

**The Influence of Fundamental Factors to Liquidity  
Risk on Banking Industry  
(Case Study between Conventional and Islamic  
Banks in Indonesia)**



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by

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## QUOTE

“My Lord, grant me that I may be grateful for Thy favour which Thou hast bestowed on me and on my parents, and that I may do good such as Thou art pleased with, and admit me, by Thy mercy, between Thy righteous servants.” (QS 27;19)

“Education = Opportunity  
The Opportunity to escape poverty  
The Opportunity to live healthy  
The Opportunity to hope” – (Queen Rania)

“VARIABILITY IS THE LAW OF LIFE. No two faces are the same, no two bodies are alike. No two individuals react or behave alike under the abnormal conditions.” (Dr. dr. Tina Dewi Judistiani, SpOG)

“I am not what happens to me. I choose who i become.” (Carl Jung)

“To drive the mainstream or to stay on the sidelines. Make your choice.” (Raditya Y. Wiranegara)

“Fighters may lose, fighters may win. But only quitters who never win. Keep fight!” (Anonymous)

“Enjoy each process of your life. Whatever it is, you will get the best experience of it.” (Hasna P. Kurnia)

## **ABSTRACT**

Bank and risk are two things that can not be separated from each other. Both conventional and Islamic banks are more or less similar in risk summary. One of the critical risk is liquidity risk that caused by bank having no ability to meet their maturity dates of depositors. Therefore it needs further observation to control their liquidity risk. This study investigates the influence of CAR, profitability ratios, NIM, liquidity gaps, and RLA belongs to liquidity risk on banking industry.

The population of this study consists of conventional and Islamic banks. The selection of samples uses purposive sampling method. The samples are divided into 3 conventional banks and 3 Islamic banks. The study is based on secondary data in a period of five years, i.e. 2007-2011. The statistical analysis of secondary data has been divided into three, which are descriptive, regression and hypothesis testing.

The study found negative and significant influence of CAR and ROE to liquidity risk on conventional banks, while ROA and RLA have positive and insignificant effect. In Islamic banks, the research found positive and significant impact of NIM and ROE to dependent variable, whereas liquidity gaps and RLA have insignificant affect. Liquidity gaps have positive and significant effect to liquidity risk in conventional banks, while ROA has positive direction in Islamic banks. In addition, NIM in conventional banks and CAR in Islamic banks is found to be negative and insignificant at 5% significance level.

Keywords : liquidity risk, profitability ratios, CAR, NIM, liquidity gaps, RLA

## **ABSTRAK**

*Bank dan risiko merupakan dua hal yang tidak dapat dipisahkan satu sama lain. Baik bank-bank konvensional dan bank-bank Islam/ syariah lebih dan kurangnya memiliki kesamaan pada risiko-risikonya. Salah satu risiko terpenting adalah risiko likuiditas yang disebabkan oleh tidak adanya kemampuan bank dalam memenuhi jatuh tempo dari nasabahnya. Hal tersebut yang menjadikan penelitian lebih lanjut khususnya dalam pengelolaan risiko likuiditas. Penelitian ini mencari hubungan dari rasio profitabilitas, CAR, NIM, gap likuiditas, dan RLA dengan risiko likuiditas pada industri perbankan.*

*Populasi dalam penelitian ini terdiri dari bank-bank konvensional dan bank-bank Islam/syariah. Pemilihan sample menggunakan metode purposive-sampling. Sample terbagi menjadi 3 bank konvensional dan 3 bank Islam/ syariah. Penelitian ini menggunakan data sekunder untuk periode lima tahun (2007-2011). Analisis statistik pada data sekunder tersebut dibagi menjadi tiga, yakni deskriptif, regresi, dan pengujian hipotesis.*

*Penelitian ini menemukan pengaruh negatif dan signifikan dari CAR dan ROE pada resiko likuiditas di bank konvensional, sedangkan ROA dan RLA memiliki efek positif dan tidak signifikan. Pada bank Islam ditemukan pengaruh positif dan signifikan dari NIM dan ROE terhadap variable dependen, sedangkan gap likuiditas dan RLA tidak memiliki pengaruh signifikan. Gap likuiditas memiliki pengaruh positif dan signifikan pada resiko likuiditas di bank konvensional, sedangkan ROA memiliki arah positif di bank Islam. Sebagai tambahan, NIM di bank konvensional dan CAR di bank Islam ditemukan negatif dan tidak signifikan pada tingkat signifikansi 5%.*

Kata kunci : Risiko Likuiditas, CAR, ROA, ROE, NIM, Gap Likuiditas, RLA

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Semarang, September 2012

The Writer

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## CHAPTER I

### INTRODUCTION

#### 1.1. General Background of the Study

Indonesia being rated one grade only below ‘investment rank’ by the major international rating agencies, foreign direct investors have been returning to Indonesia after a period of somewhat ‘unexceptional interest’. Some predict that Indonesia will have regained its investment grade status in the next 12-18 months a factor that will surely increase the growth potential of the economy still further. This will complete Indonesia’s long journey of recovery from the Asian financial crisis - the late 1990’s was the last time that Indonesia was rated as investment grade. Similar with India and China, Indonesia is growing much faster than the world economy - GDP of approx 6% is forecasted. Global strategic decisions making is being flexed accordingly. When asked to predict the sector that would attract the highest growth in lending in 2011, the responses were fairly mixed with 31% favouring the SME sector; 25% choosing business banking; 20% consumer banking and 18% microfinance (Indonesian Banking Survey Report, 2011).

According to Bank Indonesia Regulation No. 10/11/PBI/1998 concerning banking, which a bank is a business entity that collecting funds from the public in the form of savings and delivering it to the public in the form of loans or other bank products to improve the standard of people living.

Types of banks in Indonesia are divided into two, distinguished by the payment of interest/profit-sharing :

1. Bank that conducting business based on conventional principle
2. Bank that conducting business based on sharia/Islamic principles

Similar to its neighboring countries, Malaysia in particular, Indonesia has started several laws to extend and advance the development of its sharia banking industry. These find out include, for example: (a) the Council of Indonesian Islamic Scholars (MUI) has published a pronouncement (fatwa) concerning the averting of interest in 2003, which has raised the number of Islamic banking depositors and Islamic bank; (b) the House of Representative has approved the Islamic Banking Act on July 16th, 2008, which gave legal foundation to the operations of Islamic bank; and (c) the central bank has released both the blueprint and the grand design of the development Islamic banking industry (2005-2008), which outlined a medium and long-term development for the Islamic banking industry (Ismal, 2011).

In addition, until June 2012, there were 11 Islamic Commercial Bank (BUS) and 29 Islamic Banking Windows/Units (UUS) operating in Indonesia. The act of the company is very promising as well when looking at convinced Islamic banking act including total assets, deposits, and funds. Muamalat Indonesia Bank is the first Islamic bank in Indonesia that established in 1992 and followed by Bank Mandiri at 1997. After them, the development of Islamic banks in this country increased rapidly. Almost

all banks now have two banking systems, they are conventional and Islamic or sharia banking.

Bank and risk are two things that can not be separated from each other, without any braveness to take risk so there will never be a bank. In the sense that bank risk arises because the courage and even banks can survive for daring to take risk, but if the risk is not managed properly, the bank may have failed moreover it will facing bankruptcy in the end. Particularly in the context of business risk that banks and financial institutions are not always represent a significant opportunity to those who can manage them well (Avartara, 2009).

Bank Indonesia through Bank Indonesia Regulation Number 5/8/2003 about the Commercial Bank Risk Management Application, explained the definition of risk that must be faced by the bank in its business activity, although adopting Basel II, but there are differences in the definition. The types of risks that must be controlled by banks are credit risk, market risk, operational risk, liquidity risk, strategic risk, compliance risk and legal risk. Quoting from banking experts that :

“ ...We should not forget that economic function of these regulated entities (banks) is to take risk. If we minimize risk taking in order to reduce rates to zero, we will, by definition, have eliminated the purpose of banking system”.

The types of risk on Islamic banks is more or less similar to the conventional (interest - based) bank. Conversely, the risk tackled by Islamic

banks is categorized in two aspects. The first aspects of practice which are the same to conventional structure, and are not in disagreement through the Islamic finance principles, and the second aspects of practices which are modified and are believed to congregate the Islamic law and principles (Anas & Mounira, 2008).

One of the crucial risks is liquidity risk. Observing from the micro level, the increased competition for customer funds, the growing financial products of capital markets and technological advances that have changed the way of bank to manage their funding and liquidity risk. In addition, the concentration of liquidity in certain structured products and the interbank market, as well as increasing the probability of off balance sheet commitments to be in balance sheet items have triggered funding liquidity problems and interventions by the central bank. Furthermore, the liquidity of a bank may have an impact on the banking and finance industry as a whole or a contagion effect (Consultative Paper of Bank Indonesia, 2009).

Liquidity risk is sometimes considered as a consequential risk or second-order risk because it normally would not exist about without a sharp rise in one or more of the other major financial risk (Matz and Neu, 2007). Prior to the credit crisis, it was generally believed that liquidity risk arguably most basic of banking risk - was well understood. However, it was perhaps not fully appreciated that financial innovation and global market developments in recent years had altered certain factors of liquidity risk in important ways (Basel Committee, 2008a).

Bank considered in liquid condition when they go through some requirements ; bank has some liquid instruments and these are equal with the amount of liquidity needs, bank has the ability to obtain liquidity by creating or converting cash, and bank has less liquidity than needed. When bank meets that standard, this regulated entities has less troubled condition. It can be assumed the liquidity risk can be pushed.

Based on Table 1.1., sample data from multiple bank liquidity risk show that there is a bank that has high risk with big percentage and there are also banks that have liquidity risk in small piece and low percentage. In the conventional banks, the progress tend to be more stable than the Islamic banks. Start from 2007 till 2011, only in 2008 three conventional bank has increased the risk. Whereas the Islamic banks movement is more fluctuative especially Mega Sharia Bank and Mandiri Sharia Bank.

The existence of empirical data shows that it needs further information to find its trigger factors using fundamental factors of the company. The techniques can be done by analyzing the financial ratios or the events which happening and effecting directly or indirectly the company's financial performance. Financial ratios provide simple information about the relationship between specific post with another post thus it makes easy on accelerating the rate of bank performance, and can help business, government, or other users of financial statements.

It is interesting to study by knowing how big the influence of financial ratios on liquidity risk of Indonesian banking by comparing

between conventional banks and Islamic banks from 2007 to 2011. Analyze of financial reports is to determine the extent of liquidity risk that seems to be faced in the future. Table 1.2. in the below is the compute of average CAR, ROA, ROE, NIM, liquidity gaps and RLA as financial ratios to determine the risk of liquidity in the banking firm.

