2022 Taiwan Banking Report

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Foreword

Since 2019, KPMG Taiwan has released the banking industry report in the Taiwan market for four consecutive years. Based on the observation of various industry professionals, this report brings up the overall trend of domestic and foreign markets and their customer service experience. The most influential and important articles are selected as the annual topics in the report. It is expected that this report can provide readers a comprehensive understanding of different aspects of the development of Taiwan' s banking industry.

In 2021, the pandemic and lockdowns strongly affected the global economy and international supply chain. However, the performance of Taiwan's banking industry was relatively outstanding.Although the interest rate has fallen, the profits of domestic banks continued to grow and spikes a record high. In addition to the stable domestic lending business, the return of overseas funds and the government's incentives of public consumption have become the main drivers of profit growth. At the same time, factors such as the continuous growth of wealth management and other businesses are also important for helping domestic banks to achieve better operating performance.

Geopolitical risks have become main concerns between countries. From the Sino-US trade war to the war between Russia and Ukraine, this year the accompanying trade restrictions and financial sanctions have caused the banking industry to be extra careful in overseas investment to avoid potential landmines and suffer heavy losses. However, due to the changes, the supply chain has been forced to restructure, which can be regarded as a new opportunity for the banking industry. Banks can expand their overseas presence by assisting in raising funds and transferring assets, and continuing to assist Taiwan companies to expand their locations.

In addition, the landscape of the financial services industry is rapidly changing in response to future trends. In tradition, the financial service providers have gradually begun to develop "Platforms,"and the participation of emerging market players has gradually blurred the boundaries of the financial industry. For financial service providers, they have begun to formulate strategies and investment to master market niches. Nowadays, consumers care about the value, convenience and security of financial services, and expect a financial service ecosystem tailored to their specific needs.

Compared with international benchmark companies that have clearly introduced relevant access restrictions with proactive communication and management actions for high-carbon industries, Net zero commitment for Taiwan's financial industry is still in its infancy, and the main focus is its own operations. However, with the official announcement of 2050 net-zero emission law by the government, some financial institutions have gradually put forward specific industrial credit regulations, and formulated schedules of no longer undertaking and withdrawing capital for commercial activities such as coal mining, coal-fired power generation, and coal trading/transportation. As of April 2022, six financial holding companies in Taiwan have declared their net-zero emissions targets.

DeepFake's forgery with artificial intelligence (AI) technology reveals that with the continuous advancement of technology, people can easily collect sufficient audio and video materials of characters through the internet to forge videos or voices. This approach also poses a severe test to the development of FinTec which intends to use biometric technology as digital identity recognition, and is one of the new information security threats that the financial industry must face up to. For FinTech risk management, in addition to relying on the regulatory authorities to improve legal requirements, the determination and implementation ability of the market participants on information security protection is a much more important issue. In the hope to create a more friendly FinTech ecosystem and promote the development of emerging services or business models, so as to improve the efficiency, accessibility, usability and quality of financial services.

Risk patterns continue to evolve with changes in the business environment. The only thing that does not change is to identify in detail new risk patterns in the organizational process, and formulate corresponding risk management methods for new risk patterns. What needs to be reminded is that the introduction of new technology does not mean that there is no need to invest in human resources, because technology is not a panacea; especially among the current financial crime issues, the management of behavioral risks requires investments in professional and experienced talent to return to the basics of management and implement internal control, because prevention is always better than cure. Next, discussions will be held on selected topics. For the content of each chapter, if you have any questions or comments, the main contacts are listed at the end of this report and you are welcome to contact us further.

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Overview of Taiwan's banking industry

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For more than two years, the world has suffered from the COVID-19 pandemic which has caused a huge impact on the economic environment of various countries, and caused the global commodity supply chain to fall into a crisis of chain disconnection. Because COVID-19 affects the lives of people from all walks of life, its impact is even bigger than that of the financial tsunami in the past and can be described as omnidirectional. Governments around the world have made great effort to prevent the spread of the pandemic, and increased public health budgets by purchasing rapid screening agents and vaccines, in the hope of reducing the disruption to people's lives. However, the ever-changing virus constantly breaks through blockades, causing waves of pandemics in various countries, and only the negative method of reducing mobility can be used to reduce the spread of the pandemic. However, various economic activities have unfortunately also been affected as a result. The raw materials are in short supply, the waiting period is prolonged, and the commodity is either out of stock or the price is soaring, which has greatly hindered economic operations and dragged down the overall economic development. In view of this, the government has implemented various measures to revive the economy in an attempt to minimize economic damage. For the domestic banking industry, the operating pressure is heavy. However, with the implementation of the pandemic prevention policy, people are gradually getting used to contactless consumption and online payment. Financial institutions have accelerated the pace of digital transformation, enabling digital financial services to accelerate into the lives of the general public.

Domestic and Foreign Economic Environments

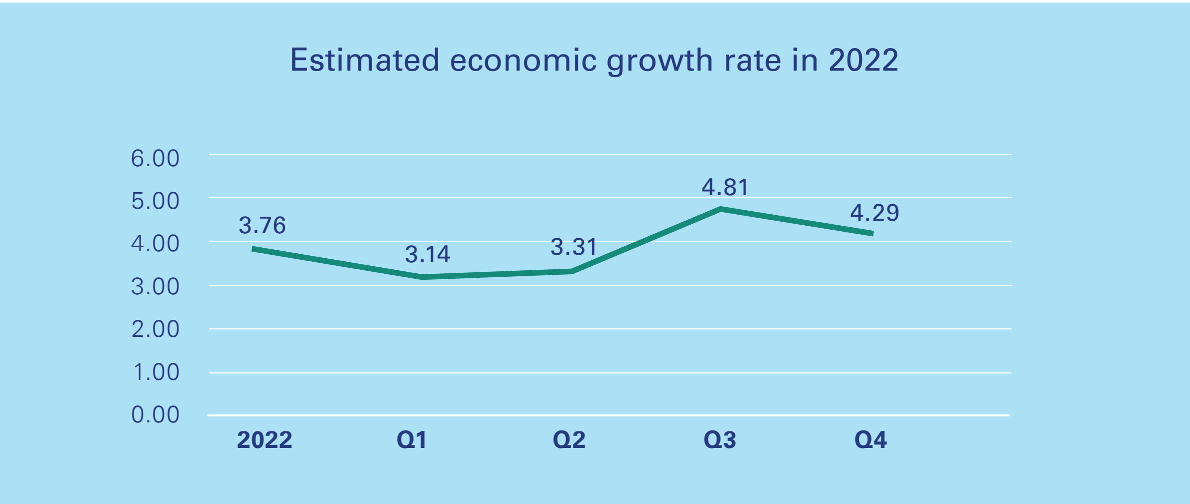
In 2021, thanks to the successful research and development of vaccines, various countries have begun to implement them, with relaxation of pandemic prevention and isolation measures, and large-scale monetary policy support, and the global economy, shipping and supply chains continue to recover. In addition, as the base figure in the previous period was relatively low, the global economic growth rate substantially rose to 5.8%, but the advanced and emerging economies recovered at different paces. Especially suffered from the impact of business shutdown due to the pandemic, global raw material and commodity prices rose, and the global consumer price index (CPI) increased to 3.9% year-on-year. The annual growth rate of global CPI is expected to rise significantly to 6.7%. In order to curb the rise of global inflation, the central banks of major economies in Europe and the United States have gradually accelerated interest rate hikes, and various countries have begun to start an interest rate increase in their monetary policies.

Looking forward to the second half of 2022, the off-and-on global pandemics and the unresolved conflict between Russia and Ukraine would increase global economic risks. S&P Global Market Intelligence estimates that the global economic growth rate will slow down to 2.9%; in addition, the war between Russia and Ukraine would further push up the prices of raw materials and bulk commodities, and it is expected that developing countries will be affected first and will experience food shortages and high prices of livelihood supplies. However, governments of various countries cannot use policies to guide people to buy in an orderly manner, and it is more likely that the devaluation of the currencies of these countries will further trigger a run on the country's banks, resulting in a series of economic crises that will lead to political turmoil and affect the international social order, and neighboring countries will also be affected. It is afraid that, like the Asian financial crisis in 1998, countries will be hit hard by economic setbacks and the unemployment rate will rise sharply.

In 2021, benefiting from the effective control of the pandemic, mainland China's economic growth rate rebounded to 8.1%, while the annual growth rate of CPI dropped to 0.9%. However, in 2022, due to mainland China's "zero clearing" measures which continue suppressing the service industry and consumption momentum, as well as factors such as the war between Russia and Ukraine and the recent lockdowns of major cities (Shanghai and Beijing), S&P Global Market Intelligence predicts that its economic growth will slow down significantly to 4.3%, and the annual growth rate of CPI will rise to 2.3%. In 2021, the incremental social financing in mainland China declined, and the non-performing loan ratio of commercial banks continued declining; however, small banks such as rural commercial banks were still relatively fragile. The overall debt growth of non-financial sectors such as enterprises, households and the government will slow down, but the balance of local government debts has risen sharply, coupled with the accumulation of huge hidden debts by local governments' financing platforms, the potential risks are still high.

In 2021, Taiwan's exports hit a record high, private investment grew significantly, and private consumption gradually recovered with the benefit from various coupons issued by the government. The annual economic growth rate reached 6.57%, a new high in 11 years;

the annual growth rate of CPI was 1.96%, which was higher than -0.23% in 2020, but the growth rate was moderate compared with those in Europe and America. Looking forward to 2022, the momentum of Taiwan's exports and private investment are expected to continue, but the domestic pandemic situation will affect consumption growth, and the war between Russia and Ukraine and supply chain bottlenecks will push up prices. It is expected that economic growth will decline and inflation will rise. The Directorate-General of Budget, Accounting and Statistics forecasts that the economic growth rate in 2022 will be 3.76%, and the annual growth rate of CPI is revised up to 2.92%.



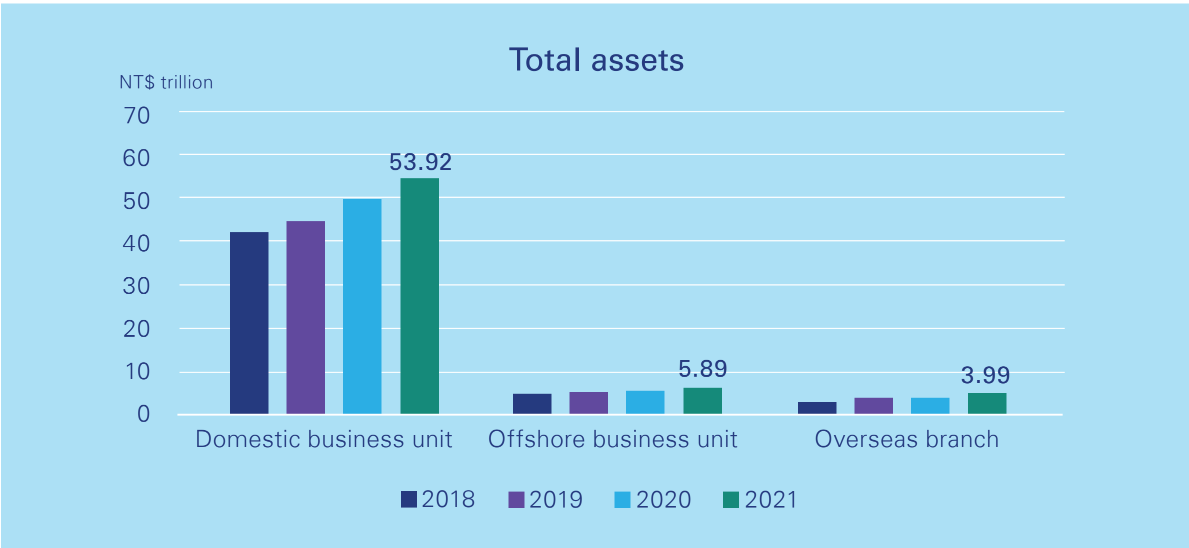
Source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan

Operational Efficiency of Domestic Banking Industry

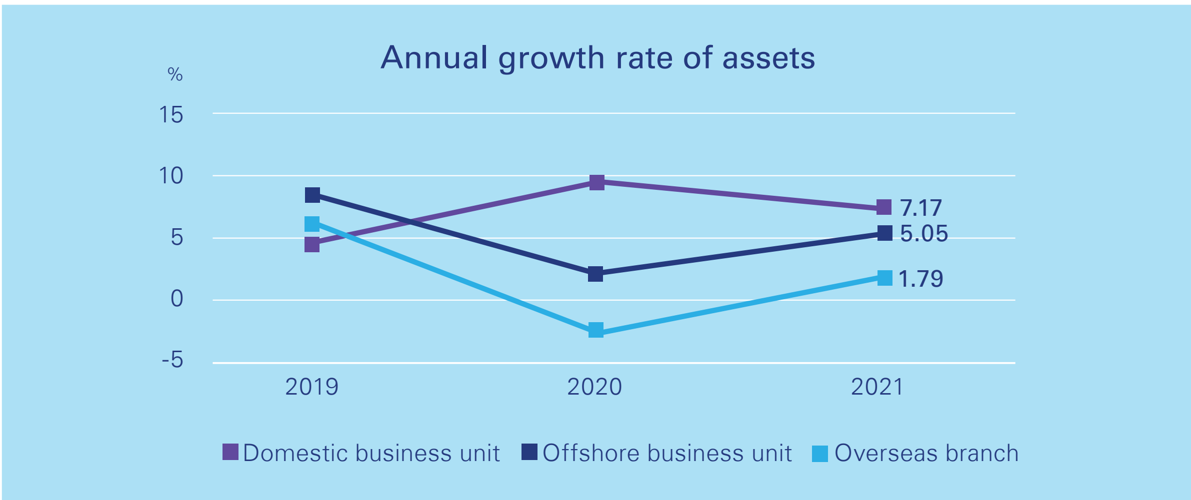
Under the continuous impact of the pandemic, various financial institutions have shouldered the responsibility of complying with the government's bailout policies, assisting in lending to support enterprises, and alleviating the living difficulties of the people to live through unemployment and unpaid leave. At the same time, the Central Bank needs to take measures to raise interest rates and control real estate credit in order to curb inflation and rising housing prices. These coupled with the reduction of people's willingness to consume and the interference of various uncertainties in the international market , have a certain impact on the operation of domestic banks.

In 2021, the scale of domestic bank assets continued to grow, but the growth rate slowed down. The quality of relevant assets improved, and the proportion of bank credit and real estate related loans increased slightly. However, the industrial concentration of corporate loans decreased slightly, and the total amount of mainland China risk exposure continued to decrease. The overall market value at risk declined, so the impact on the capital adequacy ratio is limited ; the banking system has sufficient funds, the liquidity risk is not high. Profits will recover in 2022, and the capital adequacy ratio will increase; the ability to withstand losses will still be good.

