

Risk Management at Military Commercial Joint Stock Bank in Vietnam

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Abstract

This research is conducted for examining the framework for risk management in the Basel II accord, the Basel II risk management model at the Military Commercial Joint Stock Bank. Data were collected from annual reports for the period from 2015 to 2017 of the Military Commercial Joint Stock Bank. The results show that the implementation of risk management under Basel II at Military Bank still faces many difficulties in the pressure of capital increase, database system, human resource quality, and cost of implementation. The study suggest some solutions for Military Bank to implement successfully Basel II, emphasizing the role of human resource quality, modernizing the data system and the specific mechanism for raising capital. The results of this research is a reference for Vietnamese commercial banks in identifying, controlling and responding various risks in banking activities in the context of Vietnam.

Keywords: Basel II, Risk management, Military Bank

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1. Introduction

Following the global economic crisis of 2007 - 2008, Vietnam implemented a comprehensive reform of the economy, including the restructuring plan of credit institutions in the period of 2011-2015 (Bernanke, 2004). The project concentrates on weak banks by mergers and acquisitions (M & A) and simultaneously piloting Basel II in some banks. According to the State Bank's roadmap, by the end of 2015, 10 banks were selected to pilot capital and risk management in accordance with Basel II standards including Vietinbank, Bank for Investment and Development of Vietnam (BIDV), Vietnam Commercial Bank (Vietcombank), Technology Commercial Bank (Techcombank), Asia Commercial Bank (ACB), Vietnam Prosperous Bank (VPBank), Military Bank (MB), Sacombank, VIB and Maritime Bank.

Military Bank is one of the leading commercial joint stock banks in Vietnam, always pioneering the modernization of the banking system. Military Bank has studied international standards for risk management including the Basel II. Military Bank had applied Basel II before the State Bank officially issued Circular No. 41. In 2012, Military Bank hired Deloitte advisors to develop the operational risk management framework, which included strategies, policies, operational risk and process of implementation of 03 tools is LDC, RCSA and KRI. By 2014, Military Bank has partnered with Ernst & Young Singapore to implement a gap analysis project and develop a Basel II roadmap. The roadmap to 2019 is the last time for the selected banks to complete risk management in Basel II, although Military Bank has had a lot of success in deploying Basel II, compared to other banks, but Military Bank's Basel II risk management poses many challenges (Nguyen, 2015).

2. Theoretical Framework

2.1. Risks in Banking Business

Credit risk

Credit activity is the main business activity of commercial banks, bringing the highest profit but also the biggest risk of commercial banks. Credit risk mentioned here is the risk in lending and credit activities of commercial banks. According to the Basel Committee (2000), "Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms."

In article 3, the State Bank of Vietnam's Circular No. 02/2013/TT-NHNN dated 21 January, 2013 requires credit risk in banking activities is likely to occur for debts of credit institutions, a branch of a foreign bank is not executed by the customer, or is unable to perform part or all of its obligations under the undertaking. To assess credit risk at a commercial bank, it is often calculated bad debt ratio.

Bad debt ratio = Outstanding loans (Group 3, 4, 5) x 100%/Total outstanding loans

Interest rate risk

Interest rate risk is the type of risk that occurs when a change in interest rates results in loss of assets or a decrease in bank income. Interest rate risk usually arises when banks maintain the asymmetry between the maturity of its assets and liabilities in the balance sheet or the bank adopts different interest rates during lending and borrowing.

To measure interest rate risk, two models are usually used:

- The re-pricing model is used to assess the impact of interest rate changes (Δi) on the change in interest income of a bank (ΔNII):

$$\Delta NII = GAP \times \Delta i$$

With $GAP = RSA$ (Interest-sensitive assets) - RSL (Interest-sensitive liabilities)

- The duration model is used to evaluate the effect of interest rate changes (Δi) on the bank's equity (ΔE)

$$\Delta E = -A \frac{\Delta i}{1+i} (D_A - k D_L)$$

A is the total asset of the bank, D_A , D_L is the duration of the total assets and total liabilities respectively, k = total liabilities/total assets.

