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Video: «Banks and Financial Crises»

Author: Prof. Dr. Aymo Brunetti, Department of Economics, University of Bern, www.vwi.unibe.ch

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«The last major financial crisis hit the world economy in 2008. It had the potential of becoming a dramatic economic catastrophe on the scale of the Great Depression of the 1930s. In other words, a combination of bank failures and a severe global economic downturn lasting for several years.

To understand the financial crisis, you have to first understand how a bank works. Then you have to know about the specific risks of a bank. And final it is important to know, how banks trade with each other. With this we can understand the emergence of the financial crisis of 2008 and we can understand the economic response to this crisis.

1. How do banks work?

Banks perform an important task for different members of society: Savers want to be sure their money is in a safe place. They also want to be able to withdraw it and use it to make payments at any time. In other words, they only want their money tied up for a very short term.

Borrowers, by contrast, whether individuals or companies, want to borrow money for a longer period of time, as they invest in real estate or in machines, that they can't sell at short hand.

Banks use the deposits of many savers as the basis for loans to individuals and companies. This practice of coordinating the different time-frames of savers and borrowers is called maturity

transformation. It is the major economic benefit of having banks. This is possible because, on a regular day, usually only a small portion of the deposited money will be withdrawn.

This and other important financial crisis mechanisms, can be explained using the simple model of a stylized bank balance sheet. We will start by looking at a very simple bank that focuses exclusively on taking deposits and lending money.

A balance sheet displays the assets of a company and how these are financed. The assets of a bank are shown on the left. This side shows how the bank uses its funds. How the assets are financed, is shown on the right. So, this side shows the source of funding.

In the case of a traditional commercial bank, the funds come from customer deposits. This money is the basis for loans. This is risky, because if a debtor defaults the money is lost for the bank. The bank must be able to secure this loss with money that actually belongs to the owners of the bank. This is called equity capital.

In the case of banks, equity usually makes up a small portion of the balance sheet total.

What do you think: What percentage of a typical large bank's total assets was financed through equity just before the financial crises in 2007?

The right answer is 2 percent. 100 years ago, the percentage was around 20 percent. After the Second World War, the percentage dropped from 10 to about 5 percent. In the boom phase before the crisis, equity only accounted for around 2 percent of the balance sheet total. This means, 98 percent of the bank was financed with debts.

Were a bank not to lend money, it would operate purely as a safe. It would put your money in a safety deposit box and that is where it would stay. Instead, a bank uses the money deposited as a basis for loans, for example to property owners or to individual companies.

A bank must also always be in a position to pay out cash to its customers. That is why it must keep a certain amount of cash on hand as part of its assets. Usually, a bank will keep this amount of cash as low as possible. Because by lending out money, the bank earns from the interest charged on the money lent. By contrast, the bank does not earn any interest with cash.

The way a bank makes a profit is by paying lower interest rates to us, the savers, than the interest rate it charges for lending money. That is known as the interest rate spread and constitutes the foundation of basic banking. The interest rate spread compensates the bank for the costs involved with lending money, such as assessing the creditworthiness of the borrowers and their projects.

2. The particular risks of banks

As the chart shows, two things are notably small on a bank balance sheet. And this is where the main risks lie: firstly, the low level of cash and, secondly, the low level of equity capital. The first leads to liquidity risk, the second to solvency risk.

The liquidity risk is particularly high for banks because of the described business model. It is a consequence of the fact that a bank's customers have the right to withdraw their money at any time.

At the same time, banks use that money to as a basis for loans. This money cannot be converted into cash immediately.

As mentioned earlier, banks only keep a small amount of cash because they cannot earn any interest on it. The small amount of available cash exposes banks to the risk of what is referred to as a bank run: the cash of a bank is not enough if a large number of savers want to withdraw their money at the same time.

When customers are worried that their bank is in distress, it can happen that they all at the same time want to withdraw their money. Without being aware, they trigger the bank failure they had so feared. The bank then fails because it quickly runs out of cash.

Before the Second World War, bank runs happened quite frequently. The worst bank run in history was the main trigger of the Great Depression of the 1930s.

Thereafter an economic solution was found for this problem: it is called the deposit insurance. A deposit insurance protects bank customer deposits from losses in the event of a crisis. In Switzerland, for instance, a customer's first one-hundred-thousand francs deposited at a bank are insured. This means that, in the event of a bank failure, the deposit insurance provides a guarantee. It guarantees that the state will step in and pay out these customers. As a result, customers no longer have any reason to withdraw their money, even if their bank is in distress. Since the introduction of this protective measure, there have been practically no classic bank runs.