In 2022, the scale of assets of domestic banks continues to grow, but the growth rate has slowed down. The total assets at the end of the year will be NT$60.23 trillion, and the annual growth rate will be reduced from 8.35% at the end of the previous year to 6.78%. Due to the relatively large GDP growth, the ratio of total assets to the annual GDP will drop to 277.41%. In terms of departments, the annual growth rate of assets of both offshore business units (OBUs) and overseas branches rebounded, while that of domestic business units (DBUs) reversed and declined, mainly due to the slowdown in the expansion of the net position of financial asset investment.



Source: Central Bank Financial Inspection Office



Source: Central Bank Financial Inspection Office

Acceleration in Lending Growth

As the main business source of domestic banks, the loan balance of domestic business units at the end of 2021 was NT$29.95 trillion, accounting for 49.73% of the total assets. Although the annual growth rate of 8.48% in the fourth quarter was lower than that in the first half of the same year, it was still higher than the 7.96% at the end of the previous year. The annual growth rate of loans dropped slightly from 8.99% at the end of the previous year to 8.68%; the annual growth rate of corporate loans increased from 6.38% at the end of the previous year to 8.92% due to the relief loans provided by banks during the pandemic outbreak and the increase in corporate capital needs after the pandemic eased; the annual growth rate of government loans dropped from 11.25% at the end of the previous year to 2.90%, mainly due to the increase in government taxation and the reduction of bank loans due to government debt financing.

The proportion of Credit Extension Secured by Real Estate Continues to Rise

At the end of 2021, the credit balance of domestic banks with real estate as collateral was NT$20.85 trillion, accounting for 58.49% of the total credit balance, an increase of 0.55 percentage points from the end of the previous year. In 2021, domestic housing transactions were active and housing prices rose. However, considering that the sales pressure of newly built and unsold houses still remains, and the government is actively promoting measures to curb speculation, the risk of real estate-related credit extension is still high, and attention needs to be continuously paid to the relevant credit risk.

The Industry Concentration of Corporate Lending Decreased Slightly

At the end of 2021, the domestic business units of domestic banks had a loan balance of NT$12.85 trillion, of which the loans to the manufacturing industry accounted for NT$4.71 trillion or 36.63%. Among the loans to the manufacturing industry, the loans to electronic related industries accounted for the majority, and the balance at the end of 2021 was NT$1.48 trillion, accounting for 31.42% of the balance of loans to the manufacturing industry; the proportion slightly decreased from that at the end of the previous year .

The Competent Authorities Strengthen Risk Control Measures for the Handling of Real Estate Credit Extension by the Financial Industry

In order to urge financial institutions to prudently control real estate credit risks, the Central Bank has adjusted the “Regulations Governing the Extension of Mortgage Loans by Financial Institutions”(hereinafter referred to as “selective credit control measures”) four times since December 2020. The following measures are also successively taken by the Financial Supervisory Commission to strengthen the risk control of the real estate credit business of the financial industry:

Adopting strengthened supervision measures for the real estate credit or guarantee business of financial institutions

1. In December 2021, it was required that when banks handle commercial promissory notes or corporate bond issuers purchase or construct real estate with the real estate pledged to issue commercial promissory notes or with corporate bonds used for guarantee, they shall follow the relevant conditions, limits and other control matters of the Central Bank's selective credit control measures, and banks with a larger increase in the concentration ratio of construction loans plus real estate guarantees are required to submit improvement plans and develop control measures on their own.

2. In December 2021, the law was amended to regulate that the ratio of the balance of real estate guarantees by securities firms shall not exceed 30% of the total guarantee balance. Those exceeding the limit shall be adjusted to meet the regulations within six months, and the regulations and operation manuals of the business of guaranteeing commercial promissory notes are required to include the relevant conditions, limits and other control matters of the Central Bank's selective credit control measures.

3. At the end of 2021, a new wave of special financial inspections on real estate was launched, and the inspection objects included 20 financial institutions including banks, credit cooperatives and bills finance companies. In January 2022, financial institutions were invited for the explanation of the patterns of deficiencies of the real estate credit business to remind them to pay more attention to the improvement, and will include in 2022 real estate credit extension into the key points of financial inspections on financial institutions'compliance with the relevant regulations of the Central Bank and the Financial Supervisory Commission.

Raising the risk weights applicable to banks handling real estate mortgage loans

Considering the fact that after banks apply the Central Bank's selective credit control measures some real estate mortgage loans will be subject to lower risk weights under the current capital provisions, the FSC issued an order in February to increases the risk weights applicable to new loans undertaken by banks in order to strengthen banks'risk bearing ability in handling such loans.

The FSC Adjusted Real Estate Credit Risk Weights

Loan item	Nature	Current weight	Adjusted weight
Corporate mortgage loan	General housing Income oriented housing	20% 30%	50% 100%
Natural persons' housing loans for the third house or above	Income oriented housing	30%	100%
Land purchase loan	ADC – Residential ADC – Business district	100% 150%	150% 200%
Surplus housing loan	Income oriented residential real estate ADC – Residential	30% 100%	100% 150%
Mortgage loan of idle land in industrial area	Non-qualified commercial real estate – General Non-qualified commercial real estate – Income ADC – Non-residential area	75%、85%、100% 150% 150%	200%

Note: ADC means land acquisition, development means construction.

Source: FSC

Factors Affecting Future Profits

Bank profits recovered in 2021, but there are still uncertainties in future operations including :

1. The three major international credit rating companies have successively downgraded Russia's sovereign rating to junk level, and Russia prohibits foreign investors from selling Russian stocks and government bonds. The Russia–Ukraine war has continued for more than half a year, and banks with greater exposure to Russia may increase their asset impairments which will affect their profits;

2. The Russia–Ukraine war has caused problems such as the surge in raw material prices and the setback of the supply chain, which may affect the operation and repayment ability of specific industries, and increase credit impairments;

3. The central banks of major European and American economies have accelerated the pace of normalization of monetary policies and began to reduce the scale of bond purchases, which may lead to increased financial market volatility and affect future investment returns.

The Funding of the Banking System Is Sufficient
In 2021, there was little change in the structure of domestic banks'assets and liabilities, with relatively stable deposits accounting for 79.50% of the funds, followed by equity, accounting for

7.83%, and only 2.44% was obtained through the issuance of debt securities. 56.13% of the funds were applied on loans; debts and equity securities investment accounted for 29.24%; cash, cash equivalents and interbank deposits accounted for 6.81%

External Credit Rating

Among the overall risk assessment of the banking industry by various credit rating agencies, the assessment results of the "Banking Industry Country Risk Assessment" by Standard & Poor's Rating Services on Taiwan's banking industry remain in the fourth group of low-to-medium risk. Compared with other Asian countries or regions, the risk rating of Taiwan's banking industry is comparable to that of Malaysia, and lower than that of the Philippines, mainland China, Thailand and Indonesia. In addition, the assessment results of the "Banking System Indicators/Overall Prudential Indicators" by Fitch Ratings on Taiwan's banking industry also maintained the bbb/2 rating.

Country or region	Standard & Poor' s		Fitch International	
	Country risk assessment for banking		Banking system indicators/overall prudential indicators	
	February 2021	February 2022	End of August	End of August
Singapore	Group 2	Group 2	aa/1	aa/2
Hongkong	Group 2	Group 2	a/2	a/2
Japan	Group 3	Group 3	a/2	a/2
South Korea	Group 3	Group 3	a/1	a/2
Taiwan	**Group 4**	**Group 4**	**bbb/2**	**bbb/2**
Malaysia	Group 4	Group 4	bbb/1	bbb/1
Philippines	Group 5	Group 5	bb/1	bb/1
Mainland China	Group 6	Group 6	bb/1	bb/1
Thailand	Group 6	Group 6	bbb/1	bbb/1
Indonesia	Group 6	Group 6	bb/1	bb/1

Source: Standard & Poor' s and Fitch Ratings

Options for Traditional Banks' Development Strategies

In response to changes in the digital environment, traditional banks are facing the threats and opportunities of the digital environment, as well as the advantages in internal competitiveness, and have carried out necessary business transformation and developed new business directions in accordance with their business policies. Many domestic banks have actively used financial technology to promote service innovation and provide more convenient services for financial consumers, including mobile payment, financial blockchain, Internet of Things, intelligent wealth management, ATM withdrawal with face or fingerprint, third-party payment, and community marketing, to meet consumer demand.

Strategies of Domestic Banks in Response to the Challenges of FinTech Development

1. Flexibly adjust the bank's business strategy and internal organizational culture. At present, as the pandemic situation continues, traditional banks should start to change their business strategies, use multiple methods to attract customers, and start to adjust the organizational culture to respond flexibly to various tests such as future interest rate hikes, inflation, and capital arrangement, in order to be more capable of undertaking new types of missions of the industry.

2. To actively cultivate FinTech talents and transform banks, in addition to actively supplementing FinTech talents and nurturing teams in a planned way, banks should expand the scope of recruitment to their information systems, data analysis and interface design, community marketing, etc., to help them successfully transform.

3. To quickly respond to the needs of financial consumers, banks must strengthen virtual channels and coordinate online and physical channels to provide timely and diversified services to increase customer trust and loyalty. They may cooperate with online payment or FinTech vendors for strategic cooperation and jointly develop the financial services market.

4. In order to strengthen risk control and consumer protection, banks must give priority to risk control and the establishment of relevant firewalls when developing new services or improving the efficiency of existing services, and establish corresponding control mechanisms. Various product information and consumer rights protection measures must be disclosed to everyone, and a consumer-centered protection mechanism must be established.

5. Banks need to actively enhance the competitiveness by utilizing the existing brand value, customer network and diversified channels to improve the quality of various financial services and improve customer satisfaction. At the same time, in the face of the shrinking business of physical branches, bank management should consider issues related to staff deployment and on-the-job training adjustment as soon as possible.

Geopolitical Finance – How to Avoid Fires That Affect Profits

Lin Wu
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After the U.S.–China trade war started in 2018, the manufacturing and technology industries came to realize that under the constraints of geopolitics and international trade, multinational companies must diversify their risks and try to find new places to set up factories and find other supply chain manufacturers to avoid political disturbances and various trade restrictions. Global geopolitical risks are heating up rapidly. TSMC, which ranks among the top ten companies in the world by market capitalization,has openly recruited business intelligence analysts with a background in political economy, and has sparked a discussion in the market in recent.It also alerted other multinational companies that for corporate management, it is also necessary to pay attention to the global geopolitics and international relations.

The Russia–Ukraine War Has a Major Impact on the Financial Industry

The Russia–Ukraine war that started in February this year has completely opened Pandora's box for multinational companies. As it was too late to avoid the war, various problems in manufacturing and transportation management completely hit the company management head-on, and the inability to avoid risks in time has resulted in heavy losses (including the consumer boycott effect due to the failure of international brands in expressing their positions in a timely manner).

The outbreak of the war has also caused heavy losses to the financial industry. According to statistics from the Financial Supervisory Commission, at the end of January 2022, the Taiwanese financial industry, including the fund investment by Taiwanese people, had a risk exposure of NT$217.905 billion in

Russia and Ukraine[1]. In order to remedy the devaluation of ruble and rising inflation risks, the central bank of Russia, in addition to raising the benchmark deposit rate, from February 28 this year, foreign investors, entities or individuals are prohibited from selling Russian securities until the order is lifted. For a while, the financial industry was unable to respond in a timely manner. Also, the significant losses of financial assets measured at fair value due to falling market prices or liquidity discounts, uncertain about whether Russia can pay the principal or interest of its maturing government bonds as scheduled, currently some life insurance companies have made a provision of NT$2.6 billion for impairment losses for the expected credit risk. [2]

Due to the impact of the financial industry's investment in Russian stocks and debts, European and American countries have expelled many large Russian banks from the payment system of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) in order to sanction Russia for the war it started. After this system is cut off, international financial transactions of Russia are frozen and suspended; not only European and American countries are affected, but now even financial transactions between Asian countries and major countries which have transactions with Russia are hindered. The impact time is likely to be prolonged, and the impact on the domestic economy will also be aggravated. In particular, as Russia's major exports are oil and natural gas, without the injection of international capital, the oil and gas prices have increased significantly, which have led to the chain effect of the price rise of various raw materials.

In the Face of the Variable Challenges of Geopolitics, the Financial Industry Needs to Have a Macro Vision

In the face of turbulent geopolitical situations, the financial industry must establish a macro vision, closely pay attention to the development of the international situation, and avoid the negative impact of geopolitical friction or disputes among countries. It is not possible to withdraw funds in just one or two months, and what is more important is to prevent losses due to the inability to respond to the development of the international situation.

When the financial industry is engaged in overseas investment, regardless of the stock market or bond market, it must first have the concept of multi-faceted and diversified investment. When engaging in overseas investment, KPMG suggests avoiding investing

[1] See 我金融業俄烏曝險2,179億 https://udn.com/news/story/7239/6122760

[2] See 5大金控曝險俄羅斯千億元，國泰金開第一槍！國壽認列俄債減損26億、新光金：季底會決定怎麼做 https://www.businesstoday.com.tw/article/category/183021/post/202203060010/

a substantial amount in the same region and country, and getting ready for redemption. At the same time, regularly observe changes in the international situation. Specifically, changes in the overall economic figures, attention should be paid to the political trends of major powers.

Pay Attention to the Economic Development of Various Countries, and Actively Seek Low-risk Areas to Avoid Risks in the Financial Industry Layout

As the war is still going on, countries in Europe have greatly increased their defense and emergency aid budgets, resulting in an increase in their fiscal expenditure, and it can be closely observed whether there is a crowding out of other fiscal budgets. At the same time, the inflation rate remains high, and the European economy is showing a recession. This is worth the observation of the financial industry.

The United States shifted their focus on the increase of interest rate. At the same time, it has attracted domestic semiconductor manufacturers to invest. The financial industry can find suitable investment projects on the premise of avoiding the war. In particular, U.S. bonds may benefit from the “risk hedging” demand due to international political tensions, and have become popular investment targets due to geopolitics this year.

After the impact of COVID-19, the world is now affected by geopolitics, and the international political situation is affecting the financial industry. The financial industry needs to pay more attention on finding sources of profit, and regions with stable profits and less political influence will become the first choice. With the increasing volume of e-payment transactions, e-payment platforms have become one of the payment tools of the people, and the financial industry also needs to consider providing relevant services under the legal constraints. However, such transactions have high risks (cross-border money laundering, large-scale cross-border remittances, and back-end system hacking), and most central banks and other regulatory agencies have not yet had clear rules for the financial industry to comply with.

