

Macroeconomic Policy for Emerging markets

Lessons from Thailand

Routledge: 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Routledge: 711 Third Avenue, New York, NY 10017

(©)2019 Bhanupong Nidhiprabha

Chapter 4

The banking sector:

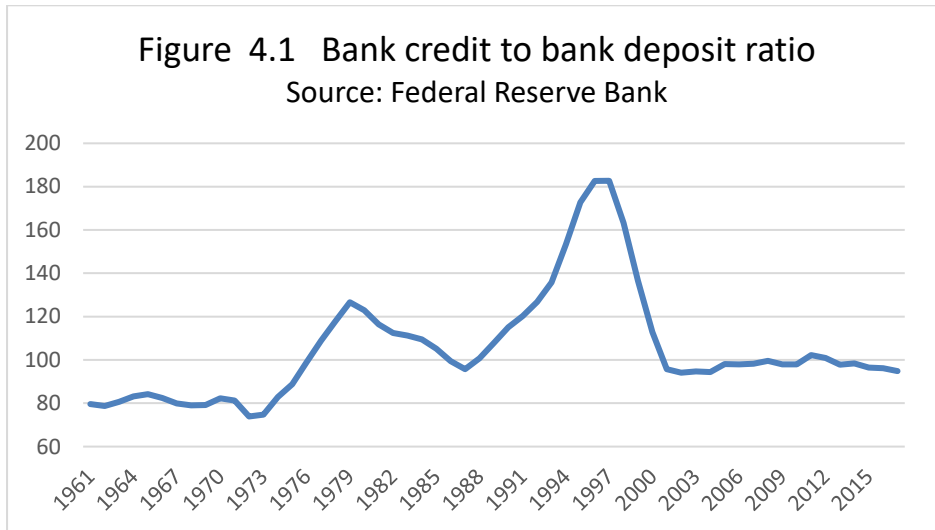
Adjustments to Financial Crises and Business Cycle

1. Introduction

The Asian financial crisis started on July 2, 1997, when the Bank of Thailand floated the baht, giving up the fight with currency speculators and hedge funds. After experiencing chronic current account deficit since the early 1990s, the Bank of Thailand abandoned the fixed exchange rate in July 1997, causing contagion effect in other Asian countries. The Asian currency crisis intertwined with the banking crisis as Asian banks had substantial dollar-denominated debts. In effect, it was the crisis that involved both foreign exchange markets and the financial sector. A large number of Thai financial institutions were closed down, consolidated, merged or sold to foreign banks after 1997. Some underwent painful adjustments and emerged stronger. The crisis opened a window of opportunities for banks to become healthy and more resilient.

Ten years after the Asian financial crisis, the credit crunch in the US in July 2007 spread to other countries as the US mortgage-backed securities sold to investors around the world turned sour as the US property values declined sharply. Marer (2010) examined the global economic impacts on Eastern Europe and found that different impacts on ten Eastern European nations depend on exchange rate regimes, exposure to foreign currency borrowings, and the monetary and fiscal policy responses. Kenc and Dibooglu (2010) found evidence that the risk premium of the subprime crisis was comparable to the risk before the great depression. Simpson (2010) attributed the widespread impact of the global financial crisis to the integration of the global financial markets because of the interdependence of the global banking industry. Nevertheless, Thailand also has embraced an open capital market since the early 1990s and Thailand has

become an integral part of the global financial system since then. The adverse impact of the global financial crisis on the real economy was substantial but not significant for the banking sector. The 1997 financial crisis gave a valuable lesson to the Thai financial sector. The financial reform through strengthened rules and regulations has prepared the banking industry for the Global Financial Crisis. After undergoing structural reform and enhancing capital adequacy, the Thai banking sector has become more efficient, leading to impressive performance.



Thailand has been a bank-based economy, where saving mobilization and credit distribution are conducted mainly through bank intermediaries. The ratio of bank credit to deposit approximates investment and saving imbalances. In the early 1960s up to the early 1970s, the ratio was stable around 80% (Figure 4.1). Bank credit amounted to 80% of deposits at banks. After the first oil shock and commodity price hikes in 1973/1974, the ratio increased steadily and peaked at 126% in 1979, when the second oil shock occurred, and the world economy went into recession. The ratio declined steadily as bank credit expanded than bank deposits. The slowdown in the economy implies a lower demand for loans for consumption and investment. After the recovery in the late 1980s, the demand for credit soared once again, fueled by cheap credit from international markets. The ratio peaked in 1997 at 182 % and started declining, thanks to growth collapse as the Thai economy gravitated back to restore external equilibrium. Since 2001, the credit to deposit ratio has been stagnant and remained below 100%. Bank credit expansion corresponds to real output growth. The slow rise in bank credit relative to bank saving indicates weak investment and low consumer demand.

In this chapter, we examine how the banking sector and the economic crises are closely related from the Asian Financial Crisis to Global Financial Crisis. The Thai banking sector must adjust in order to survive and thrive during the boom and bust influenced by external and internal shocks.

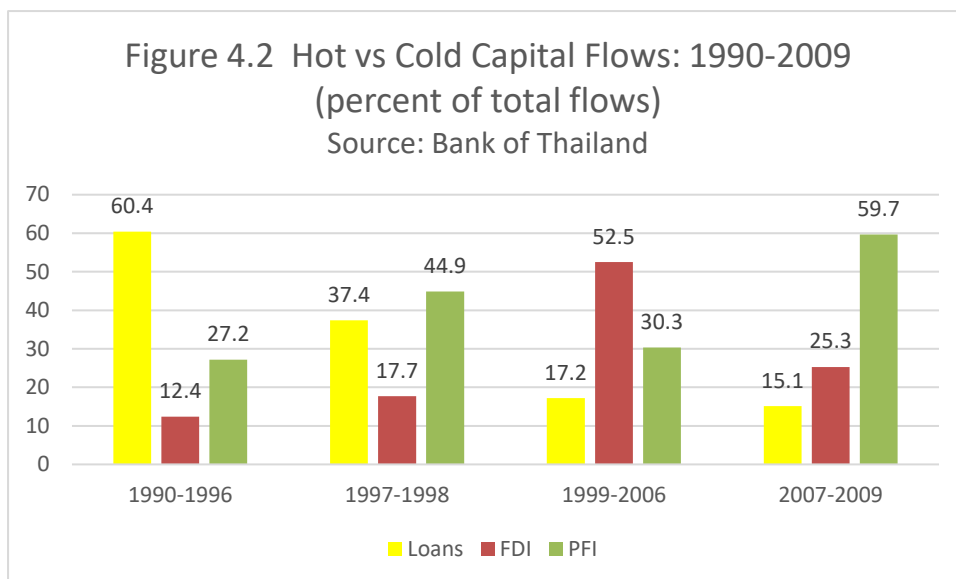
2. The Asian and Global Financial Crises

When the economy is strong, there is no urgent need to restructure the financial system to improve efficiency. Structural weaknesses of the financial system do not reveal themselves until the economy is subject to shocks. In a mild business cycle, efficient financial firms with conservative lending policy can survive temporary losses, but some aggressive banks would fail because of excessive risk-taking behaviors. In a deep business downturn, even good banks with cautious lending policy can succumb to losses and bankruptcy. The central bank must step in to restore public confidence during a deep recession to prevent a system-wide financial crisis. The intervention to bail out troubled financial institutions, therefore, depends on macroeconomic fundamentals, which are intricately related to the soundness of financial institutions.

Before allowing capital convertibility, prudential rules and regulations should have been established. The open capital account is inconsistent with the fixed exchange rate regime and independent monetary policy. Strengthening legal framework and corporate governance is required to guard against adverse consequences of liberalization. Unless liquidity-constrained firms can rely on bond markets, strict prudential rules can thwart the recovery of a fragile economy

Financial liberalization in Thailand began in the early 1990s with the abolishment of interest rate ceilings. Thailand accepted Article VIII of the IMF agreement in May 1990, relaxing capital controls and restriction on capital account transactions. Consequently, capital inflows rose rapidly. Maturity composition of capital inflows changed dramatically from cold to hot flows before the 1997 crisis.

Between 1990 and 1996, the share of foreign borrowing in total capital inflows was 60 %, while the share of portfolio investment flows was 27% (Figure 4.2). These numbers indicate the domination of hot monetary flows over the cold money, which was represented by the 12.4% share of foreign direct investment (FDI).



