would tax even a strong banking system. It is not surprising that almost all transition countries had systemic banking crises.

On the other hand, macroeconomic shocks have occurred throughout history. The United States, for example, was a developing country in the nineteenth century. Local and state economies and their local banks often suffered price declines in locally produced commodities, asset price depreciation and real estate depreciation leading to banking "panics." Yet the number of banks to fail in such events was remarkably small.[3] Something more seems to be needed to provoke a systemic collapse of the entire banking system. What might this be?

We move to the exploitative explanations. The largest candidate for exploitation is almost surely the government and its officials. In many developing countries the state owns a large proportion of the banking assets,[4] and in most developing countries the government actively guides the activities of banks. Capital is often flowed to industries, regions, firms and individuals favored by the politicians, with little regard for credit-

[3] Calomiris and Gorton (1991).
[4] LaPorta, Lopez-de-Silanes and Shleifer (2000).

worthiness or economic value. Banks provide a politically convenient "off-budget" resource, and problems of non-repayment can be papered over for many years.[5]

In exchange for favoritism from the state, most beneficiaries are more than willing to share their benefits with governmental officials, and the availability of private benefits makes the officials all too willing to continue the pattern of state-dominated favoritism. Beneficiaries also support the campaigns of elected officials.

Second only to governmental exploitation of banks is private exploitation of banks. Frequently, private entrepreneurs gain control of a bank and use it to build a business empire. This is particularly common in a period of financial liberalization. Such banks may make extensive connected loans, i.e., loans to firms and individuals related to the owners and the directors, again with little attention to credit-worthiness or economic value. Even if the bank should fail, the owners and directors will have captured much of its asset value in their other enterprises.[6]

These ownership and incentive issues are aggravated by moral hazard. When private banks are permitted to operate with high levels of unresolved NPLs, the banks' capital is essentially negative. At this point the owners have nothing left to lose, and sometimes take high levels of risk. If the risks work out, the owners benefit, and if not, they usually expect to be bailed out by the government. Indeed, they often make sure that governmental officials benefit from loans and largesse to increase the likelihood of bailout in the event of trouble.

All of the above problems, however, can develop silently. By itself, Phase 1 does not constitute a "banking crisis" because the word "crisis" implies an emergency, something in need of immediate action. That sense of urgency occurs only when Phase 2 is triggered.

Phase 2

What causes a shift to Phase 2? The central economic idea is a simple one: *banks fail only when one or more major sources of funding are withdrawn*. Four different types of agent are potentially involved in the funding of developing country banks:

A. Depositors;
B. The local government, as guarantor;
C. Private external lenders; and
D. Intergovernmental financial institutions (IFIs)

Each of these agents has different motives.

A. Depositors. Depositors simply want security for their funds. They are quite content to rely on governmental deposit guarantees when these are credible. However, the government's commitment to protect depositors may be ambiguous, lack credibility or may not exist. Whenever the guarantee is in doubt, bank runs may be expected. Although bank runs have become rare in the industrial world, they are very much a part of life in some developing countries.

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[5] Caprio and Klingebiel (1996).
[6] Akerlof and Romer (1993).

The clearest cases are those few countries where the government has credibly committed *not* to support deposits. This often occurs in the presence of a currency board, since a currency board limits the amount of fiscal deficit the government can incur without creating a massive recession. Hong Kong provides an example of classic "market discipline" on banks, where the government has a currency board and lets runs happen. However, it cannot avoid supporting healthy banks affected by contagion, as it had to do in 1991 after the fall of BCCI and again during the Asian Crisis of 1997–98.

Bank runs also occurred in Indonesia during the Asian Crisis because those events called into question the legitimacy of Indonesia's government. Runs hit Bank Central Asia, controlled by the Suharto family, in November 1997 and again in May 1998, when the government was forced to take over the bank. Runs then quickly spread to other government and private banks.

Kenya has experienced more runs than most African countries because its government, under President Moi, has used selective withdrawal of government support as a weapon of choice against rival factions with banking interests. However, the technique backfired in 1991 when the IMF suspended credits to Kenya and there was a run on the Moi-connected Trade Bank.

Runs can be triggered by any event that calls the government's stability into question. The conflict between President Noriega of Panama and the United States in 1988, for example, which ended with a U.S. invasion, set off bank runs in Panama.

Finally, and most importantly, the government itself may collapse due to war or civil war. Such events are almost always accompanied by massive withdrawals and a collapse of the banking system. There are numerous examples in the data, including Bosnia-Herzegovina, Burundi, Liberia and Sierra Leone.

B. The government. The government often finds it expedient to conceal the depth of problems in the banking system, i.e., deliberately avoids entering Phase 2. Phase 2 is therefore only entered because of some political change. Often this is a simple change of leadership. A new leader can acknowledge and clean up a pre-existing problem and obtain political credit for doing so without being blamed for creating the problem in the first place. If the new leader chooses not to do so, he will subsequently "own" the problem, so incentives exist for the new leader to face the crisis early. Thus, political leadership changes often the trigger Phase 2.

New brooms often sweep clean. The United States, for example, allowed unacknowledged NPLs to build in its thrift system during the 1980s, and these were only faced when George Bush was elected president in 1988 and Nicholas Brady became Secretary of the Treasury. Triggering recognition of the thrift crisis was one of Brady's first moves. Unacknowledged U.S. banking losses in defaulted loans to developing countries were faced at the same point in time, and for the same reason.

Similarly, the Venezuelan banking system went through Phase 1 when Carlos Andrés Perez was president (1989–93); banks were virtually looted in an extreme case of crony capitalism. Phase 2 was entered only after Perez was impeached for corruption in 1993. Rafael Caldera's election and inauguration as president in December provoked a run on Banco Latino, the bank closest to Perez. The bank was closed in January 1994.

Soon after, the government faced the additional bailout of nine of Banco Latino's affiliates. By the end of 1994 the government had taken over sixteen banks, representing nearly two-thirds of Venezuela's bank assets.

Whenever there is a new constitution, a new state or a completely new form of government, it will likely entail the recognition of banking problems of the previous regime. The largest-scale example in recent years is the transition from communism to market economy in countries throughout Central and Eastern Europe and Central Asia. The new regimes in most of these countries voluntarily cleaned up the loss-ridden state banks they inherited, though this took a number of years. In the cases where they did not do so, recognition was finally forced by bank runs (Bulgaria in 1996), by IFI pressure (Romania in 1995–98) or by market events (Russia in 1998).

Any political change incorporating a commitment to privatization is likely to force recognition of banking problems. Banks themselves cannot be privatized until they have been cleansed of bad loans. Furthermore, privatization of industrial enterprises usually imposes a hard budget constraint upon them and enables governments to release banks from the obligation to finance money-losing state-owned enterprises, a primary source of bad loans.

C. Private external lenders. With globalization, agents other than depositors and local government supply funding to local banks. In countries of sufficient affluence, private external lenders are important. Banks in the upper tier of developing countries are usually able to attract significant numbers of dollar (or yen or euro) loans from banks in the industrialized world. Such borrowing is very tempting because borrowing banks pay low dollar interest rates and earn much higher interest rates on their local currency loans. Furthermore, interbank borrowing enables local banks to conduct a much higher volume of lending than would otherwise be possible.

But interbank lending is unguaranteed and thus subject to runs. The Asian Crisis of 1997–98 can be understood as a run by international banks on their East Asian counterparts. The run was triggered by a growing acknowledgement, in early 1997, that banks in Thailand and Korea particularly had alarming levels of NPLs. For example, in April 1997 *The Economist* published a survey of banking in emerging markets in which it called attention to the weakness in Asia's banks and all but predicted the crisis that broke several months later:

> *Spot the next crisis.* . . . A surfeit of lending to overstretched property developers, state-owned smokestacks, politicians' cronies and other poor risks has left [Asian] banks' balance sheets riddled with holes. Excluding Japan and China, Asia's banks are burdened with something like $200 billion of non-performing debt—equivalent to the GDP of Thailand. . . . Banks in Thailand and Korea are lurching toward full-blown crisis. Unless regulators act quickly, one of these two might become the next Mexico. . . .[7]

Upper-tier developing countries such as Thailand and Korea also have freely convertible currencies. As banking problems become more severe, it occurs to many holders of these currencies that the government may have to bear the cost of a bailout,

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[7] *The Economist*, April 12, 1997, p. 29.

and that this may create a fiscal deficit that makes inflation more likely, and that therefore the currency should be sold.

