



BREACH OF TRUST: DECONSTRUCTING THE 2023 BANKING CRISIS

Into thin air....

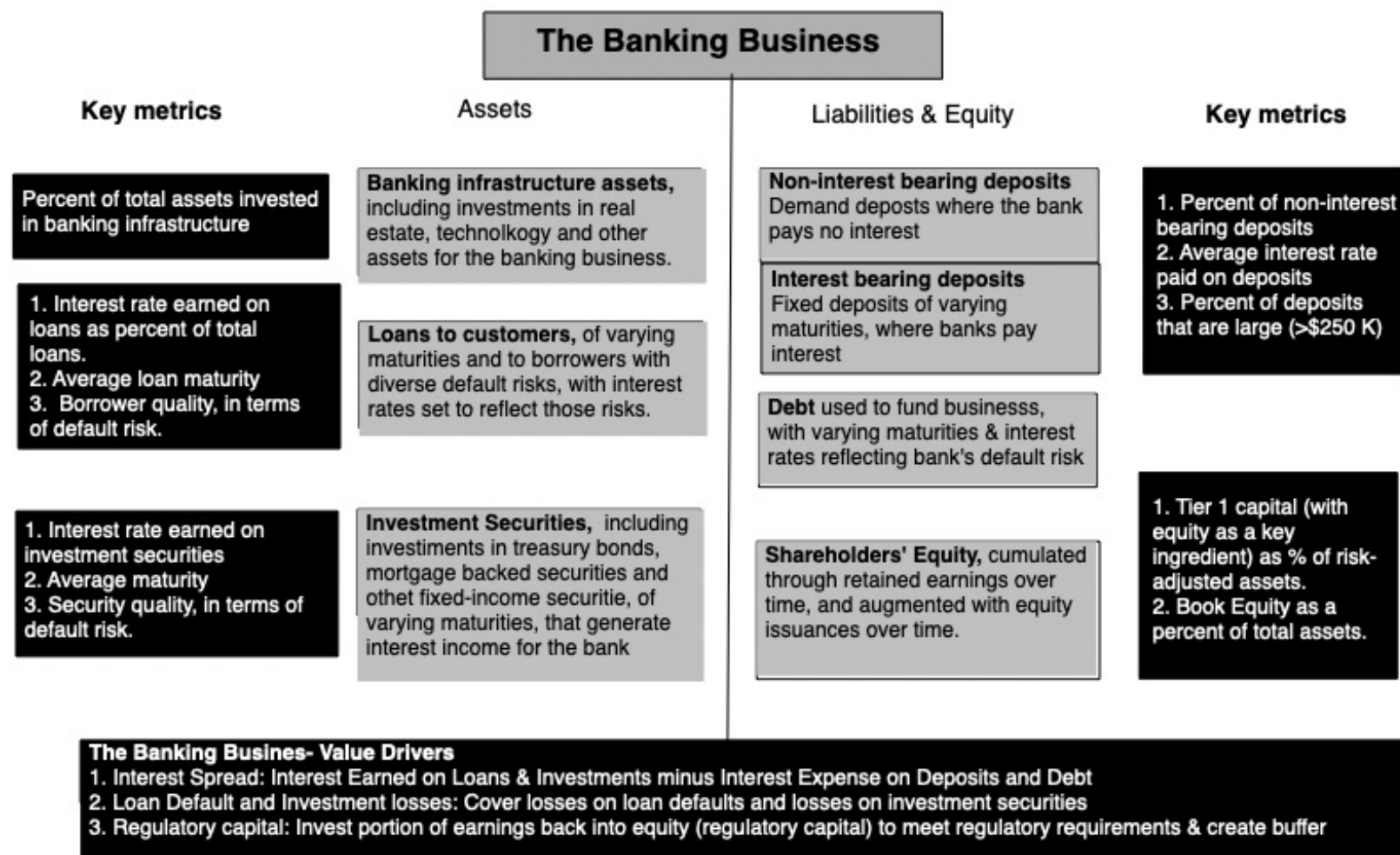
The Lead In....