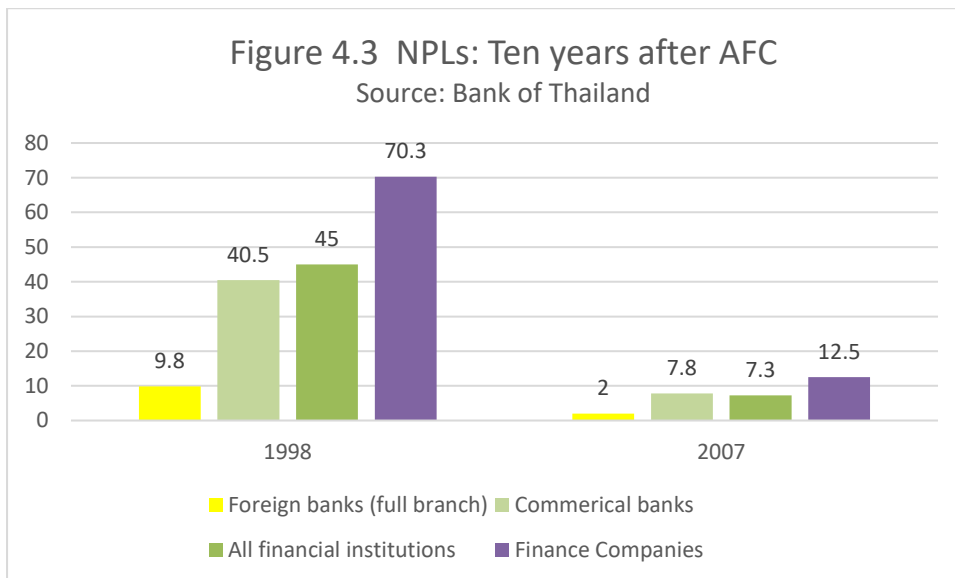
Liberalization of the external account may lead to a financial disaster. As in the case of Thailand, capital account liberalization was premature. The capital control was relaxed when Thailand's interest rates were much higher than the world market rates. The relaxation should have occurred after adequate prudential rules and regulations had been established. Open capital account led to vast and rapid inflows, while building institutional infrastructure, due to its time-consuming, could not cope with the massive inflows. The bond market was not sufficiently developed to allow the central bank to sterilize capital inflows. The Bangkok International Banking Facility (BIBF) encouraged borrowing in foreign currencies when large interest differentials between domestic and international interest rates prevailed. Loans extended by BIBFs grew from B200bn in 1993 to 1.88 trillion in 1997. At the end of 1999, the BIBF borrowing volume declined to just Bt600 million.

The precarious borrowing structure foretold financial distress that would come when foreign lenders changed their perception about Thailand's risk. Capital flights followed, causing liquidity problems to the Thai financial institutions. Currency and maturity mismatching led to a financial disaster. During the financial turmoil 1997-1998, the share of foreign borrowing in total capital inflows declined to 37% (Figure 4.2). Portfolio movements became the most significant part of capital flows. Foreign direct investment share rose from 17.7% during this period to 52.5 % during the period 1999-2006. Part of the increase was due to brownfield investment. Large capital inflows came in the form of acquisitions of assets from troubled banks that just ran out of capital fund after their huge bad debts were written off.

In 1996, short-term borrowing of finance companies amounted to 95 % of their total borrowing, while their long-term credit was 40% of total lending, which reflected technical mismanagement regarding maturity mismatching between asset and liability. It is not surprising that these finance companies experienced liquidity problems when their short-term borrowing could not

be rolled over during the period of financial turmoil. Another technical problem involved currency mismatching because Thai financial institutions and large corporations borrowed heavily in the US dollar but extended credit in Thai Baht.

The poor performance of the Thai economy deteriorated the balance sheets of the financial institutions, leading to problems of illiquidity and insolvency. The risks of these financial institutions intensified after the 1997 massive devaluation of the baht. Their ability to obtain funds was severely reduced when foreign banks' perception of their risk deteriorated. Technically commercial banks in Thailand were insolvent because the level of non-performing loans exceeded that level of capital funds. Forty-five percent of assets in financial institutions held were non-performing in 1998. NPLS of private banks and state-owned banks were 40.5 % and 62.4 % of their total assets respectively (Figure 4.3).



Thai banks were allowed to increase foreign shareholders from the maximum of 25 % to 49%. Bangkok Bank of Commerce (BBC)-was the only bank which was closed down. Other bad banks were intervened and integrated with the public-owned Krung Thai Bank. Some other troubled banks were merged with stronger banks or sold to foreign institutions.

After 56 finance companies had collapsed following the 1997 economic crisis, Financial Sector Restructuring Authority (FRA) assumed the assets of these defunct financial companies. By August 1998, the closure of the operation of the FRA took place after the auction of the FRA's assets into the Global Thai Property Fund, which was established by Lehman Brothers after paying Bt11.52 billion for the Bt24.62 billion corporate loans extended by troubled financial institutions. Other hedge funds such as GE and Goldman Sachs joined Lehman Brothers by

investing in the fund. Ironically ten years later, these investment banks suffered from the same fate similar to the Thai finance companies after the burst of the property bubble in 2007.

Because Thai firms and banks borrowed heavily from abroad in the early 1990s, they were exposed to foreign exchange risks. The domestic savings rate was high but not as high as the investment rate. The investment was financed mainly through borrowing from domestic as well as foreign banks. The average debt-equity ratio of Thai firms was above eight at the height of the financial crisis, while the economy was exposed to extreme currency depreciation risks. The collapse of the economy in 1998 provided an opportunity for firms and banks to restructure while adhering to good corporate governance and avoid technical mismanagement.

3. Capital injection and foreign entry

In the aftermath of the financial fiasco, the Thai banking system turned around and raised capital funds. Thanks to capital injection by foreign banks and by the Financial Institutions Development Fund, managed by the Bank of Thailand, capital adequacy was enhanced. Despite the declining trend of the non-performing loans (NPLs), the risk-weighted capital adequacy ratio increased substantially, reflecting the strengthened capital fund that can provide a safety cushion for depositors.

From 2004 to 2009, Capital Adequacy Ratios (CAR) had been raised in banks of all sizes. Large banks are classified as banks which have more than 7 % of total assets in the banking system. By this definition, there are four large banks. Small banks had the highest tier 1 capital risk assets ratio as a result of foreign capital injection. The medium-sized banks had the lowest tier 1 capital, although their CARs were raised from 10.9 in 2004 to 14.9 % in 2009. Thus all banks had capital funds well above the Basel II requirement of 8.5 %. The most vulnerable banks were medium-sized banks, which had a very high proportion of loan to related parties. It is not surprising that their NPLs increased marginally from 6.7 % in 2004 to 7 % during the same corresponding period, while other banks were able to reduce their NPLs from 10 % to around 4.5 %. Also, it was large banks that provided allowances for bad loans more than the amount required by regulations. Thus, large banks tend to be more conservative than small banks, which have been the most aggressive in lending; their loans/deposits ratio rose from 93 % to 137 %. Medium banks' loan exceeded deposits by 8 % in 2009, but large banks, on the contrary, cautiously balanced their loans and deposits.

The assets of these small banks are lower than three percent of total assets in the banking system. As such, they are competing with disadvantages because they, unlike large banks, cannot exploit economies of scale. Nevertheless, some small banks do have some advantages as they are backed up by colossal capital funding from world-class financial institutions. Molyneux et al. (1998) found the evidence that foreign bank performance in the US depends mainly on capital strength, in addition to industrial loan growth and asset composition. Berger

(2007) provides evidence that foreign-owned banks are more efficient than domestically owned banks in developing countries because of managerial expertise, access to capital, and the use of new technology. In the case of Thailand, foreign banks can compete against state-owned banks because the latter have to comply with the government's objectives which may not be consistent with profit maximization.

was caused by

Weak consumption and sluggish investment caused the economic slowdown during the period 2007-2009. As a result, financial institutions cannot speed up the reduction of their non-performing assets. Since real estates and manufacturing sectors are sensitive to the business cycle, NPLs in these two sectors would decline only when the economy regains its strength. All banks have already set aside reserves for loan losses, which are larger than the amount required by regulations. The painful experiences in the past have taught commercial banks well in avoiding loan concentration and high-risk exposure. Thanks to the adoption of the Basel II, banks are more prepared to deal with global slowdown due to oil price shocks and subprime mortgage problems.

It is believed that local banks should have better information about local clients than foreign banks. As such they should be less subject to the problem of asymmetric information. That turns out not to be the case since Thai commercial banks (both private and public banks) experienced NPLs by 40% of the total loan in 1998, much higher than 9.8 % of foreign banks' total lending (Figure 4.3). By 2007, commercial banks' NPLs declined to 7.8, which still much higher than 2 % of foreign banks. Finance companies excessive lending led to 70% NPLs in 1998, which led to their collapse. Finance companies remained the weakest financial institution in 2007. They were burdened by high NPLs of 12.5%, well above the average 7.3% of total NPLs for all financial institutions (Figure 4.3).

