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DIREKTUR JENDERAL KEKAYAAN INTELEKTUAL

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Banking Strategy to Overcome Decline in Credit Growth

If credit growth goes down continuously and is not controlled, banking will enter the credit crisis. If this condition lasts long, it will increase the interest rate, reduce investment and increase unemployment. For banks, more difficult to provide credit, increasing bad loans and reducing banking performance. Whereas for companies that conditions will make it difficult to obtain financing and make an expansion. This phenomenon of a decline in credit growth has occurred in Indonesia in the period of 2012-2016. To overcome the problem above this book provides a solution through the Blue Economy approach and multivariate analysis to enable sustainable credit growth. This book provides a different solution to conventional approaches. Learning from the Indonesian case, this book explains how to determine the banking of a country experiencing a credit crisis?. What causes it?. What are the managerial implications?. What should be done by the Central Bank, Financial Services Authority, banks, and companies to overcome this problem?. Therefore, this book is useful as a reference so it must be owned by students, bankers and anyone who wants to improve the ability to analyze banking.

Zainul Kisman is a lecturer and researcher in Universitas Trilogi (Jakarta-Indonesia), where he has devoted 90 percent of his practice to Corporate Finance, Banking, and Capital Market for the last twenty years. He has extensive experience in innovative financing and investment. His recent activities include collaborating with professional.

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Zainul Kisman

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“ This book is useful as a reference for students, bankers , professional and the public”

Banking Strategy to Overcome Decline in Credit Growth

H O W T O I M P R O V E Y O U R
A B I L I T Y T O A N A L Y Z E
B A N K I N G A N D M O N E T A R Y .

by Dr Zainul Kisman – Universitas Trilogi- Jakarta - Indonesia

DEDICATION

To my family and colleagues, who encouraged my curiosity
and have always supported my aspirations.

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Banking Strategy to Overcome Decline in Credit Growth

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Executive Summary

Whether or not, a bank grows depends on its credit growth. Unfortunately lately there is a tendency the monthly growth of bank credit in Indonesia has decreased. If this tendency is ignored this problem is feared will enter into the problem of the credit crunch which is more difficult to solve. It will affect the growth and health of the bank itself, the increasingly expensive cost of corporate capital, worsening business performance, slower economic growth and declining living standards. In connection with this issue, this reference book wants to discuss and draw up a model by using multivariate statistical analysis approach to determine the variables that affect the growth of the bank credit declined to follow Kisman's research (Kisman, 2017). Then offer solutions to achieve sustainable credit growth using Blue Economy way or approach. In general, for all models which are used in this study, almost all the variables such as Deposit Growth, lagged GDP Growth, Inflation and lagged BI (central bank) rate consistently significant influence on Credit Growth (2012M1 - 2016M12), except Liability to Non-resident Growth is not significant but the sign of regression coefficient is consistent. The recommended model has a goodness of fit and can be reliable to recommend a policy to improve decline in credit growth become sustainable because it is consistent with previous research, logic, meet the principles of blue economy, supported by a strong banking theory, R2 moderate, not no serious autocorrelation problem (best linear unbiased estimator). Almost all variable when tested individually or simultaneously significant. Based on the consideration above, mentioned models can be used as a model for improving credit growth in Indonesia which lately decline become sustainable. Furthermore, this study provides the policy implications especially for monetary and banking policy in Indonesia and generally for developing countries who face the same problem.

Keywords : Banking Strategy, Credit Growth, Sustainable Growth, Blue Economy, Multivariate

I. INTRODUCTION

I.1. Introduction and research rationale

Kisman on his previous research (Kisman, 2017) notes the importance of banks' role in mobilizing the economy and has been widely discussed by experts and written in several works of literature. All agree the bank plays a role in collecting funds from the community and lending money back in the form of credit. In lending money, many factors which are considered by bank such as interest rates, inflation, GDP and credit growth and also the health of the bank such as net interest margin (NIM), nonperforming loan (NPL) and capital adequacy ratio (CAR). The banks should care about these variables in its credit policy. So that the bank can grow, improve the living standard of society, business performance and economic growth.

Because there are many changes in a highly dynamic environment. Anyone can not guarantee that the policy prevailing at the given time will be valid also at another time. It might apply to a certain place or territory will not also apply to other regions. So, no general models or policies that apply universally (Kisman,2016) to resolve corporate problem including bank problems regarding both funding and lending.

Regarding the function of banks as creditors, commercial banks or central banks are often worried about why the growth of domestic bank credit is too fast. If this condition is not well controlled will result in the country's economy will become hot. As a result, will disrupt the economic stability. Control of credit growth will also be difficult, if too slow then the business world and the economy do not grow properly. Because of this dilemma, it is necessary to balance the potential for conflict that may arise. As a result, banks and their communities are always required to observe the growth of banks, especially credit or loans.

It also needs attention if the credit policy which is decided can be beneficial for corporate, business and economy. So credit, not only seen from the point of banking interests only. The problems above are only some of the issues that should be considered before the credit policy was decided. It looks that real problems above is easy for the bank to resolve it but some are harder to solve because of the emergence of a dilemma as described before.

Until now, the issue of credit policy and its growth is an important problem which is received much attention from researchers, owners, managers, investors, borrowers, central banks and other stakeholders. They try to solve the problems with formulating new theories and models in order to explain the behavior of bank loans and its growth. Even many banking experts and researchers previously claimed this credit issue as a problem of confusing. In certain areas, a variable is considered to affect lending and growth, while in other regions had no influence which is known as a research or concept gap. In certain areas and certain year when researched has an effect while in other region had not. What did happened and change in the community? All problems or question needs to find the answer through good research. One of the main goals of this study was to determine the factors that influence or to be considered when a bank or central bank wants to control the growth of bank credit.

Until now, the debate on credit growth and theoretical models still unsolved. Most of the debate was based on a study of the banking system in the developed country. Very few studies about this problem in developing countries. Especially in Indonesia. What if the research was conducted in emerging markets such as Indonesia. It should be noted that there are differences in the behavior of banking in emerging markets compared to developed countries where the banking system has been advanced and more liberal. While in developing countries is not possible full liberalization.Consequences as happened in Indonesia after banking deregulation. In developing countries, debtors are more small companies and medium enterprises, which generally is a company engaged in the informal sector. Unlike in developed countries, debtors are is a mid-sized company and large business entity in which legality is more clear. As a result, banks will be different behavior in developed countries compared to developing countries such as Indonesia in lending money. If lending too much emphasis on security and legality of it will result in lack of credit channeled and only a few companies that get credit. Too loose lending will cause the number of troubled loans.

