

US BANK FAILURES SPRING 2023

Part One: Banking stories for seventy-year-old János Száz¹

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ABSTRACT

In the first part of our two-part study, we summarize the parallel history of the four failed US banks, carefully analysing financial data from the pre- and post-COVID periods. The banks were unable to adequately manage the liquidity shocks caused monetary cycles (first easing, then brutal tightening). Their distorted business model, i.e., their reliance on closely affiliated customers and in particular uninsured deposits, left them vulnerable. But the panic itself was triggered by misinterpretation of HTM portfolios. Second part of the paper, on one hand deals with the in-depth analysis of risks and failures in risk management, on the other hand, discusses some widespread (mis)diagnoses and remedies.

JEL codes: E4, E5, G21, G28, G33

Keywords: bank crises, bank failures, bank panic, Silicon Valley Bank, Silvergate Bank, First Republic Bank

¹ Both of us have to thank *János Száz* for attracting us into the banking world. *János Száz* was *Júlia Király*'s university professor and then invited her to join the International Training Centre for Bankers established in 1989 and entrusted her with teaching liquidity management. He was also university professor to *András Mikolasek* and entrusted him with the translation of *BREALY-MYERS* and then lecturing. They have been working at the same chair ever since.

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1 INTRODUCTION

On Wednesday March 8, 2023, the tiny Californian *Silvergate Bank* (total assets \$11 billion) decided to sell its assets and close down its banking operations.

On Friday March 10, 2023, the Silicon Valley Bank (total assets more than \$200 billion, the 16th largest banking group in the United States) was closed by the California Department of Financial Protection and Innovation, and the Federal Deposit Insurance Corporation (FDIC) was appointed as receiver.

Two days later *on Sunday March 12* Signature Bank (total assets more than \$100 billion, the 29th largest bank in the US) was closed by the New York State Department of Financial Services, which appointed the FDIC as receiver.

A week later, *on Sunday March 19* in the last minutes of a long week-end of negotiations the Swiss authorities announced that UBS, the number one Swiss megabank, would take over the number two Swiss megabank the Credit Suisse (total assets more than CHF700 billion) for CHF3 billion in UBS stock.

Finally, *on May 1, 2023*, First Republic Bank (total assets more than \$200 billion, 14th largest bank in the US) was closed by the California Department of Financial Protection and Innovation, which appointed the FDIC as receiver.³

The five bank failures caused a panic on the financial markets. Bank share prices that had been ailing for some time started to plummet in spring 2023; major bank market indices such as S&P/TSX Composite Index Banks, the Dow Jones U.S: Banks Index or the MSCI World Bank Index fell by 10 to 15 percent on average. According to different blogs and media news, many analysts envisaged further major bank failures, a financial breakdown similar to the global financial crisis triggering a deep crisis in the real economy. The panic, however, was quickly over, share prices stabilised albeit not at the high level of early 2022 previous to the Ukraine-Russia war. At the time this study is completed, at the end of the summer of 2023, it looks as if - unlike the global financial crisis - the spring of 2023 was not the beginning of another global banking crisis but a short-lived panic that, however, offers some lessons.

The story of Credit Suisse (CS) was quite different from that of the four failed US banks. Its difficulties did not begin in 2023 or one or two years earlier than the miseries of the US banks, but much longer ago. The bank's name popped up in all major bank scandals of the ten years preceding the failure (*Walker-Morris, 2023*).

3 It is ironic that FRB had already been sold once during its history. Merrill Lynch acquired it in 2007 (in phase one of the global financial crisis), then in 2010, when Merrill Lynch was acquired by Bank of America, First Republic was sold to a group of private investors including chairman James Herbert. The bank once again became a public company via an initial public offering in 2010.

With its Russian partner, CS was the underwriter of the Mozambique tuna bonds for a commission much higher than the market rate (but the money received from the bonds had disappeared in the maze of the Mozambican political life). CS organized the securitisation of the receivables of the Greensill banking group specialising in financing value-chains (but in fact executing highly risky factoring transactions), then following the collapse of the bank, it had to compensate its clients for the impairment of the ABS-type bonds sold to them. CS happened to be one of the financiers of Archegos Capital specialised in the management of family funds operating with extreme leverage and had to book billions of losses after its failure. The CS was even involved in a money-laundering scandal in Bulgaria.