The ranking of non-performing loans classified by type of financial institutions in 2007 remains more or less the same as in 1998, although the level of NPLs was much lower than it was ten years ago. Foreign banks are still the banks which have the lowest non-performing assets, whereas finance companies still had the worst asset quality. Private banks registered in Thailand still could not entirely get rid of their NPLs.

There is evidence from transition economies that foreign-owned banks are more efficient than domestic-owned banks because of a transfer of banking know-how, better corporate governance exercised by foreign shareholders (Weil, 2003). The cost efficiency of foreign-owned banks, after taking into account size, and structure of activities, do not come from differences in risk preferences between types of banks. Arun and Turner (2004) argue that corporate governance reform is prerequisite for the successful divestiture of government ownership and suggested that increased competition resulting from the entrance of foreign banks may improve the corporate governance of banks in developing countries.

There was no significant rise in the banking concentration after the 1998 financial crisis. However, the market share of the top four banks was around 65 % in 2007, while the most significant six banks' combined assets were close to 80 % of total banking assets. The lack of competition due to increased monopoly power can increase the banking system's profits and would increase its solvency. Bank consolidation and conglomeration may not necessarily lead to a safer and more resilient banking system, because consolidated financial firms may take on correlated risks, thereby reducing banks' diversification. There is evidence from the survey of 500 financial firms worldwide in 90 countries that highly concentrated banking system exhibited higher levels of systemic risk potential than less concentrated banking system during 1993-2000 and this relationship intensified during 1997-2000 (De Nicolo et al., 2004).

Concentration ratios may not give an accurate measure of the lack of competition since it does not take into account differences in bank sizes. The Herfindahl index gives a better measure of monopoly power because it gives higher weight to large banks than small banks. The top four banks compete in lending as well as in other competing services. The ease of entry is also an essential consideration of monopoly as excess profit would induce more competition from newcomers. According to Claessens (2009), the lack of barriers to entry and exit determines effective competition. A banking system with greater contestability in the form of foreign entry and fewer entry and activity restrictions tend to be more competitive.

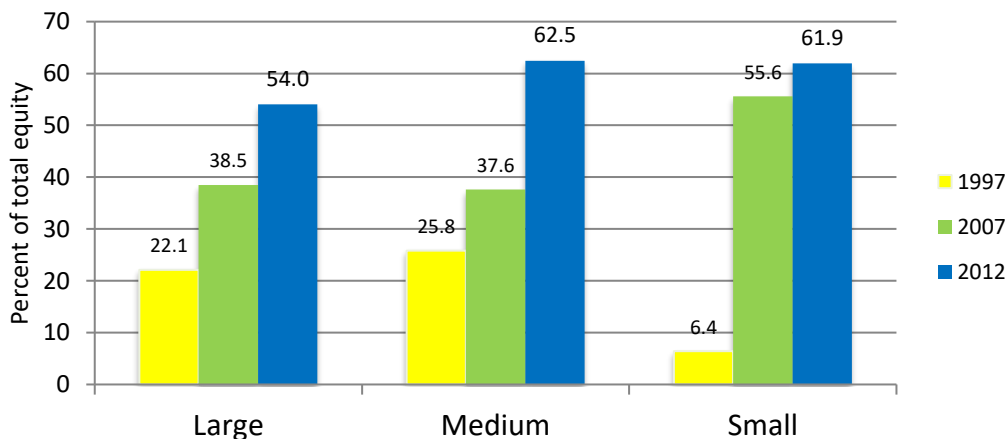
Small banks cannot compete directly with large banks. They may follow actions of large banks in setting their interest rates. The solvency of the banking system depends crucially on the health of these large banks. Large banks can take over small, troubled banks and subsume small banks' assets and liabilities. Intervention has been a norm in the past by employing public-owned banks to absorb ailing banks. However, when bad banks are too expensive to absorb, they must be intervened temporarily by capital write-off and public capital injection before selling to interested foreign financial institutions. The central bank is subject to the too-big-to-fail syndrome.

The Bank of Thailand has permitted a limited scope of competition for foreign banks through permission of full branch status (only one branch) or subsidiaries of foreign banks. Competition from foreign penetration is weak as the number of branches is limited to four branches for each foreign subsidiary. Because of the ability to exploit economies of scope, large banks were able to obtain non-interest income higher than medium and small banks. Hence foreign banks are at a unit cost disadvantage to local banks. According to the Bank of Thailand, at the end of the first quarter of 2010, the outstanding loans of 15 foreign bank branches totaled Bt899 billion. Thai banks' combined loans stood at Bt7.08 trillion, up over Bt200 billion over the corresponding period. Bank sizes matter in the exploitation of economies of scale in the banking business. Small banks can also achieve their minimum efficiency scale if they focus on the banking segment that they have a comparative advantage. The problem mainly falls on the medium banks since their medium size faces competition from both ends.

Foreign banks have played a dominant role in strengthening Thailand's financial institutions. The Thai banking industry, heavily protected from new competition, has been penetrated by foreign financial institutions through the presence of foreign banks' full branches, establishing a foreign partnership, or being taken over. In 1999, the Bank of Thailand encouraged banking consolidation and permitted foreign capital injection, allowing the share of foreign capital to rise above the previous 25% limit to 49% of total equity. As a result, some ailing Thai banks have stayed solvent by the foreign capital injection.

Foreign penetration is prevalent from large to small size banks. The average share of foreign ownership in large banks increased from 22 % in 1997 to 38.5 % in 2007. Small banks' foreign ownership share rose from the average 6.4 % to 55.6 % during the same corresponding period. The foreign share in medium-sized banks declined to 9.5 % as the government injected money to bail out these banks. However, later on, the share of foreign ownership continued increasing to 37.6 % in 2007. The need for foreign capital is obvious during recapitalization and when the economy was so weak that it could not generate capital fund. The government has already had considerable financial burden from bailing out bad banks. Opening the banking sector to foreign institutions, the Bank of Thailand has lessened the public burden and also maintained public confidence in the banking system. Although some banks failed and disappeared, their deposits were transferred to the government-owned KTB bank, which has assumed liabilities and assets of the failed banks.

Figure 4.4 Foreign Ownership in Thai Banks
Source: Bank of Thailand



Among the four largest banks, two banks had foreign shares close to the maximum level permitted by the law of 49%. The public-owned bank (KTB) had to accept foreign capital injection. Bank solvency was achieved by reducing the barriers to foreign investment in the financial sector. Although the other top three banks are efficient and profitable private banks, they cannot resist foreign capital participation because of the benefit of having foreign strategic partners. The capital adequacy ratio of all banks must be raised above 8.5 % as required by Basel

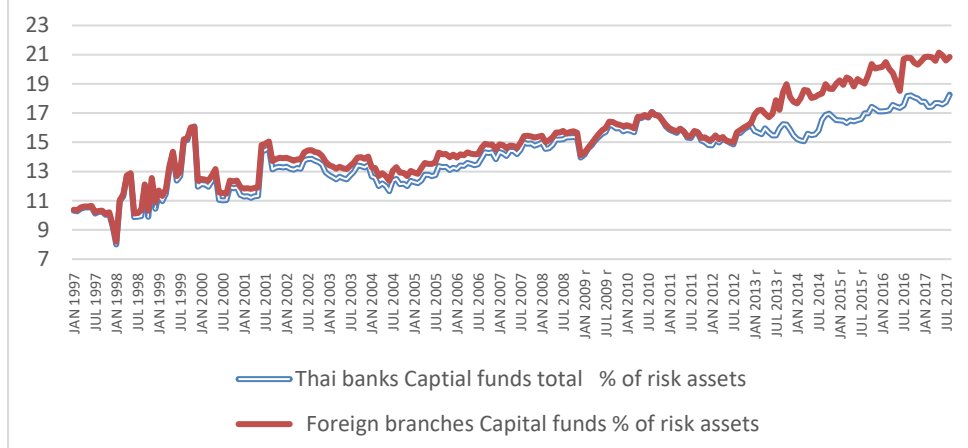
II regulations. By 2007, all banks were able to satisfy the condition. Without foreign capital participation, it would be impossible for banks to maintain a high level of the capital fund. Unlike large banks, the tier-one capital fund to risk assets ratios of smaller banks was higher than those of large banks due to their limited ability to raise other types of capital funds. The need for foreign capital partnership is higher for small and medium-sized banks.

Medium-sized banks have encountered high non-performing loans and related parties lending. Recapitalization through public money would cost more unless there is a change in management and business strategy. It is precisely the reason why the Bank of Thailand, through Financial Institution Development Fund (FIDF), would want to sell shares of these medium-sized banks to foreign institutions to reduce their burden after when they were bailed out. Unlike medium-sized banks, small banks were quickly taken over by foreign institutions that wanted to have their presence in the Thai financial markets. Their quality of assets is better than those of medium-sized banks, and they need only relatively small capital injection to boost the capital adequacy ratio to the Basel II standards. Both United Overseas Bank and Standard Chartered Bank have taken absolute control of two small Thai banks and converted them into full-fledged foreign banks bearing their names. The other four small banks in this group were either consolidated among finance companies and upgraded themselves into commercial banks. At the height of the financial turmoil in 1997, 56 finance companies were closed down. The remaining finance companies were strong enough to undergo structural adjustments during difficult times. They emerged as strong contenders in the financial sector and subsequently were upgraded into banks. Similarly, these newcomers need foreign capital participation in order to compete in the new competitive environment of the universal banking system. They tend to concentrate on retail business and real estate lending.

Small-sized banks can be profitable and efficient if they do not compete directly with large banks. They concentrate their operations in their niche areas. The Bank of Thailand allows finance companies to upgrade into banks with specialization in retail banking. It can create more completion among banks. Competition has been intensified and widened into different kinds of services, including investment in securities, foreign exchange services, fees, and services income. Their numerous branches over the country make smaller banks find it difficult to compete. Most medium and small banks' non-interest income is in the form of fees and services income. In 2007, some medium and small banks suffered losses from investment in Collateralized Debt Obligations (CDO). Nevertheless, such investment was small and did not threaten the stability of any bank's solvency.

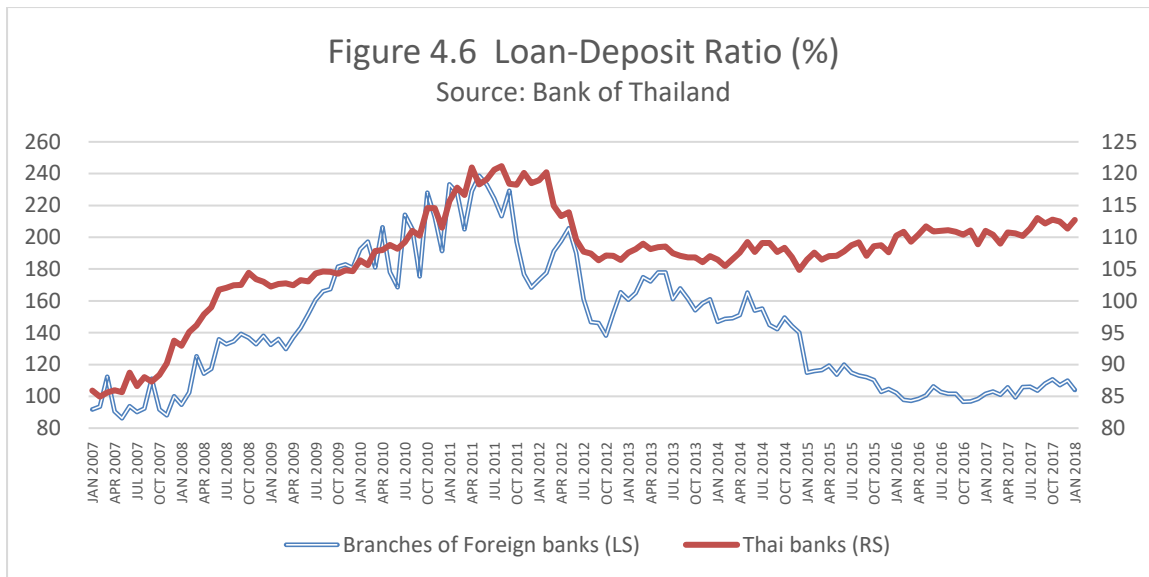
Figure 4.5 Capital Adequacy: Thai Banks and Foreign Banks' Branches

Source: Bank of Thailand

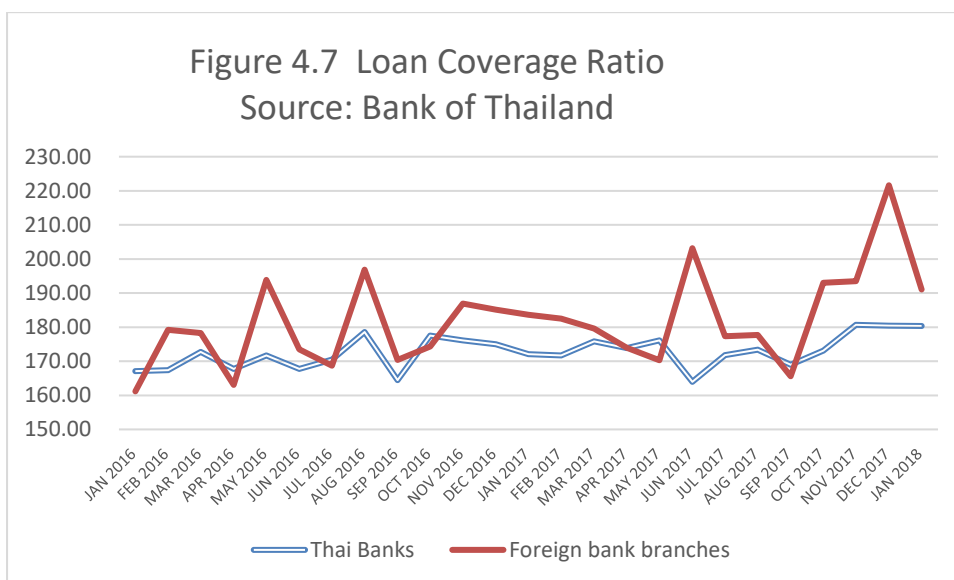


In general, foreign banks' branches maintain higher capital funds than Thai banks (Figure 4.5). However, there has been a significant difference about 3 % since 2014. Because of impaired capital funds in 1998, the number of capital funds as a percent of risk assets drop closer to 7%. Nevertheless, there has been a significant increasing trend since then. The capital adequacy ratio of foreign banks' branch rose to 20 % by 2017, exceeding 17.8 % of Thai banks. The rising level of capital funds relative to risk assets can be attributed to the desire to strengthen capital funds or the inability to extend credit during the time of slowdown in economic activity.

A sharp difference of the loan-deposit ratios was apparent when examining the loan-deposit ratio between Thai banks and foreign banks' branch, whose total loans extension is about 10 % of Thai banks' lending volume. Figure 4.6 depicts a sharp decline in the loan-deposit ratio of foreign bank branches from the peak of almost 220 % in June 2011 to 104% in January 2018. A slowdown in trade credit for exporters and importers partly explains the sluggish growth of lending activities. As for Thai banks, a stagnant loan-deposit ratio bodes well for the slow-growing demand for credit from the manufacturing sector.



In January 2016, the Bank of Thailand replaced the 6% reserve requirement of banks deposits by the Loan Coverage Ratio (LCR), which adopts a forward-looking approach to liquidity. The ratio measure, not just cash reserves, but also a stock of liquid assets which can cover the expected cash outflows in the next three months. The minimum requirement is 100% coverage, but both Thai banks and foreign banks' branches can meet the target without difficulty. Foreign banks' branches' LCR have been higher and more volatile than Thai banks.' Higher LCR implies higher excess reserves and higher opportunity costs of banks in trying to meet unexpected withdrawals of deposits. The implication on deposit creation is quite clear. This measure is meant for maintaining bank liquidity and solvency. It can never be used as the standard legal reserve ratio to stabilize the economy during upswing and downswing. There is no loss in monetary policy instrument because the Bank of Thailand has never used the legal reserve ratio for stabilizing purpose in recent history.



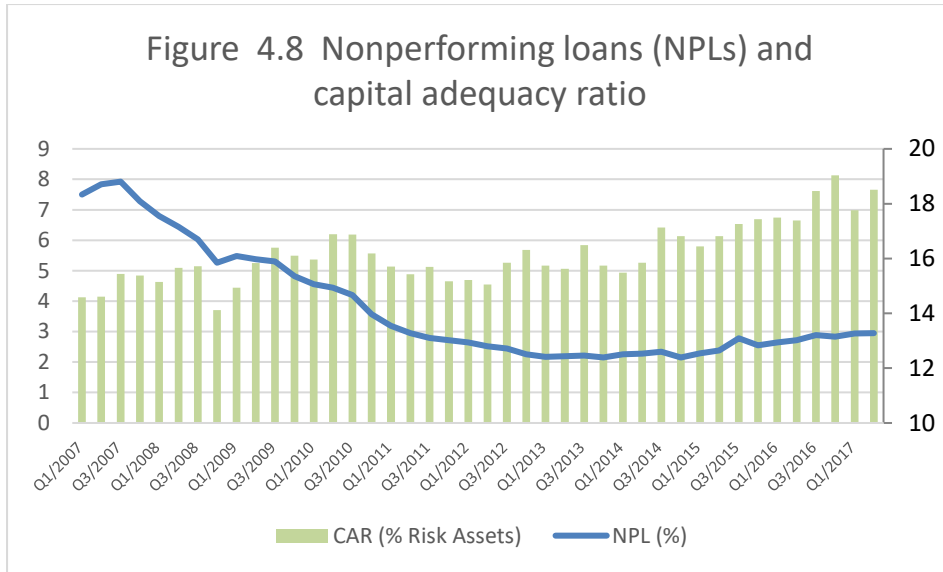
The global financial crisis in 2007-2009 led the Fed to continue maintaining the low-interest rate policy. While the US prime lending rate declined further in November 2008, the Thai commercial banks' Minimum Lending Rate (MLR) was also reduced with a few months' lags. The excess liquidity of the Thai banking system due to the lack of loan demand caused a temporary departure of the domestic interest rate from the world interest rates. The cost of bank funding was reduced since Thai banks also reduced the deposit interest rates when the lending rate was cut. The widening interest spread between the time deposits and minimum lending rates improved the profitability of Thai commercial banks. In particular, when the loan deposit ratio increased after the economic recovery, Thai banks experienced more considerable interest income. The five percent interest spread indicates that Thai banks have monopoly power. Had there been more competition, there would have been a narrower spread. The Net Interest Margin (NIM) of the Thai banking in 2010 was close to 3 percent, suggesting the ability to earn more massive profits when loan demand expands in response to a rapid growth rate in 2010, which also improved the quality of bank loans.

4. The resilience of the banking sector

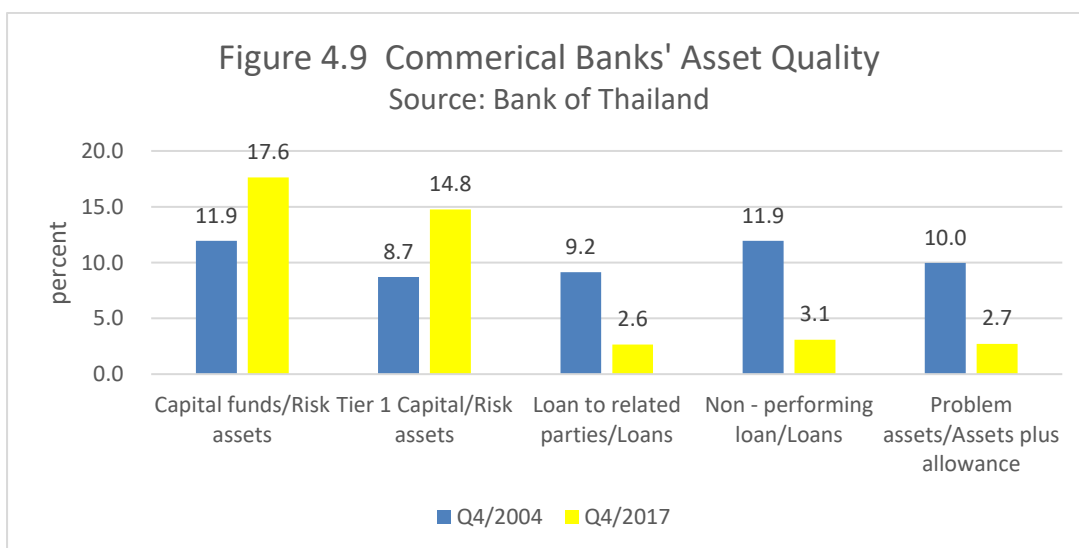
The Thai economy experienced a severe recession in 1998 and was able to recover within a few years after the crisis. As pointed out by Bonin and Huang (2002), countries that had strong financial institutions and undertook a more rapid restructuring of the banking systems were more successful in coping with the financial crisis. The Thai banking sector has prepared well for the global financial crisis. As a result of the global recession, which led to a declining world trade volume in 2009. The consequent slump of Thailand's exports contracted Thailand's GDP by 2.3 %.

Moreover, political violence disrupted the standard policy response of the government, causing a decline in public spending and dampened business confidence. As the economy slowed down, the demand for the loan was sluggish and lowered the quality of bank assets. As a result, the amount of risky assets increased, necessitating banks to raise capital funds and increase loan loss provisions. Figure 4.8 illustrates that by the first quarter of 2017, Thai banks, capital adequacy ratio was raised higher than 14%, which is above the BIS requirement. The Thai banks have prepared well for the next financial crisis.

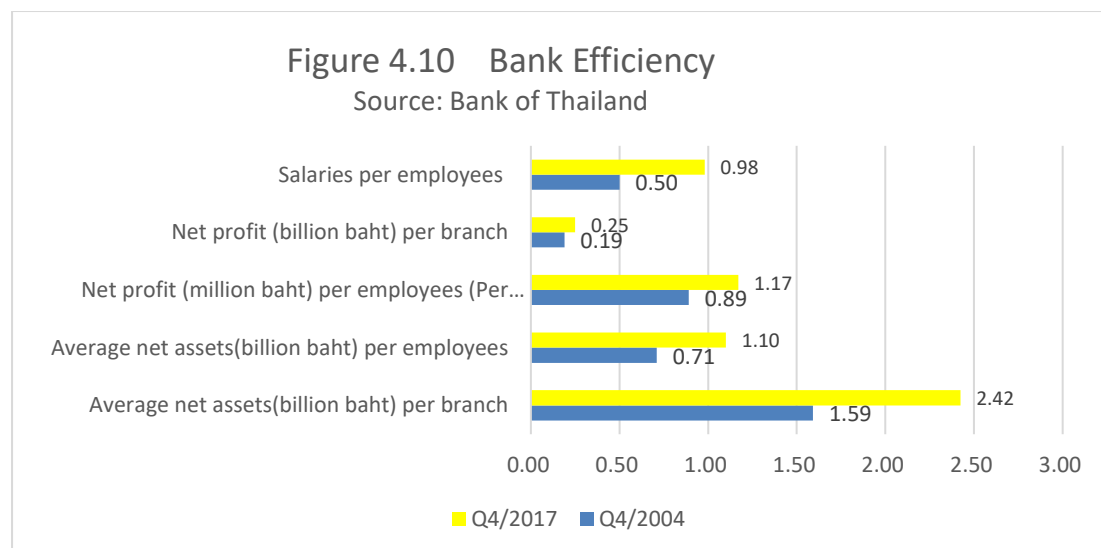
In an extreme case, when all nonperforming loans turn into bad loans and banks have to write them off from the balance sheet, commercial banks still have sufficient level of capital funds to protect depositors. Figure 4.8 reveals that equity level of shareholders has been much larger than the level of NPLs, which was already on the declining trend since 2007. Although it did not decline below 2 %, it reached its trough in 2013 and did not rebound above 3 % in 2017. Nonperforming loans are challenging to fall further as long as GDP growth is still sluggish. It boils down to the strength of the economy, which can lower the NPL further. Quality of banks assets in the financial sector is a mirror image of the condition in the real sector.



A comparison of the commercial banks' asset quality in 2004 and 2017 reveals that Thai commercial banks have gained strength considerably despite undergoing the Global Financial Crisis and Global Recession. Banks' tier 1 capital as a percentage of risk assets increased from 8.7 to 14.8 % (Figure 4.9). The amount of loan to related parties as a percentage of total loans declined from 9.2 to 2.6 %. During the same corresponding period, NPLs were reduced from 11.9 to just 3.1 %, while problem assets dropped from 10 to 2.7 % of total assets plus allowances for bad debts. This remarkable achievement happened despite the dismal growth performance of the real sector. Banks have to adjust in time of difficulties by improving the efficiency of their operations. Similarly, in time of economic buoyancy, banks are not complacent and continue to improve their operations to strike a balance between profitability, efficiency, and solvency.

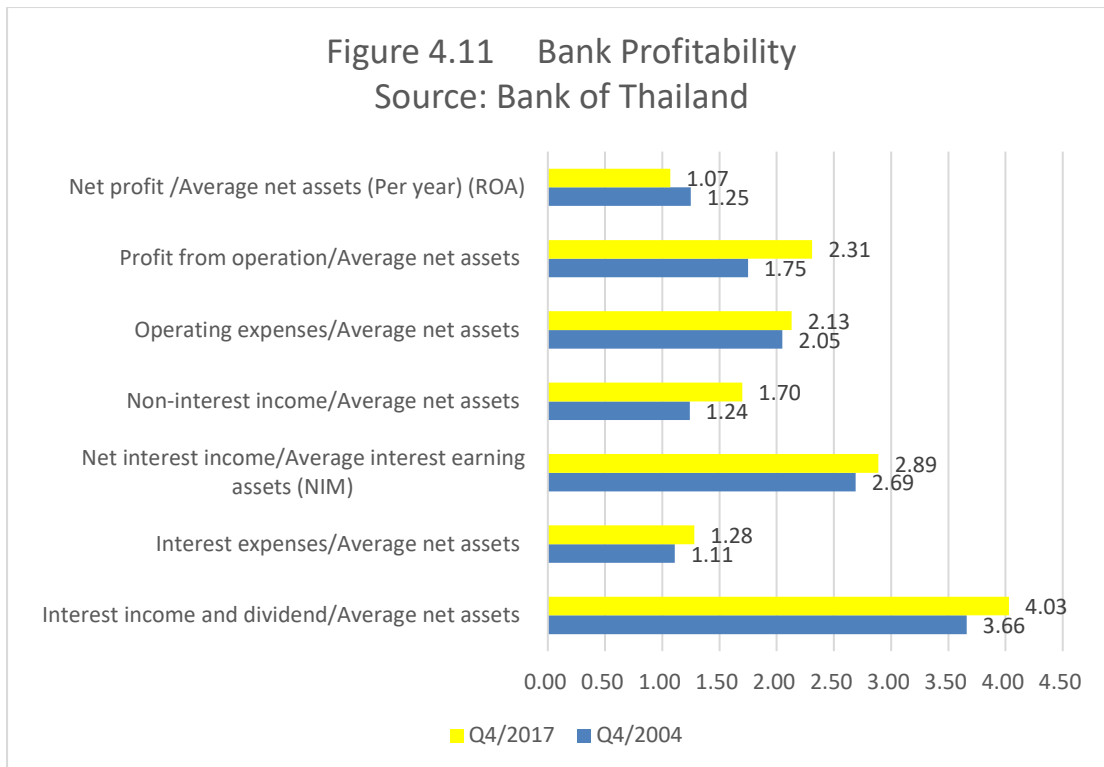


From 2004 to 2017, the average salaries of bank employees increased from 500,000 baht to 980,000 baht—almost doubled for the last 13 years (Figure 4.10). Consumer price index increased by 34.2 % during this period. Since the nominal wage increased faster than the price level, there has been a substantial rise in the real wage. The higher cost of living and improved productivity of workers explains such rise. Other indicators of bank efficiency such as efficiency in generating both net profit and net assets per employee indicate efficient improvement. Higher efficiency per bank branches regarding net profit and net assets. Banks pay their workers by the value of their marginal product. There has been a tendency for banks to reduce the number of bank branches. The trend has become clear since 2017 as banks started to cut operating costs from having a large number of branches. Internet banking and new applications on smartphones will have a profound effect on bank employees shortly.



In the aftermath of the GFC, loan growth declined substantially from the level in early 2000. Commercial banks' net profit per branches and per employee increased. In 2004 real GDP expanded by 6.3 % and slowed down to 3.3 % in 2017. Bank loan growth was 5.5 % and 4.6 % during the same corresponding period. Net profit and operating profit increased when measured as the ratio of net assets. It can be attributed to the ability to raise non-interest income, despite the rise in interest expenses. Interest income and dividends also increased (Figure 4.11).

Figure 4.11 Bank Profitability
Source: Bank of Thailand



In 2007, operating expenses were 80 % of net interest income and dividend. It declined to 77.7 percent in 2017--a minimal improvement, thanks to higher salaries which jumped from 34 to 42% of operating expenses during the same corresponding period (Figure 4.12). Banks have found the way to increase non-interest revenues, which rose from 25.3 to almost 30%. These are revenues obtained from fee and services income, whose share in total non-interest income rose 55.7 to 68.5 percent. The relative importance of non-interest income from investment in securities declined due to the poor performance of the stock market and gains from foreign exchanges did not increase much due to stable exchange rates.

Figure 4.12 Banks' structure of Income and Expenses
Source: Bank of Thailand

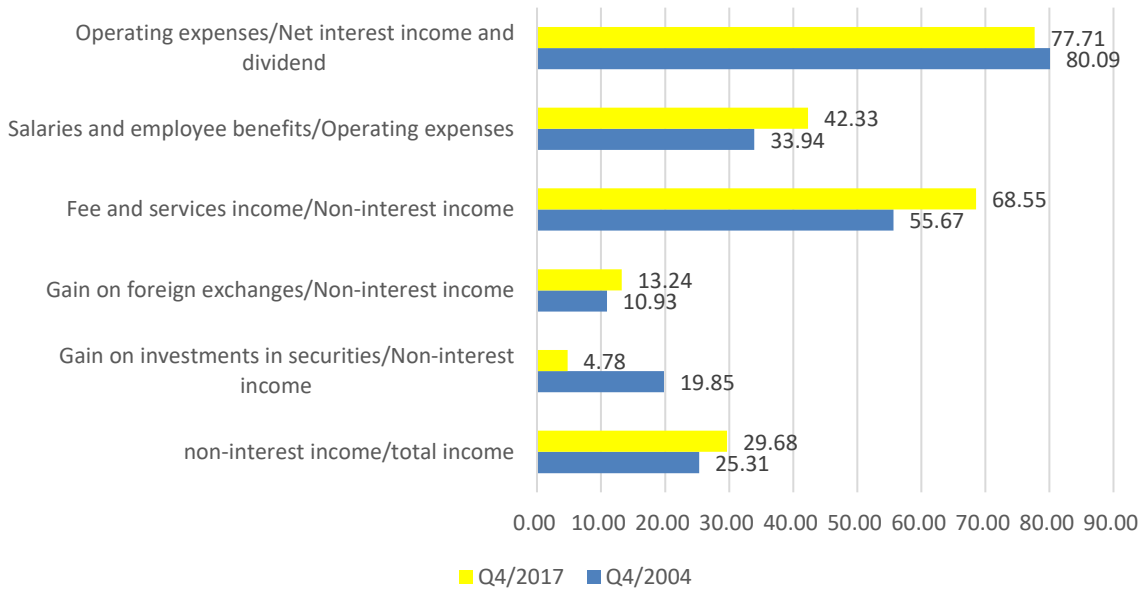
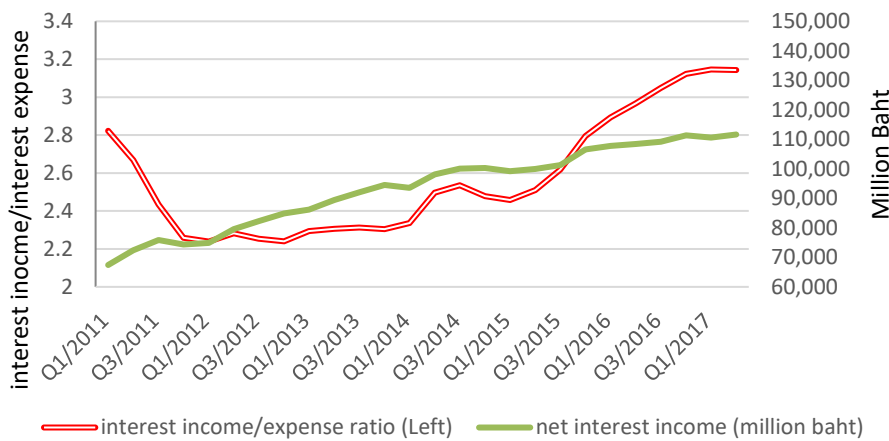
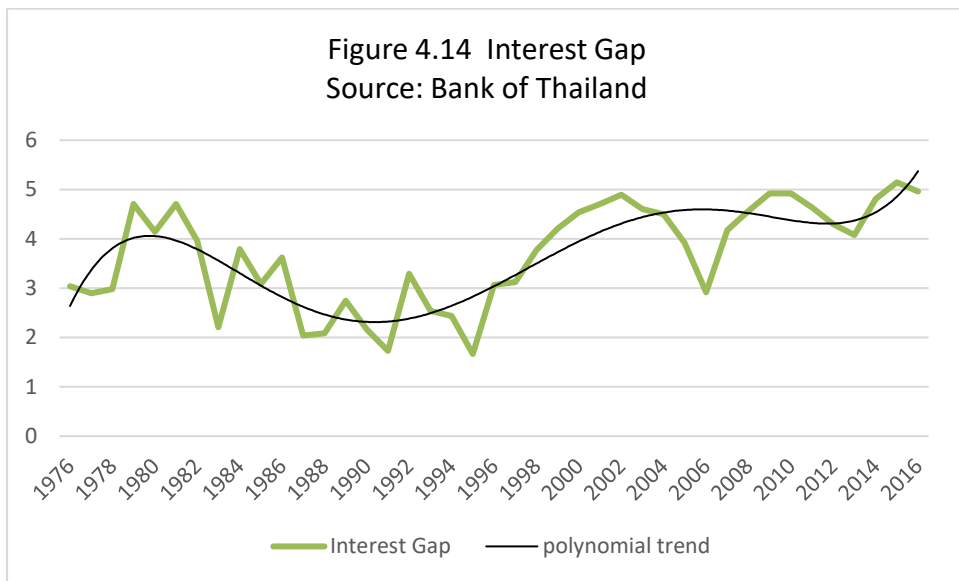


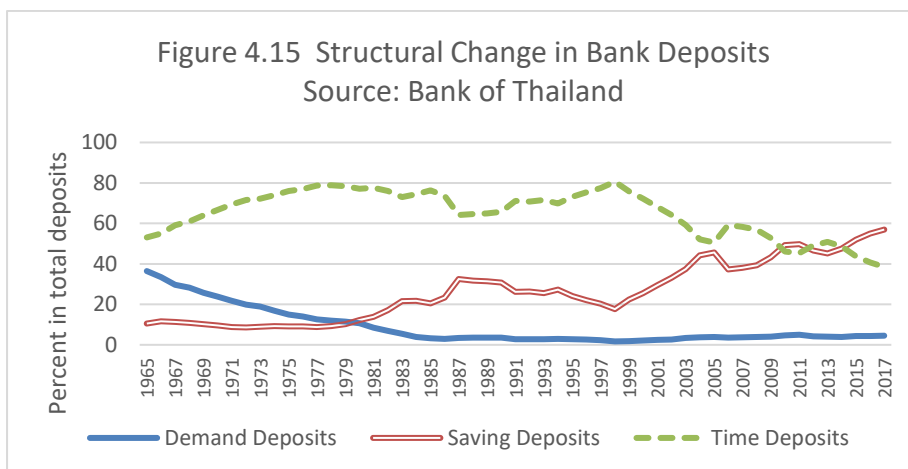
Figure 4.13 Rising interest Income
Source: Bank of Thailand



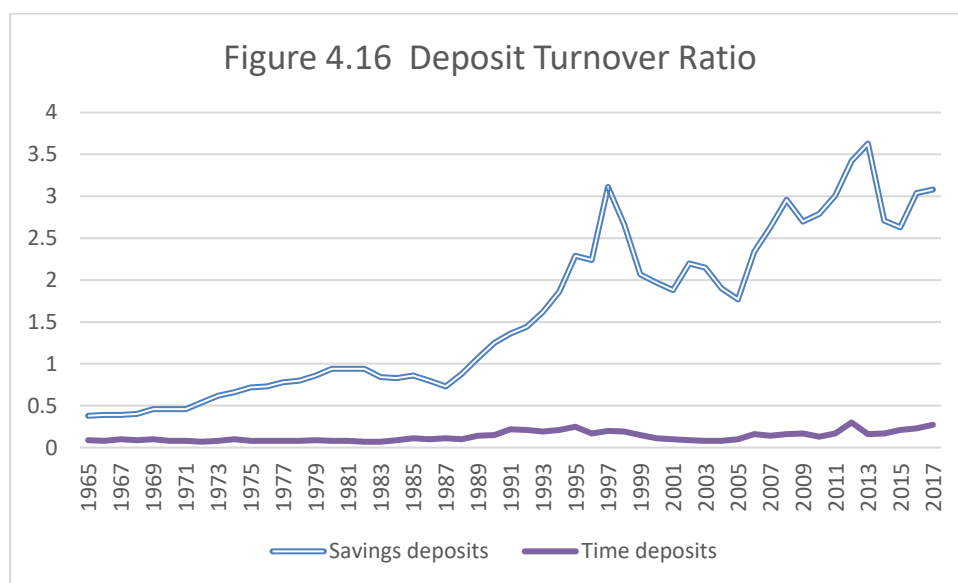
The ratio of interest to expense ratio declined temporarily in 2011 and hit its trough in the following years (Figure 4.13). By 2013, after the economy had regained its momentum, the ratio was on the increasing trend. The slowdown of the economy in 2015 caused the interest income rise slower than banks' expenditures. Nevertheless, the net interest income increased gradually reaching 110 billion baht by Q2/2017.



Interest income rises steadily despite the slowdown of loan growth, thanks to the trend of widening interest gap since 1992 (Figure 4.12). The larger spread between lending and deposit allowed banks to make a profit despite the low growth volume. It also suggests that the price competition among banks is not high enough to narrow the spread, even though there are 30 commercial banks, domestic and branches of foreign banks in Thailand. One can argue that a contributing factor to the massive spread is the high level of required reserve and the requirement of banks to contribute 0.01 % of total deposits to the Financial Institution Development Fund (FIDF). We cannot deny that Thai banks enjoy the hefty profit from their operations. A proxy for bank efficiency from a social perspective is the size of the interest gap. View in this light, social welfare has declined since the 1990s, as the welfare gains were reduced by the loss of consumer surplus of depositors and borrowers.



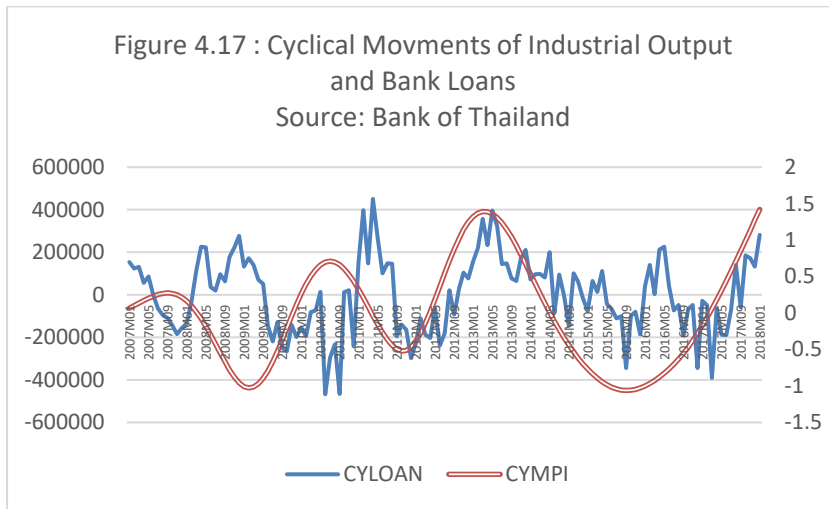
There has been a significant structural change in the household portfolio, which would affect bank operation and change commercial banks' strategy. Demand deposits have dwindled since 1965 and amounted to less than 5 % of total commercial deposits since 1985. Similarly, the share of time deposits, which increased substantially to almost 80% in 1978, declined to 64% in 1988. The final surge in the share of time deposits appeared in 1998 before it has resumed a declining trend well into 2017. There has been a portfolio reallocation, shifting away from time deposits to saving deposits. Low-interest rates offered by time deposits and more liquidity for saving deposits is the primary factor attributing to the shift.