The transaction volume of digital currency is increasing day by day, and it has become one of the options for risk hedging in major financial centers such as the United States and the United Kingdom. The financial industry also has to consider whether to join the relevant trading system and provide related services, even if the risk of such transactions is still high and not yet accepted by regulatory agencies such as central banks in most countries.

Diversification of Risks and Multiple-Allocation of Assets Are the Top Priorities for the Financial Industry in the Future

In the investment of the financial industry, it is recommended to adopt a multiple allocation strategy to reduce the risk of a single investment. The selection of appropriate assets and flexible adjustment to the allocation will be the key to investment. It is recommended to combine both mature and emerging countries

and regions in the selection.

If the economic fundamentals destroyed, the pace of interest rate hikes in various countries will slow down, but in contrast, inflation will be accelerated by the impact of oil and gas prices, which will force countries to raise interest rates in response. Therefore, we should closely observe the financial market fluctuations brought about by geopolitical shocks, and their impact on the overall economic growth cycle and inflation. The geopolitical variable will disrupt the rate and speed of interest rate hikes this year, making it more difficult to forecast; therefore, continuous attention should be paid to changes in the political situation.

As the current war continues and the pandemic situation in various countries has not yet subsided, various economic research departments in the financial industry have listed geopolitical risk as one of the important factors in the forecast of GDP and economic growth rates, and may revise them downward accordingly, but the magnitude will depend on the changes in the war and inflation status.

Financial industry development under supply chain restructuring

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KPMG in Taiwan

The U.S.–China trade war and later the COVID-19 pandemic affected the economic environment of the world. With the launch of vaccines and effective drugs, the life disrupted by the pandemic was about to gradually return to the original track. However, the outbreak of the Russia–Ukraine war in early 2022 forced the reorganization of production and supply chains, and the monetary easing policies carried out by various countries in the past for bailouts and revitalization have reversed into a cycle of interest rate hikes, in order to reduce price inflation and prevent bulk raw materials from driving up commodity prices and affecting people's lives. These substantial impacts, due to the prolonged uncertainty of the war, are expected to last for a while, with no end in sight in a short period of time .

Change of Financial Territories

The U.S.–China trade war in 2018, plus the outbreak of the COVID-19 pandemic in early 2020, triggered new thinking on the restructuring of global supply chains. In addition, with the fact that funds are returning to Taiwan for real investment, the financial market has undergone tremendous changes. Taiwan's financial industry has always closely followed the development of Taiwanese businesses. The financial industry has carried out related businesses, served Taiwanese businesses, and continued to develop the Southeast Asian market. It has set up branches to provide Taiwan-style services to meet the needs of Taiwanese businesses. Especially in the circumstances where Hong Kong, the Pearl of the Orient in the past, is under the impact of political turmoil and the pandemic, Hong Kong's financial business has been either relocated or terminated, resulting in an outflow of talents. Taiwan's financial industry should seize the opportunity to continue expanding the financial industry and deepen the Southeast Asian market.

New Business Opportunities Available to the Financial Industry

In this wave of global supply chain restructuring, the United States and Japan are vying to invite Taiwan factories to invest , also to drive related supply chain manufacturers to set up factories together. Taiwan's financial industry should actively expand various businesses and continue to be the most solid backing of Taiwanese businesses for their business development. The new business opportunities that are available to the financial industry can be divided into three main categories:

Financing for Factory Setup and Fundraising

The first business opportunity for the financial industry is to seize the return of funds from Taiwanese businesses. Whether it is the capital management required for expanding factories by the returning Taiwanese businesses, or for the Taiwanese businesses to accelerate the deployment of new production bases in the United States or Japan, the assistance from the financial industry in funding is required. With the financing in place, the factory can be put into production smoothly; especially aligned with the capital needs of the supply chain, the cash flows such as accounts receivable and orders can be connected together, and such transactions can be more secure under the review of the financial industry. This is the part where the financial industry can serve.

Exchange Rate Hedging and Wealth Management Needs

Whether Taiwanese businesses repatriate funds back to Taiwan, or set up factories overseas, import machinery and equipment, or purchase raw materials, they will need the services of foreign currency remittance or deposit for bill negotiation. The financial industry can provide Taiwanese businesses with exchange rate derivative instruments such as foreign exchange options, currency swap, and currency and interest rate swap for hedging , in order to minimize the damage of import and export

exchange, and avoid exchange rate fluctuations caused by recent significant political and economic events, which will cause Taiwan businesses to suffer large exchange losses.

The wealth management business of the financial industry can also provide a full range service for Taiwanese businesses. Whether it is to save tax burdens, accumulate wealth for future generations, or return to Taiwan to settle and invest in real estate, the financial industry can provide professional advice, so that Taiwanese businesses can focus on their own competencies and leave wealth management to the financial industry.

Venture Capital Investment and Financing for Listing

Through affiliated venture capital companies, the financial industry can also actively support new start-ups or traditional Taiwanese businesses which are willing to go public. Through this channel, the financial industry may expand investment in potential businesses and related manufacturers in fields such as domestic listing or cash capital increase, issuance of corporate bonds, euro corporate bonds (ECB) and depositary receipts (DRs), and expand the scope and reach to help enterprises integrate with international standards, and grasp opportunities for shared value and financial and capital supply chain cooperation driven by the provision of professional services.

In the enterprise growth process, capital arrangement and flow are necessary, but the key is that the funds are managed by professional talents. The business owner no longer needs to both take care of his own business and spend time dealing with fund scheduling. In particular, the government proposed with its strong support 5+2 industry innovation plans such as“smart machinery,”“Asian Silicon Valley,”“green energy technology,”“biomedical industry,” “national defense industry,”“new agriculture” and “circular economy” as the core of driving the growth of Taiwan’s next-generation industries, in the hope of injecting new energy into economic growth. These projects also require venture capital companies of the financial industry to guide capital investment and further build Taiwan’s unicorn listed companies, as well as to allow new ventures to continue growing and thriving without a lack of funds.

Despite the interference of external political and economic events, Taiwan’s financial industry still upholds its professional capabilities and macro vision, and continues to cultivate customers to give the financial industry’s development a different look. In fact, Taiwan has always had excellent financial talents, and its financial market will be more flourishing if the talents can be matched with diversified financial services, and then money will naturally follow. In fact, Taiwan has many niche points, but the market and mentality need to be more open in order for the world’s attention to be shifted to Taiwan.

Five major payment trends are expected to drive the future growth momentum of the banking industry

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The COVID-19 pandemic is not only a catalyst for digital transformation of enterprises, but it also drives many consumers to take the first step in using digital services. Many people started shopping, learning knowledge and holding meetings online because of the pandemic. According to the latest statistics from the Financial Supervisory Commission, the number of non-cash payments in 2021 reached NT$4.726 billion, and the consumption amount was NT$5.444 trillion, an annual decrease of 9.5% and an annual increase of 9.24%, respectively. There is a phenomenon that the number of transactions decreases but the amount increases inversely[1], showing that after the pandemic, people don't want to shop with banknotes or change anymore, so that the amount of non-cash payment consumption has been growing, and the same goes for the use of financial services.

The Five Major Payment Tools That Are Close to People' s Lives

The five mobile payment methods defined by the Banking Bureau of the FSC are: mobile credit card (such as Apple pay), mobile financial card (such as Taiwan pay), mobile electronic ticket (such as EasyCard and All-in-One Card), and online-to-offline (O2O) electronic payment services of electronic payment institutions (such as JKOpay and LINE Pay), and mobile acquiring (referring to mobile acquirer POS machine). The Banking Bureau pointed out that mobile payment in Taiwan started in 2016 and has grown at a double rate every year. Based on the analysis of the five major transaction tools, the trend changes every year. For example, in the past, people directly used the payment function of mobile phones to bind credit card transactions, which accounted for the largest amount.

[1] (Don't Want to Use Banknotes Anymore! Consumption via Mobile Phone Exceeded NT$5 Trillion (https://udn.com/news/story/7239/6089528)

However, because the electronic payment institutions have begun to rise and offer a large number of discounts to attract the public, the number of merchants and the fields of application have increased greatly, and the public are more willing to use mobile electronic payment. Because vendors have been offering various discounts, only the mobile POS machine has a relatively low market share, and the other four methods have a double digit growth. At present, the ranking is changing constantly, and there is no fixed ranking. At present, electronic payment ranks the first, mobile financial card the second, mobile credit card the third, and mobile electronic ticket the fourth.

Top 10 Favorite Mobile Payment in Taiwan

General type		Limited type	
1	Line Pay (28.1%)	1	PX Pay (%)
2	JKOpay(15.5%)	2	Fami Pay (%)
3	Apple Pay (9.7%)	3	Open Wallet (%)
4	Easy Wallet (6.2%)	4	Carrefour Pay (%)
5	E.Sun Wallet (5.1%)	5	Happy Go Pay (%)

Source: Institute for Information Industry

Not Going Out During the Pandemic Causes Contactless Payment to Continue Increasing

People do not go out due to the pandemic, but shop or watch various videos online all day long at home, the contactless payment business opportunities driven by online shopping and food delivery continue to increase, and more and more people are willing not to use cash for consumption. In addition, due to the giveaway of the five-time consumption coupon and various economy revitalization coupons launched by various agencies, and additional discounts offered by various banks for binding electronic coupons, people are giving up paper coupons and switching to mobile payment transactions, making the new payment type a part of our lives. What is worth noting is that in the past, supermarket chains, department stores and transportation were the occasions where mobile payment was used the most, but now tourist night markets, supermarket chains, coffee shops, fast food restaurants and hand-shaken drink shops are all willing to start accepting diversified payment modes, and they are continuing to increase people's willingness to spend through bonus points, promotions and real-time messages. Now people have at least two payment modes on their mobile phones, and this allows mobile payment apps to develop a huge fan base.

Trend 1:

Scenario Finance Has Become a Battleground for Strategists

Behind the marketing apps of various channel operators, banks play an important role in cash flow. What they plan is to create scenario finance that can be integrated into the customers daily life. In this regard, more and more banks are forming alliances, requesting customers to bind credit cards or accounts, and expecting customers to earn bonus points and earn discounts. Via these measures, banks can earn customer loyalty and increase the number of consumptions with them, thereby integrating themselves into the people's daily lives in food, clothing, housing, transportation, education and entertainment, and gaining insight into their needs through their transaction data in order to create more business opportunities.

Trend 2:

The Launch of Various Pay Services Are Attracting Public Attention and Increasing the Frequency of Use

Although banks play an important role in the flow of cash, the most impressive things to the public are the various services of bank apps, such as preferential foreign exchange rates, investment information and high rewards for card sweeping, which can effectively improve the public's willingness to use and directly attract the public's attention, so as to successfully win over fans and increase their use of the bank's services. On the other hand, in terms of transaction frequency and demand, the top three investments in financial services by the financial industry are basic services (such as digital accounts, smart ATM, account transfer and payment and foreign exchange), smart wealth management and investment, and digital payment (e.g. mobile payment and e-wallet). In general, in order to meet the needs of customers, the financial industry is following suit to constantly optimize and launch innovative services.

It is worth noting that users in areas with few branches or those who do not have credit cards may apply for financial accounts of various banks online. The application process is simple and the approval is fast to facilitate the services to the public on instant withdrawal, transfer, payment, tax payment and consumption. This can allow the public to enjoy financial convenience more, and make the number of bank customers increase as well. In particular, banks can still attract new customers and provide relevant financial services on their apps without the need to set up new branches at a cost.

Trend 3:

Opportunities for Financial Development Lie in "Cross-field Services"

For financial institutions that have solid operating fundamentals, the next stop of "cross-field service"is to quickly capture the consumer market and grab the business opportunities. Today, the financial industry has already broken away from the traditional financial service mode, and is replicating the DNA of the information industry and the circulation industry in a brand new look. It is recruiting cross-border talents to be its employees, and launching brand-new financial services such as those for different age and consumption trends, to cover the full investment spectrum and provide a full range of investment advice. The financial industry is backed by technological power. There will be a new look in the future.

Trend 4:
Information Security Threats Are the Key to Digital Finance Development

There is a general trend in the financial industry after 2020, that is, the financial industry's budget for investing in digital finance has increased year by year. Among the investments in the"technical aspect,"information security and supervision technology account for the most, because the financial industry cannot endure heavy losses to the company or customers due to the leakage of personal data of customers or the crack of the firewall, which will cause not only an actual outflow of money, but also a negative evaluation of the goodwill. With the upsurge in the number of online transactions, the financial industry needs to strengthen information security protection and implement the guidelines of the competent authorities to ensure that safe and convenient financial services are not interrupted.

Trend 5:
How the Official Debut of the Three Pure Online Banks May Affect the Financial Industry

The three pure online banks, Rakuten Bank, LINE Bank and Next Bank that are regarded as catfish have all opened, symbolizing that Taiwan's financial industry has officially entered another stage of digital finance, and there will be more cross-industry cooperation in the future. With more preferential financial services offered, they will help the upgrade of Taiwan's overall financial industry. For pure online banks without physical bases, how to attract customers is the focus of external observation. They may attract early adopters to open accounts at first, but one of the main purposes of the competent authorities to open online banking is for them to play the catfish effect in the future to bring people to break away from the traditional financial thinking in the past, stimulate the whole financial industry to blossom, transform the financial ecosystem, and provide new convenient services to the public.

The Rise of Limited Apps Are Worthy of the Attention of Other E-payment Vendors

PX Pay of PX Mart captured consumers with an army of housewives, and rushed to the third most commonly used payment tool."Limited mobile payment"apps are gradually eating away the users of"general payment"apps! In particular,"+Pay,"which is jointly invested by FamilyMart, E.Sun Bank and Pi Mobile Technology Inc., a subsidiary of PChome Express Co., Ltd., obtained the electronic payment business license, announcing that the "channel sharing"strategy of PX Mart and FamilyMart has officially taken shape, and the electronic payment market war is about to break out. The territory has to be reshuffled again. At present, FamilyMart has 13 million members, and PX Mart has 7 million members. This huge number of members will be the strong backing of this limited payment APP, which meets the needs of consumers and merchants with its cross-industry (FamilyMart and PX Mart) and cross-virtual and real (e-commerce and physical storefronts) advantages, and builds a convenience store and financial payment ecosystem. The scenario payment business it covers makes +Pay the only domestic payment vendor at the moment that focuses on scenario payment.

In addition,the Financial Supervisory Commission announced on 1st March the issuance of an electronic payment business license to “PXPay,”a 100% subsidiary of PX Mart. PXPay will appear as an“independent app”with a “brand new Image,”and incorporate more diversified and life-oriented service functions in the future. At the same time, it will strengthen the information security service, which is the most important aspect of electronic payment, and will set the goal of opening the platform to all banks.