The selling of local currency acts as a trigger for international banks to withdraw their support of local banks, particularly when local banks have incurred large devaluation risks by borrowing dollars and lending local currency. This intersection of systemic banking crisis with balance of payments (BOP) crisis, particularly where the government had attempted to peg the foreign exchange rate, generates a "twin crisis": banking weakness is aggravated by devaluation, and devaluation is accelerated by the fear of banking collapse:

> Most often, the *beginning* of banking sector problems predates the BOP crisis; indeed, knowing that a banking crisis was underway helps predict a future BOP crisis. However, the causal link is not unidirectional. Our results show that the collapse of the currency deepens the banking crisis, activating a vicious spiral. We find that the *peak* of the banking crisis most often comes after the currency crash, suggesting that existing problems were aggravated or new ones created by the high interest rates required to defend the exchange rate peg or the foreign exchange exposure of banks. . . .
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> While speculative attacks can and do occur as market sentiment shifts and possibly, herding behavior takes over (crises tend to be bunched together), the incidence of crises where the economic fundamentals are sound are rare.[8]

A market-related trigger for a banking crises should be expected wherever countries and banks are sufficiently strong that they are able to attract global market funding in the first place. Relevant market prices are the foreign exchange rate, local interest rates, local real estate prices and local stock market prices, particularly the prices of bank stocks.

D. Intergovernmental financial institutions. Most developing countries do not have access to global market funding. Nevertheless, they do have access to a funding source other than depositors and local government, namely the IFIs. By this is meant primarily the IMF and the World Bank, often acting in concert, although the regional counterparts such as the EBRD, ABD and others sometimes play this role as well.

The IMF and the World Bank engage with and regularly lend to almost all developing countries in the world, and so their presence and policies are significant for systemic banking crises. Invariably, and appropriately, these institutions press countries to recognize their banking problems and clean up their banking systems so that normal private sector finance can occur. Sometimes in the course of negotiations they withdraw their support for lack of progress with reforms. This withdrawal, or the threat of it, is perhaps the most important triggering event in the poorer of the developing countries.

The potential withdrawal of IFI funding if banking problems are not addressed is so pervasive as to be nearly universal in the class of countries dependent on IMF and World Bank support. Often it lies in the background, and there is no way an outside observer can see the state of negotiations. In some cases, however, it becomes clear that the IFIs have forced a reluctant government to enter Phase 2. Here is a typical news report for such a case:

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[8] Kaminsky and Reinhart (1999).

> The Romanian parliament yesterday passed a law for the privatisation of the troubled state banking sector. The IMF Board, meeting in Washington next week, is now expected to give its approval for new loans. The Fund and the World Bank have both made banking reform and privatisation important requirements for the granting of new loans and the resumption of suspended ones.
>
> The six state banks account for more than three quarters of assets in the total banking sector and have played an important political role. The new law allows them to make share issues and to sell the stocks held by the State Property Fund, currently the majority shareholder and overseer of the privatisation process.
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> The bill was drafted in 1995, but was twice rejected by parliament. Western analysts believed that a key reason for this was that, despite promises to international bodies, the administration of President Ion Iliescu was less than enthusiastic about surrendering control over the banks, with their tremendous power to influence politics and elections.[9]

The banking reform pressures brought by IFIs upon local governments are essentially political processes, though they have major economic impact. Much depends on perceptions, on promises and credibility and confidence. A banking crisis can be triggered by a country's rejection of IFI conditions when funding is in fact cut off (e.g., Zaire in 1992), and it can be triggered by a country's acceptance of such conditions (as in the Romanian example above).

The IFIs' decision on when to "draw a line in the sand" over banking reform is subtle and private information, rarely shown to the outside world, but is likely to be the precipitating event forcing recognition of banking weakness whenever it occurs, almost regardless of what the country decides to do in response.

In summary, we may classify crisis triggers according to the banks' primary funding sources:

Funding Source	**Crisis Trigger**
Depositors	Governmental collapse or credibility loss
Government as guarantor	Political change
Private external lenders	Negative market signals
IMF and World Bank	Bargaining impasse on conditionality

In some of the cases discussed in the following section, several of these factors were at work, i.e., several sets of agents withdrew. In such cases the key issue is the sequence of events: which withdrawal happened first? The cases are classified according to the first of the triggers.

The role of macroeconomic shocks. It is tempting to say that some systemic banking crises are caused by macroeconomic shocks. The existence of such shocks and their potential impact on banks is not in question. They can explain the presence of substantial NPLs in certain cases, but do macroeconomic shocks qualify as triggering events? To put the question more precisely, what is the connection between various macroeconomic shocks and some agent's withdrawal of bank funding?

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[9] Anatol Lieven in the *Financial Times*, April 19, 1997.

It turns out that in each case of macroeconomic shock there is more to the story. For example, in 1995 Argentina suffered powerfully from the "Tequila crisis" in Mexico. The collapse of confidence in Mexico caused apparent contagion effects, and foreign banks withdrew $5.2 billion of Argentine bank funding. Under Argentina's currency board, this would cause either a collapse of the currency system or a contraction of the money supply with highly recessionary consequences. The currency system was maintained and the recession was suffered, with significant negative consequences for Argentina's own banks.

This could be (and has been) interpreted as a self-fulfilling creditor panic. The question is why events in Mexico would have such an effect on Argentina, when there is little trade and thousands of miles between them. The answer seems to lie in the fact that local banks in both countries were deemed similarly at risk and were funded by the same international banks. Argentina's fixed exchange rate also looked vulnerable, and had it broken the consequences to Argentina's banks would have been very severe, as it had been in Mexico. Viewed from the creditors' perspective, there was a similarity between the two countries. This was a case of market events provoking a rational, self-protective withdrawal of funds by private external lenders, not a "sunspot."

Similarly Cameroon suffered a multi-year decline in real GDP during the late 1980s. NPLs in the banking system soared to 60–70% of loans. But the trigger to recognition and dealing with the crisis was the election in 1988 of a new president determined to put the country on a new economic course, with support of the IFIs. It was political change and government withdrawal of support for failing banks that triggered the banking crisis.

A third example is Côte d'Ivoire, which in 1987 suffered an important reversal in terms of trade due to falling cocoa prices leading it to suspend payments on foreign debt and leading also to large losses in the state banks. It was the IMF, however, that triggered recognition of this banking disaster through conditionality imposed in 1988.

In short, it seems that each case of macroeconomic shock can actually be assigned to one or another of the trigger categories discussed above.

III. A review of the Caprio-Klingebiel dataset

Appended to this paper is a table that restates the Caprio-Klingebiel dataset of systemic banking crises, reordered according to the above classification of the triggering events. The table records their crisis dates, but adds my estimate of the year when the crisis appears to have been triggered, i.e., when Phase 2 was entered. The table also incorporates four indicator variables in an effort to quantify some of the issues at stake.

The first variable is for polity change from the year before the crisis was triggered (Phase 2 entered) to the year it was triggered, as defined by the Polity IV Project dataset.[10] This dataset records a code for polity regime characteristics for all countries in each of many years. It ranks most countries in most years on a scale from -10 (purely authoritarian) to +10 (perfectly democratic). Cases of governmental collapse are coded -

[10] Available at http://www.bsos.umd.edu/cidcm/polity/.

77 in the Polity dataset and coded 2 in the appended table. Cases of polity discontinuity—a new constitution, new state, etc.—are coded -66 (interruption) or -88 (transition) in the dataset and 1 in the table. The table also records a 1 if the total polity score changes by at least two points from the year before Phase 2 begins to the year Phase 2 begins.