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- In March 2023, the fall of Silicon Valley Bank shocked investors not only because it was unforeseen, but also because of the speed with which it unfolded.
- That failure has had a domino effect, with Signature Bank falling almost soon after, followed by Credit Suisse in April 2023 and by First Republic last week.
 - The banks that have fallen so far collectively controlled more deposits than all of the banks that failed in 2008, but unlike that period, equity markets in the United States have stayed resilient
 - Even within banking, the damage has varied widely across different segments, with regional banks seeing significant draw downs in deposits and market capitalization.
- The overarching questions for us all are whether this crisis will spread to the rest of the economy and market, as it did in 2008, and how banking as a business, at least in the US, will be reshaped by this crisis, and while I am more a dabbler than an expert in banking, I am going to try answering those questions.

The Banking Business Model

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The Regulatory Effect...

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- Banks have existed for longer than regulators, and for much of their existence, they self regulated, with the most successful banks holding enough equity capital to provide buffer against losses (on loans) in bad times.
- That self-regulation inevitably led to banking booms and busts, with large side costs for society, and with each crisis, the regulatory reach into banking has expanded:
 - During the civil war that the National Banking Act was passed, laying the groundwork for chartering banks and requiring them to maintain safety reserves.
 - The 1907 banking crisis, which JP Morgan famously stopped, gave rise to the Federal Reserve in 1913
 - *The Great Depression gave rise to the Glass Steagall Act, keeping banks in the banking business and preventing entry into riskier businesses.*
 - *In the 1980s, the Basel Accords globalized and formalized bank regulation, by introducing risk adjusted assets (to get riskier banks to hold more capital) and Tier 1 Capital (composed of equity and equity-like instruments).*
- The Basel accord and the new rules on regulatory capital have largely shaped banking for the last few decades, and while they have provided a safety net for depositors, they have also given rise to a dangerous game, where some banks arrived at the distorted conclusion that their end game was exploiting loopholes in regulatory capital rules, rather than build solid banking businesses.
- That behavior led to the 2008 banking crisis, and the troubled assets relief program (TARP) investing \$426 billion in bank stocks and mortgage-backed securities to prop up banks that had overreached, mostly big, money-center banks, rather than small or regional banks.

Good and Bad Banks

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	<i>Bad Banks</i>	<i>Good Banks</i>
Deposits	<ol style="list-style-type: none"> 1. Low % of non-interest bearing 2. High interest rate paid on total deposits 3. Sensitive deposits (quick to pull out or move from non-interest to interest bearing) 	<ol style="list-style-type: none"> 1. High % of non-interest bearing 2. Low interest rate paid on total deposits 3. Sticky deposits (slow to pull out or move from non-interest to interest bearing)
Equity/ Regulatory Capital	<ol style="list-style-type: none"> 1. Low Tier 1 capital as % of risk-adjusted assets 2. Gaming of regulatory capital 3. Low book equity, relative to total assets 	<ol style="list-style-type: none"> 1. High Tier 1 capital as % of risk-adjusted assets 2. No game playing on risk adjusting assets 3. High book equity, relative to total assets
Loans	<ol style="list-style-type: none"> 1. Concentrated borrower base 2. Interest rates low, given default risk of borrowers 3. Minimal or no buffers against loan losses 	<ol style="list-style-type: none"> 1. Diverse mix of borrowers 2. Interest rates on loans reflective of default risk 3. Good buffers against loan losses/defaults
Investment Securities	<ol style="list-style-type: none"> 1. Duration of investments mismatched to deposit duration 2. Low percentage marked to market. 3. Low liquidity 	<ol style="list-style-type: none"> 1. Duration of investments matches duration of deposits. 2. High percentage marked to market. 3. High liquidity