Electronic payment services are being promoted more and more from the financial industry to the retail industry, and from e-commerce to physical storefronts, with the ultimate target being the “payment”on people’s mobile phone screen. The payment and member app most frequently used in consumers’daily life will be the final winner.

Reference: https://www.bnext.com.tw/article/63561/digital-payment-new-era)

Financial industry innovation – platform and ecosystem

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The landscape of the financial services industry is changing rapidly in response to future trends. Traditional financial service providers have gradually begun to develop "platforms"; emerging market players, including brand giants from other industries, have joined the ranks of financial market services, and the "financial service ecosystem" was born to integrate customer pain points and create value . The participation of emerging market players has blurred the boundaries of the financial industry, and for financial service providers, it is exciting despite the uncertain future. Many financial service providers are committed to understanding future trends. They worry about whether they are moving fast enough or brave enough to face competition, and then formulate strategies and investments to grasp market niches.

Platforms and Ecosystem

As many traditional financial services and products are standardized, conventional products are gradually becoming irrelevant to consumers' lives. Today's financial service consumers care about the value, convenience and security of financial services, and expect a financial services ecosystem tailored for their specific needs.

Judd Caplain, Global Head of Financial Services, predicts that the most successful financial services organizations in the next 15 years will be "platform service providers." The leaders of the financial services industry in the future will be defined by the participants in the financial services ecosystem in which they are located; it depends on which financial service provider can provide value-added services and which is more capable of meeting consumer needs.

In the pursuit of service experience and value nowadays, the traditional way of interacting with financial institutions no longer exists, and what consumers need are personalized, tailor-made and value-added financial services. Looking back over the past decade, we have seen fintech players decentralize financial services, trying to identify the pain points from customers and solutions; but now, we see that consumers no longer want various apps and interfaces, but yearn to have all needs solved on the same platform.

The benefits of platform services and financial service ecosystems come from the influence of the networks in which they are located. If the entire financial service network has more users, services, service providers and information, the service network will become more valuable, and customer loyalty will also increase. A traditional financial service provider lacking a platform service strategy will gradually find it difficult to provide its consumers with competitive or valuable financial services in the near future, and even to retain customers.

When thinking about transformation or expanding platform services, the first priority is to choose the right ecosystem and platform partners at the right time to meet customer needs. The premise of transformation should be based on the traditional financial service provider's existing core competitiveness and understanding of what value they can bring to customers, and then they can gradually develop the relationship with customers. From this starting point, the financial service provider will be better able to start from the perspective of customers, grasp the required information, and then predict and respond to customer needs.

In view of the evolution of the trends mentioned above, traditional financial service providers are driven to rethink the way they should present their value, and two new types of financial operating models,"platforms"and"ec osystems," have therefore emerged. Although platforms and ecosystems are not completely exclusive, they belong to different concepts. Platforms reduce market friction by connecting suppliers and consumers, while ecosystems focus on consumer needs, and organize various complementary value propositions to be provided to consumers.

By introducing emerging operating models of platforms and ecosystems, banks can combine their original banking service models (such as deposits and transaction services) and market advantages (such as customer scale, bank licenses, capital advantages) with new value propositions to deepen the relationship with customers. Whether developing a platform or an ecosystem, the transformation of the financial services industry should be built on the following three main cornerstones:

1. Value combination:
   Value combination includes establishing, integrating and managing partnerships, and to measure the value provided by each input and participant.

2. Data oriented analysis:
   It refers to the ability to transform raw data into valuable analysis for customers and operations.

3. Interoperability of data:
   The ability to exchange data securely and to make it available to participants effectively.

According to the experience of relevant KPMG experts, a bank can consider the following aspects in the initial stage of transformation evaluation:

1. Assessing the maturity of capabilities:
   The bank should assess whether it has the basic capabilities to effectively develop a future business model, such as the three main cornerstones mentioned above.

2. Assessing the role of the bank:
   The bank should assess their existing market strengths to determine its appropriate role.

3. Finding a suitable business model:
   Based on the analysis in the two items above, the bank then decides whether to develop a platform or an ecosystem.

Differences between a platform and an ecosystem

	Platform *A platform can operate within an ecosystem.	Ecosystem
Function	Reduce market friction by connecting suppliers and consumers.	Focus on consumer needs and organizing various complementary value propositions for consumers.
Consumers	· Participate in platform services with a view to solving specific problems; · Use the platform for market interaction; there are usually various options; · Consumers may also become suppliers at times.	· Participate in organized ecosystems in specific demand cycles; · Focus on the goods or services of a specific item in each of the different demand stages.
Suppliers	· Usually use the platform as a market to provide goods or services; · Compete with other suppliers on the platform; · May be based on non-financial motives (e.g. quality feedback)	· Offer products or services to embody the ecosystem value proposition; · Cooperating with the ecosystem integrator to participate in the ecosystem; · Sharing value with other participants in the ecosystem and benefiting from it respectively.
Information Sharing and Technology	· Information sharing between consumers and suppliers within the platform is limited; · Integrate the matching of consumers and suppliers through technology and generate a portfolio of specific preferences.	· Participants share information with each other and continue promoting the value proposition of the ecosystem; · Digital capabilities enable the integration of various customer experiences.

Source: KPMG analysis, 2021

How to Do It

Next, we take the Commonwealth Bank of Australia (CBA) as an example to further explain how a bank conducts financial innovation and transformation in practice.

Focus on value creation

In recent years, CBA has focused on the expansion of the Australian home loan market and is currently the largest home loan provider in Australia, serving more than 15.9 million home loan borrowers. CBA used this existing advantage to create new service value. CBA began to think about what homeowners really need and care about. Therefore, at the beginning of 2022, CBA announced to cooperate with Amber, an emerging retail energy company in Australia, to launch a 10-year fixed-rate green loan at a very low interest rate (0.99% annual interest rate) to assist homeowners in setting up green energy products, and attracted homeowners who want to save money and care about the environment at the same time. Angus Sullivan, CEO of CBA's Consumer Banking Group, believes that the value of this green bond is two-fold. On the one hand, it saves the future cost of homeowners-converting future electricity bills in advance to green energy investment with relatively low long-term costs; on the other hand, CBA has also invested in the green energy supply chain.

Valuing technology as the core

In addition, CBA invests in vertical industries that are critical to the lives of its customers, including investing in Little Birdie, an emerging e-commerce company in Australia to provide customers with products at the best price; investing in More Telecom and Tangerine Telecom, two high-speed broadband network service providers in Australia; joining Cogo, an app design company specializing in documenting and offsetting carbon footprints. It also invested in the development of several emerging technologies. What connects all the projects is that CBA continues to strengthen the value of technology as the core, and create customer experience through internal technological changes.

With the two examples above, Angus Sullivan believes that there are three key elements to the success of CBA's transformation. The first is listening to the needs of customers. CBA attaches great importance to the connection with customers, so as to understand the real needs of customers, make customers' lives more convenient, and assist customers in achieving their goals. The second is creating dynamic partnerships. Not only banks themselves increase innovative models and services, but also assist in the development and creation of new industries. Finally, while innovating and transforming, CBA emphasizes the importance of protecting customer privacy and maintaining a high level of trust, and ensures that all information is used only with the customer's consent.

In addition to the CBA example above, we are seeing financial service providers start to focus on specific projects, including agriculture and food, supply chain, health and well-being and e-commerce. Each financial service provider gradually establishes a service ecosystem and cultivates capabilities in its selected field, or establishes a platform to promote the transactions in specific fields and create benefits for market participants. Financial service providers will further narrow the distance between consumers and producers, and expand their value proposition through the information obtained, the ecosystem partnership, and the technological capabilities they own.

Finance-as-a-Service (FaaS)

After the development of platform services and financial service ecosystems, what are the next challenges for financial services?

Antony Ruddenklau, the lead accountant of KPMG Global Innovative Financial Services, believes that the final battle of the financial industry will be the establishment of an"as-a-service"business model, and some international financial players have developed finance-as-a-service based on their advantages. For example, BlackRock aggregates customer data and provides each customer with a "risk-analytics-as-a-service"; Goldman Sachs reinvented the program to provide regulated-cloud-as-a-service; HSBC, by thinking about how to use the bank's daily liquidity reporting process, has derived a service that provides"liquidity-data-as-a-service" to its peers.

Many leaders in the financial service industry have begun to move towards embedded finance, providing a variety of solutions for corporate customers through different service levels. Regardless of what Finance-as-a-Service players choose to invest in, the speed of bringing products to the market is key. Based on the experience of the embedded financial service providers, four key elements can be summarized to increase the speed of product introduction into the market. First, the ability to integrate and commercialize the aspects of business development, sales preposition and partnership; second, creating a high-performance architecture, including building a common data model, open data standards, and good big data management capabilities; third, creating a low-cost business model through derivative structures such as automated services; finally, financial service providers attract and maintain customer relationships with the right skills and experience.

In addition, there are other applications of data. Financial service providers are beginning to rethink the value of data. The value may bring to customers or third parties after being arranged and combined gradually emerges. Financial service providers are trying to find the possibility of expanding new sources of income from data combinations. With the support of various analytical technologies, the service provider establishes a financial service ecosystem surrounded by data, and focuses on providing a niche-market perspective.

Referring to the experience of financial services leaders in seeking and creating value from data, the key to transforming data into commercially valuable products is:

Building a diverse financial service ecosystem

Service providers need to think broadly about the form of data integration, possible data sources and the value that can be derived, and to integrate the needs of the ecosystem, expand new sources of value through collaboration with consumers, other banks and non-traditional market players.

Trying to ask interesting and valuable questions

Based on the understanding of their own strengths and customer needs, service providers can stimulate the possibility of data value through valuable questions and answers.

Commitment to ethics and privacy

Service providers should be committed to ensuring that data is not used in a biased manner, but for reasonable and appropriate purposes.

Strengthening data management capabilities

Service providers should also focus on strengthening data management capabilities to enable data dynamics to meet market trends and expectations.

Emphasizing the creation of financial service data value does not mean that financial service providers should position themselves as data processing companies, but to allow financial providers to develop new business models and service values through the application of data based on their traditional advantages of trust, security and financial acumen.

Conclusion

Today's financial institutions focus on service efficiency, agility and profitability. With the evolution of technology and customer needs, financial service providers have to rethink their business models. The financial service system dominated by platform operators is an inevitable future trend. Platform service providers, or participants in the financial service ecosystem, based on the advantages of traditional financial service providers and through the understanding of customer needs and the combined application of data, create new service values which enable them to provide more customer-centered, value-oriented and personalized financial services, in order to improve efficiency, agility and profitability at the same time, and remain more closely related to customers' life circles. In addition, facing the business development opportunities of Finance-as-a-Service, financial institutions need to rethink the value brought by data, how to analyze and apply this information in new fields, or integrate with platforms and ecosystems. While large players have their data volume and data analysis advantages, smaller players can also expand their niche markets. However, the most important thing in all this is to return to the security of data and the trust of customers, as well as the experience and value of customers.

Digital Finance in Process

the Catfish Effect Brought by Pure Online Banking and Cross-industry Integration

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People in the traditional banking circle have the concept that most traditional financial institutions now are like elephants, and it is not easy for a behemoth to turn around in a short time. However, as the COVID-19 pandemic has hit the global financial industry and brought a huge impact, people are not willing to go to physical branches, and the demand for zero-contact payment when shopping is growing rapidly. Banks therefore must spend more time to find and establish a financial ecosystem centered on customer experience, or they will enter a new era of financial elimination. In particular, banks in the middle and later stages must find their own niches.

The financial industry is actively deploying open banking, hoping to create ubiquitous financial services, and financial services will be integrated into more ecosystem scenarios. Through open APIs, financial institutions can conduct cross-industry and cross-domain integration with third-party service providers (TSP) to create new business opportunities and digital ecosystems, and allow consumers to experience seamless integration and ubiquity financial services.

Financial Institutions Capture Customers with Their Ubiquity

Traditional banks also have their own digital channels to interact with consumers, such as official websites, event pages and financial service-related apps. They also allow the trading of financial products or provide digital financial services online. However, the premise is that customers need to be “proactive” by going to the digital channel of the financial institution or its website or APP of digital financial services to receive the required financial services. After pure online banking joins the competition, traditional banks have no choice but to change, and create a new business model of banking-as-a-service (BaaS) to interact with consumers. BaaS is to actively allow customers to see suitable products, thereby generating loyalty and creating a financial scene. There are three main members in this BaaS business model, including consumers, banks and third-party institutions. BaaS does not change the service supply structure of banks, but only "deepens" their products into people's lives. Banks cooperate with online e-commerce vendors, social networking sites, etc., to reach more consumers through these platforms. When consumers use these platforms, they will see banking services such as personal loans, credit cards, and investment applications, and it is easier for them to be attracted. With these financial services, banks can also achieve the business goal of gaining customers and making profits.

Cross-field Talents Are the Key to Operation in the New Financial Era

Under the impact of the pandemic in recent years, the financial industry must transform in order to have differentiated industrial competitiveness, especially after the emergence of pure online banking. Pure online banking recruits many cross-field talents, which puts pressure on traditional banks. Therefore, banks are also looking for cross-field talents, especially those in e-commerce, digital transformation and online application. There are three types of professionals needed by the financial industry in the future:

E-commerce Type

In the future, banks need to have app technical experience, or app cross-device, B2C and other marketing experience. After entering the financial industry, they can be responsible for the classification of financial products and maintenance of various product information, and be familiar with cash flow, information flow and payment related laws and regulations. In addition, it must also have related work functions, including product planning, product interface maintenance, website control and firewall.

Digital Transformation Type

The talents recruited by banks can digitize various marketing functions of the financial industry, and use digital channels and related community and network analysis tools to establish online promotion and publicity, and engage in back-end editor community operations, marketing planning or digital advertising and optimization. Banks must rely on the precise vision of digital transformation talents in order to gain the favor of target customers. The work content also includes various tasks such as marketing planning, community management, and digital advertising and production.

Online Application Type

In the future, banks will also need to recruit talents who can develop iOS/Android programs. After entering the financial industry, such talents can be engaged in the development, testing and installation of Internet system software and hardware and various programming languages, app maintenance and function updates, and back-end web system development, APP firewall settings, database program development and platform system architecture planning and design. The work content also includes software and hardware operation, web design, database management and statistical analysis.

Of course, these three types of cross-field talents will not only have a single functional role in the financial industry, but also need to have professional business management capabilities (finance, economics, management and international trade) and the integration ability to understand and handle new technologies. In the future workplace, they can contribute their professional abilities, give full play to the work effects, and add competitiveness to banks.

