Dynamic Behavior in Indonesian Banking Liquidity Management

*Adrie Putra

Adrie.putra@esaunggul.ac.id

*Corresponding Author

Abstract

The purpose of this research is to create liquidity detection model of Indonesian banking industry, by acting internal and external factors of the liquidity of the banking itself. Research variables include financial and banking economic variables and banking characteristics.

The data used was data from 2002 to 2015. The process of processing data starts from charting the main indicators of banking intermediation (loan to deposit *ratio*). Then conducted an inference analysis of econometrics based on dynamic models of banking behavior.

The priority of research   is that the resulting model can be (1) applied and able to provide very useful information in controlling banking liquidity policy (2) to be a reference for monetary policymakers, especially BI (Bank Indonesia) and OJK (Otoritas Jasa Keuangan) Indonesia in making policies to stimulus financial market development. (3) This model can   also be used as a reference for the world of finance and banking in order to improve the mobility capabilities of public funds, and (4) as a reference material for further research. This model can be used as a means of dissemination and publication for financial and banking observers in understanding the conditions of money market / banks and capital markets.

Keywords: liquidity, characteristic, performance, market structure, behavior, banking

JEL Classification: [G21, G4, D21]

INTRODUCTION

The banking sector plays an important role in contributing to domestic economic growth. This is closely related to the vital function of banking as an institution. The success of banking intermediation function is reflected in the large proportion of third-party funds channeled in the form of credit by bank *Loan to Deposit Ratio* (LDR). Lending needs to take into account many aspects of risk so that credit risk does not cause the risk of default which causes banks to experience *insolvency that* interferes with the national payment system and banking system. According to Latimeria (2011:143-144), one of the risks of banks is liquidity risk. This liquidity risk occurs due to poor bank liquidity levels. Liquidity risk is a risk that can be met because a bank cannot meet its short-term obligations when it is needed by the customer due to the lack of liquidity of the bank (Santoso and Sukihanjani, 2013).

According to Ruslian (2015) *Loan to Deposit Ratio* (LDR) is a ratio that shows a comparison between the amount of funds channeled to the community or so-called credit, where the funds are taken from public funds and their own capital. According to Cashmere (2011), banking liquidity can be measured using *Loan to Deposit Ratio* (LDR). This is in accordance with Bank Indonesia Circular Letter No.6/23/DPNP dated May 31, 2004 which contains five aspects of banking health level assessment, namely CAMELS (Capital, Assets, Management, Earning, Liquidity, Sensitivity to market risk). Therefore, liquidity can be one of the benchmarks for assessing banking performance, this ratio describes the ability of banks to pay back withdrawals made by customers by relying on credit provided as a source of liquidity. The higher this ratio the lower the liquidity capabilities of banks. In order to maintain the health of the bank's business, Bank Indonesia as a monetary authority through Bank Indonesia Regulation No. 15/7/PBI/2013 sets the size of LDR to be in the range of 78% - 92%.

Issue Identification and problem restrictions
1. Problem Identification

    From the things described in the background, it can be identified the following problems: The increase in LDR that tends to be high in the mixed bank every year.
2. Problem Restrictions (Revision)

    In this study, the authors limited the problems studied: this study focused on the influence of Lending *Rate, Cost of Funds, Loan to Asset*

Ratio, Debt to Asset ratio, Total Equity Total Asset, Operating Profit Margin, Total Asset Turn Over to Loan to Deposit *Ratio of* Banking Companies registered in Bank Indonesia period 2010 – 2015.

Research problems

Based on background and identification, the formulation of problems in this study is:

1. Is Lending Rate (LR) a positive influence on   Loan to Deposit Ratio (LDR) in Mixed Banks Period 2010 (Q1) – 2015 (Q4)?

2. What is the Cost of Fund (COF) on Loan to Deposit Ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

3. What is the Loan to Asset Ratio (LAR) impact on loan to deposit ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

4. Is the Debt to Asset Ratio (DAR) impact   the Loan to Deposit Ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

5. Is Total Total Asset Equity (TETA) impact to Loan to Deposit Ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

6. Is Operating Profit Margin (OPM) impacting   the Loan to Deposit Ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

7. Does Total Asset Turnover (TATO) have a partial effect   on loan to deposit ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

8. Does LR, COF, LAR, DAR, TETA, OPM, TATO impact have a joint   effect on Loan to Deposit Ratio (LDR) in Mixed Bank Period 2010 (Q1) – 2015 (Q4)?