In the 2010s the bank's risk management was subordinated to business interests, there was no risk management culture or risk defence lines worth mentioning. A full change of management in 2022 when *Ulrich Körner* became CEO and *Alex Lehmann* bank president came too late. Although a radical refurbishment of the bank started, the spread of the panic appearing on the US banking market in March 2023 wiped out one of the oldest institutions of Europe with a history of over a hundred and fifty years. The bank's share price fell to its lowest level, its shareholders refused further capital increase and in the end, fearing a further spread of the panic and to avoid a repetition of the Lehman case in 2008, the government decided to merge Credit Suisse to UBS. The failure was the result of a distorted business model, a weak corporate management and the lack of risk management. The panic was simply the last bit triggering its failure. As a matter of fact, for professionals the bank's "death" seemed to be more interesting than the collapse itself (enforced merger by the government, i.e. a kind of bail out, certain CS contingent securities ('cocos') treated by regulators as Alternative Tier 1 Equity (AT1), were wiped out, while equity shareholders retained CHF3 billion... *Katalin MÉRŐ* described all that in details in an earlier issue of *Economy and Finance* (MÉRŐ, 2023).

We are rather focusing on the bank failures in the US. Our study is published in two parts. *In Section two of Part One* the pre-COVID period is described, and the financial indicators of the banks are analysed via a 2019' snapshot. *In Section three* the "Big Bang", i.e., the period from 2020 to 2022 as well as the path leading up to the bank failures is analysed.

In Part Two of the study to be published in the next issue of *Economy and Finance* we are going to analyse the risks and the different diagnoses and solution models devised in connection with the failures.

2 BANKS PRIOR TO COVID

The history of the four US banks is quite similar. Three of them were established in California in the 1980s (SVB 1983, FRB 1985 and Silvergate 1986), while Signature was founded much later in 2001 with its head office in New York. The first three banks developed slowly in the first 25-30 years of their history; their growth speeded up in 2008 after the global financial crisis. Signature, however, followed a dynamic growth path right from the start. It proudly reported in 2019 it had grown from a bank of a 50 million bank to a 50 billion bank. During its development, SVB was transformed into a financial group (SVB Financial Group, SVBGF), but the Californian bank remained the decisive entity in the group providing different financial services and having a British subsidiary too. Silvergate Bank operated a crypto exchange (Silvergate Exchange Network, SEN). FRB, on the other hand, was proud of its quite simple structure saying it was not a bank holding but a simple bank specialising in California.

Silvergate is the least interesting of the four banks. Not only because it is a miniature bank by American standards, but because its operations were quite one-sided; it specialised exclusively on the market of digital instruments. The crisis of the crypto market in the second half of 2022 was the core reason of Silvergate's failure. We will omit its detailed financial analysis.

The target segments of the other three banks were different. Prior to 2017, Signature mainly financed commercial real estate in a narrow geographical location. A radical change of its business strategy occurred in 2018, and the bank had gradually become the bank of venture capital funds and the tech industry, of companies mainly involved in the market of digital, particularly of crypto assets (*Shay, 2023*). Signature shares were one of the best performing bank shares in 2022 (!) because the bank had got deeply involved in the world of crypto markets, and as a result of a blockchain-based payment system it had developed, its clients could make business with each other in 24/7, even in cryptocurrency.

The profile of SVB was wider: it provided financial services to entrepreneurs and clients of all sizes and stages throughout their life cycles, primarily in the technology, life science/healthcare, private equity/venture capital and premium wine industries. Over 50 percent of SVB loans financed venture capital funds, i.e., it helped emerging companies indirectly by financing their capital investors. Over half of tech and healthcare enterprises supported by venture capital funds were client of SVB (*Becker, 2023*). The share of personal and mortgage loans was about 10 percent, provided mainly to the shareholders and executives of its client companies. Unlike Silvergate and Signature, only 2 percent of its clients were linked to the crypto world.

The business strategy of FRB was entirely different. Its business loans only amounted to barely 10 percent. It mostly targeted high-income families on the west coast, for whom it provided full scale services from preferential market-rate deposits through private banking services to preferential, low interest rate mortgage loans. The strategy of “low margins - high turnover” devised for the period of low interest rates caused the bank difficulties later when interest rates started to rise.

All the banks had a closed, concentrated and connected clientele network in the sense that in 90 percent the same people and companies were its deposit holders as its borrowers. The total number of their clients was a couple ten thousand, while European banks of a similar size have a couple of hundred thousand or even several million clients.

All three banks seemed to be really stable and successful. You should have a look at them in 2019 (*Table 1*).