**Table. 1.1.**  
**The Data of Liquidity Risk**  
**Period 2007-2011 (%)**

Liquidity Risk							
Period		Conventional Banks			Islamic Banks		
		Permata	Niaga	Bukopin	Mandiri	Mega	Muammalat
2007	Quarter 1	1,64	1,69	1,10	1,28	0,19	1,81
	Quarter 2	1,42	1,63	0,94	1,33	0,56	1,59
	Quarter 3	1,73	1,63	1,06	1,37	0,32	1,50
	Quarter 4	1,79	1,85	1,22	1,56	0,45	1,64
2008	Quarter 1	1,79	1,77	1,48	1,42	0,71	1,64
	Quarter 2	1,70	1,31	1,30	1,36	0,21	1,47
	Quarter 3	2,56	2,38	1,87	1,87	0,59	1,96
	Quarter 4	2,27	2,70	2,09	1,85	1,50	1,80
2009	Quarter 1	2,22	1,90	1,60	1,34	1,83	1,92
	Quarter 2	2,00	1,79	1,54	1,53	1,57	1,64
	Quarter 3	2,46	1,80	2,52	2,63	2,28	2,27
	Quarter 4	2,04	3,37	2,08	2,03	2,55	1,65
2010	Quarter 1	1,99	2,13	1,71	1,55	3,19	1,75
	Quarter 2	1,82	1,64	1,59	1,70	4,10	1,79
	Quarter 3	2,23	1,61	2,02	3,00	3,99	2,51
	Quarter 4	1,73	2,21	1,65	2,13	2,92	1,58
2011	Quarter 1	1,58	1,41	1,23	1,78	2,44	1,20
	Quarter 2	1,56	1,57	1,34	1,99	1,90	1,30
	Quarter 3	1,61	1,58	1,48	2,35	1,75	1,40
	Quarter 4	1,73	1,76	1,32	2,16	1,72	1,35

**Table 1.2.**  
**The Average Data of Liquidity Risk, CAR, ROA, ROE, NIM, Liquidity Gaps and RLA**  
**in Conventional and Islamic Bank Period 2007 - 2011**

Conventional Banks									Islamic Banks								
Period	LR (%)	CAR (%)	ROA (%)	ROE (%)	NIM (%)	LG (Ln)	RLA (%)		Period	LR (%)	CAR (%)	ROA (%)	ROE (%)	NIM (%)	LG (Ln)	RLA (%)	
2007	Quarter 1	1,69	19,29	2,47	17,00	6,09	15,42	3,30	2007	Quarter 1	0,19	9,32	5,43	89,83	9,04	14,63	1,95
	Quarter 2	1,63	18,44	2,51	18,30	6,30	15,44	3,61		Quarter 2	0,56	10,72	5,37	60,70	8,76	14,55	1,13
	Quarter 3	1,63	17,60	2,30	17,62	6,19	15,43	3,83		Quarter 3	0,32	11,58	5,59	61,84	9,03	14,44	1,54
	Quarter 4	1,85	18,32	2,50	20,66	5,77	16,02	2,16		Quarter 4	0,45	12,91	5,36	57,99	8,95	14,45	0,77
2008	Quarter 1	1,77	16,66	2,01	18,19	5,07	15,49	3,07	2008	Quarter 1	0,71	17,56	4,25	43,45	8,31	14,28	0,90
	Quarter 2	1,31	15,28	2,07	17,35	5,37	15,51	2,45		Quarter 2	0,21	18,14	3,15	32,00	7,85	14,28	1,61
	Quarter 3	2,38	14,69	1,97	15,67	5,33	15,55	2,44		Quarter 3	0,59	15,51	2,14	22,45	7,58	14,45	1,38
	Quarter 4	2,70	16,33	1,10	8,09	5,43	16,05	1,26		Quarter 4	1,50	13,48	0,98	11,06	6,86	14,62	1,12
2009	Quarter 1	1,90	16,34	1,69	10,94	6,05	16,38	2,81	2009	Quarter 1	1,83	12,04	0,62	9,72	7,12	14,59	1,40
	Quarter 2	1,79	15,30	1,90	22,15	6,47	16,40	2,66		Quarter 2	1,57	11,44	1,56	25,32	9,07	14,57	1,12
	Quarter 3	1,80	15,03	2,11	16,05	6,81	16,43	2,85		Quarter 3	2,28	11,06	2,08	35,11	10,46	14,94	1,29
	Quarter 4	3,37	13,59	2,11	16,34	6,85	16,46	3,11		Quarter 4	2,55	10,96	2,22	39,97	11,38	15,00	1,70
2010	Quarter 1	2,13	12,76	2,56	20,51	6,76	16,48	3,25	2010	Quarter 1	3,19	12,14	3,18	65,27	14,94	14,89	2,56
	Quarter 2	1,64	12,10	2,63	20,51	6,70	16,52	2,63		Quarter 2	4,10	12,11	3,01	61,27	15,13	14,83	2,58
	Quarter 3	1,61	12,55	2,69	23,14	6,58	16,60	2,53		Quarter 3	3,99	15,07	2,47	37,28	15,45	14,93	3,33
	Quarter 4	2,21	13,24	2,73	24,29	6,43	16,73	2,50		Quarter 4	2,92	15,07	1,90	26,81	15,49	14,99	2,65
2011	Quarter 1	1,41	14,38	2,70	23,39	5,49	16,48	2,71	2011	Quarter 1	2,44	15,07	1,77	16,43	16,13	14,93	3,31
	Quarter 2	1,57	13,66	2,84	22,74	5,54	16,87	2,65		Quarter 2	1,90	14,75	1,87	18,56	16,14	14,87	2,92
	Quarter 3	1,58	13,52	2,83	22,19	5,54	16,91	2,62		Quarter 3	1,75	13,77	1,65	16,74	15,76	14,96	2,98
	Quarter 4	1,76	13,09	2,78	21,65	5,65	16,71	2,57		Quarter 4	1,72	12,03	1,58	16,89	15,33	15,14	2,42



Looking at Table 1.2 above, financial ratios that compute from liquidity risk percentages shows the average data experiencing vacillation. In the conventional banks, in 2007 liquidity risk value was about 1,70% and increase to in 1,72%. Then there is a decrease in the year 2009 to reach 1,64%. But in 2010 and 2011 was returned to increase of 1,83% and 2,04%. While the Islamic bank, liquidity risk in 2007 of 0,38% later in the year 2008 increased to 0,51%. But in 2009 decreased to 0,42%, but then there was an increase in the years 2010 and 2011 approximately to 0,49% and 0,75%.

Capital Adequacy Ratio (CAR) at the conventional banks in 2007 amounted to 18,41%, but in 2008 up to 2010 has decreased to 15,74% ; 15,07% and 12,66%. According to Akhtar et al. (2011) that the increase in CAR will have an impact on increasing liquidity risk. But exactly what happens was reduced, although in the year 2011 increased to 13.66%. While the Islamic banks in 2008, CAR has increased to 16,17%, but decreased again in 2009 to 11,38%. However, in 2010 and 2011 rose again to 13,60% and 13,91%.

ROA and ROE are profitability ratios, the conventional banks in 2007 amounted to 2,45% and 18,40% whereas in 2008 they decreased to 1,79% and 14,83%. It suggests that large banks with liquidity using liquid assets are funded by external funding to meet depositor demands thereby increasing the cost of capital resulting in decreased profitability. But in 2009 until 2011 the ratio has increased. The same with conventional banks, two of profitability ratios (ROA and ROE) at Islamic banks also decreased in the year 2007 of 5,44% and

67,59%, while in 2008 fell to 27,24%. It had experienced an increase in the year 2010, but both this ratio fell back again in 2011.

Net Interest Margin (NIM) of conventional banks in 2007 amounted to 6,09% and in 2008 fell to 5,30%. However, in the year 2009 increased to 6,55%, it indicates that banks with high liquidity risk receive higher interest income. In the year 2010 also increased to 6,62%, then in 2011 dropped to 5,56%. While the movement of Islamic banks is similar to a conventional bank, in the year 2008 decreased to 7,65% from 8,95% in 2007. But from 2009 to 2011, NIM of Islamic banks continued to suffer an increase of 9,51%, 15,25% and 15,84%.

Liquidity Gaps (LG) of conventional banks from 2007 to 2011 continued to increase, up by 16,74% percent in the last year of this study. The higher of liquidity gaps will increase the greater liquidity risk (Joel Bessis, 2003), but in 2009 the liquidity risk of conventional banks had declined from the year 2008 of 1,64% in 2009 fell to 1,64%. Whereas the opposite phenomenon of Islamic banks, liquidity gaps in 2007 amounted to 14,52% down to 14,41% in 2008 when the liquidity risk, Islamic banks have increased. Later in 2009 to 2011, liquidity gaps in Islamic banks have increased in 2009 despite their liquidity risk had declined.

Risky Liquid Assets to Total Assets (RLA), this ratio in the conventional banks in 2007 amounted to 3,23% and in 2008 fell to 2,31%. According to Shen et al. (2009), the RLA's decline will also reduce the liquidity risk, because if the risky asset is sold, it will increase the liquid assets that can be used to fulfill their maturity date. Nevertheless, in 2009 increased to 2,86%, but in 2010 and

2011 fell back to 2,73% and 2,64%. While in Islamic banks, RLA in 2007 was 1,35% and then decreased to 1,25% in 2008. Whereas from 2009 to 2011 this ratio continued to increase.

There are several previous studies that have been carried out and related to the liquidity risk in banking industry, between others:

**Table 1.3.**  
**The Research Gaps of Previous Study**

Dependent Variable	Independent Variable	The Effect	Previous Study
Liquidity Risk	CAR	Positive	- Akhtar et al. (2011) for Islamicbanks - Iqbal, A. (2012)
	ROA	Positive	- Akhtar et al. (2011) - Iqbal, A. (2012)
		Positive	- Akhtar et al. (2011) for conventional banks - Tafri et al. (2009)
		Negative	- Al-Khouri, R. (2011)
	ROE	Negative	- Akhtar et al. (2011) for Islamic banks
		Negative	- Akhtar et al. (2011) for conventional banks - Tafri et al. (2009) for conventional banks
		Positive	- Iqbal, A. (2012) for

			Islamic banks - Al-Khoury, R. (2011)
	NIM	Positive	- Shen et al. (2009)
		Negative	- Gounder, N. & Sharma, P. (2011)
	Liquidity Gaps	Positive	- Joel Bessis (2003)
	RLA	Negative	- Shen et al. (2009)

Based on the background above, the research conducted under the title "**The Influence of Fundamental Factors to Liquidity Risk on Banking Industry (Case Study on Conventional and Islamic Banks in Indonesia)**".

## 1.2. Statement of the Problem

In the sample data Table 1.1 shows that the liquidity risk of the banks are experiencing fluctuations and theoretically the triggers of fundamental development banks measured by financial ratios.

Phenomenon gap is based on the calculation of average financial ratios CAR, ROA, ROE, NIM, liquidity gaps and RLA at Table 1.1 in the below, it can be concluded that the average financial ratios each year from 2007 to 2011 had an average increase of and reduction of data from each variable. Looking at the consistency of data in table 1.1 between liquidity risk and CAR, ROA, ROE, NIM, liquidity gaps and RLA, it can be assumed that the average value does not indicate a consistency of data because the average value experiencing increase and decrease or fluctuations. In the first quarter of 2007, CAR value is about 16,95% and has decreased in the first quarter of 2008 approximately to 14,45%. The CAR's decline has caused the decreasing of liquidity risk as well, but the existing data of liquidity risk value in the first quarter of 2007 and 2008 increased 1,48% and 1,68%.

Based on the previous studies, there are several different opinions about the variables that effect liquidity risk. The result of previous researchers. Shen et al. (2009) presented a study that NIM has positive and significant impact to liquidity risk, while Gounder and Sharma (2011) found that it negatively effecting liquidity risk.

