

Supervisory Lessons from the Failure of Silicon Valley Bank

This series of Toronto Centre Insights draw out some lessons for financial supervisors from the failure of Silicon Valley Bank (SVB)¹.

Many of these lessons are applicable to supervisors of all types of financial institutions, not just banks.

Contents

Lesson 1 – Understand the Business.....	1
Lesson 2 – Dangers of Rapid Growth	2
Lesson 3 – Deposit Risks.....	2
Lesson 4 – Market Risk.....	3
Lesson 5 – Stress Testing.....	4
Lesson 6 – Recovery Planning.....	5
Lesson 7 – Crisis Preparedness	6

“It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us”

Charles Dickens, Tale of Two Cities

Lesson 1 – Understand the Business

To understand the risks to supervisory objectives from a financial institution, supervisors need to understand its business, on both sides of the balance sheet.

For SVB, this included three key elements:

1. Lending to the technology-based start-up sector. This was inherently risky business, because of high rates of failure among start-ups; the early-stage nature of the lending; the inability of start-ups to provide security against loans, for example in the form of property or other physical assets; and lending that was intended to be repaid from the proceeds of forthcoming capital raising.
2. Deposits from cash-rich technology companies, start-ups and venture capital companies, which were concentrated in the sense of being deposits from similar types of company that were likely to behave similarly in response to shocks.
3. A substantial holding of fixed-income securities, mostly mortgage-backed securities, giving rise to both market and credit risk.

¹ This series of TC Insights is written by Clive Briault, Chair, Toronto Centre Banking Advisory Board.

Lesson 2 – Dangers of Rapid Growth

Not all financial institutions that grow rapidly subsequently fail. Nor have all failed financial institutions previously exhibited rapid growth. But it is nevertheless the case that many failed financial institutions did grow rapidly ahead of their failure. So supervisors should treat rapid growth as a warning sign of higher risk.

For many financial institutions, the main problem with rapid growth is that it is driven by taking on risky business – lending and insurance that is under-priced or that other providers have turned down; moving into riskier products and new markets; building up large exposures to single or connected customers; and investing in risky securities. Any rapid increase in assets has then to be funded, which for banks has often led to an over-reliance on short-term wholesale market funding.

For SVB, rapid growth took a slightly different form. Yes, during 2021 (the year of SVB's most rapid growth) its loans increased by nearly 50%, from \$45 billion to \$66 billion. But the main driver of overall balance sheet growth was deposits, which increased by 86% from \$102 billion to \$189 billion. The largest increase on the asset side was in investment securities, which increased by 160%, from \$49 billion to \$128 billion. Overall, SVB's balance sheet grew by 83% in 2021, from \$116 billion to \$211 billion.

Another major problem with rapid growth is that all too often, the growth in business runs ahead of a financial institution's ability to identify, understand, manage, and control the risks it is building up. Governance, risk management, policies and controls, IT systems and data management, staff numbers, and experience and expertise all tend to lag behind the rapid growth. The increase in inherent risks is then combined with an inadequate control environment, which is a toxic and dangerous mix.

There is insufficient information in the public domain to reach a judgement on the quality of governance and controls at SVB, but reports that its Chief Risk Officer departed in April 2022 and was not replaced until January 2023 are not encouraging.

“Bank runs are a common feature of the extreme crises that have played a prominent role in monetary history. During a bank run, depositors rush to withdraw their deposits because they expect the bank to fail. In fact, the sudden withdrawals can force the bank to liquidate many of its assets at a loss and to fail.”

Douglas W. Diamond and Philip H. Dybvig, 1983

Lesson 3 – Deposit Risks

One lesson from the Global Financial Crisis of 2007-2009 was that some banks had relied too heavily on wholesale funding. But, as SVB illustrates, funding risks can take many forms.

SVB was funded predominantly from customer deposits. These grew very rapidly during 2021, and by the end of 2021, non-interest-bearing demand deposits from customers had reached \$126 billion, with customer interest-bearing deposits of \$5 billion and money market funding of \$57 billion.

Four characteristics of these customer deposits were problematic.