Unlike in the developing countries, there are easier in the selection of debtors in developed countries because debtor whose legal status is clearer and the information needed easier to find. Besides a large number of depositors and amount saved and then market information widely available and easy to obtain. As a result, the cost of funds is lower compared to a developing country. So that credit growth can be increased to the level of security which is better than in the developing countries. Because of these differences is one of consideration and encouraging to do this research about credit growth decline (if not yet called credit crunch) recently in 2016 and its problems in Indonesia.

A credit crunch is situations where a waiver declining credit growth. At that situation where credit growth down to a very deep where there is a gap between the supply of funds available in the credit market that is lower compared with the demand for financing, so in that situation it difficult for corporate to obtain financing. In the credit crunch situation, financial institution especially banks have limited funds available for credit or more unwilling to lend money for any reason. As a result, will increase the cost of borrowing and many borrowers difficult to get a loan or repay it. Other consequences, increasing non-performing loans.

Declining credit growth in conventional banking, especially in countries affected by the financial crisis is an interesting study. For policymakers, this is necessary in order to overcome the limited credit in the process of economic recovery. Although from the various studies that have been carried out, it take conclusion that there has been a decline in credit in Asian countries since global financial crisis 2008, but the causes of the decline are still into question, whether caused by weakening of demand due a post-crisis recession or because of credit offerings by banks decreased.

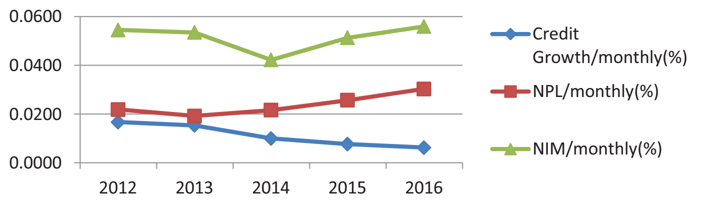
If the decline in loan growth is ignored it will change more severely that is a credit crunch. It has an effect on the business failures and worsening the quality of bank lending and financial crisis. When the phenomenon of this credit crunch is left continuously it will interfere with company growth especially the growth of the real sector. For Central Bank, the credit crunch has implications for effective monetary control.

In general, when the credit crunch happens it will be bad for the economy. Economic growth slows as capital liquidity diminishes and declines in the ability of banks to provide credit. Business expansion is hampered and even more dangerous many corporations are bankrupted if the problem is followed by a recession. This is the main reason why it should be concerned about the decline in credit growth and need to find an appropriate model to address this problem as the study will do.

Related to the above problem, this research aims to draw up a model to determine the variables that affect the growth of the bank credit declined by using macro data as well as micro. This reference book is a continuation of previous research from my article entitled Model For Overcoming Decline In Credit Growth (Case Study Of Indonesia With Data Time Series 2012M1-2016M12) and uses data from that study. Unlike this research, this reference book looks for solutions to problems and variable selection using a combination of banking science and blue economy principles. In this way, it is hoped that in the future there will be sustainable credit growth.

I.2. Current Credit Quality Problems in Indonesia.

Figure 1 :Performance of Commercial Banks in Indonesia



Source: Central Bank of Indonesia

Banks will be difficult to develop when credit growth declines as experienced banking in Indonesia from 2012 to 2016. Figure 1 above shows that in 2012, the growth of banking loan in Indonesia is around 1.67% per month and its growth trend from year to year has decreased to 0.62% in 2016. If we observe the Indonesian banking lately at least in those years, statistics will continue to increasingly tight credit growth.

The decline or slow down in credit growth is caused indirectly by the increase in nonperforming loans (NPL). By banks, loans are classified as not performed if the debtor starts not smoothly pay the installment until the category of a stop at all. In the case of Indonesia, from Figure 1 above shows that NPL of the bank in Indonesia from 2012 to 2016 has increased. In 2012 NPL per month at that time around 2.18% while in 2016 NPL per month has increased to 3.03%.

According to the Central Bank of Indonesia regulation, if bank NPLs continue to increase, banks are required to increase the reserves of their earning assets to overcome credit risk. The addition of reserves will reduce the ability of banks in the distribution of credit and will ultimately lower profitability and bank soundness. According to the central bank data, bank profitability measured by ROA (return on asset) in 2012 that is 3.11% and continues to decline to 2.32% in 2016 in line with Increase in NPL and decline in credit growth. As a result, Indonesia's economic growth slows down in 2016, especially in September 2016 until December 2016 the growth is negative (decline). In December 2016, real economic growth GDP (constant price 2010) was - 1.69 %. Although it must be acknowledged this weakness is also due to the influence of not improving economic China, America, Europe, and Japan.

The slow down of bank credit growth is also partly due to the bank's maintaining net interest margin, which is a widening saving interest rate and loan interest rate of 4.22% per month in 2014 to 5.99% in 2016 (figure 1). The likelihood of banks maintaining NIM remains high in the framework of the bank's strategy to withstand an increasing ROA. However, this strategy gives a bad effect on the growth of bank credit. The reluctance of banks to distribute the credit is reflected in the increasing NIM.

Controlling the growth of this credit is important and will also be difficult because there is a trade-off. If too fast it is not good because it will increase the NPL, reduce profitability and encourage the economy becomes hotter. As a result, disrupt macroeconomic stability as well as increased inflation and current account deficit. If too slow, it will reduce growth. Because of this dilemma need to balance the potential for conflict that will arise. As a result, banks and the banking community always need to observe the growth of banks, especially credit.

The issue of credit policy, as well as its growth, is a bank problem that continues to get a lot of attention both from the researchers, owners, managers, investors, borrowers, central banks and other stakeholders. They are trying to solve the related problems surrounding this decision by formulating new theories and models in order to explain the behavior of bank credit and its growth. In fact, for a long time, many banking experts and former researchers have expressed this credit problem as a puzzle. In certain areas, a variable is considered to affect credit and growth while in other regions have no effect. In certain areas and certain years have an effect, whereas if examined in other years in the region did not have a significant effect. What changes have occurred in the community? All of these problems or questions need to be resolved through good research.

Related to the problem of this research that is the decreasing of credit growth so that one of the main purpose of this research, building model to know the variables that influence the decreasing growth of bank credit in Indonesia as in 2012-2016.