LITERATURE REVIEW

Bank

According to Law No.7 of 1992 on banking as amended by Law No. 10 of 1998 article 1 number 2 banks are: "Banks are business entities that raise funds from the public in the form of deposits and distribute them to the public in the form of credit or other forms in order to improve the living standards of many people".

According to   Kasmir (2007:11), "Bank is a financial institution whose main activity is to raise funds from the community andre-channel the funds to the community and provide other bank services." Bank Campuran, which is a bank whose shareholding is owned by foreign parties and national

private parties. Where the majority of its shares are held by Indonesian citizens. (Cashmere:2008,29)

Through its intermediation function, banks are able to raise funds from the overfunded and channel them to those who need funding so that they can be utilized for productive activities in the real sector. With this intermediation process, bank plays an important role in the mobilization of public fund to be rotated as one of the main sources of financing for the business world, both for investment and production, in order to grow the economy (Nainggolan, 2009).

Loan to Deposit Ratio (LDR) is a ratio that compares the amount of credit channeled by the bank and the funds collected by the bank. (Febrianto :2013) As with the company, the bank must also increase its liquidity, but if in measuring the liquidity of the company *using current ratio* or acid *test ratio,* the bank uses with LDR ratio. if the result of the LDR measurement shows a low number then the bank is in a state of idle *money* (excess liquidity) so that the bank loses its fore   dimensions to get a bigger profit. The size of LDR follows the development of Indonesia's economic condition, and since the end of 2001 the bank is considered healthy if the size of LDR is between 80 percent to 110 percent (Febrianto, 2013).

In addition to the highly competitive banking industry, the determination of credit interest rates becomes a very strategic competitive tool. Banks are expected to be able to control lower lending rates compared to other banks. According to (Dendawijaya,2000:105) the policy of determining the interest rate of credit should pay attention and analyze the components that determine the interest rate of the loan is as follows:

1. Cost of Fund
2. Overhead Cost

In addition, deposit rates and credit rates are a reflection of demand and supply, increase or decrease in interest rates in addition to being influenced by external conditions also influenced by the internal condition of a company. If the company is in bad financial condition it will raise the deposit rate to obtain funding from the public. Meanwhile, rising lending rates can be a strategy for banks to be able to increase their operating income from that interest income.

Hypothesis

Based on the formulation of problems, objectives, theory of previous research and research methods, the hypotheses in this study are:

H_1: Lending Rate has positive effect on Loan Deposit Ratio

H_2: Cost of Fund has positive effect Loan Deposit Ratio

H_3: Loan to Asset Ratio has positive effect Loan Deposit Ratio

H_4: Debt to Asset Ratio has positive effect Loan Deposit Ratio

H_5: Total Equity to Total Asset has positive effect on Loan Deposit Ratio

H_6: Operating Profit Margin has negative effect on Loan Deposit Ratio

H_7: Total Asset Turnover has negative effect Loan Deposit Ratio

H_8: LR, COF, LAR, DAR, TETA, OPM, TATO have a significant effect simultaneously effect on the Loan Deposit Ratio

METHODS

The design of the research in this thesis is causality research which is a study whose observations are conducted to test the influence of independent variables on dependent variables. In this study, the influence that will be studied is the influence of LR, COF, LAR, DAR, TETA, OPM and TATO on loan to deposit ratio. This type of research in the thesis uses quantitative research. Quantitative research method is one type of research that specifications the design of research (Sugiyono, 2012). Research Objects. The objects of research in this thesis are LR, COF, LAR, DAR, TETA, OPM and TATO as independent variables (variable x) Loan to Deposit Ratio are dependent variables (variable y www.bi.go.id). _. Population and Sampling Techniques. The population is the entirety of the research object. The population in this study was the Mixed Bank group in Indonesia from 2010 to 2015 of 15 banks. The selection of samples in this study uses *purposive sampling method,* i.e. sample selection method in certain criteria (Emory Cooper in Ariyanti,2005). The criteria of this research sample are:

a. Banking companies in Indonesia that have been registered with Bank Indonesia that report finance and are listed on Indonesian Central Bank website for the period 2010 – 2015.

b. Remained active in the Indonesian Banking industry from 2010-2015.