Table 1
Key financial indicators of SVB, FRB and Signature Bank (2019-2022)

	SVB				FRB				Signature			
	2019	2020	2021	2022	2019	2020	2021	2022	2019	2020	2021	2022
	Volumes (USD billion)				Volumes (USD billion)				Volumes (USD billion)			
Total assets	71.0	115.5	211.3	211.8	116.2	142.5	181.1	212.6	50.6	73.9	118.5	110.4
Liquid assets	6.8	17.7	14.6	13.8	1.7	5.1	13.0	4.3	0.8	12.3	29.6	6.0
AFS securities	14.0	30.9	27.2	26.1	1.3	1.9	3.4	3.3	7.1	8.7	18.6	17.2
HTM securities	13.9	16.6	98.2	91.3	17.2	16.7	22.3	28.3	2.1	2.3	5.0	7.8
Securities	27.9	47.5	125.4	117.4	18.5	18.6	25.7	31.6	9.2	11.0	23.6	25.0
Loans	33.2	45.2	65.9	73.7	90.8	112.6	134.3	166.0	39.1	48.8	64.9	74.3
Deposits	61.8	102.0	189.2	173.1	90.1	114.9	156.4	176.4	40.4	63.3	106.1	88.6
Uninsured deposits*			166.0	151.0			116.7	119.5				
Equity	6.5	8.2	16.2	16.0	9.5	11.4	15.9	17.4	4.7	5.8	7.8	8.0
Net interest income	2.10	2.20	3.20	4.50	2.76	3.30	4.40	5.70	1.28	1.27	1.83	2.46
Profit after taxation	1.20	1.30	2.10	1.60	0.93	1.06	1.50	1.70	0.82	0.73	1.20	1.80
	Ratios (percentage)											
Non-deposit funding / liabilities	4%	5%	3%	12%	16%	12%	5%	10%	12%	7%	4%	13%
Liquid assets / TA	9.6%	15.3%	6.9%	6.5%	1.5%	3.6%	7.2%	2.0%	1.6%	16.6%	25.0%	5.4%
Securities / TA	39%	41%	59%	55%	16%	13%	14%	15%	18%	15%	20%	23%
AFS / securities	50%	65%	22%	22%	7%	10%	13%	10%	77%	79%	79%	69%
Deposits growth rate		65%	85%	-9%		28%	36%	13%		57%	68%	-16%
Loans growth rate		36%	46%	12%		24%	19%	24%		25%	33%	14%
Loan to deposit ratio	54%	44%	35%	43%	101%	98%	86%	94%	97%	77%	61%	84%
CET1 capital adequacy ratio	12.6%	11.0%	12.1%	12.1%	9.9%	9.7%	9.7%	9.2%	11.6%	9.9%	9.6%	10.4%
Return on assets (ROA)	1.80%	1.39%	0.84%	0.76%	0.88%	0.82%	0.89%	0.85%	1.20%	0.87%	0.95%	1.15%
Return on equity (ROE)	20.0%	16.7%	17.1%	10.0%	10.6%	10.6%	12.2%	11.6%	12.8%	10.8%	13.8%	17.6%
Net interest margin (NIM)	3.51%	2.67%	2.02%	2.35%	2.83%	2.72%	2.67%	2.65%	2.71%	2.55%	1.97%	2.23%

Note: * For SVB: uninsured deposits recorded in US institutions only

Source: Banks' Annual Reports

In 2019, the interest margin of all three banks was high, that of SVB was extremely high at 3.51 percent. It seems quite absurd in hindsight that in 2019 the market “punished” SVB with share price cut because its interest margin stagnated rather than increased in a low interest rate environment.

All three banks had excellent profitability indicators too; ROA at around 1 percent is considered very good on developed bank markets. Their financing structure was also proper: the loan to deposit ratio was usually below 100 percent with FRB and Signature (the two banks with a high ratio of loans) although FRB surpassed it slightly from time to time. The indicator of SVB was much better at 54 percent.

All three banks primarily financed their operations from deposits. Wholesale funding ratio was 16 percent for FRB, 12 percent for Signature and a mere 4 percent for SVB, in other words, none of them was characterised by funding exposure to the financial markets or excessive lending prior to the global financial crisis. However, their deposit structure was specific because of the closed and concentrated clientele: the ratio of uninsured deposits significantly exceeded the average of banks belonging to a similar group (for instance, 85 to 90 percentage in SVB and Signature Bank).

Remember: before the global financial crisis banks’ portfolios were full of low credit quality CDOs. On the contrary, in all three banks, security portfolio it mainly included treasuries, agency papers and MBS of actually zero credit risk, i.e., it was a safe portfolio. Both the analysts and the Supervision regarded the security portfolios of these banks to be an example of stable banking operations.

