How crazy was Silicon Valley Bank's zero-hedge strategy?

Not as nuts as you might think, but pretty nuts

The only perfect hedge may be in a Japanese garden, but Silicon Valley Bank could have done better than this

Robin Wigglesworth MARCH 17 2023

The most popular example of the fecklessness of Silicon Valley Bank is that it stupidly amassed a $124bn bond portfolio and then — even more madly — didn't hedge against the swelling interest rate exposure.

But is that right? FT Alphaville dug into the balance sheets of SVB and Credit Suisse for an ~~incredibly sad~~ geeky compare-and-contrast. The tl;dr is perhaps not quite as idiotic as a lot of people assume, but pretty dumb. Be warned, the following is acronym-heavy.

The first thing to remember is that SVB's bond portfolio was basically in two different accounting buckets. At the end of 2022 it held $91.3bn in a "held-to-maturity" portfolio — bonds you plan to hold on to until they are repaid — and $26.1bn in an "available-for-sale" portfolio, which is marked to market.

Here's a snapshot from SVB's end-of-2022 financial accounts.

(Dollars in millions, except par value and share data)	December 31, 2022	2021
Assets		
Cash and cash equivalents	$ 13,803	$ 14,586
Available-for-sale securities, at fair value (cost of $28,602 and $27,370, respectively, including $530 and $61 pledged as collateral, respectively)	26,069	27,221
Held-to-maturity securities, at amortized cost and net of allowance for credit losses of $6 and $7 (fair value of $76,169 and $97,227, respectively)	91,321	98,195
Non-marketable and other equity securities	2,664	2,543
Total investment securities	120,054	127,959
Loans, amortized cost	74,250	66,276
Allowance for credit losses: loans	(636)	(422)
Net loans	73,614	65,854
Premises and equipment, net of accumulated depreciation and amortization	394	270
Goodwill	375	375
Other intangible assets, net	136	160
Lease right-of-use assets	335	313
Accrued interest receivable and other assets	3,082	1,791
Total assets	$ 211,793	$ 211,308
Liabilities and total equity		
Liabilities:		
Noninterest-bearing demand deposits	$ 80,753	$ 125,851
Interest-bearing deposits	92,356	63,352
Total deposits	173,109	189,203
Short-term borrowings	13,565	71
Lease liabilities	413	388
Other liabilities	3,041	2,467
Long-term debt	5,370	2,570
Total liabilities	195,498	194,699
Commitments and contingencies (Note 21 and Note 26)		
SVBFG stockholders' equity:		
Preferred stock, $0.001 par value, 20,000,000 shares authorized; 383,500 and 383,500 shares issued and outstanding, respectively	3,646	3,646
Common stock, $0.001 par value, 150,000,000 shares authorized; 59,171,883 and 58,748,469 shares issued and outstanding, respectively	—	—
Additional paid-in capital	5,318	5,157
Retained earnings	8,951	7,442
Accumulated other comprehensive income (loss)	(1,911)	(9)
Total SVBFG stockholders' equity	16,004	16,236

Let's take the chunkier HTM portfolio first. Securities in the HTM basket can be carried at their nominal par value, because the assumption is that they are being held until they're repaid in full.

As the table below shows, most of SVB's $91.3bn HTM portfolio consisted of very-long-term, agency-guaranteed, mortgage-backed securities maturing in 10 years or more ($56.6bn to be exact).

The creditworthiness of this stuff is extremely high, but it's also very sensitive to interest rates (for bond nerds, the average duration of the HTM portfolio was 6.2 years).

	December 31, 2022									
	Total		One Year or Less		After One Year to Five Years		After Five Years to Ten Years		After Ten Years	
(Dollars in millions)	Net Carry Value	Weighted Average Yield	Net Carry Value	Weighted Average Yield	Net Carry Value	Weighted Average Yield	Net Carry Value	Weighted Average Yield	Net Carry Value	Weighted Average Yield
U.S. agency debentures	$ 486	1.91 %	$ 1	2.39 %	$ 118	2.50 %	$ 367	1.72 %	$ —	— %
Residential MBS:										
Agency-issued MBS	57,705	1.56	—	1.65	25	2.38	1,066	2.32	56,614	1.54
Agency-issued CMO - fixed rate	10,461	1.48	—	—	90	1.47	129	1.71	10,242	1.48
Agency-issued CMO - variable rate	79	0.74	—	—	—	—	—	—	79	0.74
Agency-issued CMBS	14,471	1.63	39	0.45	153	0.86	966	1.93	13,313	1.62
Municipal bonds and notes	7,416	2.82	29	2.26	235	2.48	1,362	2.74	5,790	2.85
Corporate bonds	703	1.86	—	—	115	1.72	588	1.88	—	—
Total	$ 91,321	1.66	$ 69	1.25	$ 736	1.90	$ 4,478	2.43	$ 86,038	1.63

Because of rising rates the *actual* market value of the HTM portfolio was about $76bn at the end of 2022, according to someone who has seen the details of the portfolio and shared them with FTAV — an unrealised loss of $15.1bn.