The Banking Industry Invests in Fintech to Increase Competitiveness

The government actively promotes the development of financial technology (fintech). According to the latest statistics released by the Financial Supervisory Commission, the three financial industries (banking, securities and futures, and insurance) and ancillary units invested a total of NT$18.21 billion in fintech in the year before last year, a record high over the years. This year, it is estimated that the investment will reach NT$30 billion, which will continue to hit a new high. In recent years, the rapid development of fintech has eliminated the difficulties faced by the industry (including startup fintech teams) in the development of fintech, and provided necessary assistance.

In the past, bankers focused on paying and borrowing large sums of money, and were not good at cooperating with consumers and the internet industry. Now, with the advancement of internet technology, fintech can enter various life scenes, and consumers only need to click on the digital payment function of the smart device to easily and instantly complete various payments. Bankers should think about how to continuously extend the value chain of the industry.

Emerging technological power and innovative business models are constantly subverting the channels and patterns of banking services. Banks must adapt to the trend of the times, cooperate with technological development, change and transform in a timely manner, and find a winning strategy in a time of changes. Of course, attention should be paid at the same time to establishing a comprehensive online financial data statistical monitoring system, adopting a comprehensive, accurate and real-time risk early warning system, and strengthening the monitoring and management of possible risks derived from fintech, so as to respond to the digital development trend and reduce the risk of banking operations.

Information security reengineering under the wave of digital finance

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In May 2022, the foreign media Bleeping Computer revealed that they had used deepfake technology to forge audiovisual files of tech celebrities such as Tesla CEO Elon Musk-the world's richest man-and Binance CEO Changpeng Zhao, to promote a fraud website for cryptocurrency transactions. Hackers also used YouTube and other social media for dissemination, successfully attracting FinTech enthusiasts and even defrauding investors. Deepfake technology is a type of forgery that uses artificial intelligence (AI) technology. With the continuous advancement of technology and the high exposure of celebrities on the internet, there is no lack of learning samples for AI algorithms, so it is easy to collect sufficient audiovisual materials of people through the internet for deep analysis, which allows video or audio to be forged easily. This technique also brings a serious test to the development of FinTech, which is gradually adopting biometric technology for digital identification. It is a new type of information security threat that the financial industry must face up to.

Information Security Risks Follow FinTech Transformation

In recent years, due to the impact of the COVID-19 pandemic, the global digital transformation and the development of FinTech have been accelerated, especially in technologies that can be applied with remote identification. For example, in Taiwan, recently there has been cooperation with FinTech to promote remote identification by various biometric methods (such as video, facial recognition, voice print, etc.) to replace the existing over-the-counter services, providing consumers with a more convenient experience. In addition to traditional online financial services, there is a broader category of derivative digital financial services developed from blockchains, such as cryptocurrency, decentralized finance (DeFi), and non-fungible tokens (NFT). Although these digital financial activities, characterized by decentralization, consensus decision-making, and anonymity, are going through a distinctly fluctuation changes, are still on the rise.

However, with innovative applications, corresponding information risks follow suit. For example, derivative financial services such as cryptocurrency exchanges, DeFi, and NFTs have been hacked, resulting in the loss of a large number of customers'encrypted digital assets. In addition to traditional network security protection, the following attack characteristics of emerging FinTech also deserve the attention of the FinTech industry and financial consumers:

Direct attacks on terminal financial service users

At the beginning of 2022, the customers of a famous NFT trading platform were hacked by hackers who then made successful trades. This incident was not due to any loopholes in the NFT trading platform, but because the customers failed to aware in time that they had been attacked by spear phishing, and then clicked on a link in the impostor's email, resulting in the leak of personal account information. There are more and more information security incidents where financial transaction users themselves or their equipment become loopholes. In addition to consumers' own risk awareness and ability, how FinTech companies educate users is also an important measure for risk control.

Direct access to platform encryption keys

Whether it is DeFi or NFT, under the algorithm mechanism of the blockchain, owning the password means owning the world. Regardless of the public or private chain encryption mechanism, the encryption key is the most important thing, in case of any leakage of the key, the entire system will be cracked. The most well-known incident happened at the end of the year 2021, a famous DeFi cross-chain lending platform lost US$55 million due to the encryption keys being theft by hackers.

Direct cracking of applications

Based on the hacker's eagerness to realize the return of investment of the hacker economy, compared to methods that require advanced hacking techniques such as cracking encryption algorithms and stealing encryption keys. Attackers' methods of invading emerging financial technologies still often focus on web applications, mobile apps, application programming interfaces (APIs), and protocols. Therefore, according to foreign media statistics on the top ten DeFi hacking incidents from 2021 to the present, up to 80% of information security

incidents were hackers exploiting the application and platform vulnerabilities as attacker vectors, as a result, the DeFi industry paid a heavy price for that.

How Does FinTech Surmount the Deepfake Hurdle?

FinTech can only be gradually promoted through appropriate supervision by competent authorities and a friendly and safe trading environment being put in place by industry leaders with building up the foundation of consumer confidence. In this process, both financial service providers and general consumers must shoulder their responsibilities in order to promote a virtuous cycle of the overall ecology. Service providers can use"AI protection"and "zero trust information architecture"to defend against upgraded malicious attacks such as deepfakes; consumers should also establish a correct understanding of self-protection, and the two sides should work together to fight and overcome the risk barriers of emerging technologies.

Innovation and Structural Transformation of Financial Network Protection Technology

The financial industry has the ability to apply AI to build "intelligent active" protective capabilities, such as adding exclusive hash values or digital certificates to public videos; besides ensuring the authenticity of the source and preventing hackers from secretly collecting and maliciously tampering with the information, this can also prevent hackers from using it to defraud other consumers. Another method is to expand the use of "multi-factor authentication" (MFA) which required consumers to obtain authorization through more than two authentication mechanisms, such as combining physical security keys and other authentication controls which can avoid a single device (such as a mobile phone) from obtaining all authorization information; this should be able to effectively reduce the attack risk caused by "deepfake technology". In addition, service providers should also refer to the authentication concept from zero trust architecture, avoiding the traditional prolonged services being provided after one-time verification, instead adopting verification based on different service risk levels with multiple and different types of verification methods. In order to reduce the degree of damage caused by the failure of a single user verification mechanisms and ensure appropriate and matching risk control. Indeed, moving to a "zero trust"architecture requires a lot of time and resources with more training and building of organizations'capabilities / knowledge. More than that is to break the habit of consumers who used to focus only on convenience. Therefore, it is necessary to adopt a"progressive" approach of deployment which combines processes and technology, so that emerging FinTech applications can be built on a more secure foundation in order to create"trusted and immersive"emerging financial services while optimizing the user experience.

Consumer Vigilance of "Pictures May Not Necessarily Mean the Truth"

As the threat of deepfakes is expanding, financial consumers must understand that the concept of "pictures don't lie" which they believed may become "fooled by pictures". When receiving external links for videos or files from unknown sources, first put away your curiosity about the theme and content, and also put an end to the mentality of "seeing it first" and the habit of "broadcasting the good news". In addition to choosing safe and reliable technology application vendors or services, avoid excessive disclosure of personal information on the internet or social media, and strengthen your awareness of protecting personal mobile devices. Some large audiovisual platforms have begun to use authenticity identification technology to detect altered content, however, in order to prevent getting in the danger of deepfake, when users browse through any possible "deepfaked" videos and audios, they must still be aware of the risks and find other reliable channels where they can verify the authenticity of the content. Most importantly, consumers must understand that although the traditional single sign-on (SSO) is convenient, it is not a good practice from the perspective of information security protection. When service providers introduce more secure protection mechanisms, though the convenience of use may be affected, consumers should show more support rather than resistance, in order to create a consumer environment that takes both safety and convenience into account.

Conclusion: Confidence Does Not Equal Ability

According to a survey report of a foreign security company for the first half of 2021, the rule trigger rate of the intrusion detection systems (IDSs) deployed by Taiwanese companies was between 57% and 63%, which was significantly higher than the average trigger rate of 20–35% in the Asia-Pacific region and the global rate of 25–38%. It is obvious that Taiwan is quite vulnerable to internet attacks. However, looking at the security readiness of Taiwanese companies, Taiwan's confidence index is 82%, which is significantly higher than the 71% in the Asia-Pacific region and the global average of 51%. Cross-analysis of the two survey results shows that Taiwan is in a high-risk area of global cyberattacks, but business owners are still quite confident in their own information security protection capabilities. This phenomenon is worthy of further attention from financial service providers who are frequently located in the center of hacker storms.

In addition to relying on the confidence of the industry, what is more important for the risk management of FinTech is the determination and implementation ability of information security protection. Taking new FinTech threats such as deepfake technology as an example, the FinTech development roadmap released by the Financial Supervisory Commission in 2020 included research on Fast IDentity Online (FIDO) authentication. In recent years, a mobile identification mechanism has also been gradually established to encourage consumers to open accounts or conduct business with different financial institutions, using device binding and biometrics for identification, and there is no longer a need to use physical cards or account passwords for repeated authentication. All of these implementations are hoping to create a more friendly FinTech ecosystem and promote emerging services or the development of business models, so as to improve the efficiency, accessibility, usability, and quality of financial services.

Decarbonization trend and countermeasures of global banking industry

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The COP26 UN Climate Change Summit, which ended at the end of 2021, re-stated the global commitment to move towards net zero emissions by 2050, and reached the first coal reduction agreement in history signed by more than 20 national leaders, promising to terminate government funding for the development of overseas coal-fired power plants by the end of 2022. In the future, governments around the world will accelerate the reduction of coal-fired power generation and abolish fossil fuel subsidies. It has become a global consensus for banks to set credit guidelines and caps for related industries or to exclude certain high-carbon industries from its portfolio.

Why Should the Financial Sector Pay Attention to Carbon Emission Inventory?

An analysis by MSCI pointed out that more than 99% of the carbon emissions in the financial sector comes from scope 3 emissions that are outside of its own operations, with investment and financing assets being the most critical. The Net-Zero Banking Alliance has asked its member banks to set mid-term targets (by 2030 or earlier) for the most carbon-intensive industries in their asset portfolios. Therefore, inventory and control of carbon emissions for carbon-intensive industries has become the first step for financial sector to implement effective carbon management, and it has also become an important criterion for international institutional investors to evaluate the sustainability of the financial sector.

KPMG compiled the results of carbon emission inventory of various industries at home and abroad, and found that power and energy, transportation, as well as manufacturing and construction sectors are carbon-intensive industries commonly identified by the current mainstream standards . According to the Greenhouse Gas Inventory Report released by Taiwan in 2021, energy sector accounted for up to 66.29% (about 181 million metric tons), transportation sector accounted for 12.96% (about 35 million metric tons), while manufacturing and construction sector accounted for 11.93% (about 33 million metric tons of carbon dioxide). It is clear that energy sector is what financial institutions must first consider eliminating/ gradually withdrawing from, or assisting in achieving a low-carbon transition through communication, in order to reduce the carbon risk in investment and lending, especially those assets related to coal mine and it's supply chain, as well as certain high-risk oil and gas sectors.

Sources of domestic and foreign definitions and carbon-intensive sectors

The most recent announcement/ publishing year of the referenced sources	Definition of carbon intensive sectors
Taiwan Greenhouse Gas Inventory Report, 2021	Energy, transportation, manufacturing & construction, service & housing, agriculture/ forestry/ fishery/ animal husbandry, industrial processing & product use, waste
Carbon Border Adjustment Mechanism (CBAM), 2021	Electricity, manufacturing (including steel, cement, fertilizer, aluminum)
Global Carbon Plan, 2020	Electricity and thermal energy, transportation, manufacturing & construction, land use & forestry
Equator Principles (EP), 2020	Electricity & energy (oil, natural gas, thermal power), manufacturing (cement, lime, steelmaking, metal, casting, pulp, etc.), agriculture & animal husbandry
International Energy Agency (IEA), "Greenhouse Gas Emissions from Energy: Overview" , 2019	Electricity & thermal energy, transportation, manufacturing, construction sector

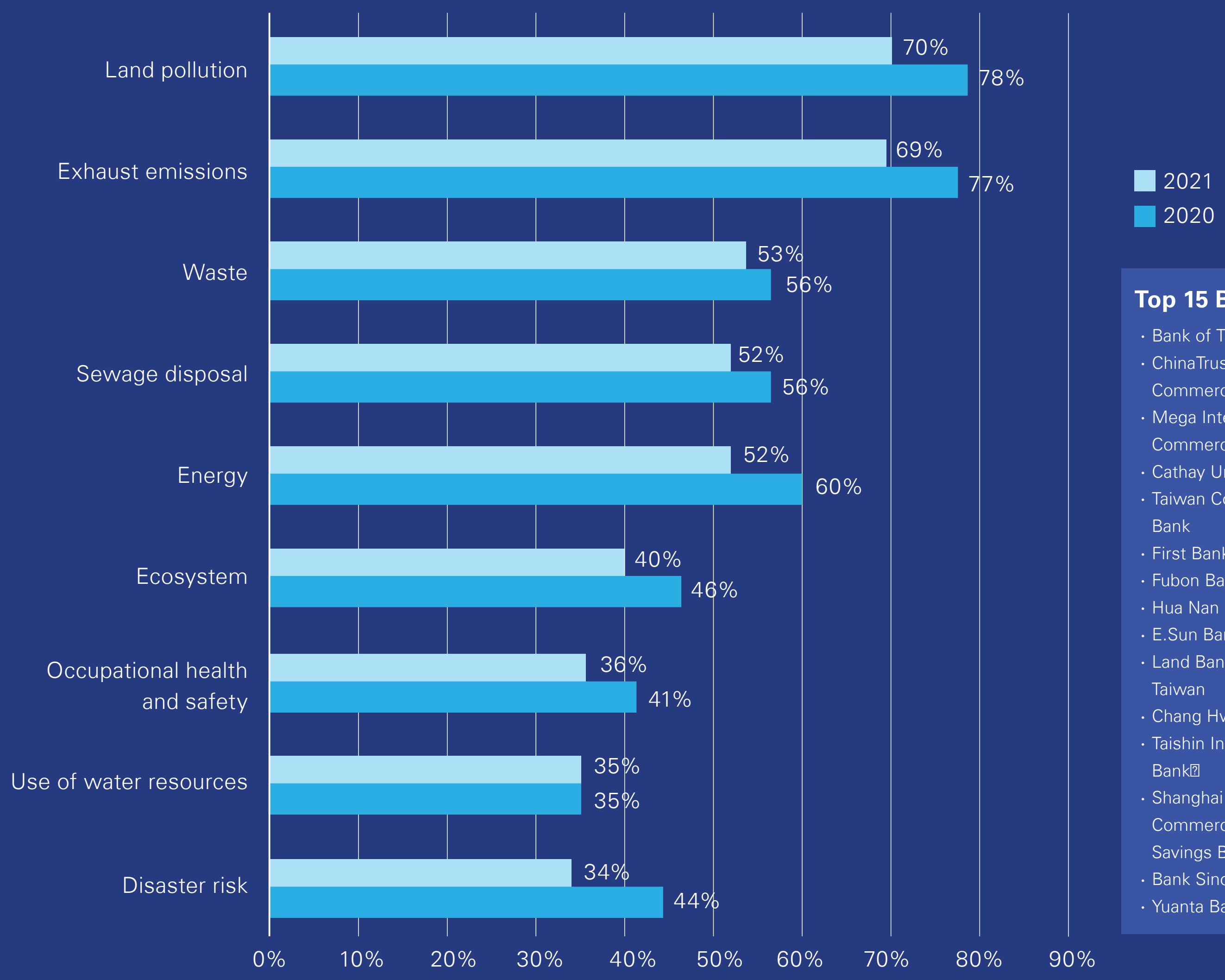
Analysis of ESG Risk Exposure in Lending Portfolio of Domestic Banks

Every year, KPMG analyzes the ESG risk exposure of Taiwanese banks'lending portfolio based on the"Environmental and Social Sustainability Performance Standards"of the International Finance Corporation (IFC). According to the analysis results in 2021, the total amount of credit granted by Taiwan's top 15 banks to its top 10 customers reached NT$1.57 trillion; about 70% were of medium and high ESG risks as defined by the IFC, which was 8% lower than the 78% of 2020. Among the ESG risk issues involved in lending portfolio (Figure 1), land pollution (70%) and exhaust emissions (69%) accounted for the largest part. On a year of year comparison, the ESG exposure in the above-mentioned two issues has reduced quite significantly.