Akhtar et al. (2011) presented a study that CAR has positive and insignificant effect to liquidity risk on conventional banks, whereas it has significant effect in Islamic banks. ROA has positive and insignificant effect to liquidity risk on the conventional banks, and significant on Islamic banks. ROE on negative and significant effect to liquidity risk on Islamic banks, and insignificant on conventional banks.

Iqbal (2012) presented a study that CAR, ROA, and ROE having positive and significant impact on liquidity risk in the two banks, both conventional and Islamic.

The phenomenon and research gaps are the reason for the writer to conduct research on fundamental factors that indicated by financial ratios for liquidity risk. Thus the formulations of research questions are:

1. How does the influence of CAR on liquidity risk?
2. How does the influence of profitability ratios on liquidity risk?
3. How does the influence of NIM on liquidity risk?
4. How does the influence of liquidity gaps on liquidity risk?
5. How does the influence of RLA on liquidity risk?
6. Are there any differences influence of CAR, profitability ratios, NIM, liquidity gaps and RLA to liquidity risk between conventional and Islamic banks?

### **1.3. Research Objectives and Usabilities**

#### **1.3.1. Research Objectives**

The purpose of the study “The Influence of Fundamental Factors to Liquidity Risk on Banking Industry (Case Study between Conventional and Islamic Banks in Indonesia) are :

1. Analyzing the effect of CAR to liquidity risk on the banking industry period 2007 – 2011.
2. Analyzing the effect of profitability ratios to liquidity risk on the banking industry period 2007 – 2011.
3. Analyzing the effect of size to liquidity risk on the banking industry period 2007 – 2011.
4. Analyzing the effect NIM to liquidity risk on the banking industry period 2007 – 2011.
5. Analyzing the effect of liquidity gaps on liquidity risk in the banking industry period 2007 – 2011.
6. Analyzing the effect of Risky Liquid Assets to Total Assets Ratio (RLA) to liquidity risk on the banking industry period 2007 – 2011.

#### **1.3.2. Research Usabilities**

1. For the company management, this study can be considered as the management of liquidity risk at banks.
2. For the customer, the results of this study can be considered in decision making bank deposit funds.

3. For researchers and academics, its expected to be a reference in financial science development regarding liquidity risk .
4. For further research, its expected to be used as an input or comparable study as references and additional insights to be developed more widely.

#### **1.4. Outline of the Study**

This study is divided into 5 chapters. Chapter I, the introduction consist of general background of the study, statement of the problems, objectives, and benefits of research, and systematic writing. This chapter explains the background of liquidity risk issues in Indonesia and its implications on banking industry. It is also elaborated on the formulation of the problems that will be as the base of this research.

Chapter II presents a review of related literature which discusses some theories about banking, financial statement, financial ratios and liquidity risk from some literatures ad references for this study.

Chapter III deals with method of the study, present a description of how the research will be done operationally. Therefore this chapter will contain the methods of research, the scope of study, research subjects, methods of data collection and data analysis techniques.

Chapter IV will discuss the results of research that has been analyzed by the method of research that has been predetermined. The

results of this study will be discussed in depth that answers the problem statement.

Chapter V, the last chapter, provides conclusions obtained from the discussion that has been done before as well as an advice to the next research.

## **CHAPTER II**

### **REVIEW OF THE RELATED LITERATURE**

#### **2.1. Literature Study**

##### **2.1.1. Fundamental Analysis**

Fundamental analysis is an analysis that related to company fundamentals, which are shown in the financial statements of the company. Based on the financial statements of the investor can be assessed the financial performance of companies, especially in terms of investment decisions. Accordingly the owner or beneficial shareholders can see the changes reflected profit and loss in the financial statements amount of their right (Herawan Budi Rahardjo, 2009).

Ratio analysis is a form or manner commonly used in financial statement analysis. The ratio is a tool that is expressed in relative or absolute terms to describe the specific relationship between a single factor with other factors of financial report. The ratio can be calculated based on the financial statements consisting of balance sheet and income statement. Helfert in 1996 reveals there are many financial ratios that can be used to assess the company performance. However, the actual benefits of each ratio is determined by objective specific analysis. Furthermore, the ratios were not an absolute criterion. Ratios are useful to show changes in financial circumstances or operating performance and to help illustrate the tendency

and pattern of these changes, which in turn can demonstrate to the analysis of risk and opportunities for companies that are being explored.

## **2.1.2. Banking**

### **2.1.2.1. Understanding banking and bank**

Banking is all that concerned about the bank, including institutional, business activities as well as the manner and process in implementing the activities. Today, there are a lot of literature that give meaning or definition of the bank, between others :

“Bank can be defined as a business entity whose main activity is accept deposits from public and or from other parties, then re-allocates to be profit as well as providing services in payment traffic (Dahlan: 1999)”.

Meanwhile, according to Law. 7 of 1992 by Law of 1998.

“The bank is an entity that collects funds from community as savings and channel them to public as loans and other forms in order to improve the standard of living at many”.

### **2.1.2.2. Principle, function and purpose of thinking**

Bank financial institutions is very important role in the economic development of one country. It is because the bank has the function of financial institutions. Its principles, and goals are very supportive to the economic development of a country. Here is the function, principles, and

objectives. According to article 2,3, and 4 of Law 7 in 1992 on the bank declared that :

- Principle : Banking based on economic democracy by using the precautionary principle
- Function : The primary function of bank is a collector of funds and the channelling of public funds
- Destination : Indonesia banking aims to support the implementation of national development in order to improve equity, economic growth and national stability toward the improvement of people.

### **2.1.2.3. Principle bank**

According to Lukman (2003), basically there are three principles that must be considered by the bank, namely :

1. Liquidity is the principle on which bank should be able to meet its obligations.
2. Solvency is the ability to meet financial obligations if the company is liquidated. Bank is a bank which is solvable warrant the entire debt.
3. Profitability is the ability of a company to generate profit for a certain period.

#### **2.1.2.4. Types of bank**

According to Lukman (2003), type of banking can be divided into four, namely :

1. In terms of function, divided into :

a. Commercial bank

Bank conducts conventional business or based on Islamic principles in its activities that provide services in a payments traffic.

b. Rural bank

Bank conducts conventional business or based on Islamic principles, but does not provide services in a payments traffic.

2. In terms of ownership, divided into :

a. State Own Bank

Bank of deed and bank capital is wholly owned by the government of Indonesia, so that all government owned bank profits.

b. Regional Bank

Bank of deed and bank capital is wholly owned by local governments, so that bank profits are owned by the government.

c. Owned cooperative bank

The bank is owned by cooperatives are legal entities

d. National private bank

It is a bank that all or most of its shares owned by the national private, establishment founded by private deed and a full division for private profit as well.

e. Foreign bank

It is a branch of the bank in other countries both private or the government.

f. Joint venture bank

It is the ownership of bank owned by foreign parties and private parties nationwide.

3. In terms of status, divided into :

a. Foreign Exchange Bank

Bank that can carry out transactions related to domestic or foreign currency as a whole.

b. Non-Foreign Exchange Bank

Bank that do not have any permission to conduct foreign exchange transactions as a bank, so it can not execute the transaction.

4. In terms of pricing, are divided into :

a. Conventional Bank

In determining finding profits or set its prices for their customers using the method of determination of interest rates, a rate for savings as well as loan products.

b. Islamic/ Sharia Bank

In determining profits and set prices based on sharia principles of Islam. It is financing based on principle of profit sharing (*mudharabah*), principle of equity (*musyarakah*), principle of buying and selling goods with aim to get some profit (*murabahah*), capital

goods under lease financing pure with no choice (*ijarah*), or with no choice of the transfer ownership or property rented from the bank to the tenant (*ijarah wa igtina*).

### **2.1.3. Conventional Bank**

#### **2.1.3.1. Understanding of conventional bank**

Conventional bank can be defined as a commercial bank in terms of article 1, paragraph 3 of Law No. 10 of 1998 by removing the phrase “and or based on Islamic principles”, the bank conducts conventional business activities and provides services in a payments traffic, and the collection of funds and its distribution needs a compensation for customers as interest in order to provide rewards in a certain percentage of funds for a specific period. The main advantage of the banking business, based on conventional principles, is derived from the difference between deposit rates given to the customers by borrowing or lending.

The advantage of the difference between loan interest and saving interest on banking industries known as spread. If a bank suffered a loss of interest margin, which deposit rates higher than lending rates, then the term is known as a negative spread.

#### **2.1.3.2. The activities of conventional bank**

Today, the banking activities in Indonesia (Indonesia Banking Booklet, Vol 4, March 2007) are :

1. Collecting funds from the public in the form of demand deposits, time deposits, certificates of deposit, savings, or other equivalent forms of it.
2. Distributing credit.
3. Issuing a letter of acknowledgment of debt.
4. Buying/ selling or guarantee your own risk or for the benefit and on the orders of their clients.
  - a. Draft letters, including bills of exchange by acceptance bank validity period not longer than in the trading habits of the letters in question
  - b. Letter of acknowledgment of debt and other commercial paper whose validity period is much longer than the custom in the trade papers referred to
  - c. Treasury paper and government obligation
  - d. Bank Indonesia Certificates
  - e. Obligation
  - f. Letter futures trade up to one year
  - g. Other instruments with a maturity securities time up to one year
5. Transferring money both for its own sake or for the benefit of customers.
6. Placing the funds on, to borrow funds from or to lend funds to other bank, either by using mail, telecommunications facilities and, check or other means.

7. Receiving payment of treasury bills and performing calculations with or between third parties.
8. Provides a place to store goods and securities.
9. Giving services by a contract in taking care of some goods, treasury bills, etc.
10. Doing the placement of funds from one customer to other customers in the form of securities that are not listed on Stock Exchange.
11. Factoring activities, business credit cards and trustee activities.
12. Provide financing and or doing other activities based on Islamic principles, in accordance with the provisions established by the bank.
13. Perform other activities commonly conducted by the bank as long as not against the law banking and regulations applicable legislation
14. Conduct foreign exchange activities in compliance with the conditions set by the bank
15. Funding activities in the bank or other financial companies, such as leasing, venture capital, securities companies, insurance, clearing settlement, to meet conditions set by the bank
16. Funding activities to cope with some problems credit or financing caused by failure refund based on sharia principles, the subject with a condition pull back its shares, conditions set by the bank
17. Acts as the management of pension funds in accordance with the provisions of the regulation.

## **2.1.4. Islamic Bank**

### **2.1.4.1. Understanding of Islamic Bank**

By the end of 1999, a new business unit of bank named sharia starts to be operated by general and commercial banks, after the new banking law issued by government. Since the operation of Bank Muamalat Indonesia, as the first Islamic bank in 1992, data from Bank Indonesia in June, 2012 indicates that current national Islamic banking has grown rapidly, it is noted that there are 11 Islamic Commercial bank (BUS), and 29 Islamic Business Unit (UUS). Development of commercial bank which opened a branch of sharia unit is also supported by the existence of Islamic bank at the national banking crisis severe in 1998. Islamic Bank or sharia bank, here in after referred to as a bank, a bank that operates not by relying on the interest. Islamic Bank or commonly called the bank without interest, is a financial institution/ banking operations and products developed based on the Qur'an and the Hadith of the Prophet Muhammad or in other words, Islamic bank are financial institutions that provide basic business financing and other services in interchange and the payment of money circulation, adjusted to Islamic law.

