

Disruptions in global financial markets: The role of public policy

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When we think of the state of the world economy over the last 20 years, what we see is a mixture of the good, the bad, and the puzzling. On the one hand, we in the U.S. have experienced the longest period of uninterrupted growth in our history. We've actually had an extraordinary 17-year run, interrupted only by the rather short recession of 1990–91. On the other hand, this period has also been characterized by financial turmoil.

Worldwide, this period has seen the greatest concentration of financial crises since the 1930s. In the U.S., the cost of resolving the savings and loan crisis amounted to around 3 percent of our gross domestic product (GDP).¹ Yet this cost was dwarfed by crises in Scandinavia, Latin America, and, most recently, East Asia. Estimates of resolution costs for the Asian crisis countries are between 20 percent and 65 percent of GDP.² And there are still rumblings of concern in certain markets. For example, the Japanese banking system is generally regarded as undercapitalized, with official reported bad loans amounting to over 6 percent of total loans. The true volume of bad loans may be quite a bit higher.³ Most observers would agree that financial disruptions of these magnitudes have substantial welfare costs.⁴

I'd like to focus on a particular manifestation of this problem: the so-called twin-crisis phenomenon, where banking crises go hand-in-hand with currency crises in emerging economies. We saw this in Mexico in 1995, in East Asia in 1997, and in Russia in 1998.

This new development is part of a broader phenomenon that creates both opportunities and dangers: the rapid globalization of financial markets. This explosion in cross-border financial transactions resulted from a confluence of economic, political, and technological factors. The rapid export-led growth of developing free market economies, notably the Asian tigers, especially by comparison to the relative lackluster performance of many state-controlled economies, has dramatized the potential gains from

decentralization, deregulation, and reduction in restrictions on free movement of goods and capital. Technological developments have increased the ease and speed with which large volume cross-border transactions can be executed.

The great opportunity from globalization is that standards of living worldwide can grow as more and more countries exploit the gains from trade, and as capital flows to its most productive uses. The great danger is that globalization may carry with it new sources of financial instability and may exacerbate financial disruptions when they do occur. So I've briefly discussed the good and the bad—now the puzzle: “How should we respond to these challenges?”

This issue is of particular concern to the Federal Reserve System. The long-run goal of the Federal Reserve is to promote maximum sustainable growth through price stability. However, the Federal Reserve is also committed to safeguarding the safety and soundness of the financial system. The approaches we have used in the past are designed mainly for national financial systems. Now, I believe, is the appropriate time to consider whether these approaches are adequate in an environment where national borders are less and less important. In light of recent developments, how should we proceed?

A good place to start is with a discussion of the twin-crisis phenomenon: where a banking crisis and a currency crisis occur simultaneously and feed on

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each other. Perhaps the most dramatic example of this phenomenon is the Asian crisis of 1997. What happened? Why did these countries get hit by a sudden crisis so strong that it engendered output declines on the order of the Great Depression?⁵

First, let's rule out one candidate explanation. The crisis was not the result of poor macroeconomic policies. In fact, the crisis countries pursued rather conservative policies. Their economies were characterized by low inflation, budgets generally in surplus, and declining government foreign debt. They engaged in responsible credit creation and monetary expansion. In short, these countries seemed to be following the usual prescription for responsible economic governance.⁶

Then something else must be going on. A number of observers are giving significant emphasis to this twin-crisis argument.⁷ A twin crisis can occur when two factors are present. First, an emerging economy must provide its banks *with implicit or explicit government guarantees*. There may be valid reasons for such guarantees. They may reflect efforts to increase the flow of investable funds. I'll return to this point later. Alternatively, the guarantees may reflect "crony capitalism" or other forms of politically directed interference in the economy. Either way, they imply for the government a huge potential liability in the event of widespread bank failure. The second factor in a twin crisis is that banks in this emerging economy must rely on *short-term loans from abroad* denominated in *dollars* or other hard currencies.