Yes, SVB didn't have any hedges on this bit. But doing so would arguably be nonsensical. Remember, the entire HTM portfolio is held at par, but the value of the hedge would obviously fluctuate with the market.

So if rates rise then a bank makes money on the hedge, but the bonds stay at par. If rates fall then they lose money on the hedge, but they can shift bonds from HTM to AfS and sell them at the higher price. That means it basically becomes a directional bet on interest rates that flows straight into the income statement, something that most banks abhor.

For example, Credit Suisse's HTM portfolio of Treasuries maturing in 1-5 years stood at a pretty minimal $992mn at the end of 2022. The market value was about $949mn, but there doesn't seem to be any hedge on here either despite the unrealised loss.

FTAV gathers that some big commercial banks often *do* hedge a bit of the interest rate risk anyway, just in case. But generally they just try to hold mostly shorter-term bonds to minimise the interest rate sensitivity.

That is something SVB definitely did not do — since ca 2018 they actually [added a *lot* of duration] by piling into 30-year MBS. But in practice, not hedging the interest rate risk on the HTM was probably not Silicon Valley Bank's biggest mistake.

However, let's turn to the AfS side. Unfortunately, here be dragons.

This is what SVB's AfS portfolio looked like at the end of 2022. As you can see, it was mostly Treasuries. Remember, these are carried at fair value, ie marked to market.

	December 31, 2022									
	Total		One Year or Less		After One Year to Five Years		After Five Years to Ten Years		After Ten Years	
(Dollars in millions)	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield	Carrying Value	Weighted Average Yield
U.S. Treasury securities	$ 16,135	1.49 %	$ 983	1.16 %	$ 14,373	1.43 %	$ 779	2.96 %	$ —	— %
U.S. agency debentures	101	4.15	—	—	33	4.47	68	4.02	—	—
Foreign government debt securities	1,088	2.12	101	1.06	52	2.29	935	2.21	—	—
Residential MBS:										
Agency-issued MBS	6,603	1.54	—	—	—	—	43	2.86	6,560	1.53
Agency-issued CMO - fixed rate	678	1.33	—	—	—	—	—	—	678	1.33
Agency-issued CMBS	1,464	1.89	—	—	326	2.21	1,138	1.84	—	—
Total	$ 26,069	1.56	$ 1,084	1.15	$ 14,784	1.46	$ 2,963	2.32	$ 7,238	1.51

That's pretty big. For comparison, Credit Suisse held "trading assets" with a market value of $70.5bn at the end of 2022 — it constantly buys and sells securities of all sorts on behalf of clients — but its actual AfS portfolio (of mostly corporate debt) stood at $860mn.

The AfS bucket is definitely where most self-respecting banks lugging around a big portfolio of bonds will hedge their interest rate risk. Otherwise, the income statement would bounce around according to whatever the market does from one quarter to the next.

SVB seems to have been aware of danger. Here's what CFO Daniel Beck told analysts in early 2021:

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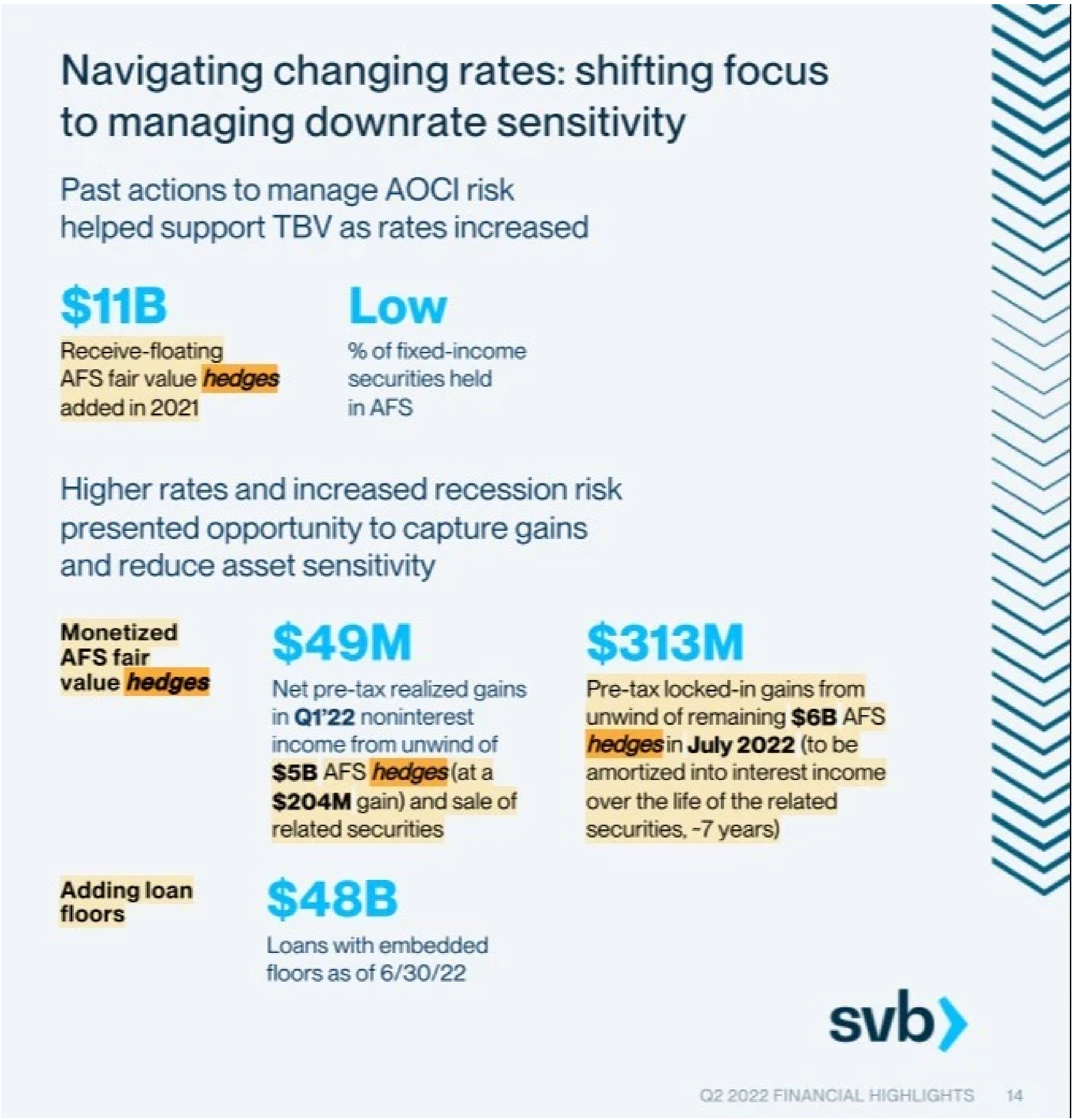
> . . . We’re certainly positioning at this point for the potential for higher rates. So in the quarter, we put on close to $10 billion worth of swaps on that available-for-sale portfolio. And we’re going to continue to do more to protect against that, to mitigate the impact of potential further rate movement.

And at the end of 2021, SVB’s financial accounts indicate that on the AfS side it held $15.26bn of interest rate swaps to hedge against the impact of rising rates on its big bond portfolio. So what happened?

Well it looks that weakening profitability in 2022 as the tech world made SVB do something really dumb. **In the first quarter, it unwound $5bn of AFS hedges to book a $204mn gain, and in the second quarter it dumped another $6bn of hedges to lock in a $313mn gain.**

Or as the bank put it in a July 2022 presentation to investors, it was “shifting focus to managing downrate sensitivity”. (H/T the FT’s Antoine Gara for the below slide):



You can see the shift here in SVB's 2022 annual report. **By the end of last year it only had $563mn worth of hedges left on its books.** For comparison, the notional value of Credit Suisse's interest rate swap hedges was $135.7bn at the end of 2022.

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Fair Value Hedges

To manage interest rate risk on our AFS securities portfolio, we enter into pay-fixed, receive-floating interest rate swap contracts to hedge against exposure to changes in the fair value of the securities resulting from changes in interest rates. We designate these interest rate swap contracts as fair value hedges that qualify for hedge accounting under ASC 815, *Derivatives and Hedging* ("ASC 815"). In 2021, we elected to account for a portion of the fair value hedges using the last-of-layer method as outlined in ASC 815. All hedges using the last-of-layer method were terminated in 2022. We record the interest rate swaps in the line items "accrued interest receivable and other assets" and "other liabilities" on our consolidated balance sheet. For qualifying fair value hedges, both the changes in the fair value of the derivative and the portion of the fair value adjustments associated with the last-of-layer attributable to the hedged risk are recognized into earnings as they occur. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item in the line item "investment securities" as part of interest income, a component of consolidated net income.