### **2.1.4.2. Islamic bank principles and objectives**

Based on the operational principles of Islamic bank on the terms of 2nd article of Law No. 21 in 2008, noted that Islamic banking in conducting its business according to Islamic principles, economic

democracy, and the precautionary principle. Islamic banks goals, it is related to national development bank banks in order to improve justice, solidarity, welfare and equity.

According to Hidayat (2008), as a financial system based on Islamic law, then he said, the direction and objectives of the establishment of Islamic finance must be committed to realize the goal of sharia (*maqasid al-Islamic*). In general, the educational objectives are categorized sharia (*tarbiyah*), justice, and welfare of the people (*maslahatul amma*). Here are the objectives of Islamic bank in Warkum Sumintro :

1. Directing economic activity for being muamalat in Islamic way, especially related to banking industry to avoid interest practices or the types of prohibited other business in Islam that contain elements of *gharar* (deception), where it also has a negative impact on the economic life of the people.
2. Creating a justice in the economy by smoothing earnings through investment activities, in order to avoid huge gaps between the capital owners and those who need funds/ creditor.
3. Improving people quality's life by opening a larger business opportunity, especially for the poor, whom are directed to have productive activities, towards the creation of self-reliance.
4. Maintaining the economic and monetary stability. Islamic bank activities will be able to avoid overheating of the economy caused the inflation and unfair competition between financial institutions.

### 2.1.4.3. Islamic bank function

Islamic banking in recent literature, with various transaction schemes owned by Islamic bank in non-usurious scheme has at least four functions, they are :

#### 1. Investment manager function

This function can be seen in terms of fund raising by the Islamic bank, especially *mudharabah* funds. It function makes Islamic bank as investment manager of fund owners (*shahibul maal*) and the fund should be channeled in a productive distribution, in order to get some profit that will be shared between the bank and the owner of Islamic funds.

#### 2. Investor function

In funds distribution, Islamic bank serves as an investor (the owner of the funds). As an investor, investment funds that are used on productive sectors with minimal risk and does not violate Islamic bank. In addition, the bank invested Islamic should use the instrument in accordance with Islamic investment.

#### 3. Social function

Social function of Islamic bank is something inherent of Islamic bank.

#### 4. Financial services function

Financial services function, that is run by Islamic bank has no different from conventional bank such as providing clearing

services, transfer, collection, salaries payment, letter of credit, letters of guarantee and so forth.

#### **2.1.4.4. Islamic bank basic principles**

Islamic bank restrictions that must run its activities based on Islamic law, have led to apply the principles of line and not against the law or Islamic syariat. The principles of Islamic bank are as below :

##### 1. Savings or deposits principle (*Al-Wadiah*)

*Al-Wadiah* can be interpreted as a pure deposit of customer to the bank, whether individual or legal entity, which must be maintained and restored whenever the depositor wants (Shafi'i Antonio, 2001).

Generally there are two types of al-wadiah, namely :

- a. *Wadiah Yad Al-Amanah* (Trustee Depository)
- b. *Wadiah yad adh-dhamanah* (Guarantee Depository)

##### 2. The principle of sharing (Profit Sharing)

- a. *Al-Murabahah*
- b. *Al-Musharakah*

##### 3. Sale and purchase principle (*Al-Tijarah*)

The principle is a system that implements procedures for buying and selling, in which the bank will purchase the items required in advance or point the customers as the bank agent to purchase good as the bank representative, will the bank then sell the goods to customers at the price of the purchase price plus profit (margin).

#### 4. Rent principle (*Al-Ijarah*)

*Al-Ijarah* is the transfer of the lease contract for goods or services, through a lease payment of wages, without being followed by the transfer of ownership of the goods themselves. *Al-Ijarah* are divided to two types :

- a. *Ijarah*, a pure lease
- b. *Ijarah al muntahiya bit tamlik* is an union of rent and buy, where the tenant has the right to have the goods at the end of the lease.

#### 5. Services principle (Fee-Based Service)

This principle covers all services provided non-bank financing.

#### **2.1.4.5. Islamic bank activities**

These are activities Islamic bank (Booklet of Bank Indonesia, Vol 4, March 2007) :

1. Conduct fund-raising from the public in the form of deposits and investments, between others :
  - a. Current account (giro) based on *wadiah* principle
  - b. Savings based on *mudharabah* principle and/ or *wadiah* principle
  - c. Deposits based on *mudharabah* principle
2. Distributing funds through :

- a. The principle of buying and selling based on *akad* include :
    - *murabahah*;
    - *istishna*;
    - *salam*;
  - b. The principle of profit sharing based on *akad*, include :
    - *mudharabah*;
    - *musyarakah*;
  - c. The principle of leasing based on *akad*, include :
    - *ijarah*;
    - *ijarah muntahiya bittamlik*;
  - d. The principle of borrowing based on *akad qardh*
  - e. Provides banking services based on *akad*, include :
    - *wakalah*;
    - *hawalah*;
    - *kafalah*;
    - *rahn*;
3. Issuing securities based on Islamic principles.
  4. Buying, selling and/ or guarantee your own risk securities of third-party based on real transaction and issued on the basis of the real (underlying transaction) Islamic principles.
  5. Buy the securities based on Islamic principles issued by the government and/ or BI.

6. Transferring money for its own account or customers based on Islamic principles
7. Accepting bill payments on securities issued and perform calculations with or between third parties based on Islamic principles
8. Provides a place to store goods and securities based on the principle of *wadiah yad amanah*
9. Provides Letter of Credit (L/C) facilities based on Islamic principles
10. Provides guarantee bank facilities based on Islamic principles
11. Conducting business debit card, charge card based on Islamic principles
12. Perform activities commonly conducted by the bank and it is approved already through Bank Indonesia and gain fatwa by Islamic National Council (Dewan *Syari'ah* Nasional)
13. Activities in foreign currency based on *akad sharf*
14. Acts founder as of the management of pension funds where its based on Islamic principles in accordance with pension legetimation and regulations
15. Islamic bank in carrying out social functions can act as recipients of social funds, between others *zakat, infaq, sadaqah, waqaf*, grants and distribute them according to

sharia as representative of the bank or amil zakat institutions pointed by the government.

### 2.1.5. Conventional Bank vs Islamic Bank

Basically the distinguishes between conventional and Islamic bank is located on the return profits and profit sharing between two of them.

Which we know later as terms of interest and profit sharing. Profit sharing based on foreign terminology (English), in economic dictionary defined as the distribution of income. Definitively, profit sharing means the distribution of income in some parts of the employees in a company (Muhammad, 2002). Islam encourages profit sharing practice and forbidden interest. Both are benefit for the depositors, but have real difference. Diversities can be explained in the following table :

**Table 2.1.**  
**The Difference between Conventional Bank and Islamic Bank**

<b>Conventional Bank</b>	<b>Islamic Bank</b>
1. Based on interest principle	1. Based on profit sharing principle
2. Using the principle of borrowing money	2. Using the principle of buying and selling
3. Creditor-debtor relationship to customers	3. Partnership to customers
4. Investments in the form both <i>halal</i> and <i>haram</i>	4. Investments perform any lawful
5. Ignorance of the Islamic board	5. Each of the products and services are provided in accordance with fatwa of Islamic National Council
6. Somestimes involved in foreign exchange speculative	

dealing	(Dewan Nasional Syari'ah)
7. Contribute to the gap between the real sector and the monetary sector	6. Forbidden for <i>ghahar</i> and <i>maisir</i> (gambling)
8. Provide a significant opportunity for sight streaming/ miss-use of loan funds	7. Create harmony between the two of sector
9. Vulnerable to a negative spread	8. Unprovide funds for cash but provide needed finance goods and services
	9. Profit sharing balancing between assets side and liabilities side

Sources : Muhammad Syafii Antonio (2001), *Bank Islamic : Dari Teori ke Praktek* (Gema Insani Press partnership with Tazkia Cendekia Foundation).

Islam forbids interest and justify profit sharing. Both of them have advantages, but have fundamental differences as the result there are difference between investment and the interest of money (see table 2.2). Invesments involve risk, and therefore an element of uncertainty. Contrary, interest of money is the activity that has no risk because of a certain percentage rate determined by the amount of capital.

**Table 2.2**  
**The Difference between Interest System and Profit Sharing**

Interest	Profit Sharing
1. Determination of interest made at the time of contract was made with assumption should always receive earnings	1. Determination of profit sharing ratio at the time of contract was made with according to the possible advantages and disadvantages
2. The amount of interest is a	2. The magnitude of profit

<p>certain percentage to the amount of money lent</p> <p>3. The amount of fixed interest as promised without considering whether the business carried on by the customer/<i>mudharib</i> get profit or loss</p> <p>4. The existence of interest is doubtful or not condemned by all religious including Islam.</p>	<p>sharing based on <i>nisbah</i> to the amount of profits earned</p> <p>3. The amount of profit sharing based on the amount of profits earned by the business carried on. When it lose money then the losses will be borne by the owner of funds, except for damages due to negligence, mismanagement or breaking the rules by <i>mudharib</i></p> <p>4. There is no doubt in the legitimacy of profit sharing</p>
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Sources : Muhammad Syafii Antonio (2001), *Bank Islamic : Dari Teori ke Praktek* (Gema Insani Press partnership with Tazkia Cendekia Foundation).

#### 2.1.6. Financial Report

In general, every company both a bank and non bank will given period report their financial activities. Information about the progres of corporate finance, corporate performance, cash flow and other information related to the activities of financial statements may be obtained from the company's financial statements. According to SAC No. 1, financial statement is a financial reporting system and the means to deliver information about all circumtances and company performance especially in terms of finances and is not limited to what can be delivered through the financial statements.

Financial reports are one source of information that describes a real company situation and its development, so it can be one means to assess the professionalism level of the company concerned with management Suwardjono (2005). This financial report shows the performance of the bank's management during certain period. By reading this report, the management can improve the existing weaknesses and maintain strengths possessed.

According to the SFAC No. 1 SASB 1978, primary objective of financial statements is to provide useful information for investors, creditors, and other users both at the same time and that also can be used in making investment, credit, and similar decisions rationally. The second objective is to provide information in assessing the amount, timing, the uncertainty of cash receipts from dividends and interest in the future. This implies that investor wants information about outcomes and risk of the investments made.

Financial statement is essentially the result of the accounting process that can be used as a tool for communication between the financial data of an enterprise or activity by the parties with other parties who have interest on data or activities of the company. Many people who have an interest in knowing more about the financial statements of the bank because each party has different interest and properties adjusted with their individual interest. According to Munawir (1992) the parties interested in the financial position and the development of an enterprise are :

1. The company's owner is very interested in the company's financial statements because of the report, the company owner will be able assess the success or failure of managers in leading and successful managers assessed with the company's profit.
2. Company manager, knowing his company's financial position and the new period will be able to plan better, improve the supervision system and determine whether the policies are more appropriate.
3. Investors, they interested in the prospect of future profits and further company development, to find out how the company will guarantee in investment and to determine the working situation or short-term financial state of the company.
4. The creditors and bankers, they also need it to make business decision whether they will accept or reject the investment proposal of the company.