A second indicator variable is for macroeconomic shock. This variable is based on an underlying dataset of IFS measures of real GDP per capita and for terms of trade over the period 1970–2000. The table records a 1 if either real GDP/capita or terms of trade drops by more than two standard deviations from the year before the crisis was triggered to the year after it was triggered.

A third indicator variable is for foreign exchange or BOP crisis. This records a 1 if the country is on the list of BOP crises compiled by Kaminsky, Lizondo and Reinhart (1997), or if the real foreign exchange rate drops by more than two standard deviations from the year before Phase 2 begins to the year after it beings, again based on IFS data from 1970 to 2000.

A fourth indicator variable records a 1 if the primary political leader changes from the year before Phase 2 begins to the year after Phase 2 begins, based on a review of the CIA World Factbook for the relevant years.

The primary source of information on triggering events, however, has not been this effort to quantify causes, but rather a review of local news reports from the country in question during the period of banking weakness. For this, the following publications in Lexis-Nexis were searched: major world newspapers, major world publications, non-US news and wire service stories. These were searched over relevant years for headline terms such as bank, IMF and new. A summary of news items found is incorporated into the table.

From this review it becomes apparent that some of these crises were never triggered at all. For example, China's long buildup of NPLs, as noted earlier, has not yet reached a triggering event. Similarly Japan's extended banking problem has yet to reach full recognition and resolution, despite the closing of a few large banks. Of the 113 crises listed by Caprio and Klingebiel, 11 were classified as unacknowledged.

The remaining 102 cases were classified according to the framework set forth in Section II. Of these, 17 appear to have been triggered by depositor runs due to governmental collapse or problems of governmental credibility. Another 33 were triggered by political change and consequent deliberate governmental action. A further 21 were triggered by negative movements of financial markets, and 25 were triggered by IFI pressure on reluctant governments. Six cases did fit readily into the other categories.

The largest broad category therefore is B—political change, meaning voluntary action by a new government wishing to distance itself from the previous regime. This trigger can apply to any country from the richest to the poorest. Categories A—depositor runs and D—IFI pressure apply to the relatively poor countries, but D is significantly more common than A. Finally C—financial markets is the most common trigger mechanism in the more affluent countries that are able to tap global financial markets.

Number

	Triggering Event	of Cases
A	Depositor runs	
A-1	Cases of war and civil war	10
A-2	Problems of government credibility/support	7
	Total triggered by depositor runs	**17**
B	Political change / government action	
B-1	Transitions from communism	16
B-2	Other major political changes	17
	Total triggered by political change	**33**
C	Movements of financial markets	
C-1	Classic twin crises	9
C-2	Other cases of negative market movement	12
	Total triggered by financial markets	**21**
D	IFI pressure on reluctant governments	**25**
E	Other cases / not readily classifiable	**6**
F	Unacknowledged crises (no Phase 2)	**11**
	Total	**113**

IV. Applying the framework

In this section I turn briefly to the practical problem of using this framework. Suppose that our mission is to anticipate banking collapses, how do we proceed?

The first step is to identify banking system vulnerability. The best summary statistic for vulnerability (advanced Phase 1) is a high level of NPLs. The official statement of this figure is, unfortunately, often deliberately underestimated. Few banking regulators wish to take a step that declares their entire system bankrupt. Therefore, regulators do not generally give honest estimates where NPLs have gotten very large.

However, because NPLs are such an important indicator of banking vulnerability, many private analysts and journalists provide estimates. Collecting these is time-consuming but very useful. Such estimates are probably closer to reality than the official estimates when they can be found.

The level of NPLs is significantly related to a number of environmental variables, including economic conditions, corruption, etc. It will be useful to examine which of these variables is particularly correlated with the level of NPLs. It is even possible that a simple model could be created that would predict the level of NPLs given certain environmental conditions.

When a vulnerable banking system has been identified, the framework of this paper can be used to identify likely triggers. The essential question is, who funds the major banks? Do the major banks tap global financial markets? If so, we should identify those negative market signals that could trigger a sudden withdrawal of such funding. If

not, the major banks almost certainly rely on government support for deposit funding. Then how credible and how stable is the government? We have seen that government instability typically leads to bank runs, as one would expect in such a setting. Does the government rely substantially on funding from the IMF and World Bank? If so, to what degree are those institutions pressing the government to clean up its banks?

Let us try this approach on two significant current cases, both of which are listed as crises by Caprio and Klingebiel, yet both of which are classified as F (unacknowledged banking crises) in the table below because neither has entered Phase 2 at the time of this writing.

China. A puzzle with which we began is the depth of China's banking problems, yet its apparent freedom from banking crisis (Phase2). What could change this? Because China's banks do not fund in global markets, market movements will not trigger a systemic banking crisis. Furthermore, China is relatively immune from IFI pressure, mainly because of its persistent current account surplus and consequent large reserves.

In China, only two of the four set of agents matter: depositors and government. All the large banks are state-owned, so the only event that could trigger a banking crisis is a political change. Two possibilities come to mind. The first is a new leader determined to clean up the banks. The present leadership has put significant pressure on the state banks to be sure they get repaid. However, this means cutting off funding to the money-losing state-owned enterprises that still dominate the Chinese economy, which the present government is willing to do only gradually. Perhaps this gradualism will work, and if so a banking crisis might be avoided.

An alternative political change, however, could be more abrupt. China runs considerable risk of social instability. Qian Gang, the deputy editor-in-chief of the reformist *Southern Weekend*, and Chang Ping, the front-page news editor, were dismissed in June 2001 after a series of unusually explicit articles about rural anti-government unrest. The government's paranoia about the Falun Gong suggests significant alarm about the risk of social protest.

The cases in section A-1 show that civil war, or unrest sufficiently serious to make civil war a possibility, will trigger bank runs and eventual banking collapse. While this must still be judged a remote possibility, it is also the leading candidate for an event that would trigger a systemic banking crisis in China.

Japan. Japan's banks obtain significant funding from the global financial system, most significantly through interbank deposits. Furthermore, its bank stocks are widely traded and closely followed, and its currency is a major factor in world financial markets. Foreign alarm about Japanese banks can translate quickly into the premium above LIBOR that Japanese banks must pay for deposits, the price of Japanese bank stocks, and the value of the yen. Sufficiently strong movements of these market indicators could undoubtedly trigger a withdrawal of support for Japanese banks from the global financial system.

Junichiro Koizumi became prime minister in April 2000 with a strong mandate for structural reform in Japan, including bank reform. Nevertheless, he is a member of the LDP and many have therefore questioned his freedom to carry out the reforms he

articulates so convincingly. For example, many of the problem loans in Japanese banks undoubtedly involve LDP politicians and in all likelihood many involve organized crime. Cleaning up the banks therefore risks major embarrassments to many of the party's members.

If Koizumi has the political will and support to clean up the banks despite these risks, then his election constitutes the political change that triggers Phase 2 as in section B-2 of the table. If he does not have the strength to do this, the markets may take action on their own, as in Section C-2. Thus, one sees news items such as the following:

> Shares in Japanese banks tumbled yesterday amid growing market unease about whether the new government of Junichiro Koizumi is really willing to resolve their mountain of bad loans. The average price of bank shares fell below ¥300—the first time the index has passed this symbolic level since a financial crisis engulfed Japan in late October 1998. 'Concerns about bad debts appear to have become more widespread,' says Yoshinobu Yamada, banking analyst at Merrill Lynch. 'If bank stocks close in on the low of October 1998 (when they touched ¥275), a financial crisis might occur.'[11]

If the government does not face up to the political risks and move forward, then a market-driven crisis is likely sooner or later as noted in the news item above.

V. Conclusion

The main results of the study may be summarized as follows. Systemic banking crises involve two phases. In the first or silent phase, loan losses (NPLs) build up due to exploitation of banks by both government and private owners. In the great majority of cases, the government wishes to conceal the magnitude of the losses, and so the banking weaknesses are not addressed nor resolved.

In Phase 2, something triggers recognition that the capital of the banks has been destroyed. What that event is depends on how the bank is funded. In general, Phase 2 is entered only when a major funding source withdraws its support.