As far as the asset structure of SVB was an outlier with high share of securities and low share of loans, that of Signature Bank was mostly and that of FRB fully equal to the structure of the peer group (Fed, 2023). All three banks had excellent loan portfolios, the volume of non-performing loans and risk expenses remained below 1 percent for each. Their clients delivered repayments reliably and stably even during the COVID crisis. Although both Signature and SVB did offer their clients risky loan products from time to time, no major credit risk incident can be found in the history of the banks. All in all, the loan portfolios were clean, credit risk was low. It is true despite the fact that after their failure the buyers heavily devalued the loan portfolios of the banks, but it happened because of the lack of special client knowledge and the market situation rather than due to any fact of credit risk to be seen in the figures.

The capital position of the banks was stable, their CET1 ratio was 10 percent (above the peer group), while their leverage ratio was high (8-10 percent).

Riskless securities, riskless and profitable loan portfolio, stable financing structure relying on customer deposits, excellent marks by the Supervisors. These were the merits *Greg Becker* the visionary CEO of SVB referred to in his presentation

on 8 March 2023, one day before the collapse of the bank. However, the CEO described in vain how SVB as “*a trusted financial partner of the global innovation economy*” would break out of the crisis of the moment (SVB 2023). Not only his shareholders punished the bank by pushing its market price close to zero, but also its deposit-holders by withdrawing \$42 billion, one-third of the total deposit portfolio on 9 March 2023. How could it happen that not only SVB but also Signature and FRB appeared on the market in March 2023 as risky loss-making businesses with their share price plummeting, which drove their clients to withdraw 20-30-40 percent of deposits, one-third of the whole portfolio, in the time frame of a few days? How could those banks fail in almost a matter of minutes?

3 THE BIG BANG: 2020-2022

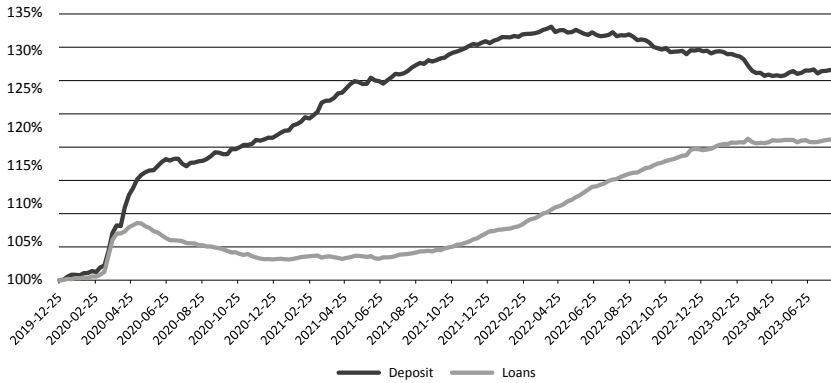
The life of banks basically changed in 2020. The change was not directly triggered by COVID but the response of economic policy makers to the COVID, i.e., fiscal and monetary easing. The evident macro-consequences of easing policy was the accelerating inflation, which proved to be not a temporary, but a persistent phenomenon. The Fed reacted with a sharp increase of interest rates, which cooled the economy and caused an immediate recession in the most dynamic sectors, in particular in the tech industry. Digital asset related companies and other tech enterprises first enjoyed the overwhelming subsidies of the COVID-era, then suffered of the restrictive policies. These three main factors are analysed in *Section 3.1*, then their effects on the investigated banks are presented in *Section 3.2*.

3.1 Changes in the economic environment

The first factor was the American fiscal and monetary easing because of the COVID, which surpassed European measures by far, as a result of which liquidity in the economy expanded by 30 percent per year (measured by the M4 Divisia index, *Goodman*, 2021). Not surprisingly, the total deposits of US banks dynamically increased in parallel, by 21.8 percent in 2020 and 11.4 percent in 2021. Deposit increase halted in April 2022 when the Fed started to tighten. Till Q12023 the average decrease of deposits was 1 percent (*Figure 1*). In Europe the fluctuation was much more moderate with less sharp increase.⁴

4 <https://www.euro-area-statistics.org/banks-balance-sheet-deposits?cr=eur&lg=en>

Figure 1
Deposits and Loans of US commercial banks (2019 = 100)