Until now the debate about credit growth and a theoretical model is still unsolved. Much of the debate is based on research on an advanced banking system in the developed country. It is very limited to research this issue in developing countries. Especially in Indonesia. What if the research was done on an emerging market like Indonesia. It should be noted that there are differences in the behavior of financial institutions, especially banks in emerging markets compared to those in developed countries where the banking system is already developed and more liberal (Kisman, 2016). While in developing countries is not possible full liberalization. Consequences as happened in Indonesia after banking deregulation 1983 and 1988. In developing countries, debtors are more small companies and medium enterprises, which generally is a company engaged in the informal sector. Unlike in developed countries, debtors are is a mid-sized company and large business entity in which legality is more clear. As a result, banks will be different behavior in developed countries compared to developing countries such as Indonesia in credit disbursement. If lending money too much emphasis on security and legality of it will result in lack of credit channeled and only a few companies that get credit. Too loose lending will cause the number of troubled loans.

Unlike in the developing countries, there are easier in the selection of debtors in developed countries because debtor whose legal status is clearer and the information needed easier to find. Besides a large number of depositors and amount saved and then market information widely available and easy to obtain. As a result, the cost of funds is lower compared to a developing country. So that credit growth can be increased to the level of security which is better than in the developing countries. Because of these differences is one of consideration and encouraging to do this research about credit growth and its problems in Indonesia.

The question is what are the factors that need to be considered in order to formulate a model of credit growth in Indonesia that has declined or slow down recently. What had been done in other countries, especially in developed countries are not necessarily appropriate in Indonesia. Fully imitating what banks in other developing countries may not be suitable. As for what Bank Indonesia had done in the past is not necessarily appropriate in the present. So that this study will conduct a review of the literature as a reference to select the variables to be used as a model. The model proposed to solve the problems above and make a recommendation to Bank Indonesia with Tatum Blaise Pua Tan (2012) and Kai Guo and Vahram Stepanyan model (2011) which is modified in accordance with the conditions of Indonesia and other literature that supports the model proposed for this study. In summary, this study wanted to find out what exactly the factors that influence credit growth in Indonesia which is a decline in recent years. So that can provide recommendations for the effort to encourage banking credit. Finally, banking can contribute to the welfare of society in general.

I.3. Objectives of the study

Based on the background and the problem of credit growth in Indonesia which is decline recently, this study aims to make model to overcome that problem by discuss and make empirically test the influence of Deposit Growth, Liability to Non-resident Growth, Inflation, Lagged GDP Growth and Lagged BI (Central Bank of Indonesia) rate to Credit Growth (2012M1-2016M12) using Kai Guo and Vahram Stepanyan and Tatum Blaise Tan Pua (as model 1: The benchmark specification). Because those variables based on previous studies allegedly affect credit growth.

Then model 1 was expanded to include NIM (Net Interest Margin) Lagged variables (model 2), NPL (Non-Performing Loan) Lagged variables (model 3), Credit Growth Lagged variables (model 4) as independent variables to see how they affect the credit growth. Then offer solutions to achieve sustainable credit growth by encouraging business running Blue Economy Principles .which have the contents among others: nature's efficiency, zero waste, social inclusiveness, cyclic systems of production, innovation, and adaptation. These principles are believed to make the company grow sustainability and result in the growing demand and supply of credit that will grow sustainably as well.

I.4 The benefits of this research

This study examines the causes of declining credit growth and sets models to address them and make recommendations. The benefits of this research for some parties as follows :

a) For banks: banks will know what variables cause the decline in credit growth and then in the future will be able to anticipate the improvement and make sustainable credit growth. Thus it will provide a recommendation to the bank regarding the innovations that need to be done in order to compete against other financial institutions. Give value added to what banks have. Disrupt by pioneering the most recent type of credit service (blue economy philosophy).

b) For Central Bank: Establish macro or monetary policies that are directed to the banking system so that credit can be recovered and banks can be maintained its credit growth at a certain rate or level.

c) For bank customers (corporates): information for future investment plans and able to make adjustments and create jobs. Changes reality for tomorrow.

d) For other researchers: information for selecting the right indicators in developing better models and improving the quality of research methodologies.

II. LITERATURE REVIEW

To discuss the problem of credit decline in the correct perspective, it is necessary to understand this problem from some of the earlier research as well as theories that guide how the research should be conducted as well as the discussion.

II.1.Definition.

The following sections below will explain the conceptual definition of credit decline and some simple theories to detect the existence of credit decline or credit crunch.

The term credit decline (credit slowdown) or which if ignored causes credit crunch (credit squeeze or credit crisis) is a form of disintermediation phenomenon which occurred when there is a decline in a large number of bank loans, might have been induced either by a decline in the supply or demand of credit or both (Lamberte, 1999). If credit decline or slowdown leads to a reduction in the available supply of credit which has been the monetary policy conducted by Central Bank. If this policy is very strict, it will raise short-term interest rates above deposit rates (net interest margin increase). As result, depositors withdraw their funds from banks to get higher interest rates on other financial assets so that banking deposits experienced a large decline that resulted in decline supply of credit.

II.2 Theory of Credit Decline (Credit Crunch)

Credit Decline (if it severe becomes credit crunch) may occur due to a decrease in demand or supply of bank credit. The decline in credits caused by demand factors is something common happened at the time of the ongoing recession, mainly because it is still a weak investment activity. On that situation, firms make an adjustment by reducing debt-equity ratios.

II.2.a. Theory of Credit Decline/ Crunch: Demand Side or Supply Side

Figures 2a illustrate the typical analysis of the credit decline from Demand Side: Decline in demand for a loan by business. In this framework, the quantity of credit demanded varies negatively with the cost of credit (interest rate).

Demand Side: Decline in demand for a loan by business

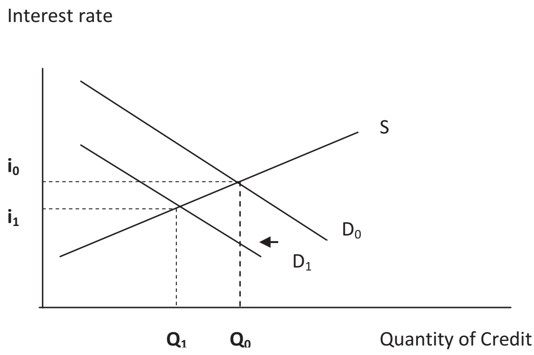


Figure 2a. Demand Side

The quantity of credit will fall from Q_0 to Q_1 if the demand for bank credit declines from D_0 to D_1 and excess supply occurs. After that, the interest rate will decline to a new equilibrium interest rate i_1. Demand for credit decline could be the result of a decline in business demand for working capital credit.