Depositors will run if they sense that the banks are troubled and also that the government cannot be relied upon to protect their deposits. These are primarily cases of governmental collapse or significant credibility problems.

Government will deliberately take action to face the losses in the event of political change, often a change in leadership. The majority of countries in transition from communism during the 1990s took deliberate action on banking problems as part of their new view of government.

Private external lenders will withdraw abruptly when market signals turn negative. Banks funded by private external lenders are exposed to foreign exchange risk almost by definition, and the lenders are particularly sensitive to weakness in the foreign exchange rate.

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[11] David Ibison and Gillian Tett in the *Financial Times*, June 5, 2001.

Finally, the IMF, the World Bank and other IFIs deliberately force recognition of banking problems as part of their ongoing efforts to enhance economic performance of the smaller and poorer of the developing countries.

Each of the four primary categories occur with significant frequency in the data. Systemic banking crises in the smaller and poorer developing countries are usually triggered either by IFI pressure or by bank runs. In larger and more prominent countries, political change and capital markets are the usual triggers.

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Country	Date Crisis is Recognized	Caprio / Klingebiel Dates	News / Policy Events	Accomp by polity change	Accomp by macro shock	Accomp by FX crisis	Accomp by leadership change	Notes (Caprio & Klingebiel)
A. Depositor Runs / Government Credibility Problems								
	1. Cases of War							
Bosnia-Herzegovina	1992	1992–99	Civil war.	2	0	0	0	Banking system suffers from high ratios of NPLs due to the breakup of former Yugoslavia, and civil war.
Burundi	1994	1994–99	Civil war; 2/94 new president sworn in.	2	1	0	1	Banking system NPLs estimated at 25 percent of total loans in 1995; one bank was liquidated.
Chad	1980	1980–89	Prolonged war with Libya..	2	0	0	0	
Chad	1992	1992	Libyan-backed rebels take power 12/90; political turmoil—mutinies, coup attempts, renewed fighting—in 1991; 5/92 IMF urges austerity program; 9/92 general strike.	1	0	0	1	Private sector NPL ratio amounted to 35 percent.
Congo, Dem. Rep. (Zaire)	1994	1994–99	Civil war; IMF suspends country's voting rights.	2	0	1	0	NPLs to the private sector reached 75 percent; two state-owned banks liquidated and two other state-owned banks privatized. In 1997, 12 banks in serious financial difficulties.
Guinea-Bissau	1998	1995–99	6/98 military rebellion, opposed by troops from Senegal and Guinea; six months of civil war; 7/99 new constitution; 11/99 elections.	2	1	0	1	At end 1995, NPLs accounted for 45 percent of commercial banks' total loan portfolio.
Lebanon	1988	1988–90	War.	2	0	0	1	Four banks became insolvent; 11 banks had to resort to Central Bank lending.

Liberia	1991	1991–95	Civil war.	2	0	0	0	Seven out of 11 banks not operational; their assets were equivalent to 60 percent of total bank assets at mid-1995.
Mozambique	1994	1987–95	10/92 accord ends fighting but does not resolve 17 year civil war; 10/94 first multiparty elections; close IMF and IBRD supervision.	1	0	0	1	BCM, main commercial bank, experienced solvency problems which became apparent after 1992.
Sierra Leone	1995	1990–99	Civil war. 10/94 new constitution; 1/96 coup by Bio; brief ceasefire, then atrocities and economic collapse.	1	1	1	1	In 1995, 40–50 percent of banking system loans were non-performing. The license of one bank was suspended in 1994. Recapitalization and restructuring of the banks is ongoing .
	2. Problems of Government Credibility and Support							
Bulgaria	1996	1990–98	Runs in 1996 in the absence of credible deposit insurance.	0	0	0	1	In 1995 an estimated 75 percent of all loans in banking system were substandard. The banking system experienced a run in early 1996. The Government then ceased carrying out bail-outs, prompting the closure of 19 banks accounting for one third of the assets of the sector as a whole. The surviving banks were recapitalized by 1997. By early 1996, the sector had a negative net worth estimated to be equal to 13 percent of GDP.
Kenya	1985	1985–89	1984 major draught; 7/86 CBK cuts off Continental Bank of Kenya from further funding; 8/86 ditto Union Bank; this precipitates runs.	0	1	0	0	Four banks and 24 non-bank financial institutions faced liquidity and solvency problems together accounting for 15 percent of total liabilities of financial system.
Kenya	1992	1992	11/91 IMF suspends credits; run on (Moi-connected) Trade Bank.	0	0	0	0	Intervention into two local banks.

Panama	1988	1988–89	3/88 US pressure on Noriega triggers run on banks; banks close, lacking cash; 7/89 IMF cuts off Panama; 12/89 US invasion.	0	0	1	0	In 1988, Panama's banking system experienced a nine-week banking holiday. The financial position of most state-owned and private commercial banks was weak. As a result, 15 banks ceased operations.
Paraguay	1995	1995–99	5/95 Central Bank scandal—cash disappears; run on banks; foreign banks benefit. 6/97 CB declares largest bank (Unisn) bankrupt due to losses on connected lending, provoking further runs. By 7/98 40 banks had collapsed, none with full deposit cover.	0	0	0	0	Government Superintendency intervened in two inter-connected commercial banks, two other banks and six related finance houses, accounting for 10 percent of financial system deposits. By July 1998, the Government had intervened in six other financial institutions, including the country's largest public bank and the largest Savings and Loans. By end 1998 most of the remaining domestic private and public banks and a number of finance companies were intervened in. By end of May 1998, the Government had spent USD 500 million, equivalent to 5.1 percent of GDP.
Philippines	1983	1983–87	Major bank runs in 8/83 after opposition leader Aquino murdered, and 7/84 following collapse of largest savings bank. Emergency liquidity infusion violates IMF guidelines and delays agreement.	0	1	0	0	Two public banks accounting for 50 percent of banking system assets, six private banks accounting for 12 percent of banking system assets, 32 thrifts accounting for 53.2 percent of thrift banking assets and 128 rural banks. At its peak, central bank assistance to financial institutions amounted to 19.1 bn pesos (3 percent of GDP). Overall fiscal cost estimated to have amounted to 13.2 percent of GDP.
Turkey	1982	1982–85	6/82 collapse of money broker Banker Kastelli causes runs on smaller banks.	0	0	0	1	Three banks were merged with the state-owned Agriculture Bank and then liquidated; two large banks were restructured.1982–85: rescue cost equivalent to 2.5 percent of GNP.

B. Political Changes / Government Action								
	1. Cases of Transition from Communism							
Albania	1999	1992–99	11/95 foreign banks welcome; 7/97 new president, 12/98 new constitution; 6/00 privatization of NCB under IBRD guidance.	1	0	0	0	31 percent of "new" (post-July 1992 cleanup) banking system loans non-performing; some banks faced liquidity problems owing to a logjam of inter-bank liabilities.
Armenia	1994	1994–96	11/94 government donors praise reform efforts;12/94 IMF loan $25mm with conditions, including strengthening regulation by central bank.	0	0	1	0	Since August 1994, Central Bank closed half of the active banks. Large banks continued to suffer from high NPL ratios. Savings bank financially weak.
Azerbaijan	1995	1995–99	8/95 new capital requirements announced by central bank, may lead to 40–50 bank closures; IDA announces $65mm loan for economic stabilization, including bank reform.	1	0	0	0	Twelve private banks closed; three large state-owned banks deemed insolvent; one large state-owned bank faced serious liquidity problems.
Croatia	1996	1996	4–8/96 Croatia reaches deal to finance its share of Yugoslav debt with $1.6B bonds; 12/96 government attacks banks to prepare for bond rating.	0	0	0	0	Five banks accounting for about 50 percent of banking system loans deemed insolvent, and taken over by the Bank Rehabilitation Agency during 1996.
Czechoslovakia	1989	1989–91	Beginning of transition period.	1	0	0	1	12 percent of GDP was spent on bank support.