How might these two factors interact in potentially malign ways? First, the government guarantees lead to moral hazard problems. They reduce the monitoring of banks by investors, so banks are less likely to make prudent investment choices.⁸ Of course, moral hazard isn't a problem just for emerging countries. We don't have to go back far in U.S. history to find examples of moral hazard induced distortions. But moral hazard doesn't seem to be the whole story. Eventually, it is likely that these poor investments go bad, at which point the government may feel compelled to bail out the failing banks. The problem is that this bailout is costly. It acts as a fiscal drag on the government. There seems to be a connection between the fiscal burden to resolve these crises and the resulting currency attacks. We've known since the early work of Paul Krugman that fiscal shocks tend to foreshadow speculative attacks on a country's currency. If the government finances the bank bailouts by borrowing or increasing taxes, its ability to defend its currency against speculative attack is reduced. If the bailout is financed by monetary expansion, the resulting inflation directly weakens its currency. Either

way, the banking crisis is likely to lead to a fall in the country's exchange rate.

Where does globalization fit in here? Recall that the banks in this emerging economy have a large volume of dollar-denominated liabilities outstanding. When the currency depreciates, these liabilities become harder to repay. As a result, more banks fail, requiring an even bigger government bailout, which in turn places even more stress on the currency. The banking crisis generates a currency crisis, which deepens the banking crisis, which exacerbates the currency crisis, and the vicious cycle continues.

Notice the fiendish way this twin-crisis phenomenon renders national banks virtually powerless. The usual weapons central banks have in their arsenal are *general liquidity provision*, usually through open-market operations, and *directed liquidity provision* through their role as lender of last resort. In a twin-crisis event, *neither* of these weapons can be effective. Open market operations, by increasing the relative supply of the national currency, act to drive down the exchange rate. Loans to assist banks in paying off their dollar-denominated debt simply strip away foreign reserves that are needed to defend the currency. If a central bank is seen to be depleting its hard currency reserves, a speculative attack is almost inevitable. The government has little choice but to go to the International Monetary Fund (IMF) or the U.S. Treasury for relief.

Now, this twin-crisis phenomenon seems mainly to be a problem for emerging markets. Why should we, in the developed world, care? I believe that we must be concerned. In the modern global economy, there are numerous pathways whereby weaknesses in developing countries can be harmful to our own well-being. Take, for example, the recent concern about our current account deficit. In the year that just ended, the U.S. experienced a current account deficit exceeding \$300 billion. At over 3.5 percent of GDP, this is the largest current account deficit in U.S. history.⁹

The main reason for this deficit clearly is the strength of the U.S. economy relative to our trading partners. However, in recent years this deficit seems to have been exacerbated by the changing capital flows due to the financial crises in developing countries. As these economies weaken, investors who had exported capital to these countries now look for a safe haven for their money. The safest economy in the world is the U.S. This inflow of capital produces a larger capital account surplus, which, as a balance-sheet identity, implies a larger current account deficit than would have been produced in the absence of these capital flow distortions.

The way this process works itself out is that these foreign investors bid up the prices of U.S. assets and drive down U.S. interest rates. This induces a *wealth effect*: Americans see their wealth increasing and their relative borrowing costs decreasing, so they tend to save less and consume more. Since this increased consumption can't be satisfied by domestic production alone, we buy more from abroad, increasing the trade deficit.¹⁰

While this flow of funds into the U.S. has immediate benefits to us, it carries with it potential problems. Sudden capital inflows can be reversed. If American consumers increase their indebtedness in response to temporary capital inflows, this indebtedness remains even after the capital inflow has been reversed. Thus, our record current account deficit could actually trigger a period of consumption volatility for the American consumer.

A further reason why we must be concerned about financial turmoil in emerging economies is that financial turmoil knows no borders. The danger to U.S. financial markets in late September and early October of 1998 was very real. Triggered by the Russian default and devaluation in August 1998, the resulting uncertainty about who was affected by the default, who was creditworthy, and who was overextended induced a widespread drying-up of liquidity. The turmoil that followed in the U.S. exemplifies how a disturbance in an emerging economy can be propagated through U.S. markets in rather unpredictable ways. Additionally, as a result of this event, the Federal Open Market Committee (FOMC) decreased the fed funds rate by 75 basis points to ensure a sufficient supply of liquidity in the economy. In doing so, the committee took a conscious risk that the monetary expansion would not exacerbate inflation pressures, with the associated costs. We believe things worked out well in this incident, but foreign turmoil of this type makes the FOMC's job more difficult.

So it is clearly in our interest to consider ways to respond to challenges of globalization such as the twin-crisis phenomenon. To start thinking about potential responses, let's first remember that twin crises arise out of a confluence of *globalization* (in the form of short-term dollar-denominated loans to emerging economies) and *government action* (in the form of government guarantees of bank liabilities). One could address this problem by restricting globalization—say, by imposing capital controls. Indeed, this approach has been recommended by some, and has been implemented in Malaysia.¹¹ While there are arguments in favor of capital controls as a short-term fix, I don't think this is the place to look for a long-term solution. The gains from international capital

mobility are just too great, and the costs in economic growth of restricting this mobility too large, to consider capital controls as a permanent solution to the troubles associated with globalization.

Rather, we should focus on the second factor: *government action*. A useful set of principles for appropriate government action in the economic arena are as follows:

- governments should have a clear policy objective;
- they should be minimally intrusive in achieving that objective;
- they should rely to the greatest extent possible on market mechanisms and market incentives; and
- they should seek to influence *ex ante* behavior, rather than focusing exclusively on *ex post* crisis management.

Most important, government policies should not actively encourage poor choices in the private sector. The Hippocratic maxim, "First, do no harm," applies to financial regulation as well as medicine.

Since the twin-crisis phenomenon starts with government guarantees of banking sector liabilities, let's look at the role of a government-provided safety net in light of these principles. Governments everywhere tend to provide some type of safety net for their national banking systems. Presumably, the intention is to promote confidence in the financial system and to reduce the possibility of financial panics and bank runs. Indeed, the Federal Reserve System was first proposed in the aftermath of the Financial Panic of 1907. There are a number of reasons why emerging countries have special pressures to provide guarantees. These countries often do not have financial structures encouraging to investors. Accounting practices are not fully transparent, disclosure is inadequate, assets are opaque, and property rights are ambiguous. For example, at the time of the 1997 crisis, Thailand did not even have an effective bankruptcy code.¹² Similarly, I once met a delegation of central bankers from a foreign country who discussed in detail the process they used to impose a haircut on collateral used for the equivalent of our discount window loans. This sounded impressive until they acknowledged that there was no legal basis for perfecting the collateral in case the borrowing bank failed. So what we see in certain developing countries is the use of an implicit government guarantee in effect being substituted for the legal and accounting infrastructure necessary to create a credible investment environment: the kind of environment investors in the U.S. can take for granted.

While these reasons for a bank safety net may be understandable, it is clear that the safety net does not

always work as intended. For example, the greatest bank losses in U.S. history came *after* the establishment of safety net institutions.¹³ The twin-crisis phenomenon shows how the safety net can result in more financial disruption for emerging economies, not less. Why might this be so? The answer lies in the negative effect of an excessive safety net: By insuring banks' creditors, it makes them less aggressive in monitoring the business practices of banks. For example, banks in the U.S. held more capital and more cash reserves prior to the 1930s than they do currently.¹⁴ Why? Because the market demanded that they do so. In the absence of a safety net, investors would not provide banks with funding unless they were adequately capitalized.

The insight from this example is that *well-functioning markets can go a long way to induce firms to make socially optimal decisions*. There is a role for government, but the best way to fulfill that role is to encourage markets to do as much of the work as possible. Ideally, we want to direct market incentives to achieve the regulatory goal of safe and stable financial markets, which foster maximum sustainable growth.

This basic principle is the driving motive for regulatory reform along several fronts. The Basel Committee on Bank Regulation is currently reevaluating bank capital standards to reduce distortions induced by the 1988 Capital Accord. That agreement introduced asset categories that carried specific risk weights for use in determining required levels of capital. It is generally recognized that the weights are not closely associated with risk: They favor bank-to-bank lending and place much sovereign debt in the same risk category. Furthermore, the risk weights favor short-term lending of foreign currencies that can have profound effects on lending patterns to developing countries. Some observers argue that these distortions may have been important causal factors in the Asian crisis. They create a regulatory environment where Korean sovereign debt has the same capital charge as U.S. Treasury securities, and where short-term loans to banks in developing countries can carry lower capital charges than loans to American AAA-rated nonbanks. In this environment, there is a clear incentive for western banks to channel money to risky emerging markets. Similarly, there is a clear incentive for these markets to take the loans that are offered. By the standard, "First, do no harm," the current international capital standards appear to be wanting.

The Basel Committee recognizes that problems exist with the current accord and a public comment period is currently underway to reform the international capital standards. In its comment letter, the Federal

Reserve Bank of Chicago emphasized the need for incentive-compatible regulation, disclosure, transparency, and market-driven risk assessment. Banks should be required to pass the test of the marketplace.

One example of how regulation could be used to promote, rather than suppress, market discipline is a recent proposal to require larger banks to issue medium- to long-term subordinated debt at regular intervals to satisfy a portion of their capital requirement. This proposal, which has been advocated by the Chicago Fed since the late 1980s, has recently gained increased support. How would it work?

Without getting into specifics, most sub-debt proposals would have the capital requirement be modified to have a sub-debt requirement in addition to an equity requirement. Why is this more in line with incentive-compatible regulation? Because the risk preference of these debtholders would closely approximate that of bank supervisors. They would be much more concerned with downside risk than they would with potential upside gains from bank portfolio choices. Because their debt holdings are subordinated to other liabilities, the sub-debt holders would be risk-sensitive and would monitor and discipline bank behavior. They would demand a higher interest rate from riskier banks. The debtholders would also have strong incentives to quickly resolve problems and to avoid forbearance and its associated costs. Most sub-debt proposals would impose certain characteristics on the sub-debt issues, such as minimum maturities, and would require the bank to stagger the debt issues to force the bank to "go to the market" on a regular ongoing basis, perhaps semiannually.¹⁵ The purpose, again, is to ensure that the bank can pass the test of the market.

Suppose a regulatory framework like the subordinated debt proposal was accepted as a worldwide standard. How could this potentially mitigate the problem of twin crises? Holders of subordinated debt of banks in emerging markets would act as the equivalent of "mine-shaft canaries." At the first sign that bank loan quality was poor, they would refuse to roll over their debt or require a much higher yield. Most studies of U.S. bank markets suggest that debtholders can distinguish between the asset quality of banks and price the debt accordingly. In the Asian crisis countries, evidence suggests that investors were aware that problems were brewing well before the onset of the crisis.¹⁶ The higher sub-debt yields would send a clear signal to both the markets and to regulators that potential problems existed. Seeing this, the subordinated debtholders would start their "walk" away from the bank. This walk would be more methodical and less disruptive than a run from troubled banks by uninsured depositors.¹⁷ This would either induce the

banks to change their poor lending practices or would induce the regulatory authorities to take corrective action. As it happened, the western creditors of these banks were not induced to walk away from the banks, since they believed that the governments in these countries would never let the banks fail. Indeed, the crisis started when the largest Thai finance company failed and the government bailout was *not* forthcoming. That is, western creditors did not move until they became convinced that these governments simply did not have the wherewithal to engage in a large-scale bailout. At that point, the creditors did not walk away from the banks. They ran.

Is it feasible for incentive-based regulation to be implemented as a global standard, including emerging markets? The evidence is looking more and more positive. One bright light shines from Argentina. The Argentine government has imposed strong market discipline on its banking system. Deposit insurance has been scaled back, banks are required to hold substantial dollar-denominated reserves, there is *significant* market disclosure,¹⁸ and, since 1996, there has been something very similar to a subordinated debt requirement equal to 2 percent of assets. These steps were not taken in response to prodding from western governments. On the contrary, they were taken in response to *market pressures*. Specifically, Argentina wanted to avoid the high interest rates it was forced to pay in the wake of the Mexican “Tequila” crisis of 1995.¹⁹ As the results of the Argentine experiment become known, other emerging economies may take similar actions.

There also appears to be a role for international coordination. In setting required levels of bank capital to cushion against losses, international standards rely on somewhat arbitrary criteria and place bank assets into “risk buckets.” An alternative to this would be the use of market evaluations of the bank’s risk profile. Indeed the Basel Committee has recently moved in this direction with a proposed new capital adequacy framework that relies on external risk evaluations. Additionally, current international standards significantly limit the use of certain capital instruments, such as sub-debt, by banks. Yet, as just discussed, such instruments could have characteristics that make them attractive as a disciplining force and as a cushion against losses. The Basel Committee has received comments suggesting that they relax current restrictions to allow countries to more fully utilize, and benefit from, alternative capital instruments. Finally, the recent Meltzer report on the future role of the IMF strongly encourages pre-certification before countries could borrow from the IMF. Part of this pre-certification procedure could be requirements that national

bank regulations incorporate adequate market incentives into their regulatory policies.

Now, I must stress that market discipline is not a panacea. It is a guiding principle that directs us towards steps that need to be taken. It is a direction in which we should move, not a magic bullet for all problems. I believe, however, that market discipline will be an essential tool for managing the changes that will occur from increased globalization of the economy.

Earlier, I posed the rhetorical question, “Why should we care?” If there’s a message I want to leave you with, it’s that everyone has an important stake in how we resolve these international issues. I spoke earlier about the financial crisis in Asia influencing our current account and perhaps creating wealth effects that may lead to problems in the future. Recently, a banker from a small town in Iowa wrote to me when he read about a session on implicit government guarantees at our May 2000 Conference on Bank Structure and Competition. Now we typically think of implicit government guarantees as a large bank issue, just as we think of international disruptions as being associated with money center banks. But this small-town banker understood well how these implicit guarantees affected him and his customers. He argued that as larger banks encounter problems, their customers would realize that they were likely to be protected from losses. Customers would then flock to the protected bank, causing his funding sources to become more expensive or disappear. As a result, he would be less able to fund his customers’ credit needs. This is an example of how inappropriate government guarantees may have unintended consequences, affecting not only Wall Street, but Main Street as well. We need to ensure that we do what we can to promote the unfettered flow of capital in international markets as well as in that small Iowa community.

To conclude, I think it’s useful to consider how far we’ve come. Back in the 1930s, policymakers believed that financial markets were too important to be left to the marketplace. The renowned economist Abba Lerner expressed this view in a remarkable metaphor. He suggested that the Great Depression was like the scene of a multi-car pileup, with bodies strewn all over. A passer-by might wonder what caused the disaster, until he looked inside the wrecked cars and noticed that *there were no steering wheels!* Lerner’s implication was that private market participants simply did not have the tools to avoid financial crises. Only the government could provide the controls to keep the cars smoothly riding towards their destinations. More recently, numerous scholars, including Milton Friedman and Anna Schwartz, offered a very different interpretation of the Depression. In this view,

the cataclysm was not a result of insufficient government action but, of inappropriate government action.

Now, at the turn of the millennium, in the midst of the greatest prosperity our country has ever known, we have the opportunity to combine Lerner's profound concern for the costs of financial instability with a

realistic appreciation of both the power of market incentives and the limits of government action. I think we can navigate the uncertainties of globalization with creativity and courage to maximize the chances for continued prosperity both here and abroad.

NOTES

¹Based on "cleanup" costs of \$165 billion. Hellmann, Murdock, and Stiglitz (2000) recently put the figure at \$180 billion or 3.2 percent.

²Drawing upon information from *Standard and Poor's Sovereign Ratings Service* (issues June 1999, November 1999, and December 1999) and the World Bank, the costs (as a percent of GDP) of bank recapitalization were estimated to be Korea, 24 percent; Malaysia, 22 percent; Thailand, 35 percent; and Indonesia, 65 percent. Kaufman (1999, table 2) puts the range at 45 percent to 80 percent.

³The 6 percent figure is from a January 27, 2000, press release of the Financial Supervisory Agency of Japan. Others place the figure even higher: Hellmann, Murdock, and Stiglitz (2000) say nonperforming loans may approach 25 percent of GDP.

⁴The previous cost figures (for example, 20 percent to 65 percent resolution costs) are not measures of welfare loss; they are simply transfers between agents in the economy. But welfare losses are typically associated with these transfers as a result of market distortions and the resulting inefficiencies. For example, the International Monetary Fund estimates that crises-induced output losses (actual versus trend growth) have been in the range of 17–18 percent (see Kaufman, 1999, table 1). Additionally, there could be welfare losses on a regular ongoing basis (not just during the crisis) as inefficient investments are undertaken. Thus, losses associated exclusively with crises probably understate the true welfare costs.

⁵For the two worst quarters of the Asian crisis the annualized rates of GDP decline were over 25 percent for Indonesia, Korea, Thailand, and Malaysia. In the U.S., over the 1929–33 period GNP decreased by nearly 50 percent—about 15 percent per year. While the declines in the Asian crisis were less persistent than the Great Depression, the rate of decline was comparable.

⁶This is further discussed in Marshall (1998) and Dooley (1999).

⁷The twin-crisis hypothesis is associated with Kaminsky and Reinhart (1999) and Burnside et al. (1999). It should be emphasized that this may not be the sole explanation of what occurred in the Asian crisis.

⁸This is consistent with arguments that suboptimal investments were undertaken in the Asian crisis countries. For example, a standard measure of investment efficiency is the "incremental capital output ratio" (ICOR), defined as the ratio between the investment rate and the rate of output growth. Higher ICOR implies less efficient investment. Corsetti, Pesenti, and Roubini (1999) show that for most East Asian countries, ICOR increased sharply in 1993–96, relative to 1987–92. They also claim that a substantial fraction of the new investment was directed toward real estate, as opposed to increased manufacturing capacity. Indirect evidence that this real estate investment was inefficient comes from data on rental yields for commercial office buildings. The yields were quite low (and vacancy rates quite high) before the onset of the crisis. Also, the rate of nonperforming loans before the crisis was above 15 percent in Thailand, Korea, Indonesia, and Malaysia. In 1996, 20 of the 30 largest Korean conglomerates showed a rate

of return on invested capital below the cost of capital. While certainly not definitive, these patterns are consistent with less prudence on the part of investors.

⁹This figure (3.66 percent of GDP in 1999) and the general discussion that follows are based on Hervey and Kouparitsas (2000).

¹⁰This increase in the current account could be associated with either the "wealth effect" from the financial side or from demand side effects resulting from the strong U.S. economy. Again, while both are operative, the data appear consistent with the wealth effect having an impact as described here. While the U.S. current account has been in deficit during most of the 1990s, the biggest increase occurred during 1998 and 1999; a timing that is consistent with the Asian crisis. Additionally, if driven by increased demand for foreign goods by U.S. consumers, it would result in increases in domestic interest rates. If the deficit was driven by an increased supply of foreign capital to the U.S., it would result in decreases in rates. In fact, the recent acceleration in the current account deficit was associated with a fall in medium- and long-term U.S. interest rates. This is consistent with the wealth effect argument.

¹¹Controls were imposed in August–September 1998.

¹²See Renaud, Zhang, and Koeberle (1998).

¹³Baer and Mote (1992) present evidence showing the rate of loss per dollar of deposits in the 1980s exceeded that experienced during the Depression years.

¹⁴Boyd and Rolnick (1998) argue that "... before 1933, banks held much more capital than they now do. In fact, from 1844 to 1900, average capital ratios exceeded 20 percent of assets. In recent years, the average has been around 6 percent." Indeed, steady bank capital declines after 1930 were a major reason for the introduction of explicit bank capital requirements in the early 1980s. For a discussion of bank capital trends, and a discussion of why reported capital levels after 1930 are actually overstated, see Kaufman (1992).

¹⁵Examples of specific proposals include U.S. Shadow Financial Regulatory Committee (2000) and Evanoff and Wall (2000).

¹⁶Examples of the evidence in Asia include 1) the fact that the relative stock market valuation of the banking sector in Thailand started to decline in mid-1994, and 2) the IMF was "warning" the Thai government of economic misalignments for over two years prior to the onslaught of the crisis; see Lissakers (1999). The U.S. empirical evidence on the market's ability to distinguish between banks is summarized in Kwast et al. (1999).

¹⁷The difference between the behavior of uninsured depositors and subordinated debtholders is driven by their different maturity structures.

¹⁸Detailed information for individual banks concerning loan customers, status of loans, past dues, and so forth, is accessible via the Central Bank of Argentina's website.

¹⁹See, for example, Calomiris and Powell (2000). They also provide evidence that banks are responding to this increased market discipline. They find that banks that were in compliance with the

requirement before the Asian crisis were stronger (lower default risk), had faster deposit growth, and paid lower deposit interest rates than the banks not in compliance.

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