Supply Side: Decline in Supply of Credit (Reduced willingness to lend) by Banks.

Figures 2b illustrate the typical analysis of the credit decline/crunch from Supply Side: Decline in the supply of loan by banks. In this framework, the quantity of credit supplied varies positively with the cost of credit (interest rate).

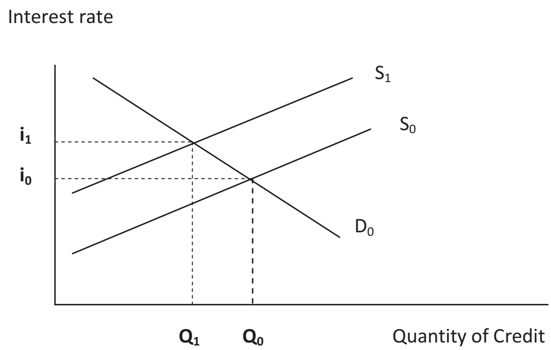


Figure 2b.Supply Side

On the supply side, the credit decline is due to the decline in bank willingness to provide loans at the prevailing interest rate. Factors that can cause a decrease in the desire to provide credit can be sourced such as low quality of banking assets, high non-performing loans and a drop in bank capital. if there is a reduced willingness bank to supply credit at a given interest rate. So the supply curve will shift upward to $S_{1.}$

Consequently, the market interest rate of credit will rise to i_1. Because at that position, there is a shortage of supply and quantity of credit will decrease to Q_1.

II.2.b. Credit Decline/Crunch or Asymmetric Information Hypothesis.

It is likely that banks do not have access or information which is perfect for credit markets. This condition is known as credit crisis hypothesis or better known as the credit crunch phenomenon. The credit crunch hypothesis is based on New-Keynesian assumptions. The New-Keynesian assumption states that basically financial markets such as credit markets, often do not work perfectly (imperfect market) especially in the presence of asymmetric information between market participants. So that, according to this hypothesis there is a tendency that the market is not always on balance (disequilibrium) where the supply of credit is not always the same as demand for credit. Therefore, this hypothesis presumes that credit crunch (credit growth) is allegedly due to an imbalance between credit demand and credit offer.

II.2.c. Liquidity Preference Hypothesis.

Liquid assets are easy-to-sell assets that can be converted into cash quickly. Liquid assets in banks include money market instruments such as Bank Indonesia Certificates (BI rate), government bonds and interbank money market. According to the theory of liquidity preference (Keynes, 1936), due to greater uncertainty over the long run, investors prefer banks of cash or other illiquid assets. Currently, there is a change in bank preferences in the funding portfolio. Banks tend to hold liquid assets and are relatively less risky than more risky credit.

II.3. Blue Economy Development Framework.

Blue Economy is the concept of economic development with the motto: BLUE SKY - BLUE OCEAN. Economic grows, the people are more prosperous, but the sky and the sea remain blue.

The idea of the blue economy as written in Pauli (2010), essentially wants to create 100 million jobs, 100 innovations within 10 years with various activities with the goal of environmental sustainability. More briefly when conducting economic development it holds to a principle expressed from scarcity to abundance. This principle is based on the lack of natural resources because it is used for the fulfillment of human needs that are increasing and diverse. Scarcity is worsened due to environmental degradation, wasteful use, pollution, and decreased environmental carrying capacity. Environmental damage is increasing due to global warming conditions. Therefore, public awareness is required when doing economic development not to damage the environment.

How to improve the role of banks through credit policy so that the values and principles contained in the policy of blue economy can be maximal?. It is necessary to consider what needs to be taken into account when addressing credit growth that has recently decreased can be improved into sustainable credit growth. So as to improve the welfare of the community without exploitation and environmental damage as the Blue Economy aims.

Blue Economy in its application has several important principles which are a guide when doing economic development, among others (www.theblueeconomy.org; Pauli,2010):

a) Improving or enhancing efficiency. So sustainable bank maximizes use of available credit, which reduces the unit price (interest) for the borrowers.
b) Zero waste or reducing waste their clients: leave nothing to waste. Waste from one process is a resource of energy for the other. So waste here is beneficial to other companies and a source of income for the company. Waste utilization reduces the burden of interest to borrowers and banks that provide assistance on how to manage waste to the borrower then the bank will have a better competitive position.
c) Social inclusiveness: self-sufficiency for the all-social equity-more job, more opportunities for the poor. Increase people's purchasing power and company sales. As a result increase, the demand for credit and credit growth will be sustained.
d) Cyclic systems of production, innovation, and adaptation. These principles are believed to make the company grow sustainability and result in the growing demand and supply of credit that will grow sustainably as well.
e) Creating new markets.
f) Increase investor confidence.
g) Innovative Business Models and competitiveness, which capable of bringing competitive products and services to the market responding to basic needs.
h) Invest less, innovate more, generate multiple cash flow, create jobs, build up social capital and stimulate entrepreneurship

i) In Nature, negatives are converted into positives. Problems are converted into opportunities.

II.4 Effects of Credit Decline (Credit Crunch).

Banks which is losses may reduce the availability of credit. For those banks, the cost of accessing credit will increase and then forced the bank to raise the interest rate. In some cases, it is difficult for the bank to lend further because of those banks earlier losses. Especially for borrowers are highly leveraged (high debt ratio), the losses will increase if the economy is in recession. Financial institutions may collapse, GDP growth will decrease, unemployment increase, economic and social unrest may unstable.

II.5 Economic indicators of a country experiencing problems with credit growth decline.

a) There is a continuous decline in loan growth over several periods. If it happened prolonged it has been categorized as a recession. Usually, the indicator is the ratio of private credit to GDP continues to decline(Kliesen and Tatom,1992; Lamberte, M.B.1999).
b) Interest rate increases due to declining credit growth are continuously and increasingly large. The increase in interest rate here can be seen from the yield to the long-term government bond or short-term interest in Treasury bills or BI rate (Kliesen and Tatom,1992).
c) The fewer credit amounts are offered for each interest rate. Means the supply curve shifts to the left. While the demand curve does not change. Indicators that can be used among others: real lending rate increase during that period or widening spread between lending rate and interest saving rate (net interest margin).
d) The role of the banks as an intermediary decrease. Banks are less aggressive in funding because they are increasingly at risk of lending credit. This difficulty

increases because banks are forced to raise credit interest. The indicators for viewing the credit decline are related to deposits such as the growth of deposits from year to year which is slower.