Estonia	1992	1992–95	New state, neo-liberal tough bank policies, particularly against Russian banks; 6/92 currency board; 6/93 Narva Bank closed.	0	0	0	1	Insolvent banks accounted for 41 percent of financial system assets. Licenses of five banks were revoked, two major banks merged and nationalized. Two large banks merged and converted to loan-recovery agency. Recapitalization outlays for new entity 300 million EEK (1.4 percent of 1993 GDP).
Estonia	1994	1994	Real economy collapse in ’94; 8/94 Social Bank (largest) moratorium, nationalized, 3/95 closed; 10/94 IBRD $10mm loan to reform financial sector.	0	1	0	0	Social Bank which controlled 10 percent of financial system assets failed.
Georgia	1995	1991–95	Shevardnadze pushes new constitution, new currency, GNB independence; 7/95 GNB raises bank capital requirements, decharters 22 banks and calls another 36 "untrustworthy".	1	0	0	0	Most large banks virtually insolvent. About one-third of total banking systems’ loans non-performing.
Hungary	1992	1991–95	12/91 new banking law commits to private system; 2/92 IBRD loans to develop financial system; 7/92 State Banking Inspectorate announces decisions on three large problem banks.	0	1	0	0	Second half of 1993: eight banks which accounted for 25 percent of financial system assets insolvent. Overall resolution cost is estimated to amount to 10 percent of GDP.
Kyrgyz, Republic of	1995	1990–99	12/93 new reform government; 1/94 new economic program; 4/95 Adil Bank suspended; 2/96 NBK liquidates Kyrgyzselbank; 5/96 fraud indictment of 17 bank directors.	1	0	0	0	80–90 percent of total banking system loans doubtful. Four small commercial banks closed in 1995.

Latvia	1995	1995–99	Bank of Latvia active throughout period to close some banks and pressure others.	0	0	0	0	Between 1994 and 1999, 35 banks either saw their license revoked, were closed, or ceased operations. In 1995, negative net worth of banking system estimated at USD 320 million or 7 percent of 1995 GDP.
Latvia	1998	1998–99	8/98 collapse of GKO markets shakes Latvian banks.	0	0	0	0	Two banks with large holdings of GKOs ceased operations after the financial crisis in Russia. The aggregate loss of the Latvian banking system in 1998 expected to reach 100 million lats (USD 172 million), about 2.9 percent of GDP.
Lithuania	1995	1995–96	4/95 IBRD $25mm loan for reform of firms and banks; 5/95 new banking law; 7/95 Similar IMF $32mm loan; 9/95 central bank describes 9 of 28 banks as problem banks.	0	0	0	0	In 1995, out of 25 banks, 12 small banks liquidated, 3 private banks accounting for 29 percent of banking system deposits failed and three state-owned banks deemed insolvent.
Macedonia	1993	1993–94	Balkan war; 1/94 IMF/IBRD joint loans for economic reform.	0	0	0	0	70 percent of total banking system loans non-performing. Government took over banks' foreign debts and closed second largest bank. Costs of banking system rehabilitation, obligations from assumption of external debt, liabilities regarding frozen foreign exchange and contingent liabilities in banks together estimated at 32 percent of GDP.

Poland	1994	1990–98	4/93 first bank privatization, 2/94 second. 5/94 80% of banks still state owned and unresolved. 9/94 foreign banks bid for failing private bank.	1	1	0	0	Seven out of nine treasury owned banks with 90 percent share of total credit market, the Bank for Food Economy and the cooperative banking sector in 1991 experienced solvency problems.1993: recap. costs of USD 750 million for seven commercial banks; recap. costs for Bank for Food Economy and cooperative banking sector amounted to USD 900 million, together equivalent to 1.9 percent of GDP.
Slovenia	1992	1992–94	No news items found.	1	0	0	0	Three banks accounting for two-thirds of banking system assets were restructured. Recap. costs of USD 1.3 bn.
	2. Other Cases of Major Political Change							
Bolivia	1986	1986–87	8/85 new president Paz sworn in, appeals to IMF; 1-day bank closure prior to new plan; 9/85 inflation crests at 23000%, currency collapses.	0	1	1	1	Five banks were liquidated. Total NPLs of banking system reached 29.8 percent in 1987; in mid-1988 reported arrears stood at 92 percent of commercial banks' net worth.
Bolivia	1994	1994	8/93 conservative new president emphasizes privatization; 8/94 new constitution; 10/94 autonomy for central bank; 12/94 IMF $147mm for economic adjustment.	1	0	0	1	Two banks with 11 percent of banking system assets were closed in November 1994. In 1995, four out of 15 domestic banks, which accounted for 30 percent of banking system assets experienced liquidity problems and suffered from high levels of NPLs.

Brazil	1994	1994–98	7/94 Real Plan; 10/94 Cardoso elected president; 11/94 tight credit and slow inflation weakens many banks; six closed; 12/94 government takes over two biggest state banks.	0	1	0	1	By end 1997, the Central Bank had intervened in, or put under the Temporary Special administration Regime (RAET) system, 43 financial institutions. Also by end 1997 non-performing loans of the entire banking system had reached 15 percent. In 1996, negative net worth of selected state and federal banks estimated at 5–10 percent of GDP. Costs of individual bank recapitalization, by end 1997: Banco Economico, USD 2.9 billion; Bamerindus, USD 3 billion; Banco do Brazil, USD 8 billion; Unibanco, USD 4.9 billion. In 1998, cost of public support to private banking sector estimated at 1–2 percent of GDP.
Cameroon	1988	1987–93	Real GDP falls 5% ’86, 18% ’87, 9% ’88, 8% ’89. 5/88 Paul Biya elected president on campaign for economic reform.	0	1	0	1	In 1989, banking sector NPLs ratio reached 60–70 percent. Five commercial banks were closed, three banks were restructured.
Colombia	1982	1982–87	6/82 Betancour elected president, first conservative in 36 years; 8/82 assumes office; 10/82 nationalizes State Bank of Columbia and jails top executives.	0	0	1	1	Central Bank intervened in six banks accounting for 25 percent of banking system assets. Costs of restructuring estimated to be around 5 percent of GDP.
Congo, Republic	1992	1992–99	8/92 Pascal Lissouba elected president; 9/92 sells to Credit Lyonnais control of state-owned BCC, which controlled 50% of bank market and had run out of cash.	1	0	0	1	Two large banks were placed in liquidation. The remaining three banks are insolvent. Situation aggravated by the civil war.
Czech Republic	1997	1991–98	1994–96, runs on many new, small banks force closings and deposit insurance; 5/97 speculative attack on koruna succeeds in breaking peg; 12/97 central bank governor Tosovsky becomes interim prime minister; 5/98 government reveals	0	0	0	1	Several banks have closed since 1993. In 1994–95, 38 percent of banking system loans were non performing. 12 percent of GDP was spent on bank support, through 1994.

			NPLs in 4 big state-controlled banks exceed 30%. 7/98 Social Democrats elected, cancel privatization plans, bail out big banks.					
Ecuador	1980	1980–83	5/81 Vice President Hurtado succeeds President Roldos when latter dies in an air crash.	0	0	0	1	Implementation of exchange program (domestic for foreign debt) to bail out banking system.
Eritrea	1993	1993	New state.	1	0	0	1	Most of the banking system insolvent.
El Salvador	1989	1989	3/89 right-wing Cristiani elected president, civil war still unresolved; 8/90 IMF $50mm loan for government economic program.	0	0	0	1	Nine state-owned commercial banks recorded NPL ratios of 37 percent on average in 1989.
Guinea	1985	1985	4/84 Lansana Conte coup ousts (Malenke tribe) remnants of Sekou Toure regime; 3/85 banking law, closure of state and Malenke-controlled private banks; French banks and advisors reintroduced.	0	0	0	1	Six banks accounting for 99 percent of total system deposits deemed insolvent. Repayment of deposits amounted to 3 percent of 1986 GDP.
Nicaragua	1996	1988–96	12/96 IMF withholds $100mm loan; conservative Aleman elected president, promises austerity.	0	0	0	1	Banking system NPLs reached 50 percent in 1996.
Sao Tome and Principe	1991	1989–94	8/90 new constitution; 1/91 elections and new government asks IMF to help run economy; much further political turmoil and violence.	1	0	0	1	At end 1992, 90 percent of Monobank's loans were non-performing. In 1993, the commercial and development departments of the former Monobank were liquidated, as was the only financial institution. At the same time, two new banks were licensed, which took over many of the assets of their predecessors. The credit operations of one newly created bank have been suspended since the end of 1994.