Government need this financial statement to determine the amount of the tax of company. Financial report is also needed by Department of Trade Industry and Department of Labour to make on government basis planned.

#### **2.1.7. Financial Ratios**

Financial ratio analysis is a method of analysis to verify the relationship of certain items in the income statement or balance sheet individually or in combination of two reports (Munawir, 1996).

With the use of ratio analysis, it is possible to determine the bank's level performance. According Dendawijaya (2005) financial ratios can be grouped into :

### 1. Liquidity Ratio

Liquidity ratio analysis is the analysis conducted on the ability of bank to meet short term obligations or liability that is due. Some of the liquidity ratio is often used in assessing the performance of a bank, including Cash Ratio, Reserve Requirement, Loan to Deposit Ratio, Loan to Asset Ratio, ratio of net liabilities call money (Dendawijaya, 2005).

### 2. Solvency Ratio

Solvency analysis is the analysis used to measure the ability of the bank to meet its long term obligations or the survival when there is ability of the bank in bank liquidation. Besides that, this ratio is used to determine the comparison scale between volume of funds obtained from a variety of debt (short and long term) and other sources outside the bank's with the volume of investment funds in various types of bank owned assets. Some of the ratio are Capital Adequacy Ratio (CAR), Debt to Equity Ratio (LDR), Long Term Debt to Assets Ratio (Dendawijaya, 2005).

### 3. Profitability Ratio

Bank profitability ratio analysis is a tool to analyze or to measure the level of business efficiency and profitability achieved by

the bank concerned. In addition, the ratios in this category can also be used to measure the healthy of bank. In calculating the earning ratios, it is usually sought reciprocity two post contained in the income statement or reciprocity in two post in the bank on the income statement with balance sheet items in bank in order to obtain a variety of indications that are useful in measuring the level of efficiency and profitability the bank concerned. Analysis of the bank profitability including Return on Assets, Return on Equity, Net Profit Margin, Operating Costs Ratio (BOPO), Dendawijaya (2005).

#### **2.1.8. Liquidity Risk**

In general, liquidity is the ability to meet the cash needs with the immediate use the appropriate cost, where the function liquidity in general:

1. Run the daily business transactions
2. Address the urgent need for funds
3. Satisfy customer demand for loans will
4. Provide flexibility in achieving attractive investment opportunity that is profitable.

Based on Taswan (2006), there are 4 theories that concerning in liquidity, the theory can be grouped into :

##### **1.Theory of Commercial-loan**

Its also known as the Productivity Theory of Credit or also called Real Bills Doctrine. Introduced in the 18th century and mainly until 1920. This theory

emphasizes asset side of banks' balance sheets to meet the liquidity needs of the bank. Bank liquidity theory can be guaranteed if the bank earning assets consist of short-term credit in operations running normally. If the bank will give long-term credit, it should be taken out of bank capital and long-term funding sources.

Banks only provide short-term credit such as loans used for working capital in the seasonal or temporary production process. Before 1920 banks loan portfolio focused on being an additional liquidity source because there was not many other alternatives.

The weakness of Theory Commercial-loan:

- In advanced economies, the medium credit / long term credit will become increasingly important and necessary.
- Much credit is not short-term type of credit and self-liquidating.
- This theory ignores the fact that under normal conditions of bank funds (demand deposits, time deposits, savings, etc.) allow to be distributed in a shorter term.
- In the current economic situation, working capital loans, which are callable from debtors cash flow, will not run well.
- Short-term credit can be long-term in overtime on an ongoing basis.
- Implicit in this theory assumes liquidity can be met by simply relying on the source of repayment and credit or payment by the customer. Though the withdrawal of deposits and loan disbursement to exceed liquidity only from repayment of loans.

## 2. Doctrine of Asset Shiftability

This theory emerged in the 1920s due to the many weaknesses of commercial loan theory. Bank may soon meet its liquidity needs by providing shiftable loan or call loan, the loan to be paid by one or more days notice prior to the collateral securities. Borrowers can repay the loan either directly or indirectly by shifting the loan to another bank.

If one reason or another can not pay the loan, the bank can sell the collateral in the form of securities for redemption. This doctrine works when financial markets are evolving and quite active, with the understanding that any number of demand and supply can be absorbed by the market.

The weaknesses of Doctrine of Asset Shiftability :

- If at the same time banks need liquidity and sell collateral securities to meet its liquidity needs.
- In such situations, it will not only cause the credit can not be transferred, but it will also cause a drop on the price of securities when banks sell the collateral.

## 3.Theory of Shiftability to The Market

Appeared in the 1940's was introduced due to the securities issued, primarily by the U.S. government, such as treasury bills and depreciation in the period of World War II and a few other companies which then creates an organized securities market and is developing well. This theory has an assumption that liquidity in bank will be guaranteed if they have securities portfolio that can be converted to cash as the instrument of liquidity.

The weaknesses of Theory of Shiftability to The Market:

- At the time of the banking system needs liquidity at the same time, done by selling securities to meet its liquidity requirements so that the banks become sellers of securities.
- In the country's central bank has been running well, the condition is not a problem because the central bank will take action by buying securities all banks. But at the central banking system has not been developed and run well, then this will be a problem at that banking system in the country.

#### 4.Theory of The Anticipated Income

It comes on between 1930 and backed by decades of low loan application to the bank which resulted in excess liquidity and lower bank profits, especially during an economic depreciation. This theory encourages banks to become more aggressive in providing long-term loans.

This theory states that banks should be able to provide long-term loans where repayment, the loan principal repayments and interest payments can be expected and it is paid on time, accordance with a predetermined time period. Customer repayment schedule will provide regular cash flow that can be used to meet liquidity needs.

The weaknesses of Theory of The Anticipated Income :

- This theory assumes all the credit can be billed according to the scheduled time without the possibility of failure of repayment by borrowers caused by internal or external factors.

- Examples of external factors: prolonged economic recession, unfavorable regulations, natural disasters.
- Examples of internal factors: miss management or lack of experience and skilled human resources.
- This theory is difficult to attract a seasonal source of liquidity and credit demand to meet the immediate needs.

In below, there are some definition of liquidity on banking, as follows :

1. Bank's liquidity related to bank's ability on collecting some funds with some costs in (Joseph E. Burns).
2. Liquidity is ability of bank to fulfill the demand of depositors in their maturity dates and fulfill their credit demand (Oliver G. Wood, Jr).
3. Liquidity is bank having sources of funds to meet their obligations (William M. Glavin).

According to theory of shiftability to market, bank's liquidity is the ability of bank to convert all the assets into cash, on the other hand on the liability's point is the ability of bank to meet funding needs through an increase in portfolio liabilities. It can be assumed the possibility bank in trouble circumstances is low, because of the risks can be cutted.

Based on Basel III 2010, liquidity risk originates from the mismatch between cash inflows and outflows. Such as, it is basically intrinsic to the banking institutions. In fact, one of the main functions of the banking transactions in a modern economic system is to allow the reordering of

financial resource from the liquid sectors (those which have excess financial resources to invest) to the illiquid ones.

Haslem in 1984 states the concept of liquidity lies at the heart of commercial banking and the management of its funds. It represents one of the crucial risk in banking industry. Liquidity risk is the possibility of loss, generating the cash needed to meet short term maturity dates included. The banking industry requires liquidity be given important consideration in funds management. There are various strategies for bank to obtain liquidity : (a) holding enough cash assets, (b) converting assets to cash, (c) borrowing. The ratio between cash to ratio describe how far the assets on banks can be converted to be cash to cover the liquidity risk that owned by them.

#### **2.1.9. Capital Adequacy Ratio**

Capital Adequacy Ratio is the ratio which is used to measure capital adequacy to support the bank owned assets that contain or produce risk, such as loan (Dendawijaya, 2005). CAR is the ratio to demonstrate the bank ability to provide funds for business investment and accomodate the operational risk resulting from the bank. It ratio to measure the extent of the decline in total assets that can still be covered by the equity. The greater this ratio means bank has enough capital that can be used as liquidity funds.

Bank Indonesia in accordance with the provisions of CAR amount a bank have achieved at least 8% since the end of 1995, and since late 1997

have achieved a minimum CAR of 9%. In early January 2004, a press release officially announcing the implementation of BI Indonesian Banking Architecture (API) which is one of the API program requires a minimum capital for commercial bank to 100 billion at the latest by 2011. At the end of June 2005, BI announced the criteria for anchor bank. This will be a starting point when it is accompanied by a commitment and consistency of policy toward Indonesia healthy banking system, robust, and efficient. One of the criteria for anchor bank as it was announced that BI should have a capital adequacy ratio (CAR) of 12%.

#### **2.1.10. Return On Assets**

Return on Assets (ROA) measures the ability of bank management in acquiring and managing the profitability of the bank's overall business efficiency. The greater value of this ratio shows the level of bank profitability, the better or healthier (Mahrinasari, 2003). Meanwhile, according to Bank Indonesia, ROA is the ratio of profit before tax to average total assets during the period. This ratio can be used as a measure of financial health. This ratio is very important, considering the benefits of the use of an asset may reflect a bank's level of business efficiency. Within the framework of the health assessment of bank, the central bank will provide a maximum score of 100 (healthy) if the bank has a ROA > 1.5% (Hasibuan, 2005).

The greater ROA of a bank, the greater the level of profit that the bank achieved and the better bank's position in terms of asset use. Total assets are typically of the placement of securities such as Bank Indonesia certificates, money market securities, the placement of the shares of the other companies, the placement of the call money or money market and placement in the form credit (Dendawijaya, 2001).

#### **2.1.11. Return On Equity**

Return on Equity measures the ability of the company in making a profit available to shareholders. This ratio is influenced by the size of corporate debt, an increasing large proportion of the debt ratio will also be greater (Abdul Halim, 2003). Return on Equity is the ratio of net income (earnings after tax) to total equity (own capital).

According to Brigham and Houston (2001), ROE is often referred to as the profitability of own capital (Return on Common Equity). Mamduh M. Hanafi and Abdul Halim (2005) says that ROE measures the company's ability to generate profits based on a certain stock of capital. This is similar to statement of Robert Ang (1997) that the company's ROE measures the return rate or effectiveness of the company in generating profits by utilizing the company's equity. This ratio is a measure of profitability from the viewpoint of shareholders.

### **2.1.12. Net Interest Margin**

Net Interest Margin (NIM) is the ratio of interest income to average earning assets. Income derived from interest received from loans made, less the interest cost of funds collected from the source. NIM reflects the market risk arising due to changing market situation, whereas it could be detrimental to the bank (Hasibuan, 2005).

NIM measures the gap between what bank pays savers and what the bank receives from borrowers. Thus, NIM focuses on the traditional borrowing and lending operations of the bank. Demirguc-Kunt et al. (2003) indicates that a bank with high levels of liquid assets in cash and government securities may receive lower interest income than bank with less liquid assets. If the market for deposits is reasonably competitive, then greater liquidity will tend to be negatively associated with interest margin. Thus, the proportion of liquid assets increases will decrease bank liquidity risk, leading to a lower liquidity risk premium of the net interest margin (Angbazo, 1997; Shen et al., 2001); Drakos, 2003) in Shen et al., 2009.