Data Analysis Techniques
Data Panel Estimation Model

The data analysis method used in this study is a method of quantitative data analysis. Quantitative data analysis method is used because this research will analyze the problems that will be realized with a certain value. The study will also use the panel's data regression analysis technique. Then the data panel regression model can be formulated with (Nachrowi and Usman,2006):

$$Y_{it} = \alpha + BX_{it} + \varepsilon_{it} \quad I = 1,2,3 \ldots, N; t = 1, 2, \ldots, T \quad \ldots\ldots (3.1)$$

Description: N = Number of observations

T = the number of times

N x T = number of panel data

According to Nachrowi and Usman (2006), to estimate model parameters with data panels, there are several techniques that may be used namely, common effect model, fixed *effect, and random effect*

RESULTS

t Test (Partial Test)

To answer questions from the formulation of the problem requires a statistical test. Therefore, a partial test with a t-test aims to find out how far independent variables influence individually in explaining variations in independent variables. Here's a summary of the hypothetical results:

Table 1. Summary of Hypothetical Results

Variable	Hypothesis		Test Results		Conclusion
	(+/-)	Significant	(+/-)	Significant	
LR	-	Significant	+	insignificant	Rejected
COF	+	Significant	-	insignificant	Rejected
LAR	+	Significant	+	Significant	Accepted
To give	-	Significant	-	Significant	Accepted
TETA	+	Significant	-	Significant	Rejected
OPM	+	Significant	+	insignificant	Rejected
Tato	+	Significant	+	insignificant	Rejected

H1: ***LR has a significant negative effect on LDR Mixed Bank***

The first hypothesis regarding LR, it is known that the coefficient value of .0295034 indicates that LR has an insignificant positive effect on LDR. This positive result shows that the increase in LR of 1% and other factors is considered constantly lowering the liquidity of banking

91

companies projected with LDR by 0.0029%. The insignificant value of the LR variable is 0.701, where this value is greater than 0.05 with a 95% confidence level so it can be said that the LR variable proved to have no significant effect on LDR.

The results of this regression analysis showed that LR was not shown to have a significant positive effect on LDR which was not in line with the proposed hypothesis which is a significant negative, so it can be concluded **that the first hypothesis (H₁) was rejected.**

H_2: *COF has a significant positive effect on LDR Mixed Bank*

The second hypothesis regarding the COF variable, it is known that the coefficients value of -.4422661 indicates that COF negatively affects LDR. This negative result indicates that a 1% increase in COF and other factors considered constant will decrease the liquidity of banks proxies by LDR by 0.0044%. The value of the COF variable is 0.494, which is greater than 0.05 with a trust level of 95% so it can be said that the COF variable proved to have no significant effect on the LDR.

The results of this regression analysis show that COF has not been shown to have a significant negative effect on LDR which is not in the direction of the proposed hypothesis which is a significant positive, so it can be concluded **that the second hypothesis (H₂) was rejected.**

H_3: *LAR has a significant positive effect on LDR Mixed Bank*

The third hypothesis regarding the LAR variable, it is known that the coefficients value of 1.353618 indicates that lar has a positive effect on LDR. This positive result indicates that an increase of LAR of 1% and other factors considered constant will decrease the liquidity of banks projected with LDR by 0.0135%. the significant value of the LAR variable is 0.0000, where this value is smaller than 0.05 with a trust level of 95% so it can be said that the LAR variable proved to have a significant effect on the LDR. The results of this regression analysis showed that LAR proved to have a significant positive effect on LDR in the direction of the proposed hypothesis which is a significant positive, so it can be concluded **that the third hypothesis (H₃) is accepted.**

H_4: *DAR has a significant negative effect on LDR Mixed Bank*

The third hypothesis regarding the DAR variable, it is known that the coefficients value of -2.401739 indicates that DAR negatively affects LDR. This negative result indicates that an increase of DAR of 1% and

other factors considered constant will decrease the liquidity of banks projected with LDR by 0.0240%. The significant value of the DAR variable is 0.0000, where this value is smaller than 0.05 with a trust level of 95% so it can be said that DAR variables prove to have a significant effect on LDR.