Slovakia	1998	1991–99	12/97 run on IRB puts it under administration, but no general facing of NPL problems; 10/98 new government commits to bank privatization; 10/99 $2.6 billion allocated to cleansing three biggest state banks.	0	0	0	1	In 1997, total amount of unrecoverable loans was estimated at 101 billion crowns, equal to approximately 31.4 percent of total loans and 15.3 percent of GDP.
Spain	1977	1977–85	Transition from Franco.	1	0	1	1	1978–83: 24 institutions were rescued; four were liquidated, four were merged and 20 small/medium sized banks (Rumasa Group) were nationalized. In total, 52 out of 110 banks were experiencing solvency problems, representing 20 percent of total banking system deposits. Estimated losses of banks were equivalent to approximately 16.8 percent of GNP.
Togo	1993	1993–95	9/92 new constitution; conflict as old president repudiates democracy.	1	1	0	0	
Venezuela	1994	1994–99	8/93 Perez impeached and removed from presidency; 12/93 Caldera elected; 1/94 Banco Latino crashes; 6/94 government intervenes 8 banks.	0	0	1	1	Insolvent banks accounted for 30 percent of financial system deposits. Authorities intervened in 13 out of 47 banks which held 50 percent of deposits in 1994, and in five additional banks in 1995. Estimated losses put at over 18 percent of GDP.
C. Crises Triggered by Financial Markets								
	1. Classic Twin Crises							
Argentina	1980	1980–82	Southern cone crisis.	0	0	1	1	1980–82: more than 70 institutions were liquidated or subject to central bank intervention accounting for 16 percent of assets of commercial banks and 35 percent of total assets of finance companies. Losses equal 55.3 percent of GDP.

Chile	1981	1981–83	Southern cone crisis.	0	1	1	0	Authorities intervened in four banks and four non-bank financial institutions (with 33 percent of outstanding loans) in 1981. In 1983, seven banks and one financiera accounting for 45 percent of total assets. By end-1983, 19 percent of loans were non-performing. 1982–1985: government spent 41.2 percent of GDP.
Indonesia	1997	1997–99	Asian crisis plus political crisis. Capital flight by owners, near breakdown of order.	0	0	1	0	As of March 1999, Bank of Indonesia had closed down 61 banks and nationalized 54 banks, of a total of 240. NPLs estimates for the total banking system range from 65 to 75 percent of total loans. Fiscal costs estimated to range from 50 to 55 percent of GDP.
Korea	1997	1997–99	Asian crisis.	0	0	1	1	State-owned banks comprising 70 percent of banking system estimated to have non-performing loan ratio of about 35 percent. Restructuring cost amounted to 25 bn rupees (5 percent of GDP).
Malaysia	1997	1997–99	Asian crisis.	0	0	1	0	Finance company sector is being restructured and number of finance companies is to be reduced from 39 to 16 through mergers. Two finance companies were taken over by Central Bank including MBf Finance, the largest independent finance company. Two banks, deemed insolvent, accounting for 14.2 percent of financial system assets, to be merged with other banks. Overall, at end 1998, NPLs estimated between 25 and 35 percent of total banking system assets. Net loss estimated at USD 14.9 bn, or 20.5 percent of GDP by 1999.

Mexico	1995	1995–98	Tequila crisis.	0	0	1	0	Out of 34 commercial banks as of 1994, nine banks were intervened in and 11 more banks participated in the loan/purchase recapitalization program. These nine intervened banks accounted for 18.9 percent of total financial system assets and were deemed insolvent. Total estimated cost of bank rescue USD 65 billion by Feb. 1998, or nearly 15 percent of GDP.
Philippines	1998	1998–99	Asian crisis.	0	0	1	1	Since January 1998, one commercial bank, seven out of 88 thrifts and 40 out of 750 rural banks have been placed under receivership. Banking system NPLs reached 10.8 percent by August of 1998 and 12.4 percent by November 1998. Expected to reach 20 percent in 1999. Net loss estimated at USD 4.0 bn, or 6.7 percent of GDP by 1999.
Thailand	1997	1997–99	Asian crisis.	0	0	1	1	Up to March 1999, Bank of Thailand intervened in 70 finance companies (out of 91), which together accounted for 12.8 percent of financial system assets or 72 percent of finance company assets. It also intervened in six banks that together had a market share of 12.3 percent. At end 1998, banking system NPLs had reached 46 percent of total loans. Net losses estimated at USD 59.7 bn, or 42.3 percent of GDP in 1999.

Uruguay	1981	1981–84	Southern cone crisis.	0	0	1	1	Affected institutions accounted for 30 percent of financial system assets; insolvent banks accounted for 20 percent of financial system deposits. Costs of recapitalizing banks estimated at USD 350 million (7 percent of GNP); Central Bank's quasi-fiscal losses associated with subsidized credit operations and purchase of loan portfolios amounted to 24.2 percent of GDP during 1982–85.
	2. Other Banking Crises Triggered by Markets							
Argentina	1989	1989–90	1988 Argentina suspends all payments to foreign banks, economy collapses with hyperinflation; 2/89 IFIs withdraw support, currency unpegged, falls from 17 to 32; 5/89 Menem elected; 7/89 takes office early; 9/89 IMF grants $1.5B credit.	0	0	1	1	Non-performing assets constituted 27 percent of the aggregate portfolio and 37 percent of the portfolios of state-owned banks. Failed banks held 40 percent of financial system assets.
Argentina	1995	1995	1–3/95 $5.2B withdrawn from banks in wake of Tequila crisis; 3/95 $2.8B IMF package, praise for financial reforms.	0	1	?	0	Suspension of eight banks and collapse of three banks. Overall through the end of 1997, 63 out of 205 banking institutions were either closed or merged. Direct and indirect cost to public estimated at 1.6 percent of GDP.
Brazil	1990	1990	12/89 Collor elected; 4/90 New Brazil plan, 3-day bank holiday, severe banking restrictions: $115B savings impounded; currency falls.	0	1	1	1	Deposit to bond conversion.
Chile	1976	1976	Financieras (unguaranteed) begin to collapse, balance of payments crisis.	0	0	1	0	Entire mortgage system insolvent.

Finland	1991	1991–94	1991 losses, scandals, boardroom battles as economy subsides after 1980s deregulation and growth. 6/91 huge KOP loss; 7/91 KOP scandal; 10/91 Skopbank taken over by government.	0	0	1	1	Savings banking sector badly affected; Government took control of three banks that together accounted for 31 percent of total system deposits. Recap. costs amounted to 11 percent of GDP.
Israel	1983	1977–83	10/83 banks spend over $1B to repurchase shares as TASE falls 70%; banks nationalized.	0	0	1	0	Virtually the entire banking sector affected, representing 60 percent of stock market capitalization. Stock exchange closed for 18 days; bank share prices fell over 40 percent. Losses of about 30 percent of GDP in 1983.
Mexico	1982	1981–90	9/81 de la Madrid selected; 2/82 peso devalued 30%; 7/82 de la Madrid elected; 8/82 sovereign default; 9/82 banks nationalized.	0	0	1	1	Government took over troubled banking system.
Nigeria	1992	1992–98	1986 liberalization, hundreds of new banks; 1991 complaints of massive fraud; currency collapse; 1/92 9 banks declared insolvent, largest closed; 5/93 5 more closed.	0	0	1	1	1993: insolvent banks account for 20 percent of total assets and 22 percent of banking system deposits; 1995: almost half of the banks reported to be in financial distress.
Norway	1987	1987–93	6/87 12 banks fined by central bank for violating loan ceilings; 1/88 CEO of den norske Creditbank resigns amid loss and scandal; 7/88 losses predicted for 30 biggest banks.	0	0	1	0	Central Bank provided special loans to six banks, suffering from post-oil recession of 1985–86 and from problem real estate loans; state took control of three largest banks (equivalent to 85 percent of banking system assets, whose loan losses had wiped out capital), partly through a Government Bank Investment Fund (Nkr 5 bn) and the state-backed Bank Insurance Fund had to increase capital to Nkr 11 bn.