Foreign exchange risk

Risks in foreign exchange trading in Vietnamese commercial banks especially the exchange rate risk occur when the bank maintains its open foreign exchange position. When the exchange rate of the foreign currency changes unfavorably will lead to damage to the bank. Thus, the measurement of risk for individual foreign currencies and for the foreign currency portfolio is the basis for banks to introduce risk prevention measures to reduce losses. Foreign exchange risk has a relationship with credit risk: when the exchange rate fluctuates sharply, it can lead to a shortage of some foreign currency and to payment of sellers, the company must buying foreign currency at unexpectedly high prices, business profits down, may affect the ability to repay the loan.

Liquidity risk

Liquidity risk: the type of risk that occurs when the bank lacks the ability to pay, fails to convert assets in cash or is unable to borrow to meet the requirements of payment contracts. Liquidity risk occurs due to several reasons: Firstly, there is a mismatch between the maturity date of the fund's use and the maturity date of the mobilized funds (cash flow from asset investments is less than the cash outflow).

Secondly, due to the sensitivity of the deposit to the change in the interest rate of the investment: as interest rates rise, some depositors withdraw their capital from the bank to invest in higher yielding areas. The borrowers will actively access credit for lower interest rates.

Thirdly, because banks have inadequate and ineffective liquidity management strategies: the bank's securities are low liquidity, the bank's reserves are insufficient for the demand.

Operation risk

According to the Basel Committee on banking supervision, "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events". Operational risk is the type of asset loss that occurs due to inefficient operations, such as incomplete information systems, problematic operations, violations in the internal control system, fraud or unforeseen catastrophes.

2.2. Introduction of Basel II

Basel II is the second version of the Basel Convention, which sets out the general principles of the Basel Committee on Banking Supervision. The Basel I (credit risk framework) was first introduced in 1988 by the BCBS (Basel Committee on Banking Supervision) which addresses the capital adequacy requirements of banks. Together with the development of the social economy, commercial banks are constantly improving themselves, renewing the business model, thus posing a requirement for the Basel Committee to renew the principles in Basel I. In June 2004, the Basel II accord was enacted, introducing a series of complex and risky approaches to credit risk, focusing on operational risk. Basel II uses the term "three pillars": (i) minimum capital requirements, (ii) supervisory reviews, (iii) market principles.

Pillar 1 deals with minimum capital requirements. Accordingly, the minimum capital adequacy ratio (CAR) is still required at 8% of total risk-weighted assets like Basel I. However, the risk is calculated not only on credit risk but also on operation risk and market risk.

Pillars 2 deals with banking supervision. This pillar defines the process of reviewing the organization's risk management framework and ultimately capital adequacy. It sets out specific supervisory responsibilities for the board of directors and senior management, thereby enhancing the principles of internal control and other corporate governance by regulators in different countries throughout the world.

Pillar 3 aims to strengthen market discipline by enhancing the disclosure of information by banks. It sets out requirements and recommendations for disclosure in a number of areas, including how banks calculate capital adequacy and the bank's risk assessment approach. Enhancing comparability and transparency among banks is the desired result of pillar 3. At the same time, the Basel Committee seeks to ensure that Basel II corresponds to

accounting standards and it does not conflict with the broader accounting disclosure standards that banks must adhere.

3. Research Methodology

Data collection: Data were collected mainly from audited financial statements of Military Bank (MB) for the financial years ended 2015, 2016 and 2017. Some management accounting reports and internal reports of Military Bank are also collected for having full data of loans, non-performing loans, exchange rate; risks and others relating to the topic research.

Based on the data collected, we use analytical procedures including comparison, evaluation, judgments relating to the topic research. For more illustration, we use crosstab data and figures for showing more the issue. In order to propose some recommendations for having good management of risks inside the Military Bank, we have in-depth interview with member of Board of directors; Chief accountant, general accountant, and internal auditors.

4. Results and Discussions

4.1. Risk management when adopting Basel II

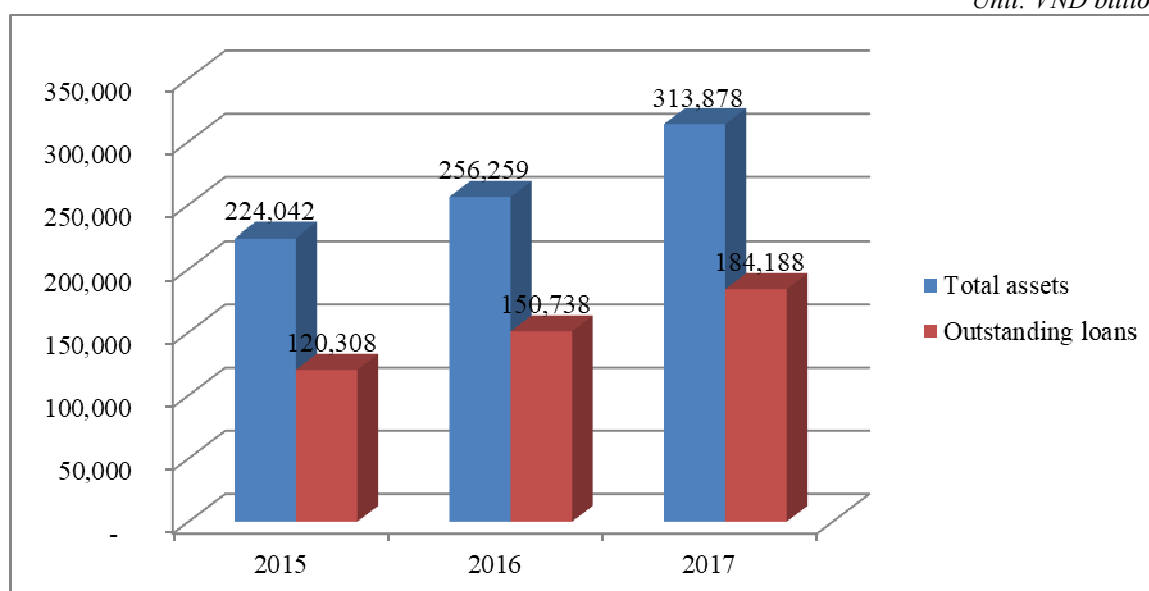
Credit risk management

Credit risk management in this part consists of (i) Credit growth; (ii) Credit quality; (iii) Credit risk management as presented below:

* *Credit growth*

Figure 1: Growth of outstanding loans and total assets of Military Bank

Unit: VND billion



Source: Financial statements of Military Bank from 2015 to 2017

In the period from 2015 to 2017, macro economy had recovered in a sustainable way after closing global economic crisis, the State Bank of Vietnam managed flexible monetary policy for supporting the growth. Despite the intensive competition from not only domestic banks but also international banks, Military Bank has achieved the target of outstanding loan growth and the quality of credit.

* *Credit quality*

Table 1: Credit quality of Military Bank from 2015 to 2017

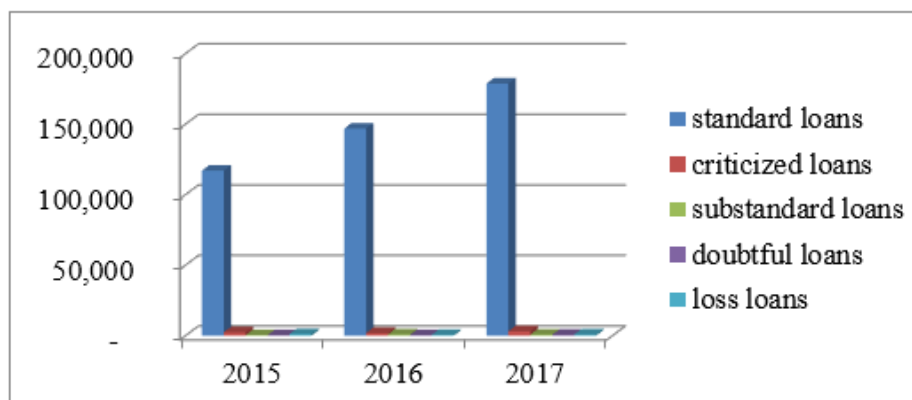
Unit: VND billion

Items	2015	2016	2017
Total assets	120,308	150,738	184,188
Standard loans	117,017	146,846	178,795
Criticized loans	2,382	1,905	3,175
Substandard loans	425	896	736
Doubtful loans	442	477	668
Loss loans	1,082	614	814
Bad debt ratio	1.62%	1.32%	1.2%

Loan of Military Bank is classified and shown in Figure 2 as below:

Figure 2: Classification of Military Bank's loans

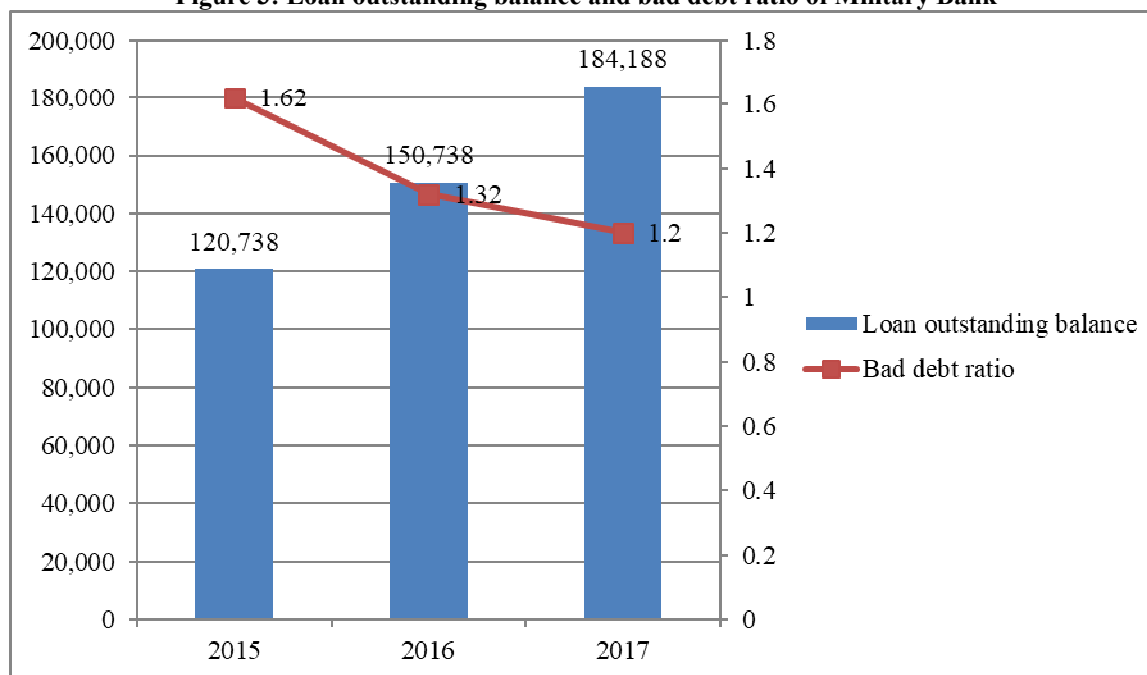
Unit: VND billion



(Source: MB annual report 2015 - 2017)

Military Bank's credit quality is basically controlled properly in the previous years. Even though there have unfavorable conditions of business environment, Military Bank has been active in deploying solutions for managing, processing and recovering bad debts. As details, bad debt of the end of 2015 is 1,949 billion, accounting for 1.62% outstanding loans. The outstanding debt of year end 2016 is 1,987 billion, the bad debt ratio is 1.32%, down 0.3% in comparison with that in 2015. Criticized loans at 31 December 2017 are 3,175 billion, an increase of 1,270 billion compared to 2016 (+ 66,6%). Outstanding debt at year end of 2017 is 2,218 billion VND. The non-performing loans rate is 1.2%, down 0.12% points from 2016, lower than the plan's target of 1.5%.

Figure 3: Loan outstanding balance and bad debt ratio of Military Bank



*** Credit risk management**

Military Bank has maintained a credit risk management policy to ensure basic principles:

- Establish an appropriate credit risk management environment;
- Operate a suitable credit process;
- Maintain a proper credit management, measurement and supervision process;
- Ensure to adequately control over credit risk.

Military Bank conducts credit review through multiple levels to ensure that a loan is reviewed independently; at the same time, the approval of loans is made on the basis of credit limits assigned to each competent authority. In addition, the credit approval model of the bank has the involvement of the credit board to ensure that credit approval is centralized with the highest quality. Military Bank is using an internal credit rating system that is approved as a management tool for credit risk management whereby each customer is rated at a risk level. This level of risk can be modified, updated regularly. Data and customer ratings across the entire system are centrally

controlled and managed. This is the basis for the credit granting and provision of services to customers as well as the provision of credit risk provisions.

Exchange rate risk management

Exchange rate risk is the risk that the value of financial instruments fluctuates due to exchange rate fluctuation, Military Bank was established and operated in Vietnam with reporting currency by VND, MB's main trading currency is VND. Military Bank's loans are mainly denominated in VND and USD ("USD"). Military Bank sets up a limited gap for each currency based on MB's internal risk rating system and State Bank's regulations. Daily managed currency position and risk hedging strategy used by Military Bank to ensure that currency position is maintained within established limits.

Table 2: Military Bank foreign currency status for the period from 2015 to 2017

Unit: VND billion

	2015		2016		2017	
	USD	EUR	USD	EUR	USD	EUR
Asset	31,457,841	1,406,022	30,762,729	2,816,885	3,105,196	3,018
Liability	33,263,984	1,405,221	32,532,478	2,827,824	3,128,816	-
Gap	(1,806,143)	801	(1,769,749)	(10,939)	(23,620)	3,018
The rate of VND against USD, EUR	1%	1%	1%	1%	1%	1%
Expected change of income	14,407	6	14,158	87	8,130	189

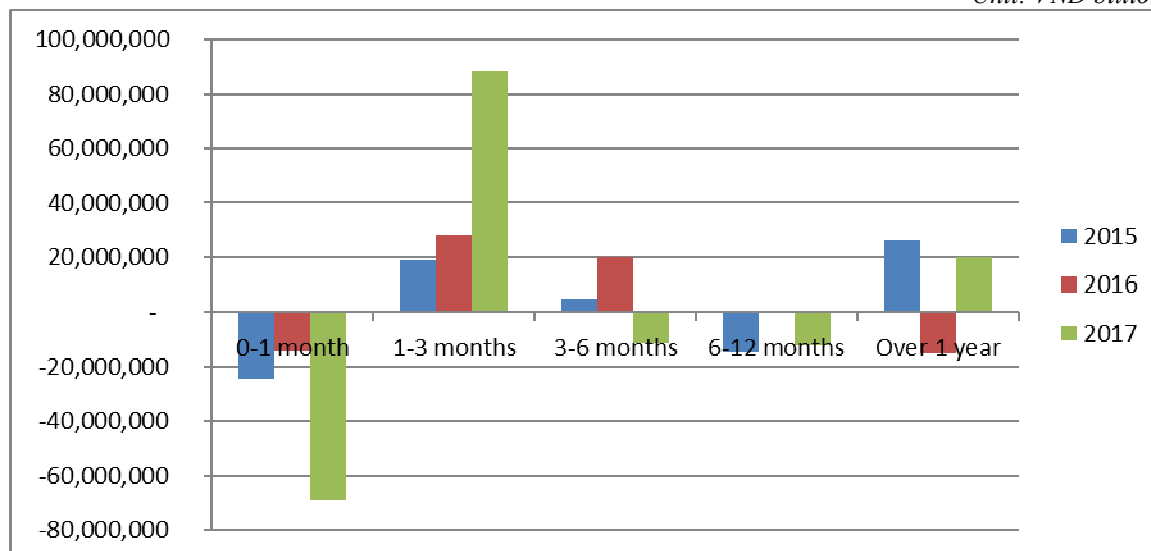
Table 2 shows that Military Bank mainly maintain the foreign currency position for two foreign currencies are USD and EUR. The bank maintains the short position of foreign currency for two currencies USD and EUR although the difference is not high. With USD, the gap between asset and debt of the bank is (-) 1,806,143 billion, by 2017 only (-) 23,620 billion. That shows the risk management of foreign currency are more interested at MB.

Interest rate risk management

The chart below presents the assets and liabilities of Military Bank that are classified according to the contractual re-pricing term or the maturity date and actual interest rate. Figure 4 shows that all terms of less than one month. Military Bank maintained a negative sensitive interest rate gap. This is in line with interest rate trend in recent years. Military Bank will increase net income when interest rates decrease. For longer term periods, from 12 months or more, Military Bank maintained a positive sensitive interest rate gap. If interest rates continue to fall as in recent years, Military Bank will face the interest rate risk. Therefore, Military Bank should increase long term deposits of 12 months or more, encourage short-term loans and reduce medium and long-term loans.

Figure 4: Interest rate gap of Military Bank from 2015 to 2017

Unit: VND billion



Liquidity risk management

Liquidity risk arises in the process of raising capital in general and in the process of managing the monetary status of Military Bank. Liquidity risk includes the risk of the inability to mobilize the asset at maturity and appropriate interest rates as well as the risk of not being able to sell an asset at a reasonable price and right period of time,

Military Bank uses risk measurement methods appropriate to the scale of operations and the availability of the information system, ensuring that the risk minimization requirements are met. Liquidity risk is measured by

the use of indicators related to cash flow, ability to raise capital, liquidity capacity of Military Bank. In addition, Military Bank also has specialized departments to update domestic and foreign economic information which directly affects the trading book and business strategy of Military Bank as well as forecast the fluctuation of market factors: exchange rate, interest rate, gold price to have the timely warning. Military Bank also develops and implements the system of limits, decision authority levels based on risk measurement results for each category.

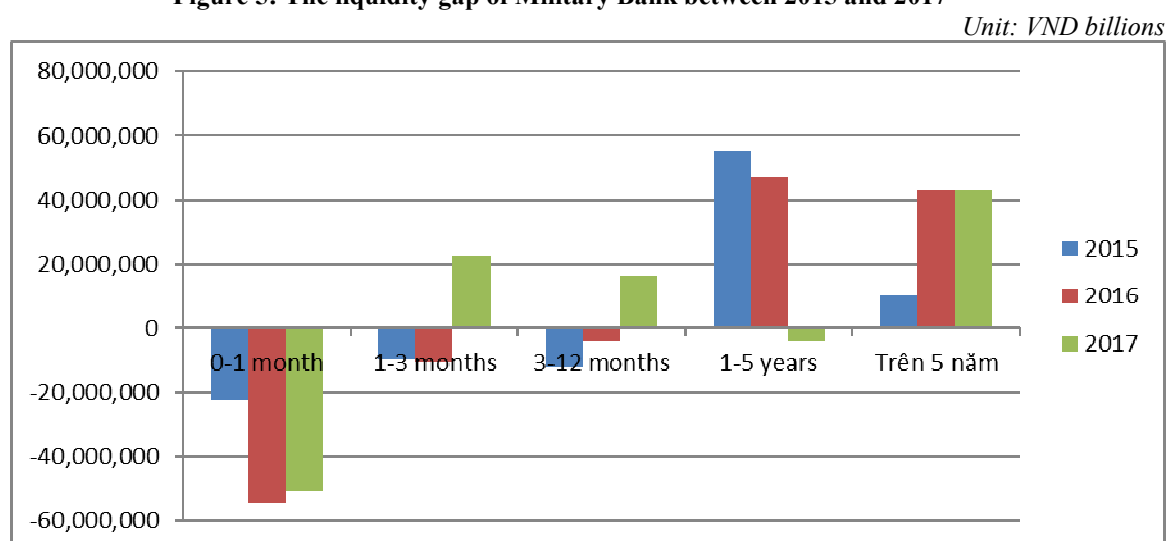
Table 3: The liquidity gap between maturities of MB between 2015 and 2017

Unit: VND million

Year	Criteria	To 1 month	From 1 to 3 months	From 3 to 12 months	From 1 to 5 years	Over 5 years
2015	Asset	45,859,795	38,820,606	45,805,934	64,939,834	23,430,474
	Liability	68,314,997	48,795,748	57,782,373	9,692,341	13,273,483
	Net liquidity gap	(22,455,202)	(9,975,142)	(11,976,439)	55,247,493	10,156,991
2016	Asset	40,470,580	43,348,452	48,782,692	75,192,666	47,234,757
	Liability	94,808,204	53,914,550	52,871,342	28,071,874	4,084
	Net liquidity gap	(54,337,624)	(10,566,098)	(4,088,650)	47,120,792	43,150,757
2017	Asset	58,969,982	48,938,512	72,885,038	87,155,154	43,026,672
	Liability	109,797,623	26,244,195	56,613,678	91,563,285	57,877
	Net liquidity gap	(50,827,641)	22,694,317	16,271,360	(4,408,131)	42,968,795

Table 3 reveals assets and liabilities of Military Bank by maturity group from the balance sheet date to the date of payment. In fact, the actual maturity of assets and liabilities may differ from the contractual period in accordance with the contract annexes may have.

Figure 5: The liquidity gap of Military Bank between 2015 and 2017



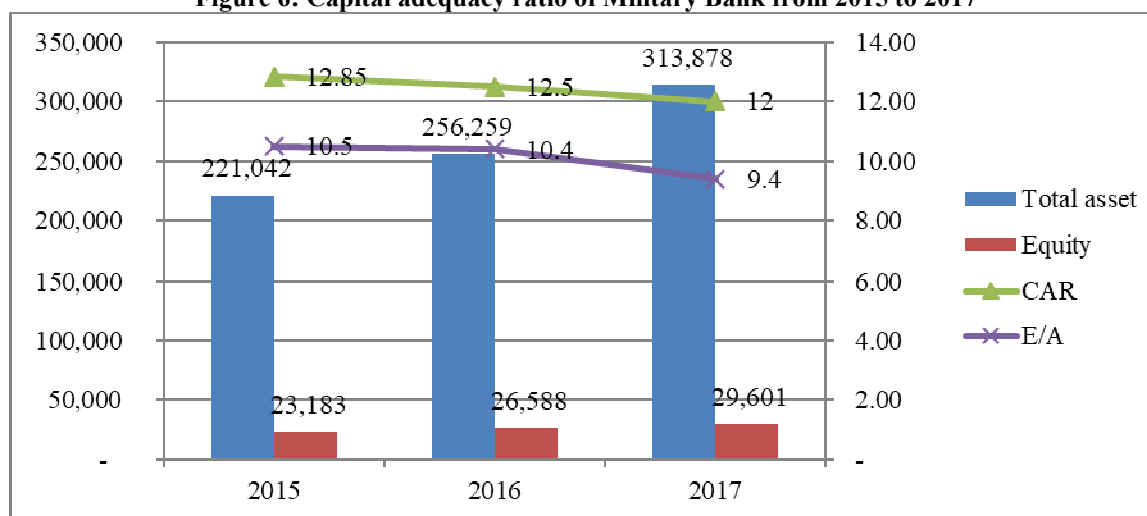
Looking at the chart, the bank is always in shortage of liquidity for short terms, especially the term of less than a month. In 2015, the difference between the short-term assets of less than one month and the debt of less than one month is (-) 2,455,202 million VND, this figure is quite high, with (-) 50,827,641 million VND in 2017. This liquidity risk in short terms is very noticeable. At longer maturities, the bank maintained its liquidity surplus.

CAR management

The size of the bank's capital is a key element in Basel II to assess the safety of banking operations. In Vietnam, the State Bank has issued many regulations relating to the level of self-financing of banks. First of all, Decision No. 297/1999/QĐ-NHNN requires commercial banks to maintain a minimum capital adequacy ratio of 8%. In 2005, the State Bank issued Decision No. 457/2005/QĐ-NHNN which stipulated minimum capital adequacy ratio of 8%, but this rate was standardized by Basel I. Then, by 2010, the State Bank of Vietnam issued Circular No. 13/2010/TT-NHNN and later Circular No. 36/2014/TT-NHNN raised the minimum capital adequacy ratio (CAR) to 9% on the basis of the Basel II approach. The increase of capital in accordance with the regulations of the State Bank put Military Bank a lot of pressure and there are many problems that need to be resolved.

Looking at the chart it can be seen that Military Bank basically meets the requirements of the State Bank of Vietnam to maintain minimum capital adequacy by continuously maintaining the CAR of over 12% in the period of 2015 - 2017, CAR numbers tend to decrease over time, Basel III, on the other hand, needs to maintain CAR above 13% so that it can withstand cyclical and cross-sector risks.