We assess hedge effectiveness under ASC 815 on a quarterly basis to ensure all hedges remain highly effective and hedge accounting under ASC 815 can be applied. In conjunction with the assessment of effectiveness, we assess the hedged item to ensure it is expected to be outstanding at the hedged item's assumed maturity date and the last-of-layer method of accounting under ASC 815 can be applied. If the hedging relationship no longer exists or no longer qualifies as a hedge per ASC 815, any remaining fair value basis adjustments are allocated to the individual assets in the portfolio and amortized into earnings over a period consistent with the amortization of other discounts and premiums associated with the respective assets. As allowed under ASC 815, we apply the "shortcut" method of accounting to a portion of our fair value hedges which assumes there is perfect effectiveness.

The following table summarizes the amortized cost basis of hedged assets that are designated and qualify as fair value hedges and the cumulative amount of fair value hedging adjustments included in the carrying value that have been recorded on our consolidated balance sheets as of December 31, 2022, and December 31, 2021:

		Cumulative Amount of Fair Value Hedging Adjustment Included in the Amortized Cost Basis of the Hedged Assets	
(Dollars in millions)	**Amortized Cost Basis of the Hedged Assets**	**Active**	**Terminated**
December 31, 2022			
AFS securities	$ 563	$ (2)	$ (290)
December 31, 2021			
AFS securities (1)	$ 15,260	$ (131)	$ 6

(1) These amounts include the amortized cost basis of closed portfolios used to designate hedging relationships in which the hedged item is the last layer expected to be remaining at the end of the hedging relationship. At December 31, 2021, the amortized cost basis of the closed portfolios used in these hedging relationships was $11.2 billion, the amounts of the designated hedged items was $6.7 billion and the cumulative basis adjustments associated with these hedging relationships was $83 million.

Essentially, to juice its P&L in the short term, SVB ambled into 2023 almost completely unhedged — in effect, a massive multibillion-dollar bet that interest rates were approaching their peak.

Ironically, it was *kinda* right! The 10-year Treasury yield peaked at about 4.29 per cent in October last year, and after declining sharply in January only went as high as 4 per cent in early March (and it has since slid back below 3.5 per cent because of the mess unleashed by SVB).

However, the Achilles heel of SVB's balance sheet was not the asset side, it was its liabilities. Specifically this:

Deposits

The following table presents the composition of our deposits as of December 31, 2022, and December 31, 2021:

	December 31,	
(Dollars in millions)	**2022**	**2021**
Noninterest-bearing demand	$ 80,753	$ 125,851
Interest-bearing checking and savings accounts	32,916	5,106
Money market	52,032	54,842
Money market deposits in foreign offices	51	696
Sweep deposits in foreign offices	664	969
Time	6,693	1,739
Total deposits	$ 173,109	$ 189,203

The decrease in deposits of $16.1 billion compared to December 31, 2021, was primarily driven by slowdown in public and private fundraising and exits as well as increased client cash burn, partially offset by flexible liquidity solutions that shifted off-balance sheet client funds on-balance sheet, all of which reduced the proportion of noninterest-bearing deposits. Noninterest-bearing demand deposits to total deposits decreased by 20 percentage points to 47 percent as of December 31, 2022, compared to December 31, 2021. Approximately seven percent and nine percent of our total deposits as of December 31, 2022, and December 31, 2021, respectively, were from our clients in Asia.

As of December 31, 2022, 53 percent of our total deposits were interest-bearing deposits, compared to 33 percent as of December 31, 2021.

Uninsured Deposits in U.S. Offices

As of December 31, 2022, and December 31, 2021, the amount of estimated uninsured deposits in U.S. offices that exceed the FDIC insurance limit were $151.5 billion and $166.0 billion, respectively. As of December 31, 2022, and December 31, 2021, foreign deposits of $13.9 billion and $16.1 billion, respectively, were not subject to any U.S. federal or state deposit

Gormlessly, SVB had amassed a stupendous pile of uninsured deposits, almost entirely in just one industry that was burning through its deposits as VC funding dried up.

Deposits are typically considered very stable, sticky funding, but in SVB's case it proved anything but. With money gushing out by last Friday and no way of selling unhedged HMT securities without realising an even bigger loss than the $1.8bn incurred when dumping most of the AfS portfolio on March 8, the FDIC had to come swooping in.

Bank balance sheets are a knotty business, and FTAV hopes we haven't mangled anything here. But if we have, let us know in the comments.

Credit Suisse's core problem clearly seems to be its stumbling business, and it has minimal exposure to higher rates. In contrast, SVB might narrowly be forgiven for not hedging more of its HTM book, but locking in low rates and leaving its AfS portfolio almost naked to bolster profits — despite a clearly unstable deposit base — looks like an asset-liability snafu that will become a cautionary tale for bank treasurers and regulators.

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