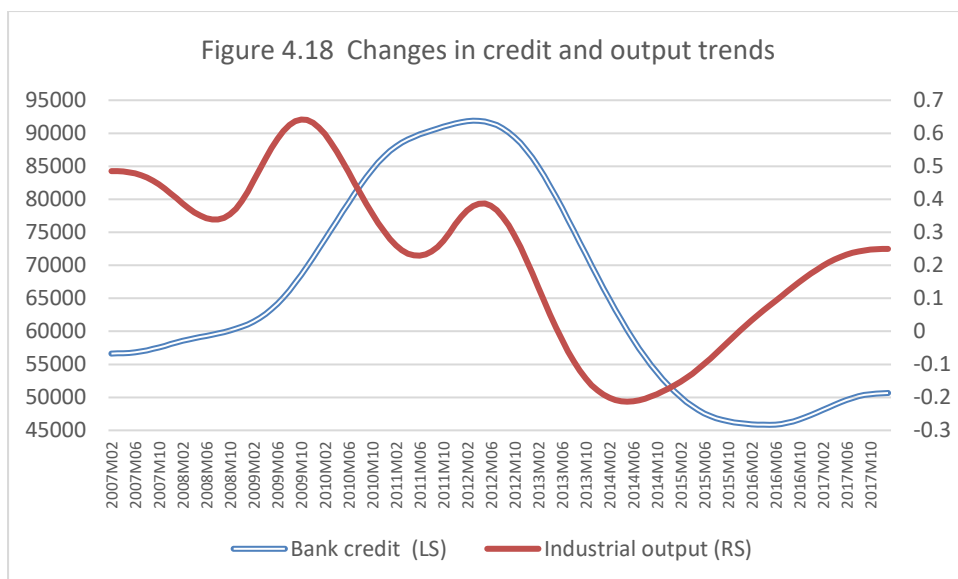
Saving deposits are close substitutes of currency, thanks to the popularity of debit cards and widespread uses of ATM. Figure 4. 17 illustrates that the turn over ratio of saving deposits rose rapidly, while that of time deposits remained stable and less than unity. Commercial banks must prepare ample liquidity for the very high turn over ratio of saving deposits. It is precisely the reason why the regulation on required reserves has been changed into the liquidity coverage ratio. If commercial banks hold an excessive amount of liquidity, above the requirement of 100%, changing the level of LCR ratio would not be effective in restraining the overheated economy.

As the economy hit its trough near the end of 2016, output started to rise together with the demand for loan. The cyclical movements of bank credit (CYLOAN) and manufacturing output index (CYMPI) are positively correlated (Figure 4. 16). If we remove these cyclical components from their actual values, we obtain trend values of loans and output paths. We can calculate the elasticity of the demand for loans with respect to output, using the trend values of loan and output, by ignoring another factor such as changes interest rates. The obtained semi-elasticity

of the demand for loans with respect to output is in the neighborhood of 3.0, indicating that the demand for loans is highly sensitive to industrial output growth.



For banks to remain profitable, they must seek higher profit from a broader interest gap as well as seeking higher non-interest income. During the upturns, credit growth would rise faster than the manufacturing output. Bank profit would increase substantially if both loan volume growth and the interest gap is high. Bank profits depend on loan growth and the gap between lending and deposit rates. During the downturns, credit growth dropped much faster than manufacturing output. It explains why loan growth is highly sensitive to changes in output growth. When output growth slows down in early 2010, credit still expanded and petered out later about 24 months. The lag adjustment of loans to output change is about two years. Similarly, when output picks up during the recovery phase of business cycles, it will take another two years before we can see a robust recovery of loan growth. There is a systematic relationship between credit cycles and business cycles.



Granger causality test between bank credit and industrial output, represented by manufacturing output index, confirms that changes output leads changes in bank credit. Figure 4.17 depicts such a lead-lag-relationship between output cycles and credit cycles. A boom in the economy, fueled by strong growth in manufacturing output is followed by credit growth. The empirical evidence points out to a conclusion that bank profitability depends on loan growth generated by a booming economy. During a downturn, it would take a while before credit growth slows down and hence bank profit will be adversely affected by the dismal growth of economic activity.

5. Concluding remarks

The Thai financial sector was vulnerable and weak in the late 1990s. The lack of prudential regulations and sufficient capital funds made capital control relaxation in the early 1990s premature liberalization. The ensuing fast and large capital inflows led to subsequent financial turmoil. The Thai financial sector since then has emerged from the 1998 crisis and become stronger and resilient, thanks to foreign capital injection, good governance, and strengthened financial rules. The rapid economic recovery, despite the political turmoil in 2010, provided opportunities for banks to expand their credit and enjoy the benefit from rising interest rates. Also, the strong performance of the corporate sector enabled banks to reduce non-performing loans further.

The substantial interest margin between lending and deposit rates bodes well for the monopoly rent of commercial banks. The transfer of wealth from consumers to banks can be reduced via allowing foreign entry in line with the liberalization of the service sector. Financial institutions and their regulators cannot resist the global trend of foreign penetration. By opening up the financial sector to foreign participation, the financial sector has become more efficient, taking the benefit from competition effect and technology adaptation. With foreign capital injection,

the monetary authorities can maintain system solvency while lessening the burden of financial bailouts.

Since the 1997 financial crisis, the Thai economy has been tightly integrated into the world economy through international trade and capital flows. As such, it cannot wholly shield itself from external shocks. The global financial crisis during 2007-2009 led to the export collapse and output contraction in 2009. The debacle of the world's financial institutions and stock markets crash in 2008 had a negative impact on the Thai stock market. However, the adverse consequence on the Thai banking sector was minimal. Thai banks were able to make profits during difficult times. Most of them did not invest in CDOs nor focus mainly on property lending. The level of NPLs continued to decline, while banks enhanced capital strength and provided sufficient loan-loss provisions. The exploitation of economies of scale and scope improved efficiency in their operation. All of these factors are the result of the financial reform undertaken after experiencing the financial crisis in 1997. Thai banks have been well prepared for the global financial crisis as they have learned a valuable lesson on being conservative and obeying stringent prudential rules and regulations. It remains to be seen how vulnerable and resilient the Thai banking system is during the Eurozone problems and the fears of US double-dip recession.

We have seen the resilience of Thai commercial banks over periods of macroeconomic shocks. Strengthening rules and regulations have made Thai banks stronger. The banking sector underwent a global financial crisis, the slowdown of China's economy, and depressed consumer spending during political turmoil and various internal shocks. The main conclusion is that the macroeconomic environment matters for bank profitability. Even in a time of sluggish economic activity, banks can survive and thrive by riding over the business cycles through improving productivity and seek higher revenue from non-interest income. Technology improvement is a must if banks are going to survive in the world of fast-changing technology. Electronic payments, rising wages, and Fintech are the new order of the days. Failure to adapt to changing environment spells troubles for some banks which are left behind.

References

- Arun, Thanakorn G. and John D. Turner (2004) "Corporate Governance of Banks in Developing Economies: Concepts and Issues, *Corporate Governance: An International Review*, 12(3), 371-377.
- Berger, Allen N. (2007) "International Comparisons of Banking Efficiency" *Financial Markets, Institutions & Investment*, 16(3), 119-144.
- Blanchard, Oliver, Giovanni Dell' Ariccia, and Paolo Mauro (2010) "Rethinking Macroeconomic Policy." International Monetary Fund, Research Department Working Paper.
- Bonin, John P. and Yiping Huang (2002) "Foreign Entry into Chinese Banking: Does WTO Membership Threaten Domestic Banks?" *The World Economy*, 25(8), 1077-1093.
- Clasessens, Stijn (2009) "Competition in the Financial Sector: Overview of Competition Policies" *The World Bank Research Observer*, 24(1), 83-118.
- De Nicolo, Gianni, Philip Bartholomew, Jahanara Zaman, and Mary Zephirin (2004) "Bank Consolidation, Internationalization, and Conglomeration: Trends and Implications for Financial Risk" *Financial Markets, Institutions & Investment*, 13(4), 173-217.
- Hale, Galina (2007) "Bonds or Loans? The Effect of Macroeconomic Fundamentals" *The Economic Journal*, 117, (January), 196-215.
- Kenc, Turalay and Sel Dibooglu (2010): "The 2007-2008 financial crisis, global imbalances and capital flow: Implication for reform" *Economic Systems*, 34(1), 3-21.
- Kubo, Koji (2006) "The Degree of Competition in the Thai Banking Industry before and After the East Asian Crisis" *ASEAN Economic Bulletin*, 23(3), 325-40.
- Marer, P. (2010) "The Global Economic Crises: Impacts on Eastern Europe" *Acta Oeconomica*, 60(1), 3-33.
- Mieno, Fumiharu (2006) "Fund Mobilization and Investment Behavior in Thai Manufacturing Firms in the Early 1990s" *Asian Economic Journal*, 20(1), 95-122.
- Molyneux, Philip, Eli Remolona, and Rama Seth (1998) "Modeling Foreign Bank Performance and Lending Behavior" *Financial Markets, Institutions & Investment*, 7(4) 26-41.
- Nidhiprabha, Bhanupong, 2011. "The Global Financial Crisis and Resilience of the Thai Banking Sector," *Asian Development Review*, Asian Development Bank, vol. 28(2), 110-132.

Simpson, John L. (2010) "Were there warning signals from the banking sector for the 2008/2009 global financial crisis?" *Applied Financial Economics*, 20 (1), 45-61.

Weill, Laurent (2003) "Banking Efficiency in Transition Economies: The role of foreign ownership" *Economics of Transition*, 11(3), 569-592.