However, the analysis results of the exposure of carbon-intensive sectors showed that although energy sector only accounted for 1.63%, transportation sector accounted for 16.43%, while manufacturing and construction sector reached as high as 51.78%. Taiwanese government has already formulated plans to introduce net zero emissions into the law by 2050. Under this trend, the banking portfolio is bound to be adjusted, or banks will need to actively guide carbon-intensive sectors to move towards low-carbon transformation.

Figure 1. Comparison of ESG risk issues involved in credit assets in 2021 and 2020

Proportion of risk issues involved in the top 10 credit assets of the 15 banks

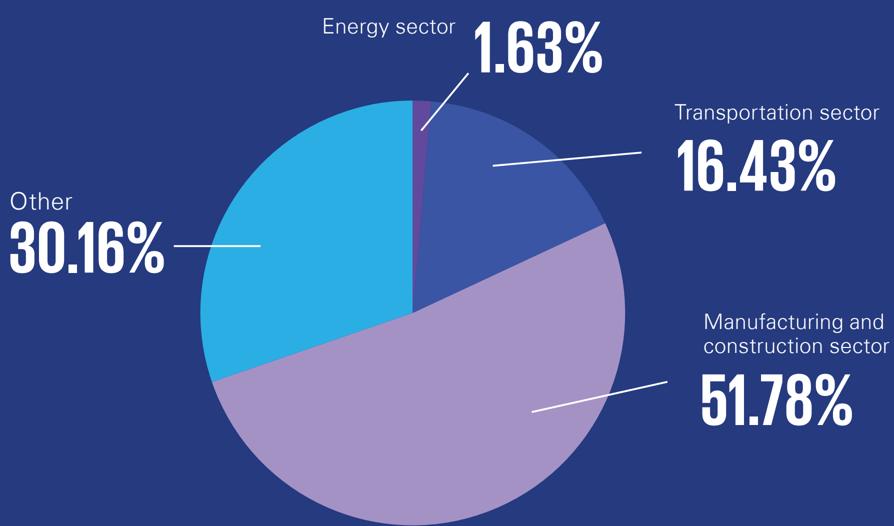


Top 15 Banks

- Bank of Taiwan
- ChinaTrust Commercial Bank
- Mega International Commercial Bank
- Cathay United Bank
- Taiwan Cooperative Bank
- First Bank
- Fubon Bank
- Hua Nan Bank
- E.Sun Bank
- Land Bank of Taiwan
- Chang Hwa Bank
- Taishin International Bank
- Shanghai Commercial and Savings Bank
- Bank SinoPac
- Yuanta Bank

Figure 2. Analysis of the proportion of carbon-intensive credit assets and other

Proportion of top 10 credit assets of the 15 banks



Decarbonization: How Financial Sector Can Start Achieving Net Zero

As of April 2022, six financial holdings in Taiwan have announced their net-zero emission targets (Figure 3). Compared to international benchmark companies which have clearly introduced relevant access restrictions, proactive communication and management actions for carbon-intensive sectors, the net zero commitments of Taiwan's financial institutions are still in its infancy and mostly focus only on their own operations. With the government's official announcement of including net-zero emission in the law by 2050, financial institutions have gradually proposed specific industrial credit regulations, and a schedule for no longer undertaking and gradually withdrawing capital from business activities such as coal mining, coal-fired power generation and coal trading/transportation.

Net-zero emissions commitments of Taiwan' s financial sector

Company name	Declaration	Commitment content
E.Sun FHC	2050	·100% of domestic self-owned buildings will use green buildings by 2027, and 100% of domestic business bases will use renewable energy by 2030. ·Become a net-zero carbon bank by 2050.
Cathay Financial Holdings	2030	·Financial Holdings, Life Insurance, United Bank and Century Insurance headquarters will achieve 100% green electricity use by 2025. ·All domestic business bases will fully use green electricity by 2030.
Taishin Financial Holdings*	2030	·The headquarters and offices of the organization will have zero carbon emissions by 2030.
Shin Kong Financial Holdings	2030	·Achieve 100% net zero emissions for "office bases" by 2030.
China Development Financial	2045	·Achieve net zero carbon emissions of its own operations by 2030. ·Achieve net zero carbon emissions across the entire asset portfolio by 2045.
Sinopac Holdings	2050	·Achieve net zero carbon emissions of its own operations by 2030. ·Achieve net zero carbon emissions across the entire asset portfolio by 2050.

* : Taishin Financial Holdings joined the Taiwan Net Zero Emissions Initiative but did not make a separate commitment externally.

Taking control measures for carbon-intensive sectors and introducing carbon inventory for credit customers are only the first steps to implementing the carbon management of investment and lending assets. KPMG believes that “communication” should be the core for financial institutions to leverage its financial impact and implement responsible investment and banking. We suggest that banks evaluate and adopt different levels of communication measures, and create good interaction with customers, deepen long-term cooperative relationships between parties, and become business partners in customers’ journey of low-carbon transformation through encouragement, provision of counseling resources, or inclusion of due diligence and credit review conditions.

Sources:

1. How the Net-Zero Banking Alliance Helps Banks Set Interim Emissions Targets - RMI
2. World Economic Forum, “Global Risks Report 2021”
3. International Finance Corporation (IFC), “Environmental and Social Sustainability Performance Standards”
4. GreenBiz How smaller companies can catch up on sustainability reporting | Greenbiz

Financial crime risk management mechanisms

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The broad definition of financial crime covers the predicate offenses of money laundering, while the currently more commonly discussed narrow definition of financial crime focuses on the three aspects of fraud, corruption and bribery, and money laundering. There is a certain degree of correlation between these three aspects. For example, people who have been engaged in fraudulent activities for a long time will form a corrupt mentality, and they may also bleach the source and destination of funds through money laundering; people with a corrupt mentality will try to carry out fraudulent activities, as well as hide the source and flow of funds through money laundering; people who engage in money laundering for various reasons may develop a corrupt mentality, and then sink into fraudulent activities. Therefore, when managing financial crime risks, it is necessary to pay extra attention to incorporating anti-corruption and anti-bribery (principle of ethical corporate management), anti-money laundering, and anti-fraud into the establishment of a proper management mechanism.

Financial institutions are in a highly regulated industry, and their internal control environment and compliance with various laws and regulations is quite mature. However, the fraud cases that made the news in the past led the Financial Supervisory Commission, through the Banking Association, to promulgate the "Principles of Internal Control of Banks to Prevent Wealth Management Specialists from Misappropriating Customer Funds" (Financial Management Committee 1080614 for reference, also commonly known as the Wealth Management Specialist Operation Internal Control 1.0) in 2019, expecting that banking institutions will be able to attach great importance to relevant fraud risk management issues. However, incidents of recurring misappropriation of customer assets by wealth management specialists made the competent authority, again, through Banking Association, revise the “Principles of Internal Control of Banks to Prevent Wealth Management Specialists from Misappropriating Customer Funds” in 2021, which became commonly known as the Wealth Management Specialist Operation Internal Control 2.0. In order to appeal to the senior management of banks and for the effectiveness of financial crime management, in addition to the Wealth Management Specialist Operation Internal Control 2.0, the competent authority also formulated a number of supporting regulations to cover relevant requirements, such as the principle of treating clients fairly, the principle of ethical corporate management and the responsibility map. More detailed points for internal control requirements are listed in the Wealth Management Specialist Operation Internal Control 2.0. However, the overall management work involves new types of behavioral risk patterns that go beyond the familiar risk control methods of the past. Therefore, this article intends to focus on the root causes of fraud, fraud risk management framework, and how to introduce emerging technologies to assist in monitoring misconduct.

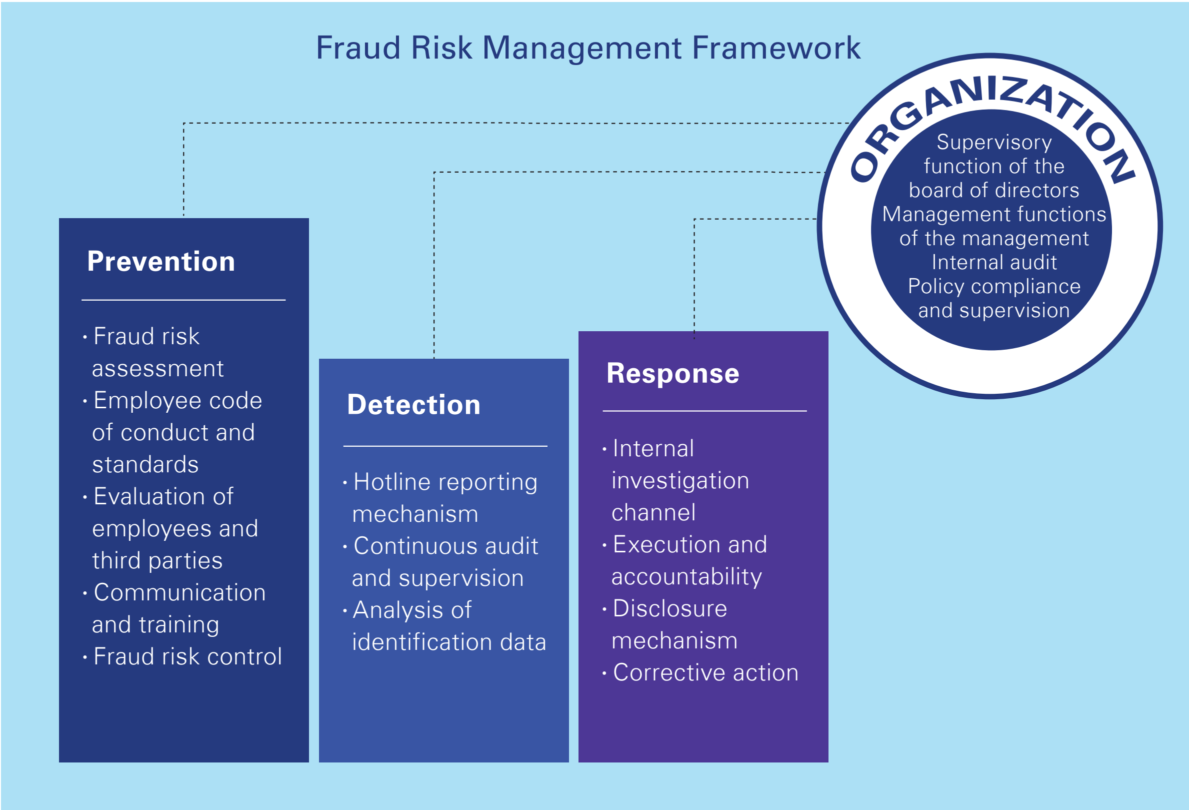
Causes of Fraud and Behavioral Risk

Among the common reasons for the formation of fraud, it is often because there are opportunities in an organization that fraudsters can take advantage of, plus incentives or pressures on the fraudsters that lead them to convince themselves to commit fraud.

One of the most important elements in the formation of fraud is that information asymmetry must exist in an organization. There are many situations that can cause information asymmetry in an organization, such as internal asymmetric situations (asymmetric information in the communication between staff and supervisors, and in operating procedures and information flows) and external asymmetric situations (asymmetric information between customers and banks). Through information asymmetry, fraudsters can manipulate information to hide the motivation of potential fraudulent activities. This can easily be understood from the issue of behavioral risk management that has recently become a focus among banking institutions. This so-called behavioral risk refers to the attempt to create a situation of information asymmetry in the process of business execution in order to carry out fraudulent activities; for example, by claiming to facilitate operations as a reason, a wealth management specialist asks a customer to sign a blank form first, and then abuses the form to engage in misconduct. The act of asking the customer to sign the blank form first is one of the improper behaviors formed through thinking in terms of convenience in the normal internal control operation process. In the early stage of the misconduct, it can be regarded as a violation of the norms of internal control. This is difficult for banks to predict in advance. It will also lead to a situation where there is asymmetric information between the bank and the manager (the bank is not aware of the customer’s prior signature); in this situation of asymmetric information, the manager will naturally have the opportunity and room for fraudulent activities. In addition, in order to conceal the fund gap in the customer’s bank account, a small number of managers may compile statement information by themselves and submit it to customers to hide the fact that the customer's funds have been embezzled. This is also one of the many situations that cause information asymmetry between the customer and the bank.

Basic Framework of Fraud Risk Management

The fraud risk management framework consists of three main pillars: prevention, detection, and response.



The key practical points on prevention, detection and response are as follows:

Prevention: Establishing a reporting mechanism, establishing an anti-bribery management mechanism, and implementing the division of functions (including the effective division and segregation of the information system).

Detection: Applying technology to the fraud detection process (computer archiving and investigation), establishing data analysis and developing monitoring and detection scenarios, and establishing an email investigation mechanism.

Response: Emergency response mechanism, incident investigation mechanism, unified external announcements, interaction mechanism with competent authorities, image disinfection mechanism for media and public relations, and judicial prosecution mechanism.

