RAPIDRATINGS®

Executive Summary:

Banking Turmoil and Q1 2023 Market Situation

The recent failures of Silicon Valley Bank (SVB) and Signature Bank have raised concerns about the financial health and viability of financial institutions, as well as the companies that rely on them.

This report explains the undercurrents that have caused the demise of these banks and further explores the implications for supply chains. It includes the following topics:

- ✔ Understanding the FHR
- ✔ Unpacking the turmoil at Silicon Valley Bank, Signature Bank, and First Republic Bank
- ✔ RapidRatings Banking Model
- ✔ Effects on supply chains

As you will find, these failures are not caused by systemic weaknesses that were seen during the global financial crisis, but instead are a combination of idiosyncratic risk (concentrated customer base and lax risk practices) and current macroeconomic conditions.

We continue to see inflationary pressures, a rise in interest rates, and an increased cost of doing business. This perfect storm of economic conditions has impacted companies worldwide and created a downward pressure on them. Private and smaller companies are more impacted than their public counterparts, given limited access to resources. Companies are increasingly using up their cash resources to fund their current operations. And, if reliant on external funding, they have to borrow at a higher interest rate.

Given the current state of uncertainty, understanding the financial health of your suppliers or vendors has become increasingly important. Financial health and the FHR will demonstrate the risk exposures you have in your supplier or vendor base. This gives you an opportunity to proactively engage with your suppliers to understand how they are navigating through the current macro problems.

Banking Turmoil and Q1 2023 Market Situation

The March 10, 2023 failure of Silicon Valley Bank (SVB), has intensified interest and scrutiny of the financial health and viability of financial institutions, as well as the companies that rely on them. Fortunately, the circumstances affecting SVB and other banks over the past few weeks are not caused by the underlying bank instability of 2008, and we're unlikely to experience the systemic failures that led to the Global Financial Crisis. However, there are real risks that the SVB failure highlights, and they are worth noting for risk managers.

Understanding the FHR

The Financial Health Rating ("FHR") is RapidRatings' proprietary and innovative measure of risk that estimates the financial strength and weakness of global public and private firms based on company specific Balance Sheet, Income Statement, and Statement of Cash Flow data, as well as the industry sector of the company. As shown on the right, the FHR is delivered on a scale of 0-100, with five color-coded Risk Categories.

Our research has made it clear that the profile of a healthy company varies from industry to industry. RapidRatings employs 24 different industry-specific models to capture the idiosyncratic behavior of companies in different industries and to produce ratings that provide apples-to-apples assessments of companies regardless of industry. We produce specialized reports for banks, financial diversified firms, and insurance firms to reflect the unique nature of their financial statements.

The FHR focuses on the profitability, efficiency, capital structure, liquidity, leverage, and earnings performance of companies. Of particular interest for banks are Capital Adequacy Ratios that determine if a bank has enough capital on reserve to handle a certain number of losses, before being at risk of becoming insolvent. They are defined as measurements of a bank's available capital expressed as a percentage of a bank's risk-weighted assets, which are primarily loans. As most bank failures are due to credit risk issues, Capital Adequacy Ratios are a key component in the Dodd-Frank Act of 2010. A bank is considered "well-capitalized" if -

- it has a Tier 1 Capital Ratio of 8% or greater, and
- a Total Risk-based Capital Ratio of at least 10%.

By these measures, Silicon Valley Bank (SVB) had strong Capital Adequacy Ratios and was considered to be at a minimal risk of insolvency due to credit risk losses.

SVB's failure is the first major one where the primary issue was not credit risk, but a duration mismatch between high quality assets and deposit liabilities. Being flooded with deposits from venture capital-backed companies primarily in the technology sector at a time of historically-low interest rates might have been more of a curse than a blessing.

Unpacking the Turmoil at Silicon Valley Bank, Signature Bank, and First Republic Bank

At the end of 2022, SVB was in a league of its own: a high level of loans plus long-term securities as a percentage of deposits, and very low reliance on stickier retail deposits as a share of total deposits. The bottom line is SVB carved out a distinct and riskier niche than other banks, setting itself up for large potential capital shortfalls in case of rising interest rates, deposit outflows, and forced asset sales.