The second important risk is the solvency risk. When a company suffers losses, these losses must be borne by the company owners, that is to say, the equity providers. If the losses are too high, a company may become insolvent. The company's liabilities are then higher than its assets.

In the case of our simple bank, such losses can arise when the value of claims on loans drops. This reduces the equity capital of the bank. If, for instance, banks have given many loans to companies that become unable to repay their debts due to an economic crisis, this can cause the banks to become insolvent.

Because the equity capital of typical banks is rather low, the risk of being unable to absorb all the losses is relatively high. As a result, the solvency risk in banking is significant.

3. How banks trade with each other

To understand the origins of the financial crisis, we need to expand our stylized balance sheet, with the trading business and the money market. This is an additional business and an additional form of financing.

Banks made large debts on the money markets in order to invest in securities. Here, too, the banks try to earn money through the interest rate spread. Securities are assets owned by the bank on which it can earn revenues.

Prior to the financial crisis, a second source of funding besides customer deposits became more and more important: money market debts. For this purpose, the banks take on additional debts, not from us bank customers, but on the money market from other banks and large companies.

Similar to customer deposits, these debts are very short term. In other words, money market debts are loans to the bank. They typically have a term of one day and subsequently need to be repaid or

renewed. And as with loans, the bank earns by paying a lower interest on the money used for funding these securities purchases.

In the run-up to the financial crisis, the interest rates the banks had to pay on this money market funding were very low. As a result, this type of financing was relatively cheap and easy to get. This means that for years it could easily be renewed on a daily basis.

As soon as funding is incurred on the money market, that debt is not owed to customers, but to companies and—above all—to other banks.

If a bank incurs a debt with another bank, that bank gives the other bank a promissory note and receives money for it. But for the bank lending the money, the promissory note is a security on the assets side of its balance sheet.

Now, if a bank goes bankrupt, then that promissory note suddenly becomes worthless for the other bank and has to be written off. This loss reduces the other bank's equity capital and can, in turn, drive that bank into insolvency.

And that is what presented a major risk. Before the financial crisis the banks were strongly interconnected because they lent ample amounts of short-term money to each other.

4. What led to the financial crisis that hit in 2008?

We now have all the basics to understand the financial crisis. In the following, we will describe what happened in the immediate wake of the bankruptcy of the «Lehman Brothers» investment bank in September 2008. It is a self-reinforcing downward spiral. And that is the basic mechanism of any financial crisis.

A characteristic typical of any financial crisis is that it can happen very quickly—the financial system can literally collapse within a matter of hours. If this spiral of the last financial crisis had not been stopped in time, the global financial system would probably have collapsed—with fatal consequences for all of us.

In the years preceding the financial crisis the global economic situation was remarkably good. It was easy to make large amounts of money on the financial markets. And the risks were seen less and less. As mentioned earlier, above all the banks substantially expanded their trading activities. They purchased an ever-increasing number of securities—funded through short-run money market debts. With time, the banks also started to buy very risky securities. However, given the excellent state of the economy, these risks were not easy to detect.

But for various reasons, doubts emerged in 2007, and increasingly in 2008, as to the recoverability of certain securities. In particular, securities connected with the US housing market were increasingly being called into question as to their recoverability. As a result, more and more financial market participants started to sell these securities.

As trust in the securities lacked and there were no buyers, securities prices started to drop heavily. This triggered a downwards spiral for all banks:

Given that the banks had a large number of these securities in their balance sheets, their equity capital shrunk considerably as a result of these losses. This meant that the solvency situation of the banks concerned deteriorated more and more.

All of this happened fairly quickly and hit a large number of banks worldwide simultaneously. This made it very difficult to assess how solvent the individual banks still were.

Suddenly, the fact that the banks had financed theses securities with short term through money market debts became a problem. They had to renew these debts every single day.

Have a guess: How much of their total funding did Lehman Brothers have to renew every day shortly before filing for bankruptcy?

The right answer is a third or 200 billion USD. With this amount of money, you could buy a new family car for every single human being living in Switzerland.

Such short-term money market debts had not been a problem in the past. But now the banks faced increasing difficulties. Because, all of a sudden, it was unclear whether these banks were still solvent—in other words, whether they had enough money to repay their debts. As a result, they received less money from the money market.