Source: Fed

<https://fred.stlouisfed.org/series/DPSACBW027SBOG#0>

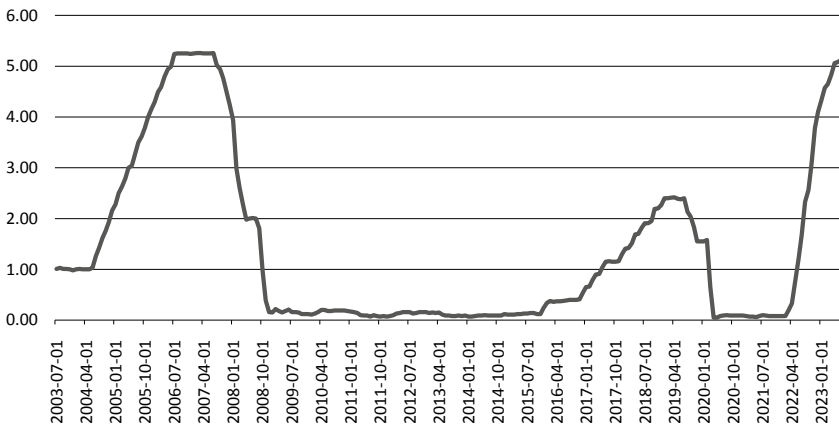
<https://fred.stlouisfed.org/series/TOTLL>

When the Fed started to tighten, and the abundant liquidity disappeared, a “shadow central bank” acted as the lender of last resort of the squeezed banking sector: the FHLB. The network of Federal Home Loan Bank (FHLB) was established in 1932 after the big crisis to make mortgage lending more secure. It is a government sponsored enterprise (GSE) similar to Fannie Mae and Ginnie Mae with an assumed implicit government guarantee. The FHLB collects funds from the wholesale market and provides wholesale loans to its members. In the event that the borrowing member becomes insolvent and goes into receivership, the lending FHLB has a (statutory-based) super-lien on the borrower’s assets — and thereby subordinates all other claimants. Originally, members were savings and loan institutions, however, later due to relaxed regulations any financial institution could join. Thus, there were almost 6500 members in early 2023 that had easy and cheap wholesale funding through the FHLB. The volume of mostly short-term FHLB loans increased from less than \$400 billion in March 2022 to \$1045 billion in a year (Acharya et al., 2023:193). It really looked as if a second, shadow-central bank had been operating in the country. However, while “the Federal Reserve plays a critical role in financial stabilisation as the lender of last resort, in contrast, the FHLB system ... plays a destabilising role, keeping dying institutions artificially alive and increasing the ultimate costs of their failures” (Cecchetti et al., 2023).

The second factor from April 2022 has been the brutal tightening of the Fed, unprecedented in the past twenty years. Before the GFC in 2004-2006 the Fed increased the policy rate gradually from 1 percent to 5.25 percent. During the GFC

the interest rates rapidly fall to 0.25 percent and did not change till December 2015. Then, during the previous tightening cycle 2015-2018 the policy rate was increased gradually up to 2.5 percent. In March 2020 the Fed started to loosen the monetary conditions, and the target rate fall to 0.25 percent. During the second, actual tightening cycle of 12 months from 2022 March – 2023 March policy rate increased from 0,25 percent to 450 percent, i.e., by 425 basis points⁵ (Figure 2). So, the three cycles of interest rate increase are spectacularly different: 425 basis point in the span of 2 years before the global financial crisis, 200 basis points in the span of 3 years after the crisis beginning from 2015 and 450 basis points a year currently (unfinished). Nothing like this has happened since the famous *Volcker* shock. One of the consequences of the tightening was the sharp decrease of fixed rate bond prices and repeated disturbances on the treasury market.

Figure 2
Interest rate cycles of the Fed 2003–2023



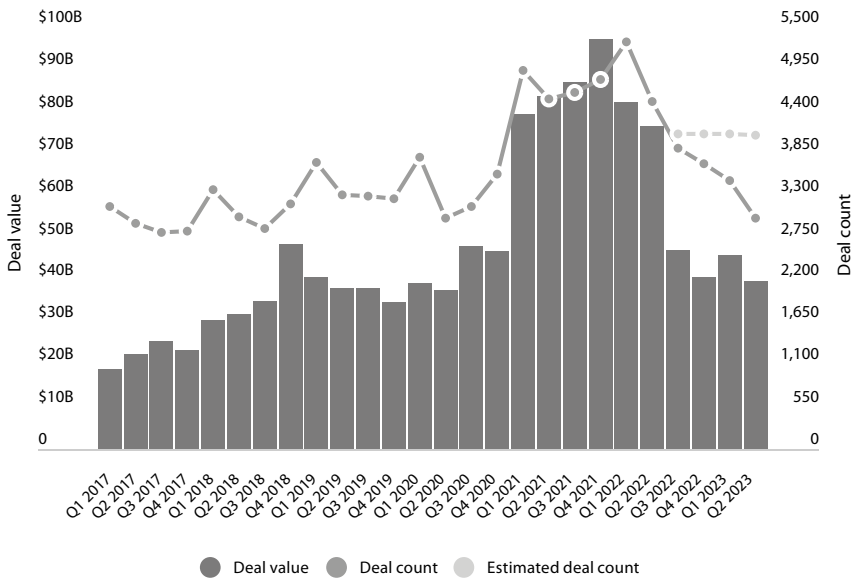
Source: Fed
<https://fred.stlouisfed.org/series/DFEDTARU#o>