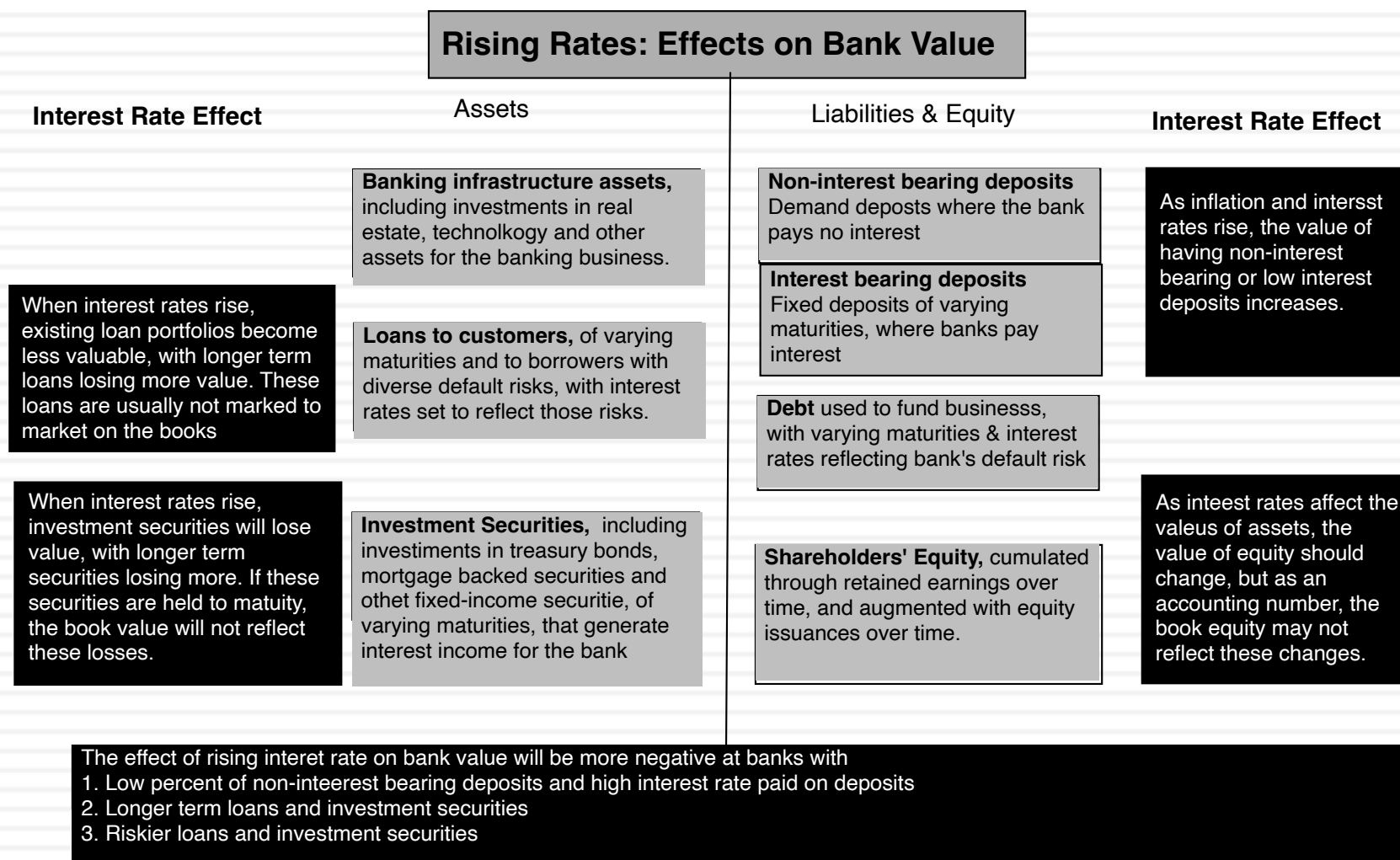
Macro Stressors

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1. *Recessions:* Through banking history, it is the economy that has been the biggest stressor of the banking system, since recessions increase default across the board, but more so at the most default-prone borrowers and investment securities.
2. *Overvalued Asset Classes:* While banks should lend money using a borrower's earnings capacity as collateral, it is a reality that many bankers lend against the value of assets, rather than their earning power. The defense that bankers offer is that these assets can be sold, if borrowers default, and the proceeds used to cover the outstanding dues. That logic breaks down when asset classes get overvalued, since the loans made against the assets can no longer be covered by selling these assets, if prices correct.

And rising inflation and interest rates...

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Silicon Valley Bank: The Start-up Bank

Silicon Valley Bank moulded itself as a bank for the start-up ecosystem, offering banking and wealth management services designed for start-up businesses and their VCs, founders and employees. Their cash deposits provided it with the funds to supply venture debt to young companies and grow with the tech business.

Start here

A Tech (and Viral) Clientele

SVB's clientele is virally connected, where word-of-mouth (or text) spread news quickly, followed by herd behavior. That allowed the bank to grow & seeded its destruction.

A Slow Down in Tech

Towards the later half of 2021, and into 2022, the public market for tech stocks cooled and investments in start-up tech companies became scarcer.