Russia	1998	1998	8/98—Reserve losses to defend semi-pegged currency. Erratic (erroneous?) government decision to default on internal debt and declare moratorium on banks' FX obligations. Ruble collapses, bank runs, banks out of cash.	0	0	0	0	Close to 720 banks, or one-half of all those now operating, deemed insolvent. These banks account for 4 percent of the sector's assets and 32 percent of retail deposits. According to the Central Bank of Russia, 18 banks, holding 40 percent of the sector's assets and 41 percent of household deposits, are in serious difficulties and will require rescue by the state. In 1999, cost of full bailout estimated at about USD 15 bn, or 5–7 percent of GDP.
Sweden	1991	1991	9/91 conservatives defeat socialists, new prime minister; 1991 property prices collapse; government invests in Nordbanken & Forste Sparbanken.	0	0	0	1	Nordbanken and Gota Bank insolvent, accounting for 21.6 percent of total banking system assets. Sparbanken Foresta intervened, accounting for 24 percent of total banking system assets. Overall, five of six largest banks, accounting for over 70 percent of banking system assets experienced difficulties. Cost of recapitalization amounted to 4 percent of GDP.
Thailand	1986	1983–87	5/83 new government. 1984 BOP crisis and 18% devaluation; 3/86 stricter rules for bank NPLs; 7/86 restructuring of Bangkok City Bank ordered.	0	0	1	0	Authorities intervened in 50 finance and security firms & 5 commercial banks or about 25 percent of total financial system assets; 3 commercial banks judged insolvent (14.1 percent of commercial banking assets).Government cost for 50 finance companies estimated at 0.5 percent of GNP; government cost for subsidized loans amounted to about 0.2 percent of GDP annually.

D. Cases Triggered by IFI Pressure on Reluctant Government								
Bangladesh	1990	1987–96	1990 IBRD $95mm loan for sector adjustment, tranches in ’92 and ’93, with bank reform conditions; 8/93 1600 branches of state banks to close; ’94 private banks grow.	0	0	0	1	In 1987, four banks accounting for 70 percent of total credit had estimated NPL ratio of 20 percent; since late 1980s, entire private/public banking system is technically insolvent.
Benin	1988	1988–90	1/88 debt forgiveness negotiations with IMF; 7/88 government program to clean banks; 11/88 special commission to investigate banks.	0	0	0	0	All three commercial banks collapsed; 80 percent of banks’ loan portfolio was non-performing. Losses of CFA95bn, equivalent to 17 percent of GDP.
Burkina Faso	1991	1988–94	After years of negotiation with left-wing government, 3/91 $31mm IMF loan for structural adjustment; 6/91 new constitution; 4/93 further $67mm IMF loan.	1	0	0	1	Banking system NPLs estimated at 34 percent.
Cameroon	1995	1995–98	12/94 CFA devalued under French pressure; 9/95 IMF $101mm loan for economic and structural reform including financial sector; 11/95 major bank (BMBC) closed.	0	0	1	0	At end 1996, NPLs accounted for 30 percent of total loans. Three banks were restructured and two were closed.
Central African Rep.	1988	1988–99	12/88 World Bank loan including $13mm for economic management and structural adjustment.	0	0	0	1	The two largest banks, accounting for 90 percent of total assets, were restructured. Banking sector NPL ratio amounted to 40 percent.

Congo, Dem. Rep. (Zaire)	1992	1991–92	Political turbulence; several prime ministers and some violence; 11/91 Bank of Zaire takes over Bank of Foreign Trade; 2/92 IMF declares non-cooperation; 4/92 Zaire's banks close semi-permanently for lack of cash; currency collapse.	0	0	1	0	Four state-owned banks insolvent; a fifth bank was to be recapitalized with private participation.
Costa Rica	1987	1987–90	1987 18% drop in terms of trade, 4% real GDP drop; IFI loans and pressure on banks to negotiate a "Brady" settlement of foreign debt; settlement reached 11/89 at 16 cents/dollar. Budgetary relief to government enables restructuring of state bank debts.	0	1	0	0	In 1987, public banks accounting for 90 percent of total banking system loans in financial distress as 32 percent of their loans considered uncollectible. Implied losses of at least twice the capital plus reserves.
Côte d'Ivoire	1988	1988–91	1987 cocoa prices fall; 5/87 country suspends payments on commercial and bilateral debt; 3/88 IMF $230mm loan with conditionality.	0	1	0	0	Four large banks affected, which accounted for 90 percent of banking system loans; three definitely and one perhaps insolvent. Six Government banks were closed. Government costs estimated at CFA677 bn equivalent to 25 percent of GDP.
Ecuador	1996	1996–99	11/95 government triples bank capital requirements and bans new banks; 8/96 new president Bucaram sworn in; 1/97 IBRD recommends he observe strict fiscal discipline and strengthen financial sector as precondition to convertibility; 2–3/97 3-way presidential contest.	0	0	0	1	Authorities intervened in several smaller financial institutions in late 1995 to early 1996 and in the fifth largest commercial bank in 1996. Seven financial institutions, which accounted for 25–30 percent of commercial banking assets, were closed in 1998/99. In March 1999, authorities declared a one-week bank holiday.
Equatorial Guinea	1983	1983–85	2/83 government bankrupt, defaults;1984 IMF program, few disbursements; strict conditionality.	0	0	0	0	Two out of the country's largest banks were liquidated.

Ghana	1982	1982–89	1/82 coup by Jerry Rawlings; severe limitations imposed on bank withdrawals; 10/82 talks opened with IMF; 2/83 Ghana agrees to 4-year economic recovery program with IMF for restructuring basic institutions, including banking.	1	0	0	0	Seven audited banks (out of 11) insolvent; rural banking sector affected. Restructuring costs estimated at 6 percent of GNP.
Guinea	1993	1993–94	Pressure on banks from IMF conditionality; 6/93 run on Islamic Bank of Guinea, IMF/IBRD guided workout; 12/93 BIAG closed, foreign bank capital brought it.	0	0	0	0	Two banks insolvent accounting for 22.4 percent of financial system assets; one other bank in serious financial difficulties; these three banks together accounted for 45 percent of the market.
Kenya	1993	1993–95	3/93 Kenya rejects IMF conditions; currency collapses.	0	0	1	0	Serious systemic problems with banks accounting for more than 30 percent of assets of the financial system facing solvency problems.
Nepal	1988	1988	12/88 IMF $16mm structural adjustment program including for reform of financial sector.	0	0	0	0	In early 1988, the reported arrears of three banks, which accounted for 95 percent of financial system, averaged 29 percent of all assets.
Niger	1983	1983–88	1981 uranium exports collapse, draught; real GDP falls 16%; 1983 IMF called in, ongoing pressure for reforms.	0	1	0	0	In the mid-1980s, banking system NPLs reached 50 percent. Four banks were liquidated and three restructured in the late 1980s.
Romania	1996	1990–99	6/93 foreign banks start to enter. 12/95 mass privatization begins under IFI pressure. 7/96 Dacia bank and Credit Bank declared bankrupt, bailed out; 11/96 new government and IFI pressure; 4/97 bank privatization law; 5/97 bank scandal; 4/98 bank insolvency law.	1	0	1	1	In 1998, non-performing loans estimated to amount 25–30 percent of the total loans of the six major state-owned banks.Agricultural Bank recapitalized on a flow basis. Central Bank injected 210 million dollars in Bancorex, the largest state bank, about 0.6 percent of 1998 GDP, and another 60 million will be injected in 1999.