This is how a solvency problem suddenly resulted in a serious liquidity problem—and thus in the other previously described bank problem.

The outcome was ultimately reminiscent of a bank run. But, in 2008, the situation was not that the customers wanted their money back; rather, the money market lenders no longer renewed their loans. But the effect was the same—the banks ran out of money at breakneck speed.

Nobody expected a bank run because everybody thought: “there is a deposit insurance”. But there is no deposit insurance for money market debts.

The banks needed to gain quick access to cash, so as to be liquid. For this purpose, they had to sell what they owned and turn it into cash. A bank with almost no cash still owns two things: claims on loans and securities.

Loans are almost impossible to sell. They are individual contracts that cannot be sold in a market, especially not quickly. However, securities can be sold in a market. And that is why all of the banks concerned began to throw their securities on the market, in an effort to obtain cash. But because they all did this at the same time, the market was full of sellers versus hardly any buyers. The logical consequence of such a situation in any market is that prices drop. This meant that securities prices dropped drastically yet again. And this did not just affect the prices of dubious securities, but of all securities.

With that, the system returned to the starting point of the spiral: due to the renewed drop in securities prices, this time on a wide scale, equity capital decreased even more, thus further exacerbating the solvency problems.

Typical for financial crises is that the liquidity risks and solvency risks are mutual amplifiers. And the banks' desperate attempt to obtain liquidity is what put the solvency of the entire banking system into question.

If this spiral were left to continue, it would push the entire financial system into the abyss within a very short time.

5. The global policy response

Global politics feared a repetition of the Great Depression of the 1930s, when a series of bank failures triggered the, by far, worst global economic downturn of the last century.

Economic policies attempted, first of all, to stop the banks from selling more securities to maintain liquidity. Otherwise, these securities would have become worthless and more and more banks would have become insolvent—including banks that held high quality securities.

The first measure was for the central banks to give money to the banks and, in return, to take over the banks' claims on loans or securities as collateral. This liquidity support is not a bank bailout in the usual sense. It is an agreement between the central bank and a bank that the banks get liquidity in exchange for high quality securities. And that is precisely why central banks were created. Because financial crises have occurred repeatedly as far back as the nineteenth century when, per se, solvent banks ran out of liquidity very quickly.

However, a second policy measure was necessary. Because many securities were almost worthless due to careless moneylending in the pre-crisis boom period, liquidity support alone was not enough. Ultimately, liquidity support is of no use if the banks become insolvent due to such losses.

It soon became clear that far more extensive measures were needed to prevent a collapse of the banking system. These ultimately consisted of preventing banks from insolvency by means of the state stepping in and strengthening bank equity.

The combination of liquidity and solvency support put an end to the downward spiral, thus averting large scale bank failures. But this required taking drastic measures. Because solvency support is nothing less than direct subsidy to a bank. This subsidy means taking taxpayers' money to save banks that have taken life-threatening risks.

But the alternative would have been so unattractive that the authorities were left with no other choice. The collapse of major banks, potentially even the entire banking system, would have caused a monumental economic downturn.

Let us illustrate this point: during the Great Depression, US industrial production was halved, and unemployment rose from three per cent to over twenty-five per cent. Thanks to the described measures, such dire scenarios were prevented.

Many ingredients of the recent financial and economic crisis resembled those of the Great Depression. However, the reason a second Great Depression could be averted is because of the lessons learned from analysing the crisis of the 1930s—in terms of what to avoid at all cost and where to intervene on all accounts.

Specifically, there were three lessons learned from the Great Depression: (1) Do not allow a bank run to occur, (2) save system-relevant banks and (3) absorb the effects on the real economy with expansive monetary and fiscal policies.

This presentation has focused on the first two measures which are directly linked to the banks and the financial system.

The most important lesson from the crisis is undoubtedly how incredibly dangerous it is if system-relevant banks with extremely low equity capital take enormous risks. Because if a bank is of a certain size, the government has no choice but to save it in the event of a crisis.

That is not compatible with a fair and efficient market economy system. This is why, in the wake of the crisis, strong internationally coordinated efforts were made to make the banking system more crisis-resistant by means of regulatory adjustments.

Decisive factors in this respect were the significant increase of capital requirements, especially for system-relevant banks. These requirements were agreed upon in what was called the «Basel Process» and have since been largely implemented.»

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