A Surge in Deposits in 2021

As start-up investments dried up, VCs found themselves with uninvested cash (dry powder) that they deposited at SVB. In 2021 & 2022, more of these deposits became interest-bearing.

Invested in Treasuries & MBS

With venture debt demand lagging, SVB invested the new deposits into long-term treasuries and MBS in 2021, trying to earn money on the yield-curve spread (short term rates close to zero, long term rates at 1.7-2%).

An interest rate shock in 2022

In 2022, the treasury bond rate rose from 1.51% to 3.88%, causing long term bonds to plummet in value, and short term rates also rose to >4%, creating higher interest payments on interest-bearing deposits.

An Accounting Choice obscures problem

Most of SVB's treasury and MBS investments were recorded as HTM (Hold till maturity), and thus were shown at face value, rather than the diminished market value.

Fair Value of Bonds

Using the book interest rate of 2.03%, and the maturity of 10 years, the fair value of these HTM bonds was only \$76.9 billion, about 16% below the balance sheet value.

Silicon Valley Bank: The Making of a Perfect Storm

	Assets				Liabilities		
	2020	2021	2022		2020	2021	2022
Cash	\$3,748	\$8,293	\$5,258	Interest-bearing Deposits	\$34,781	\$61,752	\$85,756
Investments (MTM)	\$11,285	\$28,156	\$29,867	Non-interest Deposits	\$67,201	\$127,451	\$87,353
Treasuries & MBS (HTM)	\$38,737	\$100,838	\$91,461	Debt & Leases	\$1,361	\$3,147	\$19,681
Net Loans	\$44,733	\$65,854	\$73,614	Other Liabilities	\$3,735	\$2,349	\$2,708
Net PP&E	\$386	\$583	\$729	Preferred Equity	\$340	\$3,646	\$3,646
Other Assets	\$16,622	\$7,584	\$10,864	Common Equity	\$8,093	\$12,963	\$12,649
Total Assets	\$115,511	\$211,308	\$211,793	Total Liabilities	\$115,511	\$211,308	\$211,793

MTM: Marked-to-Market; HTM: Hold till maturity (face value)

The Meltdown Trigger

The ingredients for the perfect storm have been around for a while, and the Fed and the financial press noticed, but the trigger for the meltdown was actually a poorly-managed attempt by SVB to liquidate a portion of its HTM bond holdings at a discount, while raising fresh equity to cover the loss.

Signature and First Republic.. Looking for patterns...

