Box 1
Analysis of recent US and European banking turmoil and the possible effects on Taiwan's financial system

As of March 2023, four small and medium-sized banks in the US had failed or been liquidated one after another. Meanwhile, Credit Suisse had also encountered financial distress. Authorities and bank coalitions in respective countries took proactive measures to prevent the turmoil from spreading globally. This Box explains these incidents and their spillover effects, as well as the relevant authorities' quick response measures and subsequent focus areas. It also analyzes the reasons why these incidents had little impact on the domestic financial system.

1. US and European banking turmoil

1.1 Four small and medium-sized banks in the US collapsed or sought to be wound up, and Credit Suisse became embroiled in financial distress

Both Silicon Valley Bank (SVB) and First Republic Bank (FRB) had problems such as high uninsured deposit ratios and asset-liability maturity mismatches.[1] Suffering from remarkable deposit outflows and inadequate capital levels, they were taken over by the Federal Deposit Insurance Corporation (FDIC) on March 10 and May 1, 2023, respectively. FRB was then acquired by JPMorgan Chase Bank on the same day.

Both Silvergate Bank and Signature Bank experienced a deterioration in their financial and operational conditions owing to substantial deposit withdrawals by investors following the crypto market crash in 2022. Silvergate Bank announced its intent to wind down operations on March 8, and Signature Bank was taken over by the FDIC on March 12, 2023.

In recent years, Credit Suisse has had serious problems recurrently such as material weaknesses in internal control, significant losses, and massive fund outflows. On March 15, 2023, Saudi National Bank, its largest shareholder, refused to sustain investment in new capital to Credit Suisse, causing its stock price to plummet and the five-year credit default swap rate to skyrocket on one occasion. Afterwards, under the guidance of the Swiss authorities, the Union Bank of Switzerland (UBS) acquired Credit Suisse at a nearly 60% discount of its market price in order to avoid the spreading of the turmoil.

1.2 Regulators took prompt countermeasures or bank coalitions provided quick assistance

In order to maintain domestic banks' liquidity, the Fed announced the launch of the Bank Term Funding Program (BTFP) on March 12, 2023, offering loans of up to one year to eligible depository institutions pledging qualifying assets as collateral, which were valued at par.

FRB accessed US$70 billion in funds from the Fed and JPMorgan Chase Bank on March 13 and then received other deposits totaling US$30 billion from 11 major US banks on March 16, 2023. This aid eased FRB's pressure of insufficient funds. However, it was eventually sold to JPMorgan Chase Bank owing to continuous and substantial deposit outflows.

On March 20, six central banks including the Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Fed, and the Swiss National Bank increased the frequency of 7-day maturity operations from weekly to daily via standing U.S. dollar liquidity swap line arrangements until the end of April 2023.

2. Spillover effects

2.1 Volatility in financial markets surged

The successive closures of small and medium-sized banks in the US sparked off a sharp drop in stock prices of other banks, such as Western Alliance Bancorporation (WAL), and led to a noticeable decline in regional banking indices.

2.2 Credit rating agencies downgraded the credit outlook on the US banking system

Credit rating agency Moody's lowered its credit outlook on the US banking system from "stable" to "negative" in March 2023. Subsequently, the credit ratings of some US regional banks were also downgraded. Among them, FRB and WAL were downgraded to junk grade owing to their deteriorating financial conditions.

2.3 Reducing the willingness of traditional banks to cooperate with the virtual asset industry

The successive collapse of two major virtual banks, Silvergate Bank and Signature Bank, might reduce the willingness of other traditional banks to cooperate with the virtual asset industry. Additionally, the small-scale startups in the virtual asset industry might encounter difficulties in opening bank accounts, which would hinder the future development of this industry.

3. Subsequent focus areas

3.1 Impact of interest rate hikes by the US and European central banks on international economic and financial conditions

If the central banks in the US and Europe continue to implement significant monetary tightening policies, it may increase the volatility in financial markets, thus reducing disposal gains or amplifying impairment losses of financial institutions' financial assets. As a consequence, the above-mentioned developments may expose the already fragile economies to more risks and lead them toward hard landing concerns, which warrants close attention.