Key Points of Risk Identification and Assessment

Referring to the principle of risk-oriented management, we recommend that banking institutions first identify high-risk operations and unit personnel in the institution. In the follow-up, identify the risk content of the process, personnel and service content for these high-risk business units and personnel. Different from the types of risks identified in the past, it is necessary to additionally consider whether there are situations of behavioral risk, and also to consider whether there are possible situations of information asymmetry in the operation process. Then, formulate corresponding control mechanisms based on the identified risks.

In addition, in identifying the key items of information asymmetry, pay attention to and recommend the management methods used, such as:

- Checking the handwriting color of forms, and see whether there are different handwritings on the same form;
- Conducting telephone monitoring to assess whether there are any abnormal transaction communications;
- Conducting email monitoring to assess whether there is any unusual transaction communications;
- For transactions of significant amounts, implement in-depth telephone confirmation procedures;
- Implementing telephone confirmation procedures when customer information is changed;
- Continuously promoting customer account and transaction security principles;
- Confirming the contents of statements with customers by sampling;
- Executing confirmation procedures when the targets of customer account cash flows are abnormal (when counterparties are unfamiliar accounts).

Focus of Emerging Technology Application

In the modern age of advanced technology, many organizations are thinking about enhancing the competitiveness of their organization through digital transformation, and using emerging technologies has become a better choice. In the field of financial crime risk management, although using emerging technologies can certainly improve the awareness and depth of risk management, in the face of the behavioral risks mentioned above, some risk management operations still need to rely on professional human resources for judgment and execution. In addition, not all processes can seamlessly achieve the goal of monitoring through technology, such as qualitative management—manual review or decision-making and judgment. Emerging technologies can currently mainly be applied in the following situations:

- The internal data quality of the organization is good and has the capability for centralized data management;
- The internal control points in the operating procedures have quantitative indicators;
- The types of data held in the organization can describe human behavioral patterns;
- The internal control points can be specifically converted into key risk indicators (KRIs).

The strategy of applying emerging technologies can be divided into the two categories of traditional rule-based monitoring and monitoring modes based on the artificial intelligence and machine learning of emerging technologies.

The traditional rule-based monitoring mode requires less resources, but requires more human resources for further analysis and monitoring. Because of the high misjudgment rate of its monitoring results, more human resources is spent on misjudgment exclusion and confirmation. Moreover, because it is a rule-based monitoring method, setting the rules often involves setting and evaluating monitoring parameters, and the quality of monitoring parameter setting affects the quality of monitoring results; that is, the misjudgment rate determines the quality of monitoring. However, the generation of relevant monitoring parameters also costs more human resources for statistical analysis and evaluation.

The artificial intelligence and machine learning methods are employed to construct and describe the benchmark model of human behavior through the computer system of emerging technology, and the dynamic monitoring method of supervising improper behavior is realized through the analysis and comparison of the behavior benchmark. The advantages are that the monitoring results are more accurate, the misjudgment rate is low, and the degree of manual intervention in the later stage of system construction is less, which is limited to the resource investment of subsequent manual investigation and tracking. However, the initial investment cost is high, and machine learning will require learning time, which also requires a large amount of transaction data; of course, the quality of the data causes an increase of resource consumption and costs in the import process.

Conclusion

Risk patterns continue to evolve with changes in the business environment. The only thing that does not change is the detailed identification of new risk patterns in the organizational process, and the formulation of corresponding risk management methods in response to new risk patterns. Management methods can also be digitally transformed and changed from the traditional manual control, and emerging technologies can be introduced. What needs to be paid attention to is that the introduction of technology does not mean that there is no need to invest in human resources. Technology is not a panacea; especially in the current issue of behavioral risk management under the topic of financial crime, professional and experienced human resources are needed to return to the basic issues of management to implement and enforce internal control. Prevention is always better than cure.

From GMT to CFC, is the banking industry ready for high-end wealth management?

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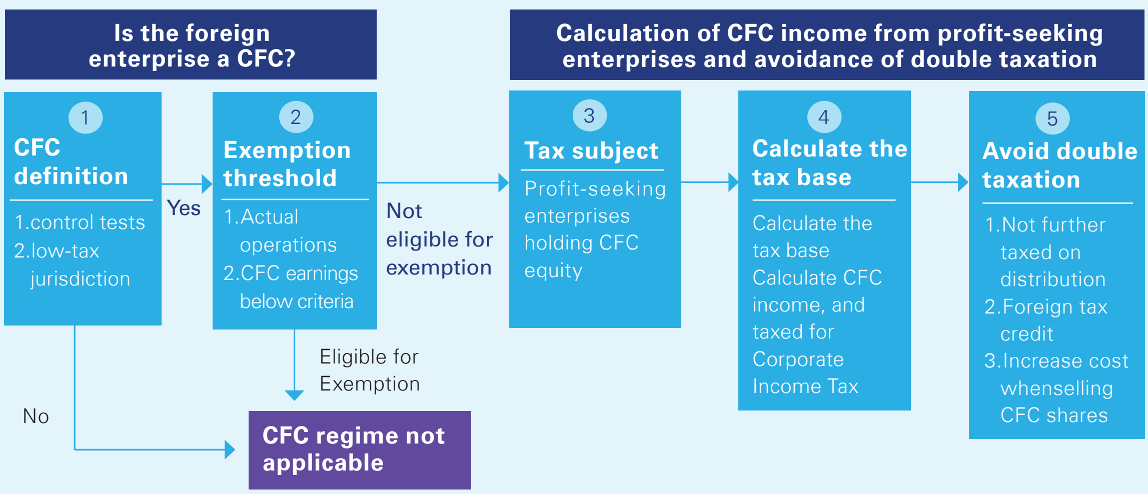
As the Global Minimum Tax system (hereinafter referred to as GMT) is set to be officially launched in 2023, Taiwan has accelerated the process of the Controlled Foreign Company (hereinafter referred to as CFC) regulations to keep up with international trends. This tax reform is expected to have a great impact on Taiwanese enterprises with outbound investments and induce considerations on the possibility of capital or operation adjustment. As the best partner of enterprises in capital utilization, banks should understand the impact of these tax changes so as to adjust relevant business strategies to further assist enterprises.

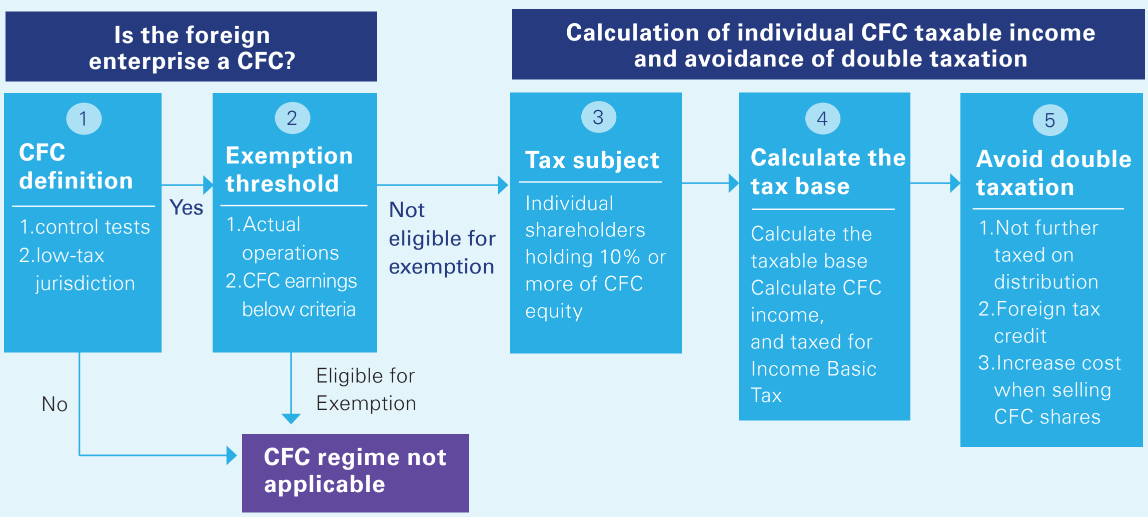
In order to promote a fair and reasonable tax environment for international trade, the OECD is promoting the GMT system, which is applicable to multinational enterprise groups with a consolidated revenue of €750 million (about NT$24 billion) in at least two of the previous four fiscal years. Taking domestic enterprises as an example, multinational enterprises that meet this condition are mostly group enterprises such as Taiwan Semiconductor Manufacturing Company and Quanta Computer, and the effective tax rate of the tax jurisdictions where the group members are located should reach the minimum tax rate of 15%. When the effective tax rate of the group members in a certain tax jurisdiction is lower than 15%, the ultimate parent company of the group should in principle pay the tax difference to the government of the country where the group is located. This system will ensure that the multinational enterprise group bears a certain proportion of the tax burden, and this will affect the arrangement of the group's operations.

The term "anti-tax avoidance" is not only a trend, but also an international consensus. In response to the CFC system that has been widely implemented in the world, Taiwan also passed the legislation of the "Regulations Governing Application of Accrued Income from Controlled Foreign Company for Profit-Seeking Enterprise" and the "Regulations Governing Application of Income Calculation from Controlled Foreign Company for Individual" in 2017,promulgated by the Executive Yuan on January 14, 2022, per decree Tai-Cai-Zi No. 1100041879 to be implemented in 2023. These regulations are bound to have an impact and influence on the overseas assets held by individuals and profit-seeking enterprises. Please refer to the following figure to check whether an overseas company meets the CFC conditions and the impact on the relevant taxes.

CFC regime for profit-seeking enterprises



CFC system for individuals



CFC definition

Shown in the infographic above, CFCs must meet both criteria of passing the control test and being established in a low-tax jurisdiction. The control tests refer to “an individual or profit-seeking enterprise and its related parties that directly or indirectly holding 50% or more of the shares or capital, or having a significant influence on them”; the “low-tax jurisdiction” refers to the income tax rate where the profit-seeking enterprise is located does not exceed 70% of Taiwan’s corporate income tax(calculated at the current corporate income tax rate of 20%, i.e. 14%), or the affiliated enterprise whose registered country or jurisdiction does not impose taxes on incomes derived from offshore, or imposes taxes only after incomes are remitted back (for example, Hong Kong and Singapore). However, it should be noted that when the shareholding ratio is 50% or more, the shareholding of related parties should be included. For example, the spouse and second-degree relatives of an individual, or dependents reported in an individual’s income tax return , will be recognized as related parties.

Exemption threshold

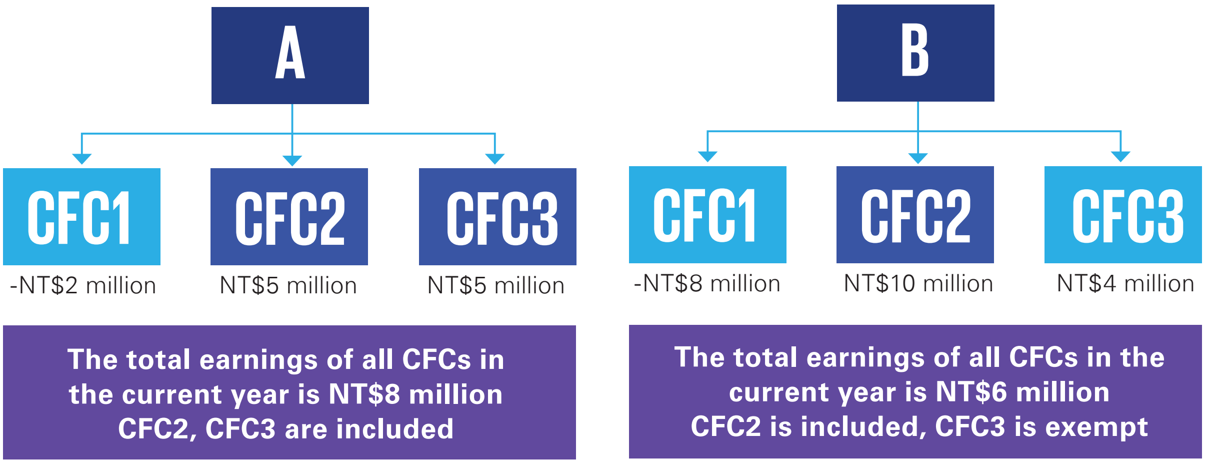
A company can be exempted if it is recognized as a CFC but has “substantial operating activities” or “the current year earnings are less than NT$7 million”. “Having substantial operating activities” refers to having a fixed base of business where it is registered and hiring employees to carry out business activities locally, with a passive income that accounts for less than 10%. “Current year earnings less than NT$7 million” refers to the earnings of a CFC in the current year being less than NT$7 million.

However, the exemption cannot apply if the sum of the current year earnings or losses of all CFCs under the control of the individual, his/her spouse, and dependents who shall file a joint consolidated income tax return in accordance with the Income Tax Act exceeds NT$7 million, or the sum of the current year earnings or losses of all CFCs under the control of the same profit-seeking enterprise within the territory of Taiwan exceeds NT$7 million, so as to avoid the application of the exemption provisions by individuals or profit-seeking enterprises by establishing multiple CFCs to disperse the profit. The calculation of said NT$7 million is illustrated in the two examples in the following figure.

Calculation of CFC income

Calculation of CFC profit in the current year

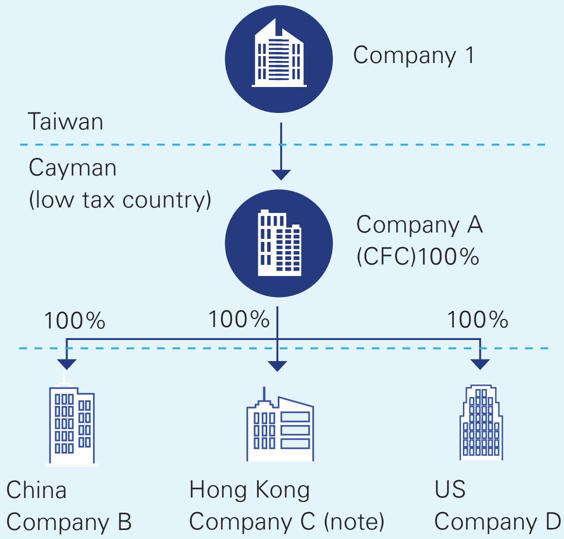
In principle, this is based on the net income in accordance with the financial accounting standards accepted by Taiwan. However, considering that intercorporate invested enterprises that are not located in low-tax jurisdictions have no motivation for tax avoidance and may need to reserve part of the working capital for intercorporate investments, if the said enterprises are not from low-tax jurisdictions, the CFC earnings in the current year is recognized as the investment income derived from an invested enterprises under the equity method, and the actual distribution is included in the earnings in the current year. The following figure illustrates the calculation of CFC profit in the current year.