The situation at SVB was caused by a few key factors:

1. SVB's primary clients were generally early-stage and growth-stage companies that had a tremendous amount of cash invested by a concentrated group of influential capital providers and venture capital firms. SVB loaned out some of these funds, but they parked a lot of the cash in treasury bonds and other investments with long maturities. Ultimately, SVB had a bond portfolio that was largely unhedged against interest rate increases. $91 billion of this was categorized as "held to maturity" (HTM) investments which do not get marked to market for gains/losses. $26 billion was categorized as "available for sale," (AFS) which is what the bank would sell to gain short-term liquidity if needed, which are funds that do get marked to market. Most banks hedge the interest rate risk on their AFS portfolios, but SVB was decreasing their hedges, not increasing them.

2. During 2022, depositors at SVB started withdrawing their funds not because they were worried about the viability of SVB, but because they needed the cash to deal with the inflationary pressure on their operations and the rising cost of capital. In addition, because the depositor base was so heavily weighted in one industry, technology, negative pressure on this industry created concentration risk for SVB. As tech firms came under pressure in 2022, their valuations decreased and venture capital firms became more cautious in investing in the sector, leading to less cash deposited at SVB rather than more.

3. Rising interest rates decreased the value of SVB's bond portfolio, leading to mark to market losses in the AFS account (and less problematically, unrealized losses in the HTM account). SVB sold some bonds at a loss and attempted to make up for the loss with new outside investment. When the market got wind of this, the run on the bank started, exacerbated by some of the venture capital firms telling their portfolio companies to get their cash out while they still could.

In hindsight, had SVB's Tier 1 Capital Ratio been recalculated with the assumption of immediate realization of unrealized securities losses, it would have fallen to below 1%. This shows the level of duration risk that SVB took in its investment portfolio during the deposit surge, how much was invested in low yields, and how under-hedged they were. Figure 1 shows the total unrealized losses on securities and year over year trend, as reported by FDIC on insured institutions. Industry wide, this unrealized loss has significantly increased in 2022, given interest rate hikes and duration mismatch.

The failure of Signature Bank on March 12, 2023, had an element of **contagion risk.** It notably was one of only a handful of banks allowing customers to deposit cryptocurrency (crypto) assets, a business it entered in 2018 and which helped turbocharge deposit growth in recent years. However, in the two days following the collapse of SVB, depositors at Signature Bank withdrew billions in cash as waves of concern spread about the liquidity position of the bank. Similar to SVB, Signature Bank had Tier 1 Capital and Total Risk-based Capital Ratios in excess of the regulatory limits and was not facing concerns related to credit risk losses.

Rounding out the March 2023 trifecta was First Republic Bank which received a $30 billion lifeline from a group of America's largest banks on March 17, 2023. The bank's problems underscored continued worries about the banking system in the aftermath of the collapse of SVB and Signature Bank. With a clientele focused on wealth management for high-net-worth individuals and corporate banking, First Republic Bank had large amounts of uninsured deposits above the $250,000 FDIC limit. That led many customers to exit the bank and put their money elsewhere, creating a problem for First Republic – it has to borrow money or sell assets to pay customers their deposits in cash. First Republic also had an unusually large 111% loan-to-deposit ratio at the end of 2022, meaning it has loaned out more money than it has in deposits.

The failures of SVB and Signature Bank, with total assets of $209 and $110 billion, respectively, represent the largest bank failures since Washington Mutual in 2008 with $307 billion in total assets at the time of failure. However, these three banks are outliers in the 563 bank failures since 2001. The next largest bank failure after Signature Bank was IndyMac Bank in 2008 with $32 billion in total assets. Excluding Washington Mutual, SVB, and Signature Bank, the average size of banks that failed since 2001 was $740 million in total assets. See table 1.