The third factor the banks had to deal with was the sudden rise and then fall of the investments made by venture capital funds, which closely followed the fluctuations of the tech market, of digital instruments and the start-ups (Thorne, 2023). The fluctuation of the investments had a direct impact on their target market;

⁵ The increase has continued after the failure, the Fed fund target rate was 5,5% in early September 2023.

the liquidity and profitability of tech companies, start-ups and the enterprises of digital assets fluctuated similarly.

Figure 3
Venture capital investments 2017-2023



Source: <https://pitchbook.com/news/articles/venture-monitor-first-look-q2-2023>

3.2 Banks in the Big Bang

All the three macroeconomic factors analysed above impacted the investigated banks albeit to different degrees as it is clear from the financial statements (Table 1).

Liquidity boom and boom of the tech industry during the COVID discussed above resulted in a much higher than average deposit inflow both in SVB (65 percent growth of deposits in 2020, and 85 percent in 2021) and Signature (57 percent and 69 percent respectively) and a slightly higher than average in FRB (28 percent and 26 percent, respectively). A real boom occurred in tiny Silvergate bank not discussed in detail yet. Its deposits increased from \$1.8 billion to \$14.3 billion from 2019 to 2021, which illustrates well the extreme expansion of banks close to the tech industry. The increase of deposits was due to existing corporate and retail clients concentrated both by sector and geographically. They deposited

in the banks their surplus liquidity, which significantly increased as a result of fiscal easing 2020-2021 (Becker, 2023). The banks regarded the inflow of deposits as long-term sources and failed to prepare themselves for a possible rapid withdraw of funds. The high risk of rapid increase of uninsured deposits was neglected, as well. The share of uninsured deposits was 93.8 percent in SVB, 89.3 percent in Signature and 67.3 percent in FRB at the end of 2022, which catapulted them to the front in the ranking of uninsured deposits. However, a high ratio of uninsured deposits was not characteristic of regional banks only. For instance, FRB was preceded by Citibank (73.7 percent), State Street (91.2 percent) and several other large banks (S&P 2023). That particular risk, however, was not presented as a risk factor in the annual reports of the banks, what is more, uninsured deposit portfolios had not been published at all before 2021 (that is why they are not included in our Table). European banks' annual reports do not provide that information, either. At his Parliament hearing, the head of the European Banking Supervision simply said for reassurance the average ratio of uninsured deposits was lower in Europe (Enria, 2023).

Lending could not expand at the rate deposit did, since due to the monetary and fiscal tightening both corporate and retail sectors expanded without relying on loans. Loans in the commercial banking sector expanded by 3 percent in 2020 and 4 percent in 2021 lagging far behind the growth of deposits (cf. *Figure 1*). Thus, loan/deposit ratio declined, share of cash and securities increased in the balance sheets. In 2020-2021 to invest in treasuries or agency papers seemed to be a very cautious, riskless strategy on the part of banks (Kinder et al., 2023). The extra risk of the rapid growth of deposits did not appear either in the internal analyses of the banks or in the supervisory reviews.

Everything changed after the Fed first tightening decision in March 2022. In Silvergate, the miniature bank, deposit outflow was 60 percent (!) in 2022, which pushed the bank close to insolvency. The reduction of deposits was more moderate in larger banks: 16 percent in Signature and 9 percent in SVB while in FRB, which was not so close to the tech industry, deposits still increased by 13 percent in 2022.

The banks losing their deposits resorted to their usual form of defence: mitigating lending, gradually cutting back credit lines, reducing the size of their securities portfolio and involving wholesale funds. FRB – being far away from the digital market scandals - was the only one which had a growing deposit portfolio even in 2022, it could also increase its lending and was not forced to downsize its securities' portfolio, while the share of wholesale funding declined. On the other hand, the rate of lending expansion radically slowed down in SVB and Signature, and SVB significantly cut back its credit lines. Wholesale funds slightly increased in

Signature and radically in SVB. The wholesale funds were mainly provided by the “shadow central bank”, FHLB.