Case background

- The earnings net of tax of Company A in 2023 are NT$100 million, including a sales profit of NT$20 million, a royalty income of NT$10 million, and an interest income of NT$10 million. The investment income of Company B, Company C and Company D recognized by the equity method are NT$10 million, NT$20 million and NT$30 million, respectively.
- Company B and Company D decide to distribute dividends of NT$10 million and NT$15 million in 2023, while Company C decides not to distribute.
- The withholding tax rates of dividends in China and the United States are 10% and 30%, respectively.

Note: Hong Kong is a "country with a low tax burden", so no adjustment is necessary.



Calculation of investment income or income from profit-seeking

Starting from the year when the CFC becomes eligible, if the loss in each period has been audited by a certified public accountant of such country or jurisdiction where the CFC is located or of Taiwan, and the profit-seeking enterprise has filled in (or the individual has provided) the CFC financial statements in accordance with the prescribed format and the loss is approved by the tax authority, then the investment income of the profit-seeking enterprise in Taiwan (or the overseas income that should be recognized by an individual) can be calculated after the loss is deducted from the CFC earnings within 10 years following the year in which the loss occurred. The loss of an individual CFC may only be offset against the earnings of the same CFC.

Company I's calculation of Company A's current year profit		
Net profit (loss) after tax for the current year calculated in accordance with the financial accounting standards recognized by the Republic of China (Taiwan)	After-tax earnings in the financial statements of Company A	NT$100 million
– (Investment income/loss from countries or regions without a low tax burden recognized under reinvested enterprises under the equity method)	– Investment income of Company B recognized under the equity method	– NT$10 million
	– Investment income of Company D recognized under the equity method	– NT$30 million
+ Resolved earnings distribution of reinvested enterprises from China recognized under the equity method × ratio of the CFC's shareholding of the reinvested enterprise on the distribution date	+ Company B's resolved dividend distribution × shareholding ratio	+ NT$10 million × 100%
+ Resolved earnings distribution of reinvested enterprises from China recognized under the equity method × ratio of the CFC's shareholding of the reinvested enterprise on the distribution date	+ (Company D's resolved dividend distribution – withholding tax of dividends paid in country D) × shareholding ratio	+ (NT$15 million – NT$4.5 million) × 100%
The CFC's current year earnings	**Company A's current year profit**	**NT$80.5 million**

Measures to avoid double taxation

When the profit-seeking enterprise has recognized the investment income of a CFC in accordance with the Income Tax Act, or an individual has recognized the overseas income in accordance with the basic tax, the actual distribution of dividends or profit does not need to be included in the income tax again.

If the profit-seeking enterprise or individual has paid the local income tax in accordance of the income tax law of the source place where the income originated at the time of distribution of dividends or earnings, the paid tax can be credited from either the tax payable from the year when the investment is recognized or included in basic income or from the basic income, within 5 years from the following day of the end of the reporting period for the year when the investment is recognized or included in basic income, after obtaining necessary tax certificates.

To sum up, the impact of CFCs not only leads to the early occurrence of tax obligations, which generates the possible need for capital deployment to respond to payable tax, but also brings about the requirement to disclose investment structures or the family's overseas assets to the tax collection authority. In the face of the global anti-tax avoidance trend, profit-seeking enterprises or individuals must re-examine their global operation layout, transaction arrangements, capital deposit and investment structure, etc., to determine whether to adjust or maintain the status quo. Should there be any adjustments, it would call for capital movement and utilization. As the best partner in corporate capital utilization, the banking industry should prepare in advance, reserve relevant service capacity, and work with customers to reduce the impact of anti-tax avoidance measures.

An overview of the trend of mergers and acquisitions in Taiwan's banking industry in recent years

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Has the COVID-19 pandemic changed the thinking of the financial industry? At the beginning of 2022, there was the major news that DBS Bank of Singapore finally defeated foreign banks and various financial holding companies in Taiwan to buy the consumer finance and wealth management business of Citibank Taiwan. Does this represent the beginning of a new round of mergers and acquisitions and expansion in the financial industry?

DBS Took Over Citigroup' s Consumer Finance in Taiwan

Him Chuan Lim, President of DBS Bank (Taiwan), explained at a recent press conference that DBS Group will increase the capital of DBS (Taiwan) by NT$45.1 billion to acquire Citigroup's consumer banking business and related assets in Taiwan. This capital increase includes a merger premium of NT$19.8 billion.

Citigroup Changes Its Global Layout Strategy and Leaves the Taiwan Market

Since Citigroup launched its consumer finance business in Taiwan in 1985, it has gone through many expansions and mergers. At present, it has 45 branches, about 2.7 million credit card accounts and 500,000 deposit and wealth management customers. In the current financial environment, it is difficult for large European and US banks to deal with the higher cost of legal compliance due to the higher requirements of the regulatory authorities for capital adequacy, the emergence of new financial technologies, and declining profits and market shares. Therefore, Citigroup decided to cut its businesses and make a drastic shift to focus on wealth management in regional financial centers such as Singapore and Hong Kong to improve returns.

Over-competition Makes It Impossible for Small Banks to Make Profit

From Citigroup's withdrawal from Taiwan's consumer finance market, it can be seen that Taiwan's banking industry is experiencing over-competition. All banks are actively pushing for the consumer finance business, but their profits are shrinking; the market is increasingly monopolized by large banks, and the operation of small banks in the later quartile is becoming more difficult. Therefore, the management teams of smaller banks are all thinking about the next step. Taking the merger of JihSun Holdings and Fubon Financial Holding as an example, the shareholders of JihSun Holdings were, in a sense, given an appropriate opportunity to exit. The merger is expected to be completed by the end of this year after the review of the FSC.

Financial Mergers and Acquisitions Are Still Continuing This Year

In addition to the confirmed merger of DBS Bank with Citibank Taiwan's consumer banking business, and the merger of Fubon Financial Holding with JigSun Holdings, there are other cases still under negotiation, including the previously broken merger of IBF Financial Holdings and EnTie Bank which could not be concluded due to the opposition of major shareholders. Whether there is a chance for the case to come back to life in the future is still worth paying attention to. In particular, IBF Financial Holdings already owns the Rakuten online bank, but still tries to acquire EnTie Bank. The online-only bank, which is a joint venture of IBF Financial Holdings with Japan's Rakuten, focuses on financial technology development and consumer finance. Through mergers and acquisitions of physical banks, it can enter into the corporate finance that general commercial banks are good at and strengthen customer relationship management. It can enter the trust and wealth management businesses and carry out differentiated operations according to the industrial characteristics, so as to give play to the effects of joint marketing and economies of scale, and improve the synergy of financial holding operations. In addition to the obvious trend of IBF Financial Holdings enhancing its own strength and continuously improving the deficiencies of its own bank under the financial holdings, Shin Kong Financial Holdings also plans to restart the merger with Taishin Financial Holdings, hoping to create a financial holding scale of 1 + 1 > 2, allowing the M&A trend to continue.

The Financial Industry Achieved a Record Profit and Diversified Its M&A Strategies

The financial industry's profit in 2021 also reached a new high. Financial holding companies are holding a large number of funds and actively looking for M&A targets. Each company starts from its own development and future business needs to look for targets in insurance, securities and banking sectors for M&A.

In response to future changes in the pandemic and industrial supply chain shifts, the enterprises in the financial industry will specifically develop diversified strategies, comprehensively review their business needs, and then look for M&A targets. They will specifically start from aspects such as"refocusing on core financial businesses","differentiating products and services"and"complementarity of M&A targets", expecting that such targets can be quickly found to realize their business expansion and revenue growth goals. Therefore, the method of M&A may be included as one of the business strategies of the financial industry. For the aspect of refocusing on core financial businesses, in view of the reorganization of the supply chain and the changes of consumption habits caused by the reasons above, the financial industry needs to follow the international and industrial trends in their layout. Whether it has an international perspective to plan the overseas business layout while focusing on the development of core businesses is a test of the strategic thinking of the financial industry. Moreover, how to widen the distance with many competitors through the differentiation of products and services to enhance the source of business momentum requires the innovative thinking of the industry. For example, the FSC has opened up the applications for online insurance companies, which has also attracted the keen interest of many financial holding companies. In terms of the complementarity of M&A targets, providing comprehensive financial services, coupled with the increasingly mature technological resources of online banking and other financial technology companies may serve as the next secret of profitability for the financial industry and a new direction. In addition, with regard to the development of ESG issues, the banking industry is bound to undergo a large-scale adjustment in terms of business development, M&A, and even its own management; this is also a point worth observing.

The M&A Trend Is Not the End, but the Starting Point of a New Financial Era

Looking back at the history of domestic financial M&A, we can find that the first wave of M&A was led by the rise of financial holding companies, the establishment of major financial holding companies, and the withdrawal of problematic domestic financial institutions due to the active handling of the competent authorities at that time. The second wave was the result of the financial crisis of 2007-2008; in order to protect themselves, foreign financial institutions began to reduce their overseas branches. The third wave of M&A from 2020 to 2021 was mainly due to the closure of borders and the delay of flights and shipping dates under the impact of COVID-19, which resulted in the rapid development of online financial transactions that changed the strategies of various service providers. Some multinational financial groups want to exit low-profit markets to save management costs, while some groups want to take advantage of the pandemic to expand their financial territories. In addition, the pandemic has changed personal consumption habits and corporate operation modes, leading to an online shopping boom. At the same time, enterprises have greatly increased their willingness for electronic accounts and orders, which has accelerated the development of digital cash flow services. Many financial professionals have sensed this change and are actively investing in the financial technology industry.

Our Services

KPMG in Taiwan provides audit, tax, risk and advisory services to businesses spanning all segments of the banking and finance industry. Our approach is based on understanding the issues affecting the marketplace. We work closely with a number of leading industry organizations and government bureaus providing support in understanding and tackling some of the major issues facing the industry.

Audit & Assurance

- Financial Information Audit and Assurance
- Capital Market Services
- Internal Control (Audit) Services
- Accounting Project Advisory Services
- Other Assurance and Attestation

Tax & Investment

- Dispute Resolution & Controversy Services
- International tax
- Global Transfer Pricing Services
- Global Mobility Services
- Tax Management Consulting
- BEPS and VCM Advisory
- Tax Agent Services for Foreign Institutional Investors
- Family (Individual) Estate Tax Advisory Services
- China Tax Advisory Services
- Japanese Tax Services
- Investment and Registration Services
- Accounting, Tax, and Payroll Outsourcing Services
- Financial Services Industry Tax Consultation Services
- Tax Technology Services

Audit & Assurance

Management Consulting

Business Performance Services

- Strategy & Operation Business Performance
- Financial Management
- People and Change

Digital transformation

- Digital-led Customer Growth and Innovation
- Intelligent Manufacturing (Industry 4.0)
- Robotic Process Automation(RPA)

IT & Business Systems Advisory

Risk Consulting

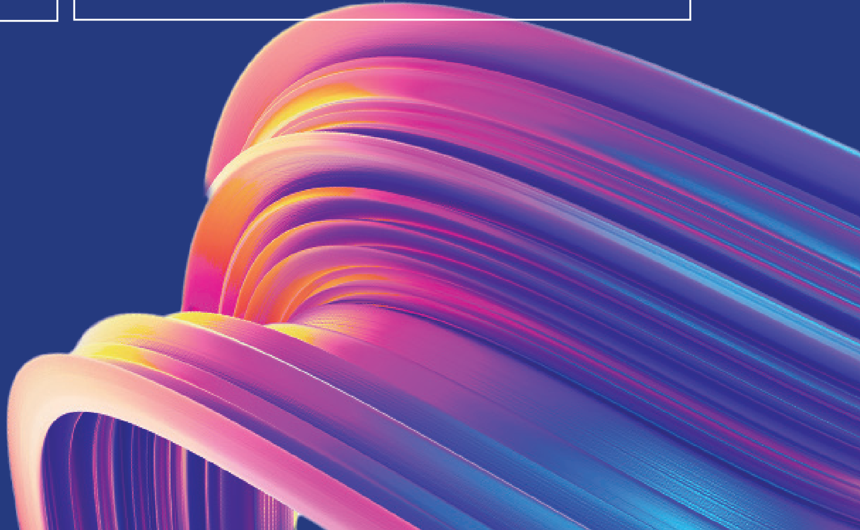
- Financial Risk Management
- Internal Audit, Risk and Compliance
- Accounting Advisory Forensic Services
- Climate Change and Sustainability
- Social Enterprise Service

Deal Advisory

- Buying a Business
- Selling a Business
- Funding a Business
- Partner
- Fixing a Business

Industry Specific Consulting

Fintech Services	Government and Infrastructure Advisory
Technology, Media and Telecom Advisory	Healthcare Transformation & Strategy Services



KPMG Financial Services reports

Pulse of Fintech H1 2022

This report analyzes global fintech investment trends and data in 2022 H1. The optimism that permeated the fintech market at the end of 2021 quickly transformed into concerns about a potential recession in H1’ 22 as uncertainties related to the RussiaUkraine conflict, ongoing supply chain challenges, and rising inflation and interest rates took their toll on public and private companies alike.

Frontiers in finance 2022

Frontiers in Finance is a biannual, forward-looking collection of market insights, thought-provoking perspectives and sector-specific discussions for leaders and decision-makers within financial services organizations around the world. In this edition of Frontiers in Finance, our global network of financial services professionals explore the issues from various vantage points.We take a deep look at cryptoassets. And, throughout, our authors offer insights and ideas to help you accelerate innovation.

Global Banking M&A Trends 1H22

The global banking M&A market enjoyed a surge in 2021, both in volume and reported size, with non-domestic transactions also rising significantly. While the three major regions (ASPAC, North America and Europe) experienced a similar level of activity by volume, North America captured a relatively higher share of value, on the back of some mega deals announced in the US. However, it’ s uncertain whether this dominance will continue, given the increased regulatory scrutiny around large US transactions.

Voices on 2030: Financial services reinvented

The ’ Voices’ in this report cover many facets of financial services and beyond — from incumbents to challengers, BigTech to fintechs, policy makers to legal experts. Taken together, they create a valuable chorus of insight and expertise. Many of the views expressed in this report may be aspirational and personal and may not necessarily represent those of the Voices’ organizations or that of KPMG.

Taiwan Banking Report 2021

Research institutions generally expect that the overall economy will experience an upturn in 2021. In addition to keeping abreast of international trends in and outlooks for digital finance, domestic banks should pay close attention to the slow withdrawal of the government's relief measures and the operational risks of corporation loan after the COVID-19 pandemic subsides.

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Banking Report