The majority of bank failures since 2001 were in 2008-2011 following the Financial Crisis when banks' balance sheets were heavy with toxic assets (i.e., subprime loans, mortgage-backed securities, collateralized debt obligations (CDOs) and credit default swaps (CDS). During this four-year time period, 414 banks failed, 74% of the total since 2001. The average size of these 414 banks was $1.6 billion in total assets, with Washington Mutual being the largest. Without Washington Mutual, the average size of the failed banks from 2008-2011 was $896 million. See table 2.

Our Bank Ratings

As we can see, bank failures, and especially large bank failures, are uncommon events. Historically, banks are stable and lower risk organizations. RapidRatings is currently tracking the financial health of 235 publicly traded banks in the United States that have released Q4 2022 financials. The average FHR of these banks is 50, in the middle of the Medium Risk zone (40-59). This is up three points over Q4 2021.

The majority of the current FHRs on these US publicly traded banks are in the Medium Risk zone, but the FHRs range from a low of 46 to a high of 59, which helps to distinguish the strengths and weaknesses of these banks. 14 of the Medium Risk banks had declines of 1-16 points in their FHR over the last year. 25 had no change in their FHR and the remaining 188 showed improvement in their FHR, with ten having 8-10 point increases in their FHR. The changes in the FHR over the past year also help to further differentiate the financial health of the Medium Risk rated banks.

Two of the banks are in the High Risk zone (20-39), with FHRs of 26 and 38. Six of the banks are in the Low Risk zone (60-79), with FHRs ranging from 60-69.

RapidRatings is continually evaluating the performance of the FHR, publishing default reviews every year that analyze the FHR on companies that did and did not default over the prior year. As bank defaults are rare occurrences, our Annual Default Reviews focus on corporate (i.e., non-financial) companies. Over the past five years, 92% of corporate companies that defaulted had Very High Risk or High Risk FHRs at the time of default, with an average of 25. A year in advance of default, the average FHR was 33, and three years prior to default the average FHR was 38, illustrating the forward-looking, predictive nature of the FHR.

As discussed above, the failures of SVB and Signature Bank, and the concerns surrounding First Republic Bank, were not related to credit losses, but were instead due to idiosyncratic issues at each of the banks. The most recent FHR on each of these banks is: SVB (52), SB (55), and FRB (50). We do not believe that the recent failures of SVB and Signature Bank, and the concerns related to First Republic Bank, are the start of a banking crisis. We do anticipate future regulatory changes for banks and the potential for increased M&A activity as weaker institutions are acquired by stronger ones. We are closely monitoring the current situation to identify potential enhancements that would improve the performance of the FHR model on banks and will make changes as appropriate. In general, the likely M&A activity will have a strengthening bias for most banks, as opposed to creating weakness in these institutions.

Implications for Supply Chains

From a supplier and vendor risk management perspective, one of the factors contributing to SVB's failure is how companies, especially private companies, are being impacted by inflation, rising interest rates, and tightening credit standards. The cost of doing business, including raw material costs, labor costs, and cost of capital continues to rise. This perfect storm is affecting companies in all sectors, not just startups and tech companies, and has resulted in increased pressure on companies, especially small or privately held entities who have less pricing power and less leverage to transfer their costs to their customers. Most of the supply base is typically composed of these private entities. This further increases your risk exposure and unexpected disruption to your business.

We are already seeing a deteriorating trend in the financial health of the companies we monitor.

That is why it is critically important for you to be understanding the financial health of your suppliers and vendors, and how well they are navigating these conditions.

We are also encouraging our clients to pay closer attention to these types of ratios, which are key contributors to the calculation of the FHR:

- **Profitability** – Inflation is taking its toll on profit margins; most notably private companies will have a more difficult time passing along increased costs to their customers.
- **Liquidity** – Look for companies with low levels of cash as a percentage of their total assets and ones with declining levels of cash. It is also important to identify companies with low and declining levels in their Current Ratio and Quick Ratio.
- **Leverage** – Focus on companies with high levels of debt, especially short-term debt that will need to be refinanced in the next 12 months in a rising interest rate environment (Figure 2). Private companies with weak or deteriorating financial health will probably have a harder time getting their debt refinanced and it will be more expensive if they do. As US Treasury Secretary Janet Yellen stated in testimony to the Senate Finance Committee on March 16, 2023, "If banks are under stress, they might be reluctant to lend. We could see credit become more expensive and less available."