II.6. Credit Decline/Crunch Reviews in Some Countries.

Asian Region

As a result of a slowdown in credit growth to the banking policy (Agung, et al,2001) as follows :

a) Banks changed their assets from credit to securities of the government more secure (liquidity preference theory).
b) The trend of credit shifted to nonsmall and medium enterprises.

Latin America Post Mexican Crisis

The factor causing credit decline/crunch in Mexico (Krueger and Tornell, 1999):

a) Too much Evergreen credit so that burden the banking system, thus reducing the bank's ability to provide new loans.
b) The decline in bank capital due to the increase in non-performing loans.
c) Banking has shifted its credits to government securities.

Industrialized Countries

In the early 1990s, a number of industrialized countries made substantial credit Contractions resulting in a decrease in credit growth. The credit crunch that occurs in these industrialized countries, as a result, rapid credit growth due to the deregulation of the financial sector.

II.7. Causes of Phenomenon of Declining Credit Growth of Banking in Indonesia

a) Problems on demand side, because of (Agung, et al,2001) :
- Declining quality of borrowers
- High loan interest rate
- Business risk
- Not optimal use of own capital.
- Difficult credit procedures
- Banks restrict lending.
- Less prospective economy
- Internal company consolidation (balance sheet adjustment).
- Low investment opportunity.
- Reducing the debt-equity ratio that is increasing due to the crisis
- Microeconomic structural factors.

b) Problems on the supply side, because of :
- Low capital adequacy.
- Increase non-performing loans (NPLs).
- High credit risk in the business world, because of the high level of leverage.
- The high credit growth in the previous period.
- Reduced ability of banks to lend.
- A swap of the credit with government bonds.
- Low bank flexibility in the negotiation of collateral and interest rates.
- Credit limitations from banks.
- Inadequate collateral.
- Worsening corporate cash flow.
- Lack of information about potential borrowers

- Credit approval by banks is more dependent on information about prospective borrowers (non-price credit rationing). Interest rates are not the main factor by banks in credit approval

c) Switching composition of the use of funds from rupiah credits to government bonds.

II.8. Factors affecting credit growth from previous studies.

A lot of the literature on financial institutions that explain the role of the bank. According to Mishkin (2007) bank has a role in collecting funds from the surplus sector and distributing it back to the public (sector deficit). In carrying out the functions of this institution are governed by the regulations made by the authority which supervise. In distributing funds, financial institutions such as banks must adjust to sources of funds. In banking, it is called by Asset-Liability Management. If it does not match then it will cause problems not only for the bank alone but also for the businesses and the economy will come to feel the bad effects. Therefore, the government and the central bank of a country participate in conducting the supervision and guidance of the banking sector. If all running well, obedient to compliance standards and act cautiously (prudential banking) then all those who get involved will also enjoy. In that situation will arise an efficient financial system . Efficient financial system will be able to stimulate the economy and business better and faster than the country's financial system are bad and primitive (Kasekende 2008).

The relationship between economic growth and credit growth can be seen from Levine and Zervos study (1988). The study was conducted in 47 countries in 1976-1993 resulted in the conclusion that there is a positive correlation between economic growth and credit growth. They also argue that the dynamics of financial institutions is something that is necessary if a country wants to increase economic growth. Economic growth led to increased demand for credit (credit growth) to finance the business in capturing investment opportunities. Is the growth of financial institutions affect economic growth or economic growth effect on the growth of banking?. So to address this problem can be read Calderon research and Liu (2002). Calderon and Liu examine the effect of the development of financial institutions and economic growth in 1960-1994 in 109 countries. The result of this research shows especially the case in developing countries that the economic expansion encouraged the development of financial institutions such as banks and capital markets more liquid.

Another study concerning credit growth can be looked from research done by Iossifov and Khamis (2009). This study found that Lagged GDP per capita, the nominal interest rate, money multiplier and credit expansion by foreign banks to local banks are some of the factors affect to the growth of credit bank of a country. So according to them, if analyze the factors that affect credit growth above variables can be considered. Another researched by Igan and Tamirisa(2009) added a net interest margin is an important variable. Because the previous study found that the net interest margin affects significantly to the growth of loan growth in Baltics and Central and Eastern Europe in the years 1995-2000 and 2001-2005.

There is also another research which is used as the main reference for this study in building a model to solve the problem of credit growth in Indonesia. That is researched by Tatum Blaise Pua Tan in Philipin (2012) and Kai Guo and Vahram Stepanyan (2011) in emerging market economies. However, this study slightly modified to suit the conditions of Indonesian banks. So there is a new novelty that augments or replace other variables from existing models such as the Lagged Bank Indonesia Rate (BI rate), Net Interest Margin (NIM), the Non-Performing Loan (NPL). BI Rate is the interest rate that reflects the attitude or monetary policy set by Bank Indonesia and announced to the public. BI rate is expected to affect the rate in the interest rate of Overnight Interbank Money Market.

Movements in interbank rates are expected to be followed by developments in deposit rates and in turn bank lending rates. So from the model which is used as a reference. Lagged Deposit Rate variables replaced or proxied by Lagged BI Rate. While the addition of Net Interest Margin variable into the model of Kai Guo and Vahram because this variable very rigid to change and the difference is often persisted on the high difference. Even the interest rate falls but NIM still persists at the existing level. The research of Tatum Blaise Pua Tan (2012) on Philipin concluded that there is a significant negative effect of NIM on the growth of credit there. So that raises the curiosity, whether this variable significantly influences credit growth in Indonesia. The reasons put NPL because this variable is known to the world of banking and the business in Indonesia when talking about corporate loans increased. Whether the increase in NPL has an effect on credit growth decline?. Tatum in his research did not use the NPL but Distressed Asset Ratio (both have the same ratio reflects the quality of assets.) The result shows that this ratio affects the credit growth. This study incorporates elements of Lagged credit growth to see whether the previous period loan growth will affect the current period of growth of bank credit. Because of banks usually very cautious in lending. The results in Philipin about this that there is a significant positive effect on the level of 5%.