The results of this regression analysis show that DAR proved to have a significant positive effect on LDR in the direction of the proposed hypothesis which is a significant positive, so it can be concluded **that the third hypothesis (H_4) is accepted.**

H_5: TETA has a significant positive effect on LDR Mixed Bank

The fifth hypothesis regarding the TETA variable, it is known that the coefficients value of -1.36235 indicates that TETA negatively affects LDR. This negative result indicates that a 1% increase in TETA and other factors considered constant will decrease the liquidity of banks proxies with LDR by 0.0136%. The significant value of the TETA variable is 0.0000, where this value is smaller than 0.05 with a trust level of 95% so it can be said that the TETA variable proved to have a significant effect on LDR.

The results of this regression analysis showed that TETA was not shown to have a significant negative effect on LDR which was not in line with the proposed hypothesis which is a significant positive, so it can be concluded **that the fifth hypothesis (H_5) was rejected.**

H_6: OPM has a significant positive effect on LDR Mixed Bank

The sixth hypothesis regarding the OPM variable, it is known that the coefficients value of .1395487 indicates that OPM has a positive effect on LDR. This positive result shows that an increase in TETA of 1% and other factors considered constant will decrease the liquidity of banks projected with LDR by 0.00139%. The significant value of the OPM variable is 0.214, which is greater than 0.05 with a 95% confidence level so it can be said that the OPM variable proved to have no significant effect on LDR.

The results of this regression analysis showed that OPM was not shown to have a significant positive effect on LDR which was not in the direction of the proposed hypothesis which is a significant negative, so it can be concluded **that the sixth hypothesis (H_6) was rejected.**

H_7: *TATO has a significant positive effect on LDR Mixed Bank*

The seventh hypothesis regarding the TATO variable, it is known that the coefficients value of .1444568 indicates that TATO has a positive effect on LDR. This positive result shows that a 1% increase in TATO and other factors considered constant will decrease the liquidity of banks projected with LDR by 0.00144%. The significant value of the TATO variable is 0.642, where this value is greater than 0.05 with a 95% confidence level so it can be said that the TATO variable proved to have no significant effect on LDR.

The results of this regression analysis showed that TATO was not shown to have a significant positive effect on LDR which was not in the direction of the proposed hypothesis which is significant negative, so it can be concluded **that the seventh hypothesis (H_7) was rejected.**

Test F (Simultaneous Test)

Test F is used to test the developmental influence of LR, COF, LAR, DAR, TETA, OPM and TATO as independent variables that influence the development of LDR as dependent variables together (simultaneously). Simultaneously the influence of LR, COF, LAR, DAR, TETA, OPM and TATO growth as independent variables on LDR growth as dependent variables.
it can be seen that the value of F-calculates 154.66 > F of the table which is 2.14 with a significant value of 0.000 < 0.05. It can be concluded that simultaneously there is a significant influence between growth variables LR, COF, LAR, DAR, TETA, OPM and TATO as independent variables on LDR growth in mixed banks during the period 2010 – 2015.

Determination Coefficient

The determination coefficient (R^2) aims to find out how much the ability of independent variables explains dependent variables. In this case the results of the determination coefficient (R^2) are in the following image:
, the number R square (R^2) on the table is 0.2527. The figure is used to see the large influence between growth variables LR, COF, LAR, DAR, TETA, OPM and TATO as independent variables on LDR growth in mixed banks during the period 2010-2015.
By calculating coefficients determination (R^2) using the following formula:

$R^2 = r^2 \times 100 \%$

$$= 0{,}2527 \times 100 \%$$
$$= 25{,}27\%$$
$$= 1 - R^2$$
$$= 1 - 25{,}27 \%$$
$$= 74{,}73 \%$$

This means that the development of LR, COF, LAR, DAR, TETA, OPM and TATO as independent variables influenced the development of LDR in mixed banks during the period 2010 – 2015 by 25.27% while the remaining 74.73% was influenced by other variables outside the regression model studied.

DISCUSSION

Effect of Lending Rate on Loan to Deposit Ratio

Based on the analysis of data testing and hypothesis testing that has been done in this study, it can be known that Lending Rate has a very significant positive effect on the Loan to Deposit Ratio. The results of this study are the same as the results of research conducted by (Arif Lukman 2013), but contrary to research conducted by Nasiruddin (2005) which stated LR has a significant negative effect on LDR. The results also showed that rising lending rates resulted in increased liquidity levels. whereas it should be, rising lending rates will affect the decrease in liquidity levels because the higher the lending rate provided by banks, the public tends to be reluctant to borrow and money marketed by banks looks expensive so that the money stored in the bank is not trusted by the public and will have a decrease in the liquidity level of the bank.