### **2.1.13. Liquidity Gaps**

Liquidity Gaps are the disparities, at all future dates, between assets and liabilities of the banking portfolio. Gaps cause liquidity risk, the risk not capable to improve supplies without excess costs. Liquidity risk subsists when there are shortages of supplies, as surpluses of funds give effect on interest rate risk, the risk of not understand in spread the rate of lending or investing these supplies (Joël Bessis, 2003).

#### **2.1.14. Risky Liquid Assets to Total Assets**

Shen et al, 2009 indicates Risky Liquid Assets to Total Assets Ratio (RLA) give positive outcome on the liquidity risk. Because a bank can be able to trade its liquid assets to gain liquid financings, possessing liquid assets since credit freeze. For this reason, they divide liquid assets into less risky assets and risky liquid assets. Bank can be able to trade their less risky liquid assets such as treasury bills with little price risk and low transaction cost. It is may be difficult to sell their risky liquid assets like trading securities because of credit freeze to obtain liquid financings, and they expect if LRLA has negative effect on liquidity risk.

#### **2.2. Previous Research**

Some of research have been analyzed the factors that are assumed giving some influences to liquidity risk :

Shen, Chen, Kao, and Yeh (2009) investigated the causes of liquidity risk and its relationship with bank performance. The dependent variable is financing gap ratio (FGAPR) as denominator in the liquidity risk equation. Independent variables are size, less risky liquid assets to total assets (LRLA), risky liquid assets to total assets (RLA), external funding to total liabilities (EFD), annual percent change of GDP (GDP), and annual percent change of inflation (INF). It is found that LRLA and RLA having negative and significant to FGAPR, GDP having negative and

significant relationship with FGAPR. Whereas INF having positive and significant effect to liquidity risk, and EFD having positive but not significant to this variable. The relationship between FGAPR and bank performance (ROAA and ROAE) are negative and significant. The object of this study are banks in 12 advanced economies over the period 1994 – 2006. The statistical analysis of panel data on this study uses regression analysis.

Akhtar, Ali and Sadaqat (2011) did comparative analysis of conventional and Islamic banks by focusing the importance of size of the firm, ROE, ROA, networking capital and CAR with liquidity risk management. It is found that size of the bank and networking capital to net assets having positive and insignificant relationship with liquidity risk. Whereas CAR in conventional banks and ROA in Islamic banks have a positive and significant relationship with liquidity risk. The object of this study are 12 banks from Islamic and conventional banks of Pakistan. The statistical analysis of secondary data on this study uses regression analysis.

Iqbal (2012) did comparative analysis of Islamic and conventional banks by focusing of size, NPL, ROE, CAR, and ROA with liquidity risk. It is found that CAR, size, ROA, ROE have positive and significant to liquidity risk in both models (conventional and Islamic). Whereas NPL have negative and significant effect to liquidity risk. The object of this study are 5 banks from Islamic and conventional banks of Pakistan, period

2007 – 2011. The statistical analysis of secondary data on this study uses regression analysis.

Al-Khouri (2011) did investigate the influence of bank's specific risk characteristics, and the overall banking environment on the performance of commercial banks operating in the Gulf Cooperation Council (GCC) countries). The dependent variables is bank profitability. The independent variables are bank risk (credit risk, liquidity risk, capital risk), bank size, government ownership (GPV), general and administrative expenses (GAE), degree of market concentration (con), growth in real GDP (GGDP), inflation (INF), and stock market capitalization to GDP (MKTC). It is found that ROA has negative and significant effect to liquidity risk, whereas ROE has positive and significant relationship to this variable. Government ownership has negative and significant relationship to an inefficiency in banks with high government ownership. The object of this study are 43 commercial banks in the 6 of the GCC countries over the period 1998 – 2008. The statistical analysis of secondary data on this study uses regression analysis.

Gounder and Sharma (2011) did investigate on the determinants of NIM in banks. The variable that used on this study are Credit Risk (CR), Implicit Interest Payments (IIP), Learner Index (LI), Liquidity Risk (LR), Quality Management (QM), Operating Cost (OC), Opportunity Cost of Required Reserves (OCCR), and Bank Capital (BC). It is found that CR, IIP, LI and OC have positive and significant relationship to NIM. QM has

negative and significant effect to this variable. Whereas OOCR, BC and LR have negative and not significant to NIM. The object of this study are 4 commercial banks in Fiji, a small island developing state in the South Pacific over the period 2000 – 2010. The statistical analysis of secondary data on this study uses regression analysis.

Bektas (2011) did an analyze the determination of NIM and spread in a small banking system. The dependent variables of this study are NIM and spread. Whereas the independent variables are equity to total assets ratio (EQTA), provision for loan losses to total loans (PLLTL), total costs to total assets (C1), Total costs to total assets, as efficiency ratio (EFF) personnel and fixed assets expenses to total assets as overhead expenses (C2), cash and banks due from accounts to total assets as liquidity ratio (LIQ), difference between not-interest expense and not-interest revenue to total earning assets as implicit interest payment ratio (IMPINT), difference of sensitive assets and sensitive liabilities to equity ratio as interest rate risk (INTRSK), Ln of assets as size measure (LNA), market share of loans as market power (MSL), reserve at central bank to total earning assets to evaluate the role required reserve policy (CBRTEA), and total earning assets to total assets as efficient management of assets (TEATA). It is found that EQTA, PLLTL, and TEATA have positive and significant effect to NIMTEA as denominator in the NIM equation. EFF has negative and significant to NIMTEA. Whereas LIQ and CBRTEA have negative and not significant to NIMTEA. Other variables such as IMPINT, INTRSK, LNA,

and MSL do not appear in relationship with NIMTEA. The object of this study are 24 in the North Cyprus bank market over the period 2003 – 2009. The statistical analysis of unbalanced panel data on this study uses regression analysis.

Buyuksalvarci and Abdioglu (2011) did investigate the determinants of CAR and its impacts on financial positions of banks in Turkey. The dependent variable is capital adequacy ratio (CAR). The independent variables are size, deposits (DEP), loans (LOA), loan loss reserve (LLR), liquidity (LIQ), profitability (ROA and ROE), net interest margin (NIM) and leverage (LEV). It is found that LOA, LEV, and ROE have negative effect on CAR, whereas LLR and ROA have positive and significant to this variable. On the other hand, size, DEP, LIQ, and NIM do not appear to have any significant effect to CAR. The object of this study are 32 commercial banks comprising 3 state owned banks, 11 privately-owned banks, 1 bank under deposit insurance fund, 11 foreign banks founded in Turkey and 6 foreign banks having branches in this country over the period 2006 – 2010. The statistical analysis of panel data on this study uses regression analysis.

Tafri, Hamid, Meera, and Omar (2009) did an analyze the relationship between financial risk and profitability in conventional and Islamic banks in Malaysia. The dependent variables are ROA and ROE as the profitability ratios. The independent variables are credit risk (CR), interest rate risk (IRR), liquidity risk (LIQ), off balance sheet activities

comprising non interest income to total asset (OBS1) and derivatives to total asset (OBS2), size, bank capital (BCAP), and growth (GDP). It is found CR has negative and significant effect to profitability (ROA and ROE), LIQ has positive and significant to ROA in conventional banks, but positive insignificant in Islamic banks. On the other hand LIQ have positive and insignificant effect to ROE in Islamic banks, while it has negative and not significant effect to ROE in conventional banks. OBS1 has positive and weakly significant to profitability, whereas OBS2 has negative and not significant to these variable. GDP have positive and significant effect to ROA, while it has negative insignificant relationship to ROE. Whereas IRR has positive significant relationship to profitability in conventional banks and insignificant in Islamic banks. The object of this study are all commercial banks in Malaysia including the Islamic banks and foreign licensed banks in this country, over the period 1996 – 2005. The statistical analysis of panel data on this study uses regression analysis of Generalised Least Squares of fixed effects and random effect models.

**Table 2.3.**  
**Previous Research**

No.	Researcher and Title	Variable	Methodology	The Study Result
1.	Akhtar et al. (2011). Liquidity risk Management: A	Dependent : Liquidity risk Independent : Size, Networking Capital, ROE,	Regression Analysis	1. Size and net-working capital have positive and insignificant correlation to liquidity risk. 2. CAR has positive and

	Comparative study between Conventional and Islamic Bank of Pakistan	CAR, ROA		<p>significant relationships to liquidity risk in islamic bank</p> <p>3. ROA has positive and significant to liquidity risk in conventional bank</p> <p>4. ROE has negative correlation to liquidity risk in both models</p>
2.	Chung-Hua Shen (2009). Bank Liquidity Risk and Performance	<p>Dependent : Liquidity risk (FGAPR) and bank performance (profitability)</p> <p>Independent : Size, LRLA, RLA, EFD, GDP, INF</p>	Regression Analysis	<p>1. Size has positive relationship to FGAPR.</p> <p>2. RLA and LRLA have negative and significant to FGAPR.</p> <p>3. FGAPR has negative and significant effect to bank performance.</p> <p>4. GDP has negative and significant relationship with FGAPR</p> <p>5. INF has positive and significant effect to liquidity risk</p> <p>6. EFD has positive but not significant to this variable.</p>
3.	Anjum Iqbal (2012). Liquidity	<p>Dependent : Liquidity risk</p> <p>Independent :</p>	Regression Analysis	<p>1. CAR, ROA, ROE, and size have positive and significant relationships</p>

	Risk Management; A Comparative Study between Conventional and Islamic Bank of Pakistan.	Size, ROA, ROE, CAR, NPL, and Net-working capital.		to liquidity risk in both models. 2. NPL has negative and significant correlation to liquidity risk.
4.	Ritab Al-Khouri (2011). Assessing the Risk and Performance of the GCC Banking Sector.	Dependent : ROA, ROE Independent : credit risk, liquidity risk, capital risk, size, GOV, GAE, con, GGDP, Inf, MKTC	Regression Analysis	1. Capital risk, credit risk, size have positive and significant effect to ROA 2. Liquidity risk and GOV have negative and significant to ROA. 3. Liquidity risk and size have positive and significant to ROE, while credit risk and capital risk have insignificant effect to this variable.
5.	Neelesh Gounder and Parmendra Sharma	Dependent : NIM Independent : CR, IIP, LI,	Regression Analysis	1. CR, IIP, LI, and OC have positive and significant relationship to NIM.

	(2011). Determinants of bank net interest margins in a Small Island Developing Economy; Panel Evidence from Fuji.	LR, QM, OC, OCCR, BC		<ol style="list-style-type: none"> <li>2. QM has negative and significant effect to NIM.</li> <li>3. OOCR, BC, and LR have negative and insignificant effect to NIM.</li> </ol>
6.	Eralp Bektas (2011). Determinants of NIM and Spread in North Cyprus Bank Market; The Preliminary Findings.	Dependent : NIM (NIMTEA) Independent : EQTA, PLLTL, EFF, LIQ, IMPINT, INTRSK, LNA, MSL, CBRTEA, TEATA	Regression Analysis	<ol style="list-style-type: none"> <li>1. EQTA, PLLTL, TEATA have positive and significant effect to NIMTEA.</li> <li>2. EFF has negative and significant effect to NIMTEA.</li> <li>3. LIQ, CBRTEA have negative and not significant to NIMTEA.</li> <li>4. Other variables do not appear relationship to NIMTEA.</li> </ol>
7.	Buyuksalvarci and Abdioglu (2011). Determinants	Dependent : CAR Independent : size, DEP, LOA, LLR,	Regression Analysis	<ol style="list-style-type: none"> <li>1. LOA, LEV, ROE have negative effect on CAR</li> <li>2. LLR and ROA have significant and positive effect to CAR</li> </ol>

	of CAR in Turkish Banks	LIQ, NIM, LEV, profitability		3. Size, DEP, LIQ, and NIM do not appear to have any significant effect to CAR.
8.	Tafri, et al. (2009) The Impact of Financial Risks on Profitability of Malaysian Commercial Banks : 1996-2005	Dependent : Profitability (ROA and ROE). Independent : CR, IRR, LIQ, OBS1, OBS2, BCAP, GDP	Regression Analysis	<ol style="list-style-type: none"> <li>1. CR has negative but significant effect to profitability.</li> <li>2. LIQ has positive and significant effect to ROA in conventional banks, but positively insignificantly in Islamic banks.</li> <li>3. LIQ has positive but insignificant effect to ROE in Islamic banks, while its having negative and insignificant effect in conventional banks.</li> </ol>

Sources : Chung-Hua Shen et al. (2009), Akhtar (2011), Iqbal, A. (2012), Ritab Al-Khoury (2011), Neelesh Gounder and Parmendra Sharma (2011), Eralp Bektas (2011).

### 2.3. Theoretical Framework

#### 2.3.1. The effect of CAR to liquidity risk

According to Dendawijaya (2003), CAR is a ratio that shows how far the risky bank assets (loans, investments, securities, claims on other banks) financed part of the bank's own capital funds in addition to obtaining funds from external sources of banks, such as funds clients, a loan (debt) and others.

The previous research conducted by Akhtar, et al. (2011) and Anjum Iqbal (2012) shows that Capital Adequacy Ratio has positive and significant impact to liquidity risk. But when the CAR value which is high shows these banks can afford their operational activities and give many contribution to bank profitability. As higher as CAR means as better as the bank ability to anticipate the risk of each risky productive assets. Based on this argument, the hypothesis formulated as follows:

H1 : CAR has negative effect to liquidity risk.

### **2.3.2. The effect of ROA to liquidity risk**

Return on Assets (ROA) measures the ability of bank management in acquiring and managing the profitability of the bank's overall business efficiency. The greater value of this ratio shows the level of bank profitability, be better or healthier (Mahrinasari, 2003). The higher of ROA, the greater of bank profits level are achieved so that the possibility of bank in less troubled situation.

The previous research conducted by Shen, et al. (2009) and Al-Khoury (2011) shows that ROA has a negative and significant impact to liquidity risk. Based on this argument, the hypothesis formulated as follows:

H2 : ROA has negative effect to liquidity risk.

### **2.3.3. The effect of ROE to liquidity risk**

Return on Equity describes the ability of the company in making a profit available to shareholders. This ratio is influenced by the size of corporate debt, an increasingly large proportion of the debt ratio will also be greater (Hanafi & Halim, 2003). This is similar to statement of Robert Ang (1997) that the company's ROE measures the return rate or effectiveness of the company in generating profits by utilizing the company's equity. This ratio is profitability's measure from the viewpoint of shareholders.

According to Shen, et al. (2009), banks with higher liquidity risk or larger gap lack on cheap fund, and thus they have to use liquid assets or much external funding or combining from shareholders to meet the demand of fund, increase bank's cost of funding. It will decrease bank's profitability (ROE). Similar to Shen, Akhtar, et al. (2011) found that ROE has negative and significant to liquidity risk in Islamic banks, and insignificant in conventional banks. Based on this argument, the hypothesis formulated as follows :

H3 : ROE has negative effect to liquidity risk.

### **2.3.4. The effect of NIM to liquidity risk**

Net Interest Margin is a ratio that indicates the ability of bank to manage its productive assets to generate NIM. Net interest income derived from granting credit or loans, while bank has an obligation to the depositor's interest expense. The greater this ratio increase in interest income

on earning assets that managed by bank, it means less possibility of a bank in less troubled situation (Anggrainy Ayuningrum, 2003).

The research by Gounder & Sharma (2011) found that NIM has negative and insignificant impact to liquidity risk. On the other hand, Angbazo (1997) found that NIM has negative and significant effect to liquidity risk. Based on this argument, the hypothesis formulated as follows:

H4 : NIM has negative effect to liquidity risk.

### **2.3.5. The effect of liquidity gaps to liquidity risk**

According to Joel Bessis (2003) in his book 'Risk Management in Banking', liquidity risk caused by gaps between assets and liabilities. It generate risk on liquidity, the risk of not being competent to get financings without excess costs. Controlling this risk means spreading over time amounts of financing, preventing unexpected important market financing and maintaining a 'chusion' of liquid short-term assets. So we can conclude, liquidity risk is due to liquidity gaps. Greater liquidity gaps, greater liquidity risk incurred by a bank. Based on this argument, the hypothesis formulated as follows :

H5 : Liquidity gaps has positive effect to liquidity risk.

### **2.3.6. The effect of RLA to liquidity risk**

RLA is the ratio between risky liquid assets to total assets. Shen et al. (2009) in the previous study explains cause of bank can trade its liquid assets to get liquid financing, keeping liquid assets can reduce bank's liquidity risk. Eventhough, bank can get troubled to trade their liquid assets. It happened because of credit freeze. He was expecting RLA has positive effect to liquidity risk.

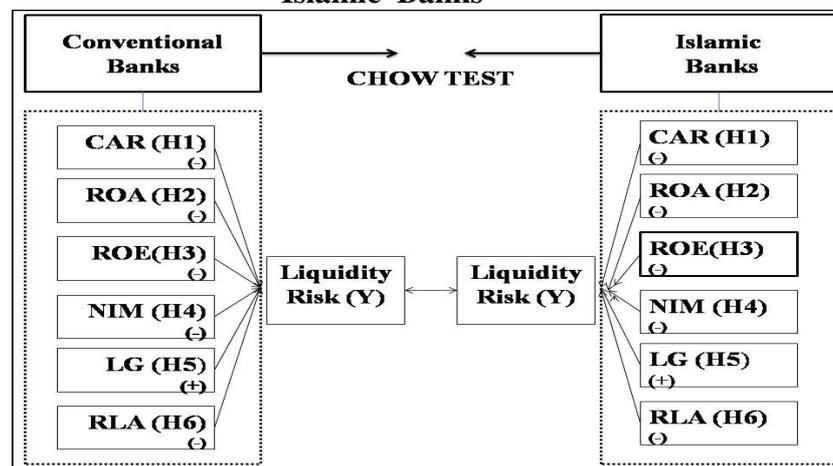
Eventhough, he found that RLA has negative and significant effect to FGAPR as the denominator of liquidity risk. Based on this argument, the hypothesis formulated as follows :

H6 : RLA has negative effect to liquidity risk.

#### 2.4. Hypothesis Formula

Based on the theory and the results of previous studies that have been described previously, it can be prepared a schematic model of the image frame of the study "The Impact of Fundamental Factors to Liquidity Risk on Banking Industry (Case Study between Conventional and Islamic banks in Indonesia period 2007-2011)", as shown in Table 2.1. below.

**Graph 2.1.**  
**Theoretical Framework**  
**The Factors that Influencing Liquidity Risk both in Conventional and Islamic Banks**



Hypothesis is a tentative preliminary conclusions of the research that remains to be verifiable. Based on reviews the theory above, then the alternative hypothesis of this study can be formulated as follows:

- H1 : CAR has negative effect to liquidity risk.
- H2 : ROA has negative effect to liquidity risk.
- H3 : ROE has negative effect to liquidity risk.
- H4 : NIM has negative effect to liquidity risk.
- H5 : Liquidity gaps has positive effect to liquidity risk.
- H6 : RLA has negative effect to liquidity risk.
- H7 : Presumably there are differences in liquidity risk between conventional banks and Islamic banks in Indonesia

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **3.1. Variable Research and Operational Definition**

##### **3.1.1. Variable Research**

Variable research is the main concept that will discuss and operational definition will give details the variables and the indicator on this research. Variable is a concept study that will be discussed in this research and operational definitions are descriptions of them. Operational definition describes the measurement of variables and indicators develop in this study.

##### **3.1.1.1. Dependent variable**

Dependent variable as a synonym for principle variable is deliberated, predicted, or else observed and is expected to be involved by manipulation of an independent variable (Coopper & Schindler, 2003).

It is the main attention of the researcher. The researcher's objective is to know and illustrate the dependent variable, or to explain its variabilty, or see coming it. In other words, it is the primary variable that provides itself as a feasible factor for study (Sekaran, 2000). In this research, the dependent variable is liquidity risk.

According to Haslem in 1984, liquidity risk is the possibility of loss involved in generating the cash needed to meet short term maturity dates.

Converting assets to cash is one way to fulfill banks obligations, and the possibility they in troubled situation is low.

The formula to determine liquidity risk is as follows :

$$\text{Liquidity risk : } \frac{\text{Cash}}{\text{Total Assets}}$$

### **3.1.1.2. Independent variables**

An independent variable is one that persuades the dependent variable in each a positive or a negative way. That is, when the independent variable is present, the dependent variable is also present, and when there is an increase in the independent variable, there will be an increase or decrease in the dependent variable also. On other words, the variance in the dependent variable is accounted for by the independent variable (Sekaran, 2000).

Predictor variable or also known as independent variable is manipulated by the researcher, and the manipulation causes an effect on the dependent variable (Cooper and Schindler, 2003).

In this study the independent variables selected are Return on Assets (ROA), Return on Equity (ROE), Capital Adequacy Ratio (CAR) for reasons still not give satisfactory results in the previous studies, so it is interesting to be used as independent variables in this study, they as below are :

1. CAR

CAR is the ratio of performance to measure the adequacy of bank capital to support the bank owned that contain or result in the risk of loans (Dendawijaya, 2005). The formula to determine CAR is as follows :

$$\text{Capital Adequacy Ratio : } \frac{\text{Bank Capital}}{\text{The Average Assets by Risk}} \times 100 \%$$

## 2. ROA

Return on Assets is the ratio between earnings after tax to total assets (Dendawijaya, 2005). The formula to determine ROA is as follows :

$$\text{Return on Assets : } \frac{\text{Earnings After Tax}}{\text{Total Assets}} \times 100 \%$$

## 3. ROE

Return on Equity is the ratio between earnings after tax to total equity (Dendawijaya, 2005). The formula to determine ROE is as follows :

$$\text{Return on Equity : } \frac{\text{Earnings After Tax}}{\text{Total Equity}} \times 100 \%$$

## 4. Net Interest Margin

NIM is the ratio between net interest income to earning assets of a bank to determine NIM. The formula is as follows:

$$\text{Net Interest Margin} : \frac{\text{Net Interest Income}}{\text{Earning Assets}} \times 100 \%$$

### 5. Liquidity Gaps

Liquidity gaps are spread between assets and liabilities (Joël Bessis, 2003). The formula to determine Liquidity Gaps is as follows :

$$\text{Liquidity Gaps} = \text{Ln (Assets - Liabilities)}$$

### 6. Risky Liquid Assets to Total Assets Ratio (RLA)

RLA is ratio between risky liquid assets to total assets (Shen et al., 2009). The formula to determine RLA is as follows :

$$\text{RLA} : \frac{\text{Risky Liquid Assets}}{\text{Total Assets}} \times 100 \%$$