In brief, from several studies examining why credit growth in Indonesia and some developing countries decreased, among others, due to lower credit offer due to banks' reluctance to channel credit due to bad business prospects in the future (Agung, 2001). Others suspect the decline is due Deposit Growth, Liability to Non-resident Growth, Inflation, GDP Growth and interest rate of Central Bank (Guo, 2011; Tan, 2012).

There are a number of causes why banks might slow lending activity. For example, inadequate information about borrowers (particularly its financial condition), the declining the value of the collateral of borrower, raising reserve requirement, direct control or new constraints on credits by Central Bank.

II.9. Factors affecting credit growth, variable selection and proxy, formulate hypotheses.

Selection of variables and indicators in the writing of this reference book refers to the previous research of Kisman (Kisman, 2017). An explanation as follows an independent variable in this study were:

1.Deposit Growth (source of data: www.bi.go.id):

Although the source of bank funds can come from a variety of sources, the amount of deposits received by the bank is the largest part of the funds that can be loaned by banks in the form of credit. So it is appropriate that the variable amount of deposits is a factor that is expected to cause why credit growth fluctuates.

This variable is calculated as the share of deposits in total credit to the private sector $_{i,t-12}$ x Deposits Growth $_{i,t}$. Deposits Growth is weighted by share of total deposits in the total credit for the last 12 months consider the role of domestic deposits as a source of funds.

Theoretically, this study expects a positive relationship between deposit growth with credit growth. Increase in deposit growth of banks is expected to expand credit expansion.

Therefore, if the bank wants to increase its role in the economic growth of a country or region it is advisable to try to increase the number of its deposits. According to the principles of The blue economy (Pauli,2010), the bank will succeed if the bank improves its performance, services, and credibility.

2.Liability to Non-resident Growth (source of data: www.bi.go.id):

This variable is calculated as the share of deposits in total credit to the private sector $_{i,t-12}$ x Non-resident Liability Growth $_{i,t}$. Liability growth here is multiplied by the weight of liability to non-residents on the total credit. So the role of Liability to non-resident the past 12 months (1 year) as a source of funds available for lending in the credit has been taken into account. The relationship between Liability to non-resident against credit growth is positive. The greater Liability growth is the greater sources of funds to lend in the form of loans. So the credit growth is expected to increase.

3.Inflation (data source: www.bi.go.id):

The relationship between inflation with loan growth is expected positive. The higher the rate of inflation or nominal prices than the demand for credit more increase. So that loan growth is expected an increase.

4.Real GDP Growth using constant prices 2000 (data source: www.bi.go.id and www.bps.go.id):

The relationship between GDP growth to credit growth is expected to be positive. The higher the GDP growth (the better economic performance) increasing business opportunities/investment means a credit application will increase or growth.

5. Deposit rate replaced or proxied by **Bank Indonesia rate - Lagged BI rate** (data source: www.bi.go.id):

BI rate as a proxy for deposit rate will ultimately affect bank lending rates. Entering the BI-rate variable in the model is a reflection of how monetary policy in a country. The relationship between BI-rate (lagged BI-rate) against loan growth is expected to be negative. Increasing BI-rate (or lagged BI-rate) it will lower credit growth.

6.Net Interest Margin - lagged NIM (data source: www.bi.go.id):

Net Interest Margin in developing countries generally remain rigid and the difference between lending with interest savings rate is often retained by banks high, despite interest rates has gone down. The relationship between NIM with loan growth is expected to be negative. The higher the NIM, the bank's willingness to make loans decrease. As a result, loan growth is expected will decline.

7.Non-Performing Loans - lagged NPL (data source: www.bi.go.id):

NPL reflects the credit quality/asset bank or financial performance of the financial system.Increasingly unhealthy (higher NPL), the bank will be more careful in distributing its credit. So that loan growth is expected a decline. So the relationship between the two variables is expected to be negative.

8.Lagged Credit Growth (source data: www.bi.go.id):

This variable is considered to be influential because appropriate with lagged credit growth cycle. The relationship between lagged credit growth to the credit growth is a direct (positive). If the previous period increases, the estimated credit this year will also increase.And vice versa.

II.10.The hypotheses.

1. H_0: There is no influence of deposits growth to credit growth.

   H_1: There is an influence of deposits growth to credit growth.
2. H_0: There is no influence of liability to non-resident growth to credit growth.

   H_1: There is an influence of liability to non-resident growth to credit growth.
3. H_0: There is no influence of inflation on credit growth.

   H_1: There is an influence of inflation on credit growth.
4. H_0: There is no influence of GDP on credit growth.

   H_1: There is an influence of GDP on credit growth.
5. H_0: There is no influence of BI-rate on credit growth.

   H_1: There is an influence of BI-rate to credit growth.
6. H_0: There is no influence of NIM on credit growth.

   H_1: There is an influence of NIM to credit growth.
7. H_0: There is no influence of NPL to credit growth.

H_1: There is an influence of NPL to credit growth.

8. H_0: There is no influence of lagged credit growth to credit growth.

   H_1: There is an influence of lagged credit growth to credit growth.

III. METHODOLOGY

III.1 Methods Used

This research using economics approach in particular banking management with the main study on credit growth. Besides descriptive study, this research is that aims verification study to determine causal relationships between variables through a hypothesis testing and ultimately draw conclusions (inferential). In this study, the resulting model will also be tested for their predictive power. So that the results model obtained can be used to forecast the future and solve the problem. The difference in the writing of this reference book compared with the previous research of Zainul (2017) is to include novelty that is Blue Economy approach to solving the problem of credit growth decline. Blue Economy approach is chosen in the hope that the downward loan growth will become sustainable credit growth.

III.2 Data

This study refers to the data of previous Kisman research (Kisman,2017) will use the monthly data time series banking in Indonesia (January 2012- December 2016) all n = 60, in contrast to research Kai and Vahram (using quarterly). The consideration because almost all the available and complete data for all variables studied was monthly data. Except for GDP data from BPS (Central Bureau of Statistics) and almost all institutions including the central bank uses the data published quarterly. In order all data has the same period then the GDP data will be interpolated by using the

Quadratic Match Sum Eviews 6. So the GDP data will be transformed from Quarterly to Monthly data. In this study, Guo and Stepanyan above model then are extended to include other variables such as Net Interest Margin (NIM) for model 2, Non-Performing Loan (NPL) to model 3 and Lagged Credit Growth to model 4.