The relationship between rising lending rates has an insignificant positive effect on the loan to deposit ratio due to the supply of funds owned by banks but not productive, while loan to deposit ratio positions increase. It should be with a high LDR position due to low credit interest rates so that public interest increases to make loans to banks. Therefore, the increase in LR has no effect on the height of LDR.

Effect COF on LDR

Based on the analysis of data testing that has been done in this study it can be known that *the Deposit Rate (Cost of Funding)* has a negative effect insignificant. On the Loan to Deposit Ratio. The results of this study contradict research conducted by Maher Odeh (2013) which stated COF

had a significant positive effect on LDR. The results showed that lower deposit rates resulted in increased liquidity levels. In fact, the decrease in deposit rates will affect the decrease in liquidity level due to the decrease in the deposit rate given by the bank to the public, it will decrease the public interest to save in the bank. So, the bank cannot maximize profit and inventory for short-term activities.

The relationship between rising cost of funds or significant negative effect on loan to deposit ratio is due to the high interest rate of loans leveled by banks, because deposit rates and loan rates each affect each other. If the credit rate is high then the savings rate automatically decreases. Similarly, Keynes Theory is that high interest rates are determined by demand and supply of capital. Therefore, the decline of COF has no effect on the height of LDR.

Effect of LAR on LDR

Based on the analysis of data testing that has been done in this study it can be known that Loan to Asset Ratio (LAR) has a significant positive effect. On Loan to Deposit Ratio. The results of this study show that the rise of LAR resulted in increased liquidity levels. The results of this study are similar to those conducted by Suwarsi Aqidah Asri (2009), but contrary to research conducted by Fredrick Oglio (2015) which stated LAR had a significant negative effect on LDR.

The relationship between the increase in LAR or the significant positive effect on the loan to deposit ratio is due to the availability of third-party funds stored in the bank derived from deposit savings that are allocated within the company's assets sufficient to be able to channel credit. Therefore, with the increase of LAR can affect the height of LDR.

Dar's influence on LDR

Based on the analysis of data testing that has been done in this study it can be known that Debt to Asset Ratio (DAR) has a significant negative effect. On Loan to Deposit Ratio. The results of this study are similar to the results of research conducted by Zen (2012), but contrary to research conducted by Anna Safitri (2013) which stated DAR had a significant positive effect on LDR.

The relationship between DAR's rise has a significant positive effect on the loan to deposit ratio caused by the debt held by the bank can be covered by assets owned in other words the debt decreases so that the ratio of financial failure also decreases. Therefore, with the decline of DAR can affect the height of LDR.

Effect TETA on LDR

Based on the analysis of data testing that has been done in this study it can be known that Total Equity Total Asset (TETA) has a significant negative effect on loan to deposit ratio. The results of this study also showed that the decrease in TETA ratio resulted in increased liquidity levels. whereas it should be, the decrease in TETA will affect the decrease in liquidity level because the proportion of capital itself is relatively lower compared to the assets held so that the company cannot meet its short-term obligations where this working capital is used to carry out the company's operations on a daily basis.

The relationship between declining TETA ratio has an insignificant negative effect on the loan to deposit ratio due to the reduced capital held by the bank making depositors less likely to decrease their interest in saving in the bank, as it is considered illiquid. Therefore, with the decline of TETA has no effect on the height of LDR.

Effect OPM on LDR

Based on the analysis of data testing and hypothesis testing that has been done in this study it can be known that OPM (operating profit) has a significant positive effect on LDR. The results of this study are the same as the results of research conducted by Antung (2016). The results of this study also showed that the increase in operating profit resulted in a high loan to deposit ratio. In general, high profits can increase the capital owned by banks which means it can increase sales by providing credit to customers. However, the rise in operating profit indicates a poor state, as the influence of every rupiah of sales absorbed in costs is also high.

The relationship between OPM has an insignificant positive effect on the loan to deposit ratio due to the resulting profit being used entirely to fund lending so that the bank does not have the availability of funds for the short term which means optimal profit conditions are not necessarily liquidity either. Therefore, with the increase of OPM has no effect on the height of LDR.