We do anticipate an increase in the default risk of companies, especially private companies, in 2023. It is an important time to be **evaluating financial health** across key counterparties and to be engaged in proactive dialogue with these companies.

Appendix

Table 1 – Bank failures since 2001 by asset size.

Asset Size	Count	%	Total Assets (000)	Avg. Assets (000)
> 250 Billion	1	0.2%	307,000,000	307,000,000
100-250 Billion	2	0.4%	319,400,000	159,700,000
50-100 Billion	0	0.0%		0
10-50 Billion	8	1.4%	130,750,000	16,343,750
1-10 Billion	64	11.4%	164,886,700	2,576,355
< 1 Billion	488	86.7%	118,717,500	243,274
Total/Avg.	**563**	**100.0%**	**1,040,754,200**	**1,848,587**

Table 2 – Bank failures since 2001 by year.

Year	Count	%	Total Assets (000)	Avg. Assets (000)
2001	4	0.7%	2,358,600	589,650
2002	11	2.0%	2,705,400	245,945
2003	3	0.5%	1,045,200	348,400
2004	4	0.7%	163,100	40,775
2007	3	0.5%	2,602,500	867,500
2008	25	4.4%	373,588,800	14,943,552
2009	140	24.9%	170,909,400	1,220,781
2010	157	27.9%	96,514,000	614,739
2011	92	16.3%	36,012,200	391,437
2012	51	9.1%	12,055,800	236,388
2013	24	4.3%	6,101,700	254,238
2014	18	3.2%	3,088,400	171,578
2015	8	1.4%	6,727,500	840,938
2016	5	0.9%	278,800	55,760
2017	8	1.4%	6,530,700	816,338
2019	4	0.7%	214,100	53,525
2020	4	0.7%	458,000	114,500
2023	2	0.4%	319,400,000	159,700,000
Total/Avg.	**563**	**100.0%**	**1,040,754,200**	**1,848,587**

Figure 1 : Unrealized Gains (Losses) on Investment Securities 2008-2022 (Source: FDIC)

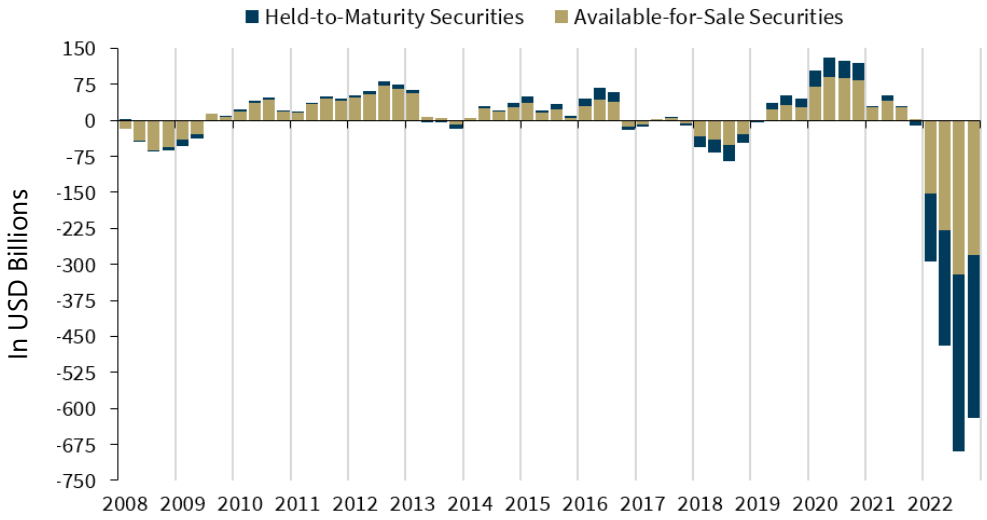

Figure 2: Interest Rate 2008 – Q1 2023 (Source: FRED Economic Data)

Figure 3 : Quarterly Change in Deposits 2008-2022 (Source: FDIC)