1. They were deposited by a relatively small and concentrated depositor base of venture capitalists and technology companies. These depositors were cash-rich as a result of a pause in investment and the receipt of government loans and funding during the COVID-19 pandemic.
2. They were mostly non-interest-bearing on-demand deposits.
3. Nearly all (up to 95%) of them were above the \$250,000 coverage limit of the deposit insurance scheme (the FDIC).
4. They were easily accessible and movable 24 hours a day, every day, through mobile phone applications and internet-based accounts.

All these characteristics increased the “flight risk” of these customer deposits. They were held by depositors from a relatively close community where news, rumours and actions could, and did, spread rapidly. Depositors could literally withdraw their deposits as quickly as they had made them, either because they needed the cash or because of any concerns they had about SVB. The large size of the individual deposits meant that deposit insurance provided only very limited potential benefit. And the zero rate of interest meant that switching to other banks became increasingly attractive when interest rates began to rise.

As Diamond and Dybvig (recent Nobel Prize winners) demonstrated in an [academic paper](#) 40 years ago, it is rational to “run” from a bank at the slightest sign of trouble because you never know (a) whether the bank will be solvent, or (b) what everyone else will do. Being the first out of the door is better than taking the risk of not being able to exit at all.

More generous deposit insurance and the post-Global Financial Crisis regulatory reforms may have reduced the incentive to run, but clearly they have not removed it entirely. And, as shown by the recent experience of Credit Suisse, serious funding problems can threaten even a systemically important financial institution subject to additional capital requirements, higher expected standards of governance and risk management, more intensive and intrusive supervision, and recovery and resolution planning.

As bad news about SVB emerged, including a failed attempt to raise new capital, customers tried to withdraw \$42 billion in deposits from the bank on 9 March 2023, equivalent to a quarter of its overall deposit base. Whether solvent or not, the bank had to close.

“With inflation well above the FOMC’s longer-run objective and a strong labor market, the Committee expects it will soon be appropriate to raise the target range for the federal funds rate.”

Board of Governors of the Federal Reserve System. Monetary Policy Report, February 2022.

Lesson 4 – Market Risk

When interest rates increase, the value of fixed income securities falls. Holding fixed income securities therefore carries market risk, even if the credit risk is small (as, for example, with government bonds). As SVB illustrates, this market risk needs to be properly factored into risk management.

SVB had to do something with the very high amount of customer deposits that flooded into the bank, especially during 2021. Its loans increased from \$45 billion to \$66 billion. But the biggest increase on the asset side of its balance sheet was in investment securities, which increased from \$49 billion to \$128 billion, representing 61% of total assets at the end of

2021, mostly in the form of mortgage-backed securities. This was at a time when interest rates were very low.

If a bank holds a \$100 fixed income security to maturity, then – credit risk aside – it should be able to redeem the security for \$100 at maturity. But if it is forced to sell the security before maturity it will be worth less than \$100 if interest rates have increased since it was purchased. SVB was able to elect whether to treat its fixed income securities as “held to maturity” (in which case they sit on the balance sheet at cost) or “available for sale” (in which case they are marked to market and increases in interest rates result in immediately realised losses). At end-2021 SVB had allocated \$98 billion of securities as “held to maturity” and \$27 billion as “available for sale”.

As US interest rates increased during 2022 (the Fed began increasing its rates in March 2022, for the first time since 2018), SVB incurred unrealised losses of \$2.5 billion on its “available for sale” portfolio. That was manageable for a bank with equity of \$16.6 billion (at end 2021) and profits of around \$3 billion a year.

But meanwhile the unrealised losses on the “held to maturity” portfolio increased from \$1.3 billion to \$15.2 billion during 2022, which if realised would have almost exactly wiped out the bank’s equity (which had declined slightly to \$16.3 billion by the end of 2022).

Now here comes the big problem for SVB. The withdrawal of customer deposits that began in 2022 and accelerated early in 2023 could not be offset by raising replacement deposits from other sources, such as wholesale markets or the Federal Home Loan Fund, without paying such a high cost for replacement deposits that this would have destroyed the profitability and viability of SVB – especially when such a large proportion of its assets were held as fixed income securities that were earning a low rate of interest.

And under accounting standards, if SVB sold a single security out of its “held to maturity” portfolio it would have to revalue the entire portfolio on a mark-to-market basis, which would wipe out its equity.

So in the face of continuing deposit withdrawals – themselves no doubt accentuated by the unrealised losses on fixed income securities mounting up at SVB – and with the failure of a proposed capital raising by SVB, the game was up. In effect, the market risk crystallised and the bank failed.

“Stress testing should form an integral part of the overall governance and risk management culture of the bank. Stress testing should be actionable, with the results from stress testing analyses impacting decision making at the appropriate management level, including strategic business decisions of the board and senior management.”

Basel Committee Principles for sound stress testing practices and supervision, May 2009.

Lesson 5 – Stress Testing

Stress testing is a valuable tool for financial institutions. They should run a range of stress tests, covering a range of scenarios, taking account of feedback loops and market-wide stresses. They should then act upon the results.

The SVB example illustrates the need for a financial institution and its supervisors to carefully consider the stress tests that it should run, taking into account the specific risks it faces.

First, at the most basic level, it would be natural to assume that SVB stress-tested the credit risks inherent in its loan portfolio, the risks of deposit withdrawals, and the potential impact of rising interest rates on its holdings of fixed-income securities.

What would be a “severe but plausible” stress test here? For deposit withdrawals the Liquidity Coverage Ratio might be a natural starting point, because it is in effect a stress test that asks what happens if a bank loses 5% of its retail deposits in the next 30 days, plus all of its wholesale deposits that mature in the same period. However, the 5% figure for retail deposits is based on assumptions that these deposits are highly diversified and are covered by deposit insurance. If neither of these assumptions holds – as was the case for SVB’s customer deposit base – then a much higher figure than 5% should be used (in the UK in 2007 Northern Rock was at one point suffering the withdrawal of more than 5% of its retail deposits each day, not each month!).

And what about interest rates? Arguably, central banks had been behind the curve in tightening monetary policy before 2022, waiting for inflation to take off rather than raising interest rates in advance of that. Market participants and analysts had been warning for some time of the possibility of much higher interest rates. Financial institutions should therefore have been conducting interest rate sensitivity analysis and stress tests on their holdings of fixed-income securities, and indeed on their non-interest-bearing deposits.

Second, and most importantly, “one-dimensional” stress tests considering a single shock in isolation often do not indicate significant problems. That was certainly true ahead of the Global Financial Crisis. Even without the benefit of hindsight, a severe but plausible “combined” stress test could have included high levels of deposit withdrawals; a consequent need to sell fixed-income securities to meet these withdrawals; and this coinciding with a period of higher interest, so selling these assets would immediately generate large realised losses (because of the fall in the price of these assets since they were first purchased). Such a combination of stresses was entirely predictable, not least because – as happened with SVB – the realised and unrealised losses on the fixed-income securities portfolio was itself one factor that contributed to the high level of deposit withdrawals.

Financial institutions need to consider such multi-dimensional stress tests and to be agile in changing their stress tests to test the sort of prospective risks (deposit withdrawals at a time of higher interest rates in this case) that might arise, as opposed to either (a) just running the same old stress tests over and over again, or (b) just running the tests prescribed by a supervisor/central bank, which may not pick up the specific risks facing an individual financial institution.

Lesson 6 – Recovery Planning

There has been a much greater emphasis on recovery planning by financial institutions since the Global Financial Crisis. To some extent this is closely linked to stress testing, since a starting point for recovery planning is to consider the adverse shocks that a financial institution might be exposed to, and then to consider what recovery actions could be taken to restore the institution’s financial position.

For SVB, one element of any recovery plan should have been its possible recovery actions in the event of the withdrawal of customer deposits. Would it have been credible to rely on a

recovery action based on replacing those deposits by wholesale funding, or by offering higher deposit rates to attract alternative funding? Possibly, in some circumstances, although this would have threatened the profitability of the bank. But this recovery action would not have been so credible if the deposit withdrawals occurred at a time of market-wide funding stress (as occurred to a very severe extent back in 2008), or when the bank was vulnerable to the impact of increasing interest rates on its holdings of fixed income securities.

So, as with stress testing, the arts of risk management and supervision require thinking through a combination of plausible but severe inter-linked potential shocks, specific to an individual financial institution.

“In preparing for battle I have always found that plans are useless, but planning is indispensable.”

Attributed to Dwight D. Eisenhower

Lesson 7 – Crisis Preparedness

The failure of SVB is yet another example of why it is so important to prepare for crises. Failures of financial institutions happen, and they can have painful consequences.

No doubt there will be many lessons from the failure of SVB for crisis preparedness and crisis management. Three of them are discussed here.

First, it is important for the relevant authorities to decide **in advance** the possible options for dealing with the failure of each financial institution. A massive – and potentially very costly for taxpayers – inconsistency arises if the authorities decide in advance that a financial institution is not systemically important, or that it can simply be placed into some form of liquidation or administration if it fails (with its uninsured creditors, be they depositors, insurance policy holders or investors, eventually being paid whatever is available from the eventual sale of assets) but then the authorities intervene when it does fail by providing government support, in the form of guarantees, capital injections, asset purchases, or whatever.

If you are going to treat a financial institution as being of systemic importance at its death, then you should do the same during its life. This reads across to all sectors – if governments are going to step in to protect policyholders and investors in some insurers and securities firms, then supervisors should impose tougher requirements up-front on the relevant financial institutions.

In the case of SVB, if the uninsured depositors were deemed worthy (for example because they were predominantly from a “strategic sector”) of protection through a government guarantee when the bank failed, or if a government guarantee was necessary to preserve financial stability, then the logic must be that the bank should have been designated as being of systemic importance in advance, and subject to additional measures designed both to limit the probability of failure and to enable an orderly resolution if a failure nevertheless occurred.

These measures for systemically important financial institutions typically include additional capital requirements; higher expected standards of governance and risk management; more intensive and intrusive supervision; and recovery and resolution planning.

Within resolution planning, this includes a requirement to hold sufficient “loss-absorbing capacity” (in the form of equity and subordinated debt) in advance of any failure, so that holders of equity and subordinated debt can be wiped out to absorb losses, and if necessary the subordinated debt can be converted into new equity to recapitalize a failing financial institution. Resolution authorities typically require this loss-absorbing capacity to be at least twice as large as the equity and subordinated debt held by SVB before it failed.

Second, be careful what you wish for. Following the Global Financial Crisis, in the United States the Dodd-Frank Act essentially designated banks with more than \$50 billion in assets to be systemically important, and therefore to be subject to the additional requirements noted above. But this was subsequently watered down, and the threshold was raised to \$250 billion. Which happened to be just above the largest amount that SVB’s assets ever reached.

Third, a government guarantee of deposits is good news for depositors. But if this is extended to all banks it creates a moral hazard – it enables an unscrupulous bank to raise limitless deposits just by paying slightly more than the market rate for deposits. The bank can then lend the money to its friends, family, political connections, and related companies. When the bank fails someone else (taxpayers or the surviving banks) bears the costs. And whenever governments bail out failing firms, the profits are privatized while the losses are socialized.

As Diamond and Dybvig (remember them from Lesson 3) showed 40 years ago, the more protection you give the more you have to regulate/supervise as a quid pro quo. But ultimately that becomes overly costly and inefficient. This just means that – as we have seen both before and after the Global Financial Crisis – the authorities continue to struggle to find the optimal mix of deposit insurance and regulation/supervision.

The SVB failure highlights the critical need for supervisory authorities to focus on crisis preparedness and crisis management. Planning, and running crisis simulation exercises, will reveal important lessons about what actions need to be taken both before and during a crisis.

More guidance for supervisors can be found in our Toronto Centre Notes, including those on:

[Risk-Based Supervision](#)

[Supervising Corporate Governance: Pushing the Boundaries](#)

[Recovery Planning](#)

[Resolution: Implications for Supervisors](#)

[Designing and Implementing a Systemic Financial Crisis Management Simulation](#)

[Lessons for Supervisory Authorities from Crisis Simulation Exercises](#)

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