#### 3.1.2. Operational Definition

Operational definitions in above can be able to be summarized on Table 3.1. in below :

**Table 3.1.**  
**Operational Definition**

No	Variable	Definition	Scale	Measurement
1	Liquidity Risk	Ratio between cash and total assets.	Ratio	Liquidity risk : (Cash / Total Assets) x 100%
2	CAR	Ratio between bank capital and total average assets by risk.	Ratio	CAR : (Bank Capital / Total Average Assets by Risk) x 100%

3	ROA	Ratio between earnings after tax to total assets	Ratio	ROA : (Earnings After Tax / Total Assets) x 100%
4	ROE	Ratio between earnings after tax to total equity.	Ratio	ROE : (Earnings After Tax / Total Equity) x 100%
5	NIM	Ratio between net interest income and earning assets.	Ratio	LDR : (Net Interest Income / Earning Assets) x 100%
6	LG	Spread between assets and liabilities.	Ln	LG : Ln (Assets – Liabilities)
7	RLA	Ratio between risky liquid assets to total assets.	Ratio	RLA : (Risky Liquid Assets / Total Assets) x 100%

### 3.2. Population and Sample

The population on this study are divided into conventional and Islamic banks from Foreign Exchange Bank (Bank Umum Nasional Devisa) during the period 2007 to 2011. The population are 43 conventional bank and 4 Islamic bank. However, they are not the object of research therefore it does not need sampling. The sampling technique used is purposive sampling, that is until election of members based on certain criteria. Criteria used in this study is

1. Conventional and Islamic banks from Foreign Exchange Bank (Bank Umum Swasta Nasional).

2. Conventional banks and Islamic banks that display their financial statement period 2007-2011 and available in Indonesian Banking Directory.
3. Conventional banks and Islamic banks that display their financial statement and finance ratio completely which suitable with the ratios on this research.
4. Conventional banks and Islamic banks that have no negative post in every finance ratio during period research.

Based on these criteria the amount of sample available for the 43 but that used in this study is the 3 companies. As for the Islamic banks is comprised of 4 companies, but on this study is used 3 companies. Sample in this study can be seen in Table 5.2.

**Table 3.2**  
**List of Conventional and Islamic Banks used in this study**

No.	Conventional bank	Islamic Bank
1	Permata Bank	Mandiri Islamic Bank
2	CIMB Niaga Bank	Mega Islamic Bank
3	Bukopin Bank	Muammalat Bank

### 3.3. Types of Sources of Data

The data used in this study is secondary data from the company's financial performance data obtained from the Indonesian Banking Directory period from 2007 to 2011.

### **3.4. Data Collection Methods**

The method used in this study is documentation's data collection by recording or documenting the data included in the Directory of Bank Indonesia. The data retrieval is done through literature study conducted by reviewing the literature books, journals, and papers to obtain a comprehensive theoretical foundation subjects on this study.

### **3.5. Data Analysis Techniques**

The method of analysis used in this study is quantitative method. It is a form of analysis that uses numbers and calculations with statistical methods, so it makes data can be classified in a particular category. Data processing techniques performed uses SPSS17 for windows. The analysis tools are descriptive analysis, multiple regression analysis and hypothesis testing.

#### **3.5.1. Descriptive Analysis**

Descriptive analysis are used to describe the data from mean, median, standard deviation, variance, sum, range, curtosis, skewness, minimum and maximum values (Ghozali, 2006). The test is done to help understanding the variables used in this study.

#### **3.5.2. Multiple Regression Analysis**

This model is used to analyze the influence of independent variables on the dependent variable regression models. Multiple regression analysis is chosen because the study is designed to examine

the independent variables that effect the dependent variable using cross section data.

The test will be performed by multiple regression models as follows :

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e$$

Explanations :

Y = Liquidity risk

a = constanta

$b_1 - b_6$  = regression coefficient of independent variables

$X_1$  = Capital Adequacy Ratio

$X_2$  = Return On Assets

$X_3$  = Return On Equity

$X_4$  = Net Interest Margin

$X_5$  = Liquidity Gaps

$X_6$  = Risky Liquid Assets to Total Assets

e = error

### **3.6. Classic Assumption Test**

It is necessary to test model by the classical assumption. Its consists of multicollinearity, heterocedasticity, autocorrelation, and normality.

#### **3.6.1. Multicollinearity test**

Multicollinearity test aims to test whether on the regression model found any correlation between free variables (independent). On the good regression models, should not be found any correlation between the independent variables (Ghozali, 2006). One method to detect the presence of multicollinearity is as follows:

1. Magnitude Variance Inflation Factor and Tolerance (VIF)

Guidelines for a model-free regression multicollinearity are tolerance  $< 1$  or equal to the value of  $VIF < 10$ .

2. Inter-scale Correlations of Independent Variable

Guidelines for knowing a model-free regression multicollinearity. The coefficients between the independent variable must be weak (below 95%). If there is a strong correlation, then there will be a problem multicollinearity.

### **3.6.2. Heteroscedasticity test**

Heteroscedasticity trials aims to testing whether on regression model, there is no common of period variance from observation to observation of others still, it is called homocedasticity, and if the variance is called heteroscedasticity, it will be different. A good regression model is not the case of heteroscedasticity. The only way to detect the presence or absence of heteroscedasticity by looking at the graph plots between the predicted value of the dependent variable (ZPRED) and the residual (SRESID). To detect the presence or absence of heteroscedasticity is by looking at the presence or absence of certain

patterns in charts and scatterplots between SRESID and ZPRED, where Y is the Y axis that has been predicted and the X axis is the residual (Y predicted - Y actual) which has been observed (Ghozali, 2006).

If there are certain patterns such as dots that form a regular pattern (undulating, wide and narrow), it indicates there has been a heteroscedasticity. If there is no clear pattern, as well as no points spread above and below the 0 on the Y axis, then it does not happen heteroscedasticity.

Analysis of the graph plots can not fully detect any heteroscedasticity. Then it can be done by Glejser test to detect it. Glejser proposes absolute residual value of the independent variable (Gujarati, 2003) in Ghozali (2006). The analysis variable probability of significance must be above the 5% confidence then there is any indication heteroscedasticity.

### **3.6.3. Autocorrelation test**

Autocorrelation test aims to test whether on the linear regression model there is any correlation between bullies in period  $y$  with bullies error in period  $y-1$  (previous) (Ghozali, 2005). If there is any correlation, then there can be said there is a problem called autocorrelation. Autocorrelation arises because sequential observations all the time and they are related each other.

The other way to detect the presence or absence of autocorrelation is the Durbin-Watson test. Durbin-Watson is used only

for test a single level autocorrelation and requires an intercept (constant) in the regression model and variable no lag between the advert is not an independent variable.

The hypothesis that are going to be tested are :

H<sub>0</sub> : no autocorrelation ( $r = 0$ )

H<sub>a</sub> : there is autocorrelation ( $r \neq 0$ )

Null Hypothesis	Decision	If
No positive autocorrelation	Reject	$0 < d < dl$
No positive autocorrelation	No decision	$dl \leq d \leq du$
No negative autocorrelation	Reject	$4 - dl < d < 4$
No negative autocorrelation	No decision	$4 - du \leq d \leq 4 - dl$
No positive or negative autocorrelation	Not rejected	$du < d , 4 - du$

#### 3.6.4. Normality test

Normality test has a purpose whether to test the regression variable model or variables residual model can be found a normal distribution (Ghozali, 2005). A good regression model must have a normal data distribution, or almost normal. There are two ways to detect whether the residuals are normally distributed with graphical analysis and statistical tests or not.

##### 1. Graphic Analysis

One of the easiest way to find the normality of the residuals is by looking the histogram graph which compares between observed and normal distribution data. The other method is the normal

probability plot, comparing between the cumulative distribution from the normal distribution. In principle, normality could be detected whether there are spread of the data (dots) on the diagonal axis of a graph or a histogram of the residuals. The basic decisions made based on:

If the data and the spread of diagonal lines or following the direction of diagonal line or histogram charts do not show the normality of the distribution pattern of the regression model, it does not meet assumption of normality.

## 2. Statistical Analysis

In addition to use the chart, in this study the normality test is also performed by using the Kolmogorov - Smirnov. This test is a method commonly used to test normality data. If the Kolmogorov – Smirnov test is not significant (significant variable levels  $> 0,05$ ), then all the data are normally distributed.

### 3.7. Hypothesis Testing

#### 3.7.1. Simultaneous hypothesis test (F-test)

F test is performed to determine whether the independent variables used in the model have an influence together against the dependent variable. The way of testing :

##### 1. Comparing the calculated F with F tables

- a) If  $F_{\text{calculated}} < F_{\text{table}}$ ; the independent variables simultaneously have no effect on the dependent variable.

b) If  $F$  calculated  $>$   $F$  table; the independent variables simultaneously have effect on the dependent variable.

## 2. Based on probability

If the probability is greater than 0,05 ( $\alpha$ ), then the independent variables simultaneously and freely will effect the liquidity risk.

### 3.7.2. Coefficient of determination test ( $R^2$ )

Coefficient of determination ( $R^2$ ) is essentially to measure how far the model ability in explaining the variation in the dependent variabel. Coefficient of determination values is between 0 and 1. However, the use of the coffecient of determination has fundamental weakness that is bias to the number of independent variables entered into model. Per one additional independent variable,  $R^2$  then will increase regardless of wheter these variables significantly influence the dependent variable. Therefore in this study, it is used the adjusted  $R^2$ , because the value of  $R^2$  can be adjusted up and down when one independent variable is added to the model (Ghozali, 2006).

### 3.7.3. Hypothesis partial test (t-test)

t - test is performed on a partial hypothesis testing to determine whether there is individually influence of independent variables on the dependent variable.

The test is carried out with 2 (two) directions test, as follows :

#### 1. Comparing between t-calculated and t-table :

- a) If  $t_{\text{calculated}} < t_{\text{table}}$  ; independent variables do not individually effect on the dependent variable.
- b) If  $t_{\text{calculated}} > t_{\text{table}}$  ; independent variables individually effect the dependent variable.

## 2. Based on probability

When the probability is greater than 0,05 ( $\alpha$ ), then the independent variables individually has no effect on liquidity risk. While if the probability is smaller than 0,05 ( $\alpha$ ), then the independent variables individually will effect liquidity risk.

### 3.7.4. Chow test

Chow test is a tool to test the similarity coefficients by looking at the results of our observation. It can be grouped into two or more groups that are subject of the same economic process (Ghozali, 2006).

The formulas used are as follows :

$$F : \frac{(RSS_r - RSS_{ur})/k}{(RSS_{ur})/(n_1+n_2-2k)}$$

r = sum of SSR<sub>r</sub> parameter

k = sum of SSR<sub>Rn</sub> parameter

df = (n<sub>1</sub>+n<sub>2</sub>-2k)

n = sum of observation

$f_{\text{calculated}}$  value from the above formula is compared with the value of  $f_{\text{table}}$  if the value of  $f_{\text{calculated}} > f_{\text{table}}$  then the hypothesis will be accepted. It means that there are differences between the effects of independent variables on the dependent variable in both groups of sample (Ghozali, 2006).