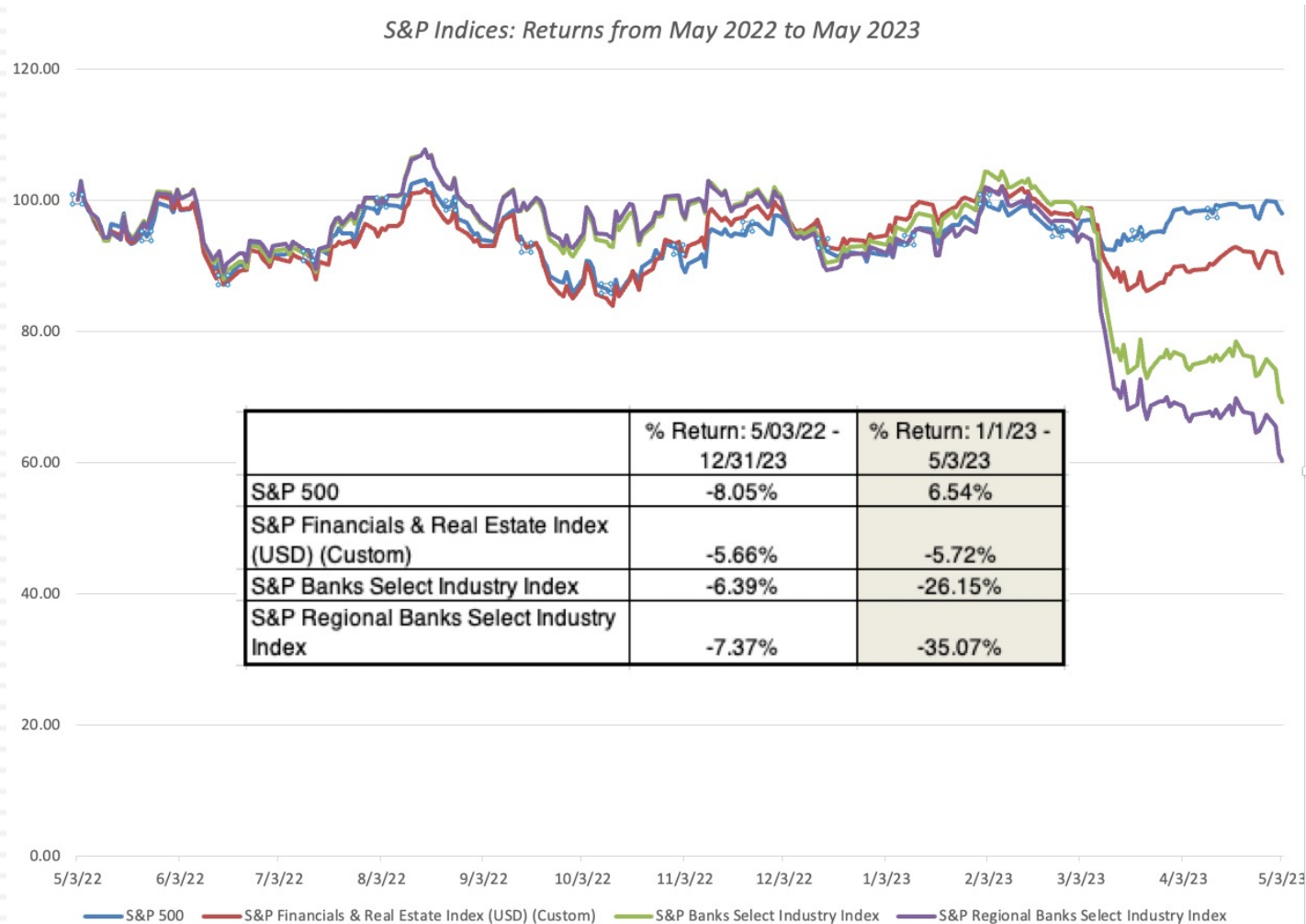
- With Signature Bank, the trigger for failure was a run on deposits, since more than 90% of deposits at the bank were uninsured, making those depositors far more sensitive to rumors about risk. The FDIC, in shuttering the bank, also pointed to "poor management" and failure to heed regulatory concerns, which clearly indicate that the bank had been on the FDIC's watchlist for a while.
- With First Republic bank, a bank that has a large and lucrative wealth management arm, it was a dependence on those wealthy clients that increased their exposure. Wealthy depositors not only are more likely to have deposits that exceed \$250,000, technically the cap on deposit insurance, but also have access to information on alternatives and the tools to move money quickly. Thus, in the first quarter of 2023, the bank reported a 41% drop in deposits, triggering forced sale of investment securities, and the realization of losses on those sales.
- In short, it is the stickiness of deposits that seems to be the biggest indicator of banks getting into trouble, rather than the composition of their loan portfolios or even the nature of their investment securities,

Determinants of Deposit Stickiness..

1. Depositor Characteristics: As we noted earlier, depositor age and wealth can be factors that determine stickiness, with younger and wealthier depositors being less sticky than older and poorer depositors.
2. Deposit age: As in other businesses, a bank customer who has been a customer for longer is less likely to move his or her deposit, in response to fear, than one who became a customer recently. Perhaps, banks should follow subscriber/user based companies in creating deposit cohort tables, with the stickiness rate in each group.
3. Deposit growth: Few banks have the capacity to double their loans, with due diligence on default risk, in a year, but these deposits, being recent and large, are also the least sticky deposits at the bank. In short, banks with faster growth in their deposit bases also are likely to have less sticky depositors.
4. Deposit concentration: To the extent that the deposits of a bank are concentrated in a geographic region, it is more exposed to deposit runs than one that has a more geographically diverse deposit base.

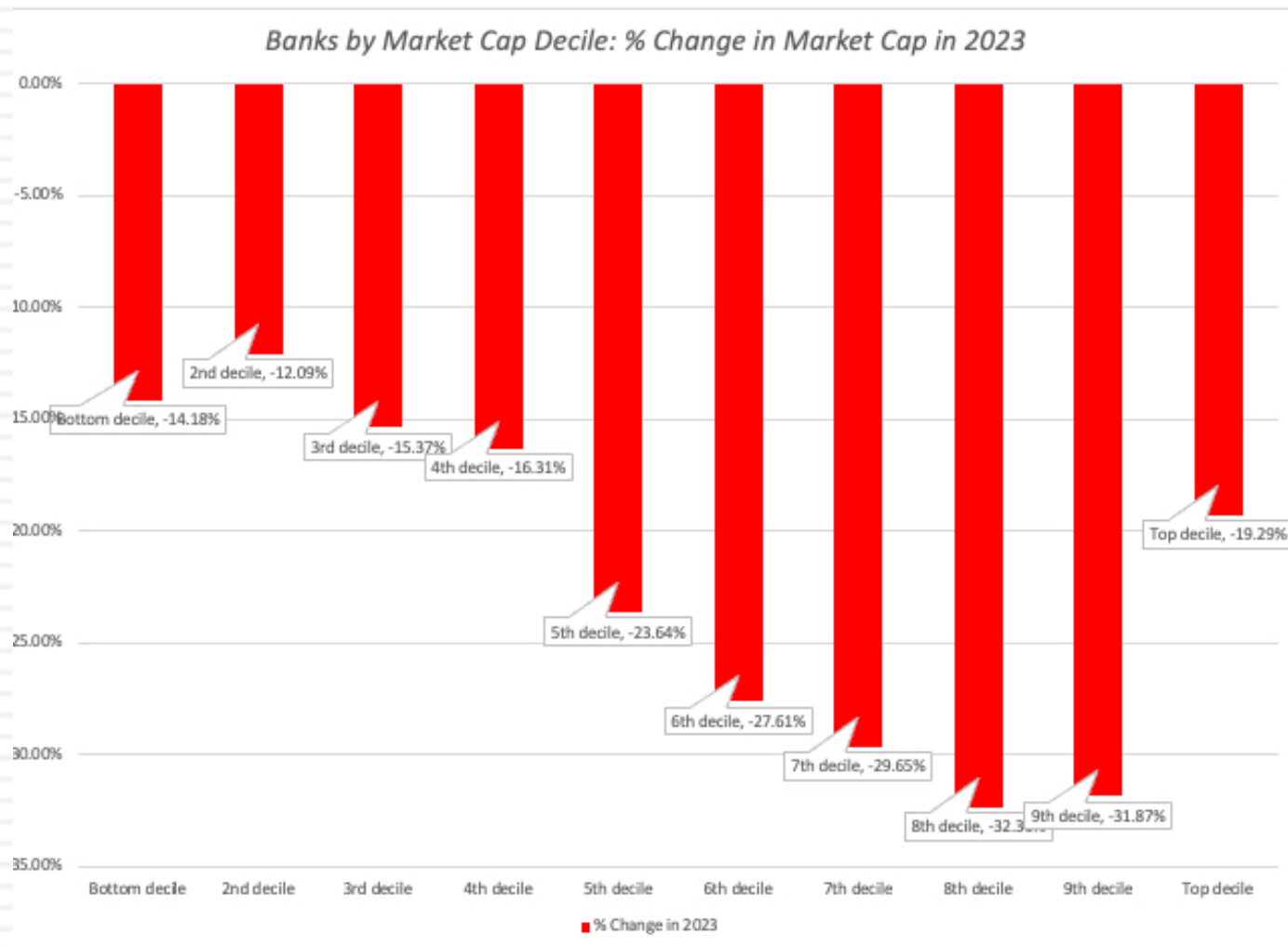
The Market Reaction to the 2023 Banking Crisis