3.2 The public's lack of confidence in the banking system may trigger systemic risks amid greater contagion effects

The successive failures of small and medium-sized banks in the US have raised concerns about the business conditions of other regional banks, such as Pacific Western Bank, which was reported to be sold and saw a slump in its stock price. Furthermore, the turmoil highlights the problem that many banks' deposits are not covered by deposit insurance.[2] Once public confidence in the banking system collapses, even sound banks may be affected. If the contagion effects spread out, they could possibly trigger systemic risks and result in a recurrence of financial turmoil, warranting extra caution.

3.3 Impact of regional banks tightening credit on individuals and small and medium-sized businesses

Regional banks in the US may tighten their credit owing to massive deposit outflows, which could pose adverse impacts on households and businesses. In addition, as small and medium-sized banks' loans account for 38% of total loans in the US banking system, if they suffer from poor performance, it could exert negative effects on US employment and economic growth, increasing downside risks to the economy.

3.4 Fund raising is difficult for startups following the collapse of SVB, which may be unfavorable for the future development of the startup industry

The failure of the startup-friendly bank SVB has raised concerns about broader shocks on the US technology industry. Although the financing needs of startups have increased, it is difficult for them to acquire funds through initial public offerings. This situation, for small-scale startups, may lead to operational predicaments and be unfavorable for the future development of the US startup industry.

3.5 US regulatory authorities strengthened their efforts in banking supervision, which may further tighten the financial situation

The incidents prompted regulatory authorities to review their supervisory intensity on medium-sized banks. In the future, if regulatory authorities strengthen their monitoring of interest rate risks on banks' balance sheets and incorporate them into capital adequacy requirements, it may further tighten the financial situation.

3.6 Full write-down of Credit Suisse's AT1 bonds sparked a controversy, which may strike the CoCo bond market

The recent controversy over the priority of loss absorption between Credit Suisse's shareholders and AT1 bondholders may lead to a re-evaluation of AT1 bonds. This increases the funding costs of CoCo bonds in the market, reducing banks' willingness to issue the bonds, which is thereby detrimental to market development. In addition, regulatory authorities will also need to review the management of capital adequacy provisioning for CoCo bonds in the future.

4. Effects on the domestic financial system

4.1 Domestic stock markets were not significantly affected, and financial institutions' exposure to the four failed American banks and Credit Suisse was still manageable

Affected by the market concerns surrounding the recurrence of financial turmoil and the impairment losses of financial institutions' exposure, the TWSE Finance and Insurance Index briefly declined, dragging down the TAIEX of the TWSE market. Nonetheless, after US and Swiss authorities quickly intervened, which then boosted European and American stock markets, domestic stock markets rebounded and were not significantly affected. According to the statistics of the FSC, domestic financial institutions' exposure to the four failed American banks, including SVB, Silvergate Bank, Signature Bank, and FRB, and Credit Suisse was NT$410 million and NT$155.6 billion, respectively, as of the end of February 2023. The above-mentioned exposure was still manageable and none of them invested in Credit Suisse's AT1 bonds.

4.2 Financial conditions of domestic banks remained sound and the capability to withstand adverse shocks increased

The net income before tax of domestic banks in 2022 reached NT$392.8 billion, the highest level in the past 20 years, and the average NPL ratio dropped to a record low of 0.15%, suggesting satisfatory asset quality. All capital ratios of domestic banks were above statutory minimum standards, and the average liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) were much higher than the minimum requirement of 100%, indicating the overall financial conditions of domestic banks remained sound.

4.3 The asset-liability structure of domestic banks differs from that of the failed banks such as SVB, reflecting that their operations were relatively stable

Taiwan's domestic banking units (DBUs) primarily rely on stable funding sources such as personal and business deposits. There is less credit concentration in a single type of customer, and the ratio of the depositors covered by the maximum deposit insurance of NT$3 million reaches 98.01%. In contrast, SVB's deposit customers were concentrated in startups, and the proportion of deposits which was not covered by deposit insurance accounted for 86% of total deposits. As for the uses of domestic banks' assets, customer loans made up the largest share with 57.07%, and the proportion of investments was not high. Therefore, domestic banks were less affected by international financial markets. On the other hand, SVB allocated nearly 57% of its funds to long-term bond investments (Table B1.1), leading it to become susceptible to substantial valuation losses in financial assets when US interest rates reversed to rise rapidly.