Russia	1995	1995	Real GDP/cap down 12% in ’94, 13% in ’95 and 6% in ’96. 1–2/95 intensive IMF negotiations end in $6.5 B loan; inflation falls; 3/95 interim central bank head announces 100 banks to lose licenses. 4/95 “Loans for shares” announced. 7/95 list of withdrawn licenses reaches 150.	0	1	0	0	On August 24, 1995, inter-bank loan market stopped working, due to concern about connected lending in many new banks.
Senegal	1988	1987–91	2/88 IMF medicine issue in elections; 3/88 reformist president reelected; several IBRD loans; 12/88 plan to restructure banks, cut 750 of 2500 jobs leads to strike.	0	0	0	1	In 1988, 50 percent of banking system loans were non-performing. Six commercial banks and one development bank closed accounting for roughly 20–30 percent of financial system assets. US$830 million which is equivalent to 17 percent of GDP.
Sri Lanka	1989	1989–93	3/89 new prime minister; IMF $67mm payment withheld; economic chaos.	0	0	0	1	State-owned banks comprising 70 percent of banking system estimated to have non-performing loan ratio of about 35 percent. Restructuring cost amounted to 25 bn rupees (5 percent of GDP).
Tanzania	1990	1987–95	6/86 IMF agreement on stabilization after 6 yrs negotiation; 2/90 SAF facility emphasizes financial restructuring; foreign banks admitted, 6/91 private banks to be permitted after two years for state banks to shape up; 10/93 state banks threatened with closure. 1994 third private bank formed, many foreign banks open; 5/94 IMF says more reform needed in banking; 4/95 Meridian Biao bank taken over (FX losses); five public banks fail, 9/95 a public bank fails; 11/95 new president, restructure of public	0	0	0	0	1987: the main financial institutions had arrears amounting to half of their portfolio; 1995: The National Bank of Commerce, which accounted for 95 percent of banking system assets, insolvent since 1990–92, possibly longer. 1987: Implied losses amount to nearly 10 percent of GNP.

			banks.					
Uganda	1994	1994–99	9/94 $175m IMF loan with express recommendation to close the largest bank; this led to further closings in 1995.	0	0	0	1	50 percent of banking system facing solvency problems.
Ukraine	1997	1997	Early 1997 tension with IFIs. 2/97 Gradobank runs out of cash, is rescued, and 12 smaller banks closed.	0	0	0	0	By 1997, 32 out of 195 banks were being liquidated, while a further 25 were undergoing financial rehabilitation. Bad loans constitute 50 to 65 percent of assets of even some of the country's leading banks. In 1998, Ukraine banks were further hit by Ukraine Government's decision to restructure Government debt.
Vietnam	1997	1997–99	2/97 IMF urges more reform including of financial system; 3/97 central bank sets up "bad loan facility"; 4/97 new banking law and bailouts announced.	0	0	0	1	Two out of four large state-owned commercial banks accounting for 50.7 percent of banking system loans, deemed insolvent; the other two experience significant solvency problems. Several joint stocks banks are in severe financial distress. Total banking system NPLs reached 18.2 percent of total loans in late 1998.
Yemen		1996–99	10/99 privatization law as urged by IMF under extended structural adjustment facility. First candidate mto be National Bank of Yemen, following cleanup.	0	0	0	0	Banks suffered from extensive non-performing loans and heavy foreign currency exposure.
Zimbabwe	1995	1995–99	Disastrous draught; conflict with IMF, withdrawal of IMF funding, then new agreement.	0	1	0	0	Two out of five commercial banks recorded high NPL ratio.

E. Other Cases / Not Readily Classifiable								
Djibouti	1991	1991–93	Foreign owners abandon stakes in two local banks after several years of war and severe corruption.	0	0	0	0	Two of six commercial banks ceased operations in 1991 and 1992; other banks experienced difficulties.
Egypt	1980	1980–83	No indication of acknowledged bank problems.	0	0	0	0	Government closed several large investment companies.
Jamaica	1994	1994–99	No deposit insurance until 1997, frequent runs, democratic but impoverished government, massive fiscal problem; 11/94 23% government surcharge on bank profits, stocks plunge; 12/94 government takes over Blaise Trust; 6/95 decides to pay off depositors.	0	0	0	0	In 1994, a merchant banking group was closed. In 1995, a medium-sized bank received financial support. In 1997, the Financial Credit Adjustment Company intervened in and effectively nationalized five out of six commercial banks as a result of the sharp deterioration of their asset quality and the virtual erosion of their capital base.
Peru	1987	1983–90	Economic war between Garcia government and banks/IFIs; abortive attempt to nationalize banks in 1987–88.	0	0	0	0	Two large banks failed. The rest of the system suffered from high levels of non-performing loans and financial disintermediation following the nationalization of the banking system in 1987.
Swaziland	1995	1995	Four largest banks all foreign-owned. 3/95 Meridien Biao Swaziland taken over following related events in Zambia; 5/95 takes over SDSB.	0	0	0	0	Meridien Biao Swaziland was taken over by the Central Bank. The Central Bank also took over the Swaziland Development and Savings Bank (SDSB), which faced severe portfolio problems.
Zambia	1995	1995	2/95 government bails out Meridien Biao Bank, criticized by IMF; new central bank governor appointed.	0	0	0	0	Meridien Biao Bank became insolvent which accounted for 13 percent of commercial bank assets. Rough estimate of USD 50 million (1.4 percent of GDP).

F. Unacknowledged Banking Crises (no Phase 2)								
Algeria		1990–92	GDP falls 7% in ’90, 15% in ’91; near sovereign default, refusal to negotiate with IMF or IBRD; 6/90 Fundamentalists win first elections since independence.	0	0	0	1	Banking system non-performing loan ratio (NPLs) reached 50 percent.
Cape Verde		1993–99	Both commercial banks state-owned, started operations in 1993; no acknowledgement of crisis.	0	0	1	0	At end 1995, commercial banks’ NPL ratio amounted to 30 percent.
China		1990–99	No actual trigger/recognition.	0	0	0	0	At end 1998, China’s four large state-owned commercial banks, accounting for 68.3 percent of total banking system assets, deemed insolvent. Total banking system NPLs estimated at 50 percent.Net losses estimated to reach USD 427.6 bn, or 47.4 percent of
Congo, Dem. Rep. Of		1980–89	Decade of economic underperformance and aborted IFI initiatives.	0	0	0	0	
Japan		1990–99	Very gradual and inadequate acknowledgement of problem.	0	0	0	0	Banks suffering from sharp decline in stock market and real estate prices; official estimate of NPLs: 40 trillion Yen (USD 469 billion) in 1995 (10 percent of GDP); unofficial estimates put NPLs at 1 trillion or 25 percent of GDP; for some of bad loans, banks have already made provisions. At end 1998, total banking system NPLs estimated at Yen 87.5 trillion (USD 725 billion), about 17.9 percent of GDP. In March 1999, Hakkaido Takushodu bank closed, Long Term Credit Bank nationalized; Yatsuda Trust merged with Fuji Bank, and Mitsui Trust merged with Chuo Trust.

Kuwait		1980–86	1982 stock market collapse leads to bank loan losses; 1985 NPLs 25–40 percent, government considers required loss provisions and government capital injection; but these moves apparently not taken.	0	0	0	0	An estimated 40 percent of loans were non-performing by 1986.
Madagascar		1988	No evidence that banking problems were acknowledged or dealt with, despite IFI pressure for reform.	0	0	0	0	25 percent of banking sector loans deemed irrecoverable.
Mali		1987–89	IMF pressure to resolve losses at development bank and postal savings bank, but no government action.	0	0	0	0	NPLs of largest bank reached 75 percent.
Mauritania		1984–93	No evidence that banking problems were acknowledged or dealt with.	0	0	0	0	In 1984, five major banks had non-performing assets ranging from 45 percent to 70 percent of their portfolio. Cost of rehabilitation estimated at 15 percent of GDP in 1988.
Morocco		1980–83	Foreign sovereign debt restructured, but no evidence of any domestic banking crisis.	0	0	0	0	
Taiwan		1997–98	Asia crisis; 8/97 new PM Vincent Siew; but no news of bank crisis.	0	0	0	0	Banking system NPLs estimated at 15 percent, at end 1998. In 1999, net losses estimated at USD 26.7 billion, or 11.5 percent of GDP.