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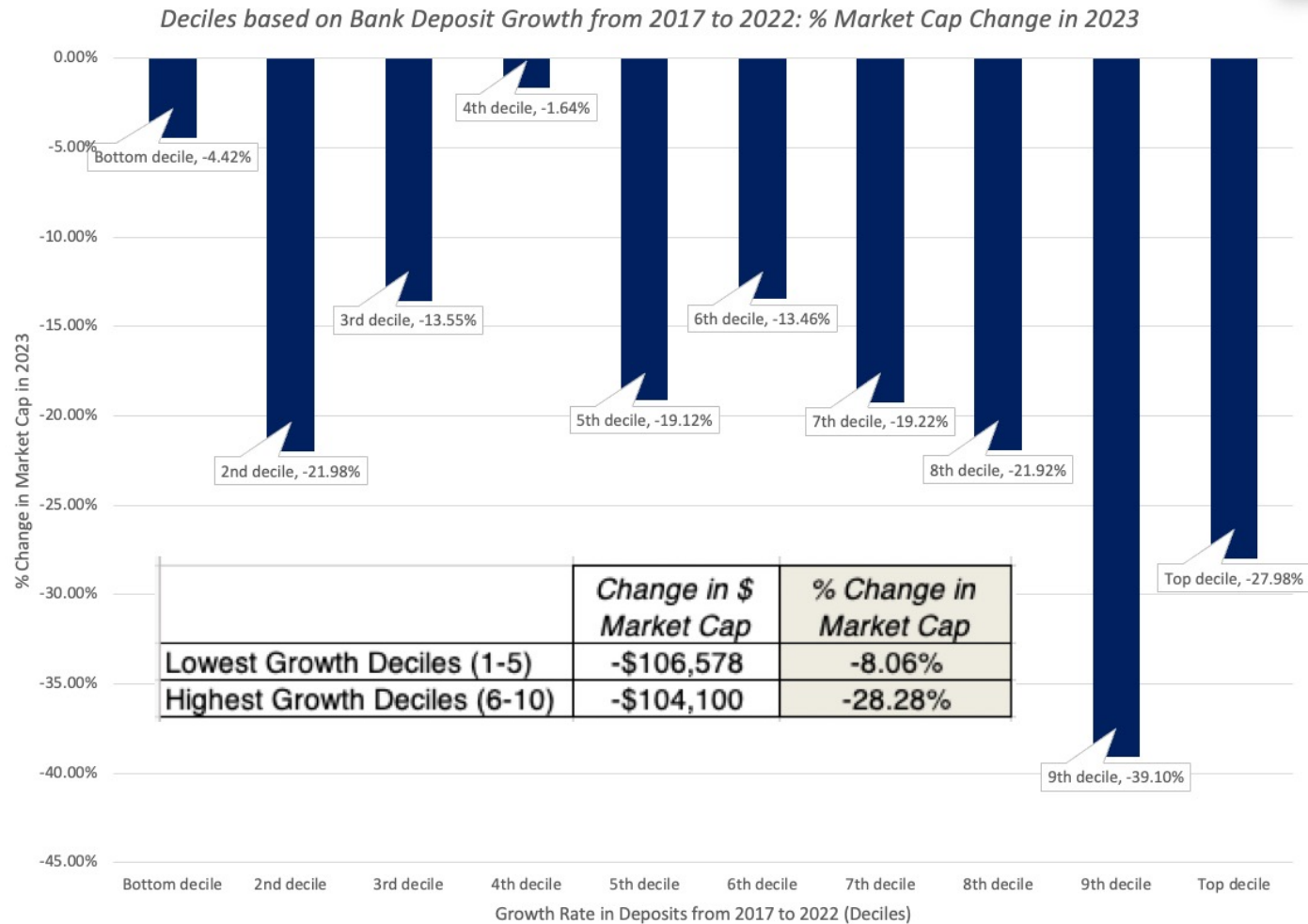
Big versus Small Banks

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Deposit Growth and Market Return

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Reading the tea leaves...

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1. Continued consolidation: 2023 bank failures will accelerate this consolidation, especially as small regional banks, with concentrated deposit bases and loan portfolios are assimilated into larger banks, with more diverse structure.
2. Bank profitability: For some, that consolidation is worrisome since it raises the specter of banks facing less competition and thus charging higher prices. I may be naive but I think that as banks consolidate, they will struggle to maintain profitability, and perhaps even see profits drop, as disruptors from fintech and elsewhere eat away at their most profitable segments. In short, the biggest banks may get bigger, but they may not get more profitable.
3. Accounting rule changes for banks: While I don't foresee a requirement that every investment security be marked to market, a rule change that will create its own dangers, I expect the rules on when securities get marked to market to be tightened.
4. Regulatory changes: The 2023 crises have highlighted two aspects of bank behavior that are either ignored or sufficiently weighted into current regulatory rules on banks. The first is duration mismatches at banks, which clearly expose even banks that invest in default free securities, like SVB, to risk. The other is deposit stickiness, where old notions of when depositors panic and how quickly they react will have to be reassessed, given how quickly risk whispers about banks turned into deposit flight at First Republic and Signature Bank.