Figure 6: Capital adequacy ratio of Military Bank from 2015 to 2017



Source: MB annual report 2015 – 2017

Likewise, although the CAR of the bank has remained stable over 12%, if the equity / asset ratio is immediately seen falling from 10.5% in 2015 to 9.4% in 2017, this shows that financial leverage of Military Bank is increasing.

4.2. Difficulties in Implementing Basel II at Military Bank

During deploying Basel II with the case study of Military Bank, some constraints have been pointed out as below: First, with the first pillar, to increase the CAR ratio, As mentioned above, Military Bank's CAR is maintained at over 12%, it meets the requirements of the the State Bank (> = 9%), However, Military Bank's CAR has only included credit risk without mentioning market risk and operation risk. When adding these two types of risk, Military Bank's CAR will decrease. To increase CAR, Military Bank can reduce total risky assets. However, this is difficult to implement because Military Bank is still focusing on credit growth target, reducing total risky assets means reducing the bank's credit activity, thereby reducing the profitability and performance of Military Bank. Therefore, the need to increase capital to ensure CAR is very urgent.

Second, Basel II has provided a framework for the risks that banks face (systemic risk, strategic risk, reputation risk, etc.). The second pillar requires commercial banks to have a capital adequacy and internal capital adequacy assessment process to maintain safe capital. At the same time, the State Bank will be responsible for reviewing, re-evaluating and then intervening, requesting adjustments if the level of commercial banks' capital below the prescribed minimum level. This will push Military Bank to invest in IT systems, hire consultants and train human resources.

Third, Military Bank needs to disclose information appropriately in accordance with market principles, When information is public, the commercial banks will know all the information of competitors, customers will also know the information of many commercial banks. Consequently, good quality commercial banks will be able to survive easily, and inexperienced commercial banks will be at risk of being eliminated. In addition, because there is still a gap between Vietnam's accounting system and risk management and international practices, financial disclosure by banks is currently difficult.

Last, perhaps the biggest obstacle for most commercial banks in Basel II is the database. The core banking system at banks has so many different systems and data that have not been focused on systematically and collectively for a long time. While, the minimum data length requirement for some analytical models is 3 years. Therefore, system building and data collection will take time, effort and money of banks when deploying.

5. Recommendations

First, Military Bank needs to develop a clear and specific strategy to increase its own capital, but it should be linked to the proper use of capital to ensure sustainable development. Theoretically speaking, in order to increase Military Bank 's internal capital there are two ways to increase it from internal sources and from external sources. Military Bank, as well as other banks, is increasing internal capital mainly from the increase in retained earnings or dividends. This method is being implemented effectively by Military Bank, Military Bank has completed raising its chartered capital to over 21,600 billion VND on 15/8/2018 after issuing 345 million shares to pay bonus shares and dividend for the second phase of 2017. However, this method is still limited when the scale of capital increase is low. As such, Military Bank as well as other commercial banks, need to expand their own capital from outside sources such as issuing shares, M&A for banks, and even recommending the State Bank to

propose a specific mechanism for open larger room for foreign investors during the Basel II deployment period. In addition, the bank should have plans to issue additional bonds with maturities of 5 to 10 years to be able to meet Basel II equity.

Second, Military Bank needs to continue building and improving its information system in order to increase its modernity, updating, researching and setting up data transmission lines and linking information networks with other banks for the purpose of creating ownership for the bank. Military Bank should try to connect, share information with the State Bank to build a comprehensive data warehouse, to provide accurate sources of information for the relevant departments.

Third, Military Bank must build a team of experienced and dedicated professionals. This is a decisive factor in the success of Basel II. By adopting more sophisticated risk management methods, Military Bank will be lacking in high quality human resources. In addition to attracting and training human resources to meet the needs of building and deploying Basel II, Military Bank also needs a team of experts outside the bank both at home and abroad for advice and support.

Last, Military Bank need to raise awareness of risk management, putting risk management into banking culture, Military Bank B should actively apply the regulations of the State Bank as well as international standards in risk management of the Basel II Committee such as 16 principles of risk management, 10 principles of management of interest rate risk, 17 principles of BIS on liquidity risk management.

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