Table B1.1 Asset-liability structure between Taiwanese banks and SVB

Unit: %

Domestic Banks				SVB			
Assets		Liabilities and Equity		Assets		Liabilities and Equity	
Cash	6.64	Customer deposits	79.46	Cash	6.52	Customer deposits	81.74
Investments	27.83	Other liabilities	13.13	Investments	56.68	Other liabilities	10.57
Customer loans	57.07	Equity	7.41	Customer loans	34.76	Equity	7.69
Other assets	8.46			Other assets	2.04		

Notes: 1. Figures are as of the end of 2022.
2. Domestic banks' cash included cash, cash equivalents, and cash due from banks, while SVB's cash contained cash and cash equivalents.
3. SVB's investments included available-for-sale securities (12.31%), held-to-maturity securities (43.12%), and non-marketable and other equity securities (1.25%).

Sources: SVB and CBC.

4.4 The interest rate hike path in Taiwan has been steady, which differs from the accelerated rate hikes in the US

Considering that inflation in Taiwan remained relatively moderate compared to the US and Europe, the Bank was able to raise the policy rates progressively without triggering drastic volatility in the domestic bond market. Furthermore, this gave domestic banks ample time to adjust their asset-liability structure, resulting in an expansion of the average interest rate spread between deposits and loans,[3] making the profit of domestic banks in 2022 rise to the highest level in the past 20 years.

4.5 The Bank will provide sufficient liquidity to the domestic financial system when necessary

If international incidents in the future trigger abnormal capital outflows from the domestic financial system, the Bank will fully support the liquidity of financial markets, including extending the scope of repurchase operations established during the global financial crisis,[4] to provide necessary funds for financial institutions.

5. Conclusion

The recent bank failures in the US and the financial turmoil in Credit Suisse were attributed to individual bank-specific factors. Although the US and the Swiss authorities took swift and decisive actions to avoid the spreading of bank turmoil, many uncertainties still exist in the future. The aftermath of these incidents potentially impacts the interest rate path of major economies, macroeconomic conditions, credit supply, financial regulatory intensity, public confidence in the banking system, and so on, warranting continual close attention.

In addition, domestic banks' financial conditions remain sound, and their operation model differs from banks like SVB and Credit Suisse, indicating that they are not highly involved in cryptocurrency transactions. Moreover, with the steady interest rate hike path by the Bank, domestic banks benefited from an expansion of the average interest rate spread between deposits and loans in 2022, resulting in the highest profitability in the past 20-years. Overall, the domestic financial system is not expected to have systemic risks. The Bank will continue to pay close attention to the impacts of relevant subsequent developments and employ appropriate policy tools to promote financial stability in Taiwan.

Notes: 1. According to Fitch Solutions, SVB and FRB had uninsured deposit ratios of 86% and 68%, respectively, significantly higher than the ratios of JPMorgan Chase Bank (43%), Citibank (43%), and Wells Fargo Bank (51%) at the end of 2022. Meanwhile, the sums of loan-to-deposit and investment-to-deposit ratios for SVB and FRB were 109% and 112%, respectively, also higher than the ratios of JPMorgan Chase Bank (91%) and Citibank (85%).

2. Jiang et al. (2023) indicated that among the 190 US banks each with total assets over US$300 billion, even if only half of the uninsured deposits were withdrawn, without intervention from regulatory authorities, the remaining assets valued at market prices might be insufficient to support the withdrawals of insured deposits, which was estimated to exceed US$250 billion. Please see E.X. Jiang, G. Matvos, T. Piskorski, and A. Seru (2023), "Monetary Tightening and US Bank Fragility in 2023: Mark-to-Market Losses and Uninsured Depositor Runs?" *Stanford Institute for Economic Policy Research Working Paper* No. 23-13, March.

3. The interest rate spread between deposits and loans of domestic banks at the end of 2022 notably elevated to 1.36% (after interest rate hikes by the Bank) from 1.24% (before interest rate hikes) at the end of 2021.

4. The Bank's repurchase operations include "regular repurchase operations" and "extended repurchase operations." The extended repurchase operations enlarge the scope of eligible counterparties including banks, bills finance companies, Chunghwa Post Co., securities firms, and insurance companies. The repurchase period could be up to180 days.