Although the ratio of non-interest-bearing demand deposits declined in all three banks in 2022, the moderate increase of interest rates on the liabilities side in Signature and SVB was offset with the dynamically increasing interest income from floating rate loans. In the SVB the other reason of interest income increase was that SVB rearranged its securities portfolio into longer-maturity, higher-interest bonds realising in that way some loss unrealised earlier (at the beginning of 2022 the market accepted it without the reduction of share prices). The business policy of FRB resulted in stagnating interest margins since most of its loans were fixed-rate mortgage loans while non-interest-bearing deposits made up 30 percent of all deposits. Its interest income moderately increased but not at the rate as that of the other two banks. So, interest income increased in all three banks due to rising interest rates.

No matter how nicely profitability indicators evolved, the market solely focused on the so called non-realised losses. Securities are classified whether they are hold to maturity (HTM) or available for sale (AFS) ones. *AFS securities* should be booked at market value, however, the unrealised loss is part of the other comprehensive income (OCI) and does not modify the regulatory capital. *HTM securities* on the other hand need not be revalued, they are accounted at amortised value. Thus, increase in interest rates reduces the value of the AFS portfolio but not that of an HTM portfolio, and unrealised losses do not affect the regulatory capital in either case. This accounting rule is based on a logical economic reasoning: deposits are not revalued if interest rates change, they are accounted at nominal value. It would be worthwhile to compare banks and investment funds: assets of investment funds are accounted at market value, however, their liabilities, the investment-units (often considered as liquid as bank deposits) are accounted at market value, as well. If banks' deposits are to be marked to market, then all assets should be marked to market. Bank deposits, however, always pay their nominal value since they are considered as private money. That is why HTM securities are not marked to market either. On the other hand, if - for any reason - a bank is forced to sell HTM securities, the whole portfolio must be reclassified into AFS, and marked to market. This asymmetry is the peculiar feature of financial institutions.

Signature Bank classified 80 percent of its bonds into AFS all along, so its non-realised loss settled in OCI quickly grew, nevertheless, it was much less than the banks equity. FRB kept a mere 10-15 percent AFS ratio, so it hardly had any loss according to accounting rules. SVB reclassified its AFS securities into HTM when deposits flew in fast in January 2021, so the ratio of AFS fell back from 60-70

percent to 22 percent. Its high HTM ratio protected the bank from a fast change in the value of its securities portfolio at the time interest rates increased quickly.

All in all, in the financial statements of the banks (Table 1), no mortal wounds or the signs of an unavoidable failure can be detected. Their capital position did not deteriorate in 2020-2022. All three banks were profitable. The profitability of FRB remained stable, that of Signature, in fact, improved, while that of SVB declined but still remained relatively high. Following a slight decline, the interest margin of all three banks increased to above 2 percent. The ratio of liquid assets was higher than before the big boom. All three continued to build up a secure portfolio.

Nevertheless, the reason why the panic occurred was not the relatively weak risk management culture of the banks - to be analysed in Part Two of our study - but because of a newspaper article that blurred the difference between AFS and HTM portfolios. Considering the extremely fast interest rate increase by the Fed as well as the size of deposit outflows from the banks, investors did not only analyse the losses realised on the sale of securities or the non-realised loss reported in OSI on the AFS portfolio, but they also contemplated the joint latent change in value of AFS and HTM bonds irrespective of the nature and purpose of the investment. According to an analysis published in *Financial Times* on 22 February 2023: “But that also meant that at the end of last year the “held-to-maturity” assets were valued at their purchase price of \$91bn on SVB’s balance sheet, rather than their \$76bn market value. The unrealised \$15bn loss disclosed by SVB is almost as much as the group’s \$17bn market capitalisation, and greater than the total profits reported by the bank over three decades.” (Kinder et al., 2023). Authors have not justified why should unrealized losses on HTM portfolios be compared to equity, why did they assume that a bank should sell its HTM portfolio and realize the loss. Markets were not looking for sophisticated explanations, “higher than equity unrealised loss” was the market rumour which started to destroy the SVB. Nevertheless, the potential loss for SVB was really extremely high, since the average duration of its HTM portfolio was 6.2 years.

According to the Fed report made after the failure (Fed 2023), that article in *Financial Times* was the “spark” that ignited the series of events peaking in the evolution of the bank run. It should be noted that FRB was mentioned in the same article as a *positive* example, as a bank with a much smaller securities portfolio compared to its balance sheet, one which should be more secure at the time interest rates were drastically raised. Not a month later, market analysts already described FRB as one of the vulnerable banks not only because its uninsured deposits but also due to its fixed-rate mortgage loans, on which non-realised billions of losses were posted just as on bonds. From then onwards, there were no sensible analyses on the market: everything that had fixed-rate assets (loans, securities, anything) was considered to be loss-making.

The events gained momentum in March 2023. The fall of share prices and the outflow of deposits was ongoing stronger and stronger. Due to the deficiencies of its risk management system, SVB was unable to implement its contingency funding plan (CFP), either. The concentrated clientele, basically holders of uninsured deposits, who often communicated with each other on the social media, was fleeing. As many analysts emphasised, the perfect digitalisation of the banks contributed to the bank run, as you did not need to queue outside bank branches for a long time, you only had to push a few buttons on your mobile (Tett 2023). Not all deposit holders of all US financial institutions were fleeing, as deposits only declined by 2-3 percent on average, but the deposit holders of banks with a closed clientele group connected to each other did. It included the shareholders and members of the same sector, the same group of people, who made business with the key player banks only. They could move together: they did not only read the papers but kept close contact with each other too, so a bad piece of market news drove all of them to make the same step: save what you can!

In early March 2023, SVB - advised by Goldman Sachs (Becker, 2023) - decided on a strange move. On the one hand, it reported it had sold three-quarters of its AFS portfolio realising immediately a loss of \$1.8 billion, and also reported to carry out a capital increase via a share issue of \$2.25 billion (SVB 2023). Greg Becker outlined the measures in his presentation held on 8 March, in which he said he thought the bank's position was not desperate at all and offered a way for breakout. His announcement, however, had an impact contrary to his purpose of reassuring the market. Moody's immediately downgraded the shares of SVB. What's more, the tiny Silvergate Bank announced the final suspension of its operations on the same day.

The next day, Thursday 9 March Becker tried to reassure the bank's clients via a conference call, but the withdrawal of deposits accelerated. \$42 billion, a quarter of the deposits, was withdrawn in one day and the withdrawal of another \$100 billion was expected for the day after (Fed 2023). A decision was made that night. SVB was closed and the FDIC was appointed as receiver. Nevertheless, the bank panic continued to spread and seemed unstoppable.

On Friday, 10 March crowds of investors made efforts to get rid of the shares of similar banks - Signature Bank was the worst hit victim of the attack and it was decided to be closed down the following day despite the fact that the deposit holders fleeing on the day of the bank run partly transferred their deposits to Signature Bank or FRB (Roffler, 2023; Shay, 2023).

On Sunday 12 March, to prevent a further panic, *Janet Yellen*, the secretary of Treasury announced a temporary 100 percent deposit insurance for the failed banks. The Fed announced a new lending scheme, the Bank Term Funding Pro-

gram (BTFP) to provide liquidity to U.S. depository institutions, with a collateral valuation at par value. The panic seemed to be subsiding.

FRB was still alive. On Thursday 16 March, a bank consortium led by JPMorgan provided FRB with liquidity of \$30 billion. It stabilised the bank for some time, but when it published its Q1 report on 24 April (FRB 8k 2023 Q1), it had become clear the bank had become quite weak financially. All income items declined by 23-30 percent, profitability ratios fell back, e.g., its interest margin had been reduced to below 2 percent and its CET1 capital adequacy ratio had also declined to below 10 percent. The report also made it clear 60 percent of the bank's end-of-year deposits were withdrawn in Q1 by its non-bank deposit holders and, at the same time, its external market funding had grown from \$10-15 billion to nearly \$100 billion. Equity holders and deposit holders panicked alike, so both the volume of deposits and its share price plummeted. On 1 May the bank was closed, and the FDIC was appointed as receiver.

Are the banks innocent victims to a market panic, as they stated at their Congress hearing (Becker, 2023; Roffler, 2023; Shay, 2023)? The answer is a clear no. The business model of the banks, which was built on a concentrated and interconnected group of customers with uninsured deposits failed. There had been grave mistakes of corporate governance and risk management we are going to discuss in the next part of the study. All three banks had over expanded during the COVID boom and had failed to adjust their business policies and risk management systems accordingly. Are they the only banks to be blamed for such mistakes? Not at all. A peculiar random effect presents in a panic at any time had a part to play in their failure. But it was not an accident that they had been hit.

Further investigation and drawing the lessons will be the topic of the next part of the banking story in the next issue of *Economy and Finance* to commemorate the 70th birthday of János Száz.

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