III.3 Framework of this study.

This research begins by looking at the phenomenon of a continuous decline in credit growth in the banking sector in Indonesia. In 2012, the growth of banking loan in Indonesia is around 1.67% per month and its growth trend from month to month has decreased to 0.62% in 2016. To explain this problem, a study of previous literature was conducted to look at the causes and see related theories that are able to explain this phenomenon. Then compiled the hypothesis and build a model corresponding to the relationship between variables. The overall framework of this study presented in Figure 3 :

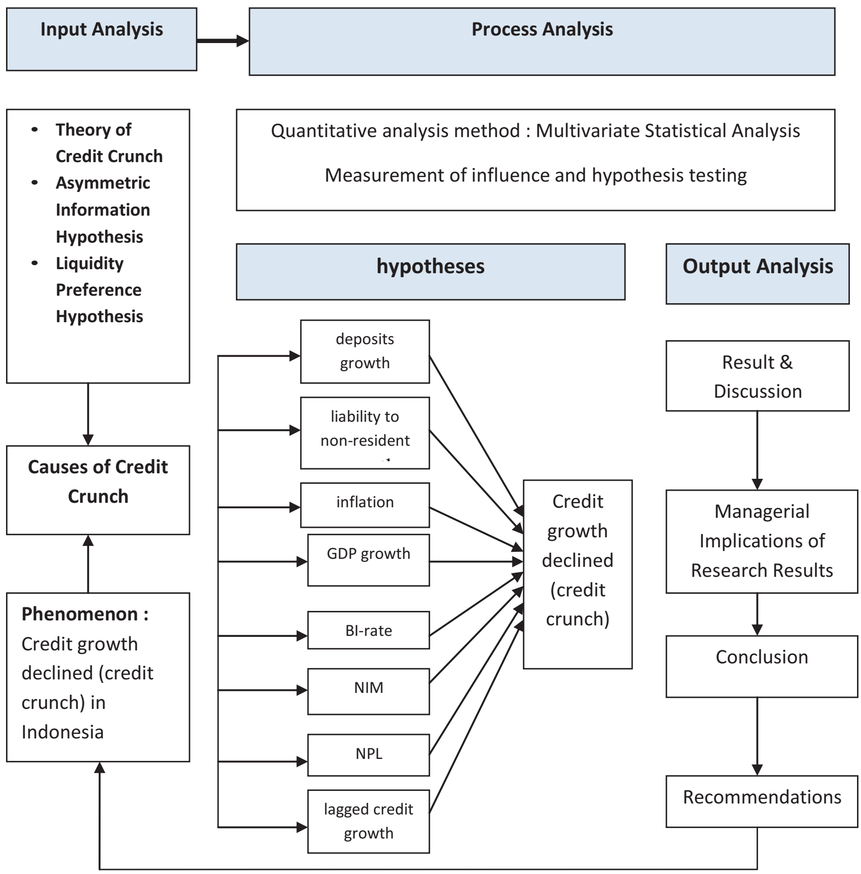


Figure 3. The overall framework of this study

III.4 Model Specification

This research used a model that used by Kai Guo and Vahram Stepanyan (2011) as standard or benchmark model and then expand the model by including other variables (a novelty on model) as found in previous Kisman research (Kisman,2017):

$$\text{Credit Growth}_{i,t} = \beta_0 + \beta_1 (\text{Share of deposits in total credit to the private sector}_{i,t-12} \times \text{Deposit Growth}_{i,t}) + \beta_2 (\text{Share of liabilities to non-resident in total credit to the private sector}_{i,t-12} \times \text{Non-resident Liability Growth}_{i,t}) + \beta_3 \text{ Inflation}_{i,t} + \beta_4 \text{ Lagged GDP Growth}_{i,t-1} + \beta_5 \text{ Lagged deposit rate}_{i,t-1} + \varepsilon_{i,t} \quad \text{.............................(1)}$$

Where i =observation and t= time period.

Study of Kai Guo and Vahram Stepanyan found that deposit, liability to non-resident, inflation, and GDP has a positive influence on credit growth. Whereas lagged deposit rate and the Fed Funds rate negatively affect the credit growth.

IV. ARE BANKS in INDONESIA EXPERIENCING CREDIT DECLINE or CREDIT CRUNCH PROBLEMS at THE TIME of THIS STUDY?

According to Kliesen and Tatom (1992) and also Lamberte (1999), there are several indicators that can be used to measure or assess the economy of a country whether to experience credit decline or credit crunch or not at all. What about the Indonesian economy when this research is done. What is credit decline, credit crunch or not at all ?. For the assessment use the available data, as follows:

1) There is a continuous decline in loan growth over several periods.

Table 1: Credit Growth

Year	Credit Growth/month
2012	0.0167
2013	0.0154
2014	0.0100
2015	0.0077
2016	0.0062

source: Bank Indonesia

.

From table 1 above, looking at Indonesia's loan growth from 2012 to 2016 there is a decrease in growth that occurs continuously. Because of the decline is only a few years and not in the long term. So the phenomenon is included in the category of decline credit growth has not been up to the credit crunch.

2) Interest rate increases. The increase in interest rate here can be seen from the term interest in Treasury bills (BI rate). (Kliesen and Tatom,1992).

Table 2: BI-rate

Year	BI-rate per year
2012	5.8%
2013	6.5%
2014	7.5%
2015	7.5%
2016	6.0%

source: Bank Indonesia

From table 2 above, looking at the BI-rate of Bank Indonesia from 2012 - 2016 seen there is an upward trend that occurs continuously. Therefore the phenomenon is included in the category of decline credit growth.

3) The fewer credit amounts are offered for each interest rate (Kliesen and Tatom, 1992). Means the supply curve shifts to the left. While the demand curve does not change. Indicators that can be used: widening spread between lending rate and interest saving rate (net interest margin).

Table 3: Net Interest Margin

Year	NIM
2012	5.8%
2013	6.5%
2014	7.5%
2015	7.5%
2016	6.0%

source: Bank Indonesia

From table 3 above, looking at net interest margin of Indonesian banking from 2012 - 2016 seen there is an upward trend that occurs continuously. Therefore the phenomenon is included in the category of decline credit growth.

4) The role of the banks as an intermediary decrease. Banks are less aggressive in funding because they are increasingly at risk of lending credit. The indicators for viewing the credit decline are related to deposits such as the growth of deposits which is slower.