The Effect of TATO on LDR

Based on the analysis of data testing and hypothesis testing that has been done in this study it can be known that TATO has a significant positive effect on LDR. The results of this study also showed that the rise of TATO resulted in a high loan to deposit ratio.

The relationship between TATO positively effect is not significant because the higher the turnover of assets managed by the company, the better the effectiveness of the company using the overall asset to create sales and profit. But it has no effect because high profits are not necessarily liquidity either. Thus, the increase in TATO has no effect on the height of LDR

CONCLUSION

Based on the results of analysis and discussion, can be drawn some conclusions as follows:

1. LR growth had no significant effect on LDR growth at mixed banks in Indonesia from 2010 to 2015.
2. COF had no significant effect on LDR growth in mixed banks in Indonesia from 2010 to 2015.
3. LAR had a positive and significant effect on LDR growth at mixed banks in Indonesia from 2010 to 2015.
4. DAR had a negative and significant effect on LDR growth in mixed banks in Indonesia from 2010 to 2015.
5. TETA had a negative and significant effect on LDR growth in mixed banks in Indonesia from 2010 to 2015.
6. OPM had no significant effect on LDR growth in mixed banks in Indonesia from 2010 to 2015.
7. TATO had no significant effect on LDR growth in mixed banks in Indonesia from 2010 to 2015.

The advice given to Mixed Bank in Indonesia by referring to the results of this study is:

1. The increase in LR is worth noting because it will certainly reflect low liquidity as well as provide lower lending rates in order to optimize profit. in accordance with the role of the bank can become an intermediation institution by channeling credit.
2. The need to keep deposit rates in a positive position, in order to increase the public interest in saving in mixed banks and increase the availability of funds so that it is not liquid.
3. Declining TETA ratios need to be controlled, which means the bank has little capital and may cause banks to be unable to carry out short-term operations.
4. The increasing value of OPM is worth noting, because the profit earned is entirely used for lending. There needs to be an adjustment of the percentage scheme of lending in each month and pay

attention to the normal LDR limits set by BI. this is in anticipation of the inability to pay depositors' short-term funds.

REFERENCES

Adraian, T., Shin, H.S. 2008. Liquidity and financial contagion. *Financial stability Review, Banque de France*.

Aikaeli, J. 2006. Determinants of excess liquidity in commercial banks in Tanzania. Availableat:http://papers.ssrn.com/sol3/papers.cfm?abstract_id=971750

Alper, K., Hulager, T., Keles, T. 2012. An empirical study on liquidity and bank lending. *Working paper 1204*, Research and Monetary policy department, Central Bank of the Republic of Turkey.

Aris tanto, Eko. 2005. Review of Liquidity and   Profitability of Government Banks Pemerintah (SOEs) in Indonesia period 2003-2004. Journal of Finance and Banking   Year IX No. September 3rd: 837-848

Arellano, M., Bover, O. 1995. Another look at the instrumental variables estimation of errorcomponents models "Journal *of Econometrics*, 68, 29-52.

Arif Lukman Hidayat, Tito Pinandita, 2013, Sistem Pendukung Keputusan Evaluasi Kenerja Karyawan Untuk Promosi Jabatan Struktural Pada Bimbingan Belajar Sciencemaster Menggunakan Metode GAP Kompetensi (Profile Matching), Jurnal Teknologi Technoscientia, Vol.5 No.2 Februari 2013, ISSN: 1979-8415

Ayadi, N., Boujelbène, Y. 2012. "The determinants of the profitability of the Tunisian deposit banks" *IBIMA Business Review*, 1-21. based on the financial instability hypothesis. Available at: www.researchonmoneyandfinance.org/media/ papers.

Berger, A.N., Bouwman, C.H.S. 2009. Bank liquidity creation. *Review of Financial Studies*, 22,3779-3837.

Bessis, J. 2009. Risk management in banking. Chichester John Wiley et Sons.BIS (2008) Principles for sound liquidity risk management and supervision. *Basel Bank for International Settlements*.

Blundell, R., Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87, 115-143.

Bordelau, E., Graham, C. (2010) The impact of liquidity on bank profitability. *Working paper* 38, www.bankofcanada, December, p. 3-22.

Chagwiza, W. 2014. Zimbabwean commercial bank liquidity and its determinants. *International Journal of Empirical Finance*, 2(2), 52-64.

Dornbus, R. and Fischer, Stanley. 1997. *Macroeconomics*. Rineka Cipla: Jakarta.

Mishkin, Frederic S. 2013. The Economics of Money, Banking, and Financial Markets, *10th edition, Pearson*.

Francisca and Siregar, 2009. Testing the Effect of Internal Bank Factors on Credit Volume. *USU* Management Program Thesis.

Febrianto, Dwi Fajar dan Muid Dul. 2013. Analisis Pengaruh Dana Pihak Ketiga, LDR, NPL, CAR, ROA dan BOPO Terhadap Jumlah Penyaluran Kredit. Universitas Diponegoro. Journal of Accounting, Vol. 2 No.4: 1 – 11

Hamadi, H., Awedh, A. 2012. The determinants of bank net interest margin: evidence from thelebanese banking sector "Journal *of Money, Investment and Banking*, 23, 85-98.

Hermawan, Jaka. "Effect of Rentability and Solvency on Liquidity in Public Banking Companies", USU Thesis of North Sumatra, 2009. Publik

Hersugondo & Handy Setyo Tamtomo,2012. "Influence of CAR, NPL, DPK and ROA on Indonesian Banking LDR, 2006-2009". Journal of Stikubank Semarang.

Heffernan, S. 2005. "Modern banking "John *Wiley and Sons Li*mited.

Hovarth, R., Seidler, J., Weill, L. (2012) Bank capital and liquidity creation: Granger –causality evidence. *Working paper*, n°1497, November, p.3-30.

Kamau, N. P, Erick, O.M, Murithi, J.G. (2013) Factors influencing liquidity level of commercial banks in Kisumu city Kenya.Vol 2, May, *International Center for Business Research*, p.1-13.

Kasmir. 2007. Dasar – Dasar Perbankan. Jakarta: PT. Raja Grafindo Persada.

Khrawish, H.A. 2011. Determinants of commercial bank performance: Evidence from Jordan. *International Research Journal of Financial and Economics*, 5(5), 19-45.

Kristijadi,E. and Laksana, Krisna Bayu. 2006. "Effect of Deposit Growth, Pertumbuhan Deposit Growth from Other Banks, SBI and CAR Interest Rates on Credit Growth in Government Banks". Pemerintah Compact. Vol. 13. Vol. 1, p.249-264

Latumaerissa, Julius R, 2011. Bank dan Lembaga Keuangan Lain. Salemba Empat: Jakarta.

Lartey, V.C., Antwi, S., Boadi, E.K. (2013. The relationship between liquidity and profitability oflisted banks in Ghana. *International Journal of Business and Social Sciences*, 3, 48-56.

Lestari, Maharani Ika and Toto Sugiharto. 2007. Performance of Foreign Exchange Banks and Non-Foreign Exchange Banks AndFactors That Affect It. Proceeding PESAT (Psychology, Economics,Literature, Architects & Civil). August 21-22 Agustus, Vol.2. Faculty ofEconomics, Gunadarma University.

Lei, A.C.H, Song,.Z. (2013) Liquidity creation , bank capital structure, bank performance in China. *Global finance Journal*, 24(3), 188-202.

Lukman, Dendawijaya. 2000. Manajemen Perbankan. Ghalia Indonesia: Jakarta

Lukorito, S.N, Muturi, W, Nyangan, A.S, Nyamasege, D. 2014. Assessing the effect of liquidity on profitability of commercial banks in Kenya. *Research Journal of Finance and Accounting*,5(19), 145-152.

Mankiw, N Gregory. 2007, Macroeconomics,Jakarta: Erlangga Publisher.. Penerbit

Manurung, M., and Primary R. 2004. Money, Banking,and Monetary Economics (Indonesian Contextual Study). FEUI Penerbit Publishing House. Jakarta.

Malik, M.F, Obiakor, R.T, Okw, A.T. 2011. Investigating liquidity profitability relationship inBusiness organisations of the Tunisian banking industry profitability: Panel evidence.www.mafhoum.com

Mongid, Abdul. 2008. "The Impact of Monetary Policy on Bank Credit During Economics Crisis: ndonesia Experience". *Journal of Finance* and *Banking,* Vol. 12 No.1, p. 13. hal 100-110.

