



Silicon Valley Bank Failure



Welcome to this Special Edition of FIG in Focus


The failure on March the 10th of California-based tech-specialist lender Silicon Valley Bank (SVB) has left many in the industry asking how a bank which a few weeks before had reported exemplary asset quality, strong capital ratios, and an apparently highly liquid balance sheet could fail so spectacularly. Wasn't Basel 3 supposed to stop this sort of thing happening?

Adeva Risk Specialist Andy Berry looked at SVB's December 2022 annual report (10-K) and found some familiar themes with a couple of new twists.

Deposits:

The potential instability of SVB's largely corporate deposit base was apparent in their 2022 annual report. 30% of deposits were described as originating from money markets and 87% of balances were over the FDIC USD 250,000 deposit insurance limit. Large balances such as these are inherently unstable due to price and credit sensitivity. A reported 25% of SVB's deposits withdrew on March 9th alone.

There is another clue in SVB's deposit base though. Year-on-year balances from 2021-22 fell by USD 16 billion, indicating that the bank was experiencing outflows at least as long ago as December. SVB attributed this to a slowdown in its tech customers funding, and increased cash-burn of startups. This was directly linked to the rate sensitivity of SVB's depositors. As interest rates went up, these venture capital funded companies were less able to raise funding and needed to withdraw money to pay bills. This fall in deposits may help us place the next piece of the jigsaw.



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The FHLB Loan:

In late 2022, SVB accessed the San Francisco Federal Home Loan Bank (FHLB) for USD 15 billion using securities and loans as collateral. This seems unusual for a bank with USD 120 billion (57% of its balance sheet) in cash and securities. Why borrow from the FHLB instead of using some low-yielding liquidity to meet the deposit liabilities?

The FHLB loan, however, enabled SVB to report that its balance sheet had not fallen in value in 2022, and may have helped them to prop up their reported earnings.


The “Available for Sale” Portfolio:

Banks typically hold securities held for liquidity purposes under the so-called Available for Sale (AFS) accounting treatment. This method and its IFRS equivalent “Fair Value Through Other Comprehensive Income” is a sort of halfway house between the trading book and banking book. Assets are held at fair value, but unrealised changes in fair value are accounted directly to equity reserves, without impacting earnings. The unrealised part is important here: *if a loss is realised (i.e., by selling the investment), then the profit or loss is recognised in earnings.*

SVB’s AFS portfolio at the year-end was USD 26 billion and was largely comprised of “safe” medium term US Treasuries. However, rising interest rates had caused this portfolio to suffer unrealised losses of around 9% of par value. Therefore, if SVB had met its deposit outflows from AFS liquidity, it would have caused unrealised losses on its AFS portfolio to crystallise in its 2022 earnings.

The FHLB loan avoided the need to do this, allowing the USD 2.5 billion of unrealised losses to sit quietly against equity. In most banks, this would have had a negative impact on reported Basel III capital, but US regulations permit small and even mid-size banks to add this loss back to their calculation of Common Equity Tier 1 capital.

The losses on the AFS portfolio appear to have arisen partly as the result of a lack of hedging against interest rate risk. In SVB’s 2021 annual report over half of the AFS portfolio was the subject of fair value hedging to protect it against rising interest rates. By the end of 2022, these hedges appear to have rolled-off and not have been replaced. Bank management prioritised profitability over prudence.



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The “Held to Maturity” Portfolio:

Beside the AFS portfolio, SVB also held a portfolio of securities for investment purposes under “held to maturity” (HTM) accounting.


HTM accounting holds an asset or liability at its original cost unless it becomes credit-impaired. The rationale for this is that if the security is to be held until maturity, fair value fluctuations don’t matter.

SVB’s HTM portfolio was substantial. At USD 91 billion, it was 3.5 times the size of the AFS portfolio and occupied over 40% of SVB’s balance sheet. Portfolios of this type are usually employed by banks to generate yield on excess liquidity where deposits are greater than loan assets.

The asset mix of SVB’s HTM portfolio is also significant. Whereas the AFS portfolio was largely medium-term treasuries, the HTM portfolio was comprised largely of longer dated mortgage-backed securities. The longer duration of these securities exposed them to greater interest rate risk in a rising rate environment. The average valuation of these securities was around 83% of par (an unrealised loss of USD 15 billion at 31/12/22), with the HTM accounting treatment meaning that this paper loss was not accounted for in SVB’s equity.

Under normal circumstances this would not matter if the securities did not become impaired, they would be “held to maturity”; fair value fluctuations don’t matter. However, SVB’s unrealised losses on its HTM portfolio were so large that they would have wiped out 95% of its equity, and with the Fed signalling further rate rises, this was only going to get worse. On paper SVB’s liabilities were greater than its assets, or in other words it was insolvent.

Depositors were then faced with the age-old ‘prisoner’s dilemma’, that it’s not rational to start a bank run, but once one has started it is rational to join in. This is vividly illustrated by SVB, where the unrealised losses on both the AFS and HTM portfolio were more likely to be realised as more depositors demanded their money back.



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What can we Learn from SVB's Failure?

- Commentators have speculated that SVB's failure may be in part due to the exemptions on both capital and liquidity regulations that smaller US banks enjoy relative to larger institutions, or even whether Basel 3 liquidity coverage ratio (LCR) rule is adequate, given the speed and scale of their deposit outflows. Given the magnitude of SVB's unrealised losses and the size of its outflows, it is difficult in isolation to use it as a gauge to assess the calibration of a rule such as the LCR, but a couple of more general points in respect of regulation are pertinent:
 - US regulators have chosen not to implement the Basel interest rate risk in the banking book framework for banks with assets < USD 700 billion. Arguably the economic value of equity (EVE) metric required by Basel would have highlighted the risks that SVB was exposed to in its HTM portfolio.
 - Although SVB was not subject to Federal Reserve stress tests, it is unclear why internal stress testing and their supervisory review had not identified both the capital and liquidity risks inherent in the balance sheet, and at the very least required greater so-called "Pillar 2" capital requirements.
- The underlying cause of most bank failures is real or potential credit risk combined with unstable funding. Failures solely due to interest rate risk have historically been extremely unusual, the last comparable cases being in the early 1980s. SVB did however exhibit a classic reliance on concentrated and unstable funding sources.
- The unhedged AFS interest rate exposure can only be motivated by a desire to widen margins by avoiding the cost of hedging. Pushing the envelope in this way, in a highly competitive and low margin environment, was one of the hallmarks of failures from the 2007-8 crisis.
- Looking at the bigger picture though, SVB had other similarities to the 2008 crisis era. Back then funding mortgage-backed securities with money market instruments was the typical balance sheet structure of securities arbitrage conduits, structured investment vehicles, as well as certain banks (e.g. Germany's IKB). Many of these business models had evolved in an era of abundant liquidity but failed to survive first contact with tougher funding conditions in mid-2007. Throughout history, banks have failed through poor quality or illiquid assets, funded by volatile instruments, with poor risk management failing to identify or mitigate the risks in time when financial conditions get tougher.

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In this respect, even though SVB's losses occurred exclusively through interest rate risk, its failure was in many respects no different to those of 15 or even 150 years ago.

To quote former Wells Fargo chairman John Stumpf, *"Irrational lenders come and go - mostly they go!"*

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