Table 4: Deposits Growth

Year	Deposits Growth per month
2012	1.22%
2013	1.04%
2014	0.97%
2015	0.65%
2016	0.77%

source: Bank Indonesia

From table 4 above, looking at Deposits Growth per month from 2012 - 2016 seen there is a downward trend that occurs continuously. Therefore the phenomenon is included in the category of decline credit growth.

Conclusion: based on the above indicators, empirical evidence satisfy the conditions for the existence of a credit decline. That is the phenomenon of credit growth that occurred in the Indonesian economy in 2012-2016 where the study was conducted. Then it can be concluded that the exact phenomenon is decline credit. But decline credit if it gets less attention to be overcome it will turn into more difficult to resolve. This phenomenon is called a credit crunch. But Indonesia at that time has not reached it.

V. RESULT AND DISCUSSION

The following sections below will perform an empirical analysis of the declining credit growth in Indonesian banks using macro and microdata related to the banking industry. Some of the results and discussions in this reference book use the results and discussion of previous Kisman research (Kisman, 2017) and then expanded and enriched using the Blue Economy approach. This is done to create sustainable credit growth. Beneficial for business, banking, economy, business environment, and society.

Table 5: Regression Results For Some Alternative Models

Private Credit Growth (2012M1-2016M12)				
	Model 1 (benchmark specification)	**Model 2**	**Model 3**	**Model 4**
Constant	0.021** (0.006)	-0.010 (0.406)	0.024** (0.024)	0.025** (0.002)
Deposit Growth	0.508 ** (0.000)	0.548** (0.000)	0.513** (0.000)	0.486** (0.000)
Liability to Non-resident Growth	0.339 (0.188)	0.370 (0.175)	0.318 (0.228)	0.366 (0.153)
Inflation	0.133** (0.036)	0.067 (0.274)	0.111 (0.162)	0.158** (0.016)
Lagged GDP Growth	0.243** (0.004)	0.256 (0.004)**	0.244** (0.004)	0.274** (0.002)
Lagged BI rate	-0.003** (0.007)		-0.003** (0.013)	-0.004** (0.003)
Lagged NIM		0.002 (0.289)		
Lagged NPL			-0.001 (0.637)	
Lagged Credit Growth				-0.136 (0.149)
Anova (F-test)	16.475**	13.507**	13.570**	14.397**
Adjusted R-Squared	0.567	0.515	0.561	0.576
Durbin-Watson (Autocorrelation-test)	2.353 No autocorrelation	2.168 No autocorrelation	2.382 No autocorrelation	2.127 No autocorrelation
Number of Observation	60	60	60	60

*significant at 10% level
** significant at 5% level
(...) standard errors are in paranthesis
Source : www.bi.go.id ; www.bps.go.id.;Kisman(2017)

V.1.Model 1: The influence of Deposit Growth, Liability to Non-resident Growth, Inflation, Lagged GDP Growth, Lagged BI rate to Credit Growth.

Following on table 5 above is the result of the regression of all variables affects the credit growth. In column 1 are the regression results of the main model (model 1: The benchmark specification). In column 1 are seen all regression coefficients of the variables that affect the credit growth has the same sign as expected.

All variables have a significant effect at the level of 5% to the credit growth, except Liability to Non-resident Growth. The coefficient sign of this variable consistent with the expected that is positive but not significant because the fluctuation of these variables over time during the study period is not much changed. Means during that period, the role of liability to non-resident (obligations to nonresidents) as a source of bank funds available to lend in credit is relatively small due to the appreciation of the dollar from \$ 1 = Rp9000 in early January 2012 to Rp.13.500 at the end of the period 2016. In that period the growth of bank credit relies more on the source of savings from the domestic (deposit growth) which is relatively cheaper.

The coefficient of deposit growth and lagged GDP growth is consistent with Kai Guo and Vahram Stepanyan research and Tatum Blaise Pua Tan research in Philipin. This means that this study (undertaken in Indonesia) reaffirms the results of previous research that deposit and GDP growth have a positive effect on credit growth. These results indicate a decline in GDP Growth and deposit growth during that time is the cause of the decline in credit growth. Supply credit declined by banks due to decreased demand for a loan which is due to economic growth. The results of this study are in line with Credit Crunch or Asymmetric Information Hypothesis.

In addition to GDP and deposit growth, in column 1 it appears that the weakening of credit growth is due to the decline in inflation rate (deflation) were in December 2016 reached 3% per month whereas in 2015 it has reached 7%. The lower rate of inflation or nominal prices than the demand for credit more decrease (the relationship is positive). So that loan growth is expected a decrease.

Besides GDP, deposit growth, inflation, in model 1 it shows that declining credit growth is also caused by BI rate (central bank rate). When the BI rate increases then the banks are more motivated to save their funds in BI certificates than lending of funds in credit. As a result credit growth declined. The results are consistent with the liquidity preference hypothesis

From model 1, variables GDP growth, deposit growth, keeping the inflation rate and controlling BI rate are the variables can be considered as solution variables to increase the weakening credit growth because the coefficients for these three variables are most sensitive and significant.

V.2.Model 2: The influence of Deposit Growth, Liability to Non-resident Growth, Inflation, Lagged GDP Growth, Lagged NIM to Credit Growth.

Model 2 (model 1: benchmark specification plus NIM variable) in column 2 of table 5 shows that NIM has no significant effect on credit growth. Although the sign of regressive coefficient variables is not consistent with the expected, these results indicate something different in Indonesia (credit puzzle). The insignificant NIM indicates that it is a rigidity banking policy. Many banks do not change the width of NIM from time to time even though the deposit interest rate (BI-rate) has already changed. NIM is set relatively constant in order to maintain profit when credit growth declines. Unfortunately, according to the central bank data, banks profitability measured by ROA (return on asset) in 2012 that is 3.11% and continues to decline to 2.32% in 2016. Hence NIM has no effect on credit growth.

In column 2 of table 5, despite the addition of NIM variables, the regression results for all the significant variables are unchanged compared to the benchmark specification model (model 1) except inflation. In this second model, BI-rate is excluded from the regression equation to avoid the occurrence of multicollinearity between BI-rate with NIM.

From model 2, variables GDP growth, deposit growth and reduce NIM that can be considered as solution variables to overcome the weakening credit growth. Because the coefficients for two variables namely GDP and deposit are most sensitive and positively significant. Increