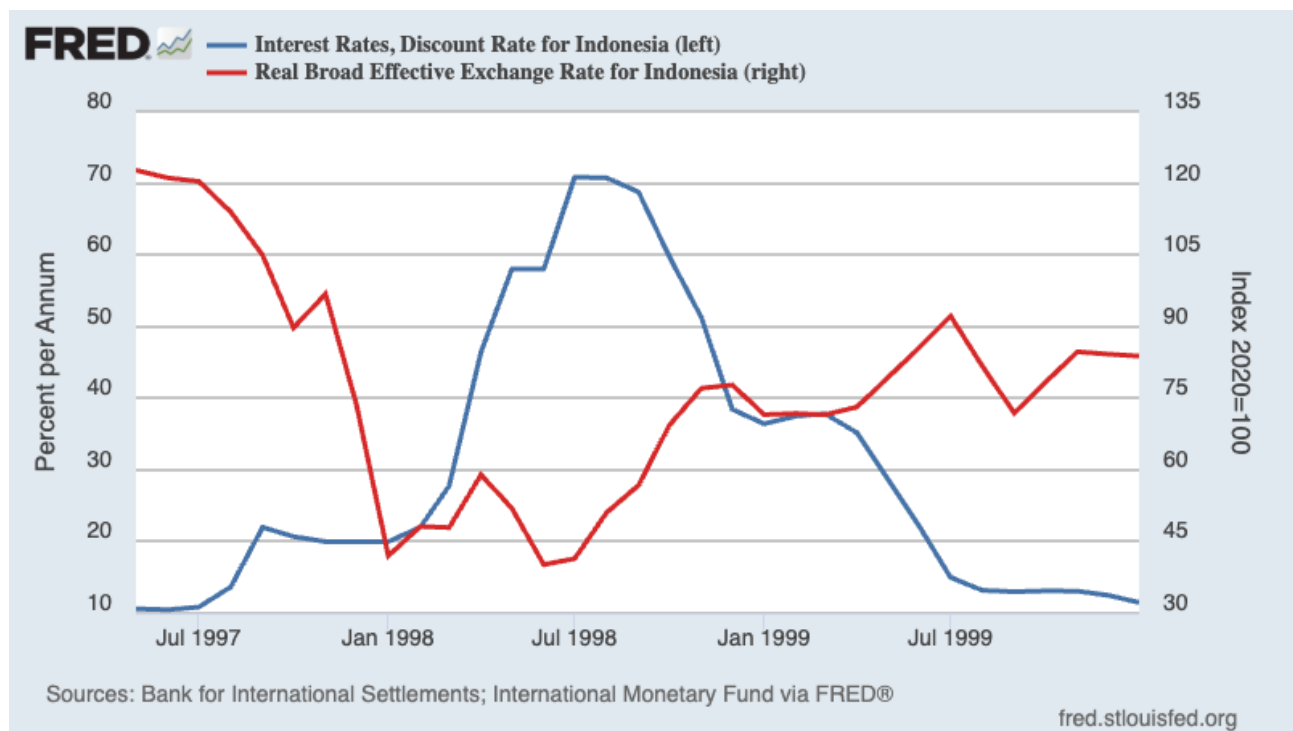


## A Financial Crisis Primer, Part I

*di Paul Krugman*



Last week was a scary time in U.S. financial markets, and the danger may not be over. I'm not talking about stocks, whose fluctuations often tell us nothing at all. What had me and others rattled were developments in bond and currency markets. Interest rates on long-term government debt rose sharply even as the perceived risk of a recession, which normally pushes rates down, rose. And the dollar went down against other currencies even though interest rates went up.

These moves weren't normal for an advanced country like the United States. However, the combination of rising interest rates and a falling currency as the economy slumps is something often seen in emerging markets facing a financial crisis. The chart at the

top of this post shows an example: Indonesia from 1997 to 1999. Obviously we haven't seen anything that severe for the United States. But suddenly I and many others are wondering whether we're looking at the early stages of a U.S. financial crisis.

So this seems like a good time to post a primer on the economics of financial crises. However, this is a big topic, so I'll do it in two parts. This week I'll discuss the logic of financial crises. Next week I'll discuss policy responses and recent developments in the United States — although God knows where we'll be by then.

### *This time isn't different*

Back in 2009 Carmen Reinhart and Ken Rogoff published a terrific book on financial crises with the sarcastic title "[This Time Is Different](#)." The gallows-humor joke was that whenever people brush off the risks of crisis by saying that the lessons of history don't apply to the current situation, history bites them in the um, assets.

The truth is that financial crises keep happening. And when one happens, it's always clear in retrospect that the crisis arose from one of two sources: a liquidity crunch or balance sheet problems.

In a liquidity crisis, which may include but isn't limited to bank runs, banks or other institutions have obligations that they can't meet on short notice, because they can't sell their assets except at extreme fire-sale prices. And fear that these obligations won't be honored leads causes investors to rush for the exits, deepening the crisis. In a balance sheet crisis, falling asset prices force investors or in some cases debtors to retrench and/or engage in fire sales, driving prices down even more. In both cases there is a self-reinforcing downward spiral. This can cause contagion, spreading through the economy, if public policy doesn't contain the damage.

Thus the financial freeze that followed the fall of Lehman Brothers in 2008 was fundamentally similar to the banking crisis of 1930-31. And the wave of bank failures in the early 1930s, not the 1929 stock market crash, was what made the Great Depression such a disaster.

As I'll explain next week, the incipient bond market crisis that scared Donald Trump into fake-pausing his Rose Garden tariff regime appears to have been, in essence, a balance sheet crisis that was qualitatively, though not quantitatively, similar to the crises that wracked the world economy in the late 1990s.

If financial crises always follow two standard scripts, why do they often come as a surprise even to alert observers? The answer is that while the underlying mechanics are the same, the superficial details can look very different. While the 2008 crisis was basically a banking crisis, in large part a kind of bank run, it was centered on institutions that didn't look like — and, crucially, weren't regulated like — conventional banks. Similarly, the balance sheet crisis that caused bond prices to plunge, and yields to soar, after Trump's Rose Garden tariff announcement involved novel channels, notably the role of hedge funds in the “basis trade” (as I'll explain next week.)

So it's hard to anticipate financial crises. Sometimes you only find out about the skeletons in the closet when the house falls down. But when crisis strikes, policymakers have to respond quickly and well, or the crisis can inflict severe economic damage.

*What constitutes a financial crisis?*

Financial crises have been happening since the birth of financial markets. Adam Smith's *The Wealth of Nations*, published in 1776, is famous for its advocacy of free markets. But Smith also called for [bank regulation](#), which he compared to requiring fire walls between row houses. Why? Because the [credit crisis](#) of 1772-3, which hit Scotland's banks hard, was still fresh in his memory.

Before World War I financial crises were usually referred to as “panics.” For example, the U.S. Panic of 1837 involved both cotton-backed borrowing and a burst real-estate bubble, while the Panic of 1873 was centered on railroad speculation. As the “panic” label suggests, every financial crisis involves a rush to dump or sell some kind of asset, be it bank deposits or Greek debt.

But not every asset selloff is a financial crisis. While the [NASDAQ](#) lost three-quarters of its value between early 2000 and fall 2002, as the dotcom bubble burst, I don't know of anyone who calls that a financial crisis. It was more of a Wile E. Coyote moment, named after the cartoon character who keeps running off cliffs. Obeying the laws of cartoon physics, he doesn't fall until he looks down and realizes that there is nothing to support him.

The distinguishing feature of financial crises is their self-reinforcing nature: people rush to dump assets mainly because other people are rushing to dump those assets. That

is, your decision to pull out is my motivation to pull out. For example, in a bank run people rush to cash out because other people are doing so. They fear that if they don't do so, the bank will go under before they can rescue their funds.

Similarly, investors sometimes pull out of highly indebted nations' currencies because of the flight of other investors. This causes the currency to fall, bankrupting local companies that have borrowed in dollars and crashing the economy, validating investors' fears. The Indonesian crisis of 1997-9, illustrated at the top of this post, was a classic case. It involved an 80 percent decline in the rupiah and a 13 percent decline in real GDP.

As these examples suggest, financial crises can take multiple forms. There's probably some deep underlying principle that underlies all crises, but I haven't quite figured it out. However, as I said, every financial crisis I've looked at falls into one of two broad categories: liquidity crises or balance sheet crises.

Let's look at the logic of each kind of crisis, along with some historical examples.

#### *Bank runs and other liquidity crises*

Embarrassingly few economists predicted the financial crisis of 2008. As far as I know, those who did also predicted many other crises that *didn't* happen. But while the "Lehman moment" came as a shock, I don't know any economists whose reaction was that we were seeing something unprecedented and impossible. Instead, all the economists I knew were wandering around muttering "Diamond-Dybvig, Diamond-Dybvig," after the authors of a canonical [theoretical analysis of bank runs](#), which won them a Nobel.

What many economists, myself included, suddenly realized was that financial institutions that don't look like traditional banks — no marble buildings, no rows of tellers — can still be subject to the functional equivalent of bank runs.

All banks operate with a fundamental vulnerability. They take depositors' money and put it into long-term assets like loans to businesses and home buyers. But they promise to return depositors' cash on demand. And their loans can't be sold quickly to raise cash except at fire sale prices.

In normal times, banks can manage this mismatch because depositors don't all try to withdraw their money at the same time. That is, banks can operate with fairly small

cash reserves because only a few depositors want to make withdrawals on any given day. But in abnormal times, if there is fear (justified or not) that a bank is in difficulty and may not be able to honor its promises to depositors, many depositors will in fact rush to withdraw their funds. And these fears, justified or not, can become a self-fulfilling prophecy, causing the bank to fail. Knowing this, everyone will try to pull their money out if they believe that others are about to do the same. That's a bank run. Furthermore, bank runs can be contagious: After one bank fails, depositors often flee other banks too, leading to a wave of bank runs. An epic wave of bank runs in 1930-31 was what turned a garden-variety recession into the Great Depression.

Old-fashioned bank runs have been rare since 1933, when FDIC insurance was introduced to protect depositors against bank failure (although depositors are only insured up to \$250,000, as customers of Silicon Valley Bank recently learned.) But the lesson of 2008 was that institutions that aren't officially banks can play bank-like roles in the economy and, as I said, experience the functional equivalent of bank runs.

In particular, Lehman Brothers didn't take deposits. But it issued repo — debt securities with a one-day maturity — which many corporate treasurers used as a place to park their funds, because it seemed safe and offered slightly higher interest rates than bank deposits. The funds raised via repo were invested in mortgage-backed securities. Then, suddenly, repo no longer seemed safe, and the de facto bank run was on.

There's some dispute about the extent to which the 2008 crisis should be seen as a "[run on repo](#)." But repo and other forms of "shadow banking" were clearly central to the story.

Liquidity crises don't have to involve banks, conventional or shadow. In 2011 the Belgian economist Paul De Grauwe [argued](#) that the euro area crisis then underway was not, as many argued, the result of unsupportable debt levels. It was, instead, a self-fulfilling liquidity crisis.

De Grauwe suggested that investors were unwilling to lend to some European governments, not because they were fundamentally insolvent, but because they might be forced into default by lack of cash — and the reason they might run out of cash was precisely that nobody would lend to them. His analysis was validated in 2012 when

Mario Draghi, president of the European Central Bank, said three words — “whatever it takes” — that investors took to mean that the ECB would make sure that these governments weren’t forced into default. And the euro crisis rapidly faded away.

I’ve discussed liquidity crises because they have loomed so large historically. However, the pressures in U.S. financial markets right now don’t seem to involve a lack of liquidity, at least so far. Instead, they seem to be about deteriorating balance sheets.

### *Margin calls and other balance sheet crises*

Liz Truss became Prime Minister of the United Kingdom on Sept. 6, 2022. She left office 49 days later, having failed to outlast a [head of lettuce](#) whose wilting the tabloid The Star livestreamed next to her portrait. What did her in was a surge in long-term British interest rates and a fall in the pound after she announced an economic plan built around belief in the magic of tax cuts.

Her plans were bad economics and would have increased the UK budget deficit. But Britain, like the United States, is an advanced nation that borrows in its own currency, which usually gives it a lot of leeway to run deficits. So what happened?

The answer seems to involve [pension funds](#). British pension funds hold a lot of gilts — long-term government debt. But in an effort to achieve higher returns, they also hold other, riskier assets, hedging those risks with financial derivatives. The Truss budget, which drove up interest rates, reduced the value of the collateral they had put up to secure those derivatives. Sellers of derivatives demanded that they put up more collateral, which they could only do by selling gilts. And their sales drove bond prices down and interest rates even higher.

The Bank of England, Britain’s equivalent of the Federal Reserve, stepped in to limit the damage. More about policy responses to financial crisis next week. But Truss’s political fortunes never recovered.

Truss versus the head of lettuce will be remembered as a classic example of a balance sheet crisis. While, the British economy took a hit, other balance sheet crises have been much more frightening. Back in 1998 the whole world economy was shaken by the collapse of Long Term Capital Management, a hedge fund that had made huge bets on risky assets, mostly made with borrowed funds. When LTCM lost heavily on Russian

investments, its desperate attempts to raise cash by selling its assets caused asset prices to plunge around the globe.

The LTCM panic was eventually contained by a show of confidence by U.S. officials. Readers of a certain age may remember this magazine cover:



I'll talk next week about when and how official intervention can head off financial panics.

How can the losses of a single investor, like LTCM or a class of investors, like British pension funds, cause large declines in asset prices? Why don't other investors step in to buy the dips and thereby stop the contagion?

I usually think about these things through the lens provided by Andrei Shleifer and Robert Vishny in their 1997 paper "[The limits of arbitrage](#)." Shleifer and Vishny pointed out that arbitrageurs, who buy undervalued assets, are typically "highly specialized investors using other people's capital." While arbitrageurs mostly rely on other people's money to buy the dips, such investors need to put up some of their own capital as collateral.

The problem is that a large decline in the prices of those assets shrinks the arbitrageurs' own capital, and thereby reduces their ability to buy the dip. In fact, like British pension funds in 2022 or LTCM in 1998, they may be forced to sell when they should be buying. Hence the contagion spreads.

An aside: I've mentioned Silicon Valley Bank. What happened there wasn't so much a bank run as a balance sheet issue. The bank, which had become a favorite place for tech bros to park their money, suffered large losses as interest rates rose and bond prices fell. At that point the supposedly smart money learned that their huge deposits mostly exceeded the maximum insured by the FDIC. They were bailed out, but this was a reminder that even conventional banks can pose risks.

But back to LTCM or UK pension fund-type crises: It looks as if something like that may be happening with U.S. hedge funds right now. But I'll talk about that next week, by which time more may have happened.

All of what I've said so far is about investors like pension funds and hedge funds. How do emerging-market crises like Indonesia's fit in? The answer is that the relevant balance sheets in that case were those of Indonesian businesses, many of which had borrowed in dollars. When the rupiah plunged, their debts measured in domestic currency exploded, forcing many into bankruptcy and drastically reducing the whole business sector's ability to invest. The deep recession that followed — so deep that it amounted to a depression — validated foreign investors' fears. So that was also a balance sheet crisis, involving a different set of actors.

I don't think the Trump tariff regime will cause that severe an economic earthquake in America. But last week we were definitely feeling tremors, and it's far from clear that this saga is over.

To be continued ...