Nachrowi, D.Mphil dan Usman Hardius. 2006. Pendekatan Popular Dan Praktis Ekonometrika Untuk Analisis Ekonomi Dan Keuangan. Lembaga. Jakarta: Universitas Indonesia

Nasiruddin, 2005, "Factors Mempengaruhi Affecting Loan to Deposit Ratio (LDR) at Bank BPR Working Area of Bank Indonesia Semarang Office Periode 1998-2000. Journal. University of South Africa.

Nandadipa, Seandy. 2010. Analysis Pertumbuhan Analisis of The Influence of CAR, NPL, Terhadap Inflation, DpK Growth, and Exchange Rate on LDR (Case Study on Commercial Banks in Indonesia Period 2004-2008). *Thesis.* Faculty of Economics Diponegoro University. Semarang.

Nordhaus, William D. Samuelson, and Paul A 2004.Macroeconomic Sciences.Media Global Dedication: Jakarta Nurfirman, Panji. 2001. Analysis of Rupiah Exchange Rate Movement against USDollar. *Thesis.* University of Indonesia.

Nuryani, Sri Hanifah,2007. Impact of Capital Market Development on Banking as a Financial Intermediation Institution, Thesis,UGM.

Ogilo, Fredrick dan Mugenyah, Oscar, Leonard. 2015. Determinants of Liquidity Risk of Commercial Banks in Kenya. The International Journal of Business & Management

Ongore, V.O, Kusa, G.B. 2013. Determinants of financial performance of commercial banks in Kenya. *Internationl Journal of Economics and Financial Issues*, 3(1), 237-252.

Haas, Ralph de, and Iman van Lelyveld ,2006. Foreign Banks and Credit Stability in Central and Eastern Europe: A Panel Data Analysis, *Journal of Banking and Finance* 30(7), 1927-1952.

Riyatno,M.Y and Dedi Haryanto. 2007. Effect of Bank Indonesia Certificate Interest Rate and Exchange Rate on The Systemic Risk of Company Shares in BEJ. *Journal of Finance* andBusiness, vol. 5, no.1, 24-40.

Ruslian, Cahyo, Sandy. 2015. Analisis Faktor – Faktor Yang Mempengaruhi Likuiditas Pada Bank Campuran Konvensional Tahun 2010 – 2014. Skripsi. Universitas Negeri Surabaya

Santoso, Lukman, Arif dan Sukihanjani, Tekad. 2013. Analisis Faktor – Faktor Yang Mempengaruhi Likuiditas Perbankan Di Indonesia.

Salvatore, Dominick. 1997. International Economy. Erlangga: Jakarta.

Siamat, Dahlan,2005," Management of Financial Institutions Keuangan ", Fifth Edition,Jakarta Edisi :Facultyof Economics University of Indonesia.

Siringoringo, R. 2012. Characteristics and Functions of Banking Intermediation in Indonesia. Bulletin of Monetary and Banking Conomydom, Perbankan62-83.

Sugiyono. 2012. Memahami Penelitian Kuantitatif. Bandung: ALFABETA

Suwarsi, Asri, Aqidah. 2009. Pengaruh Loan to Assets Ratio, Rate of Return on Loan Ratio, Capital Adequancy Ratio, dan Non-Performing Terhadap Penyaluran Pembiayaan. Jurnal Universitas Muhadiyah Magelang

Utari, Mita Puji,2011. "Analysis of the Influence of CAR, NPL, ROA and BOPO Terhadap on LDR (Case Study at The National Private Public Bank of Foreign Exchange in Indonesia Periode Period 2005-2008)", Thesis, Diponegoro University,Semarang.

Pramono, 2006. "Effect of Capital, Liquidity, and Likuiditas Efficiency on Lending to PT Bank Rakyat Indonesia (Persero) Tbk. Period 2001-2005. Diponegoro Journal of Management, Vol. 1, Number 2, Year 2006, P. 13. 80-91.

Zen, Ihah Rosyihah (2012). Pengaruh Capital Adequacy Ratio (CAR), Non-Performing Financing (NPF), Debt to Total Asset Ratio (DTAR) dan Dana Pihak Ketiga (DPK) terhadap Penyaluran Pembiayaan. Studi Kasus di BMT Al Falah Kab. Cirebon. Skripsi. FSH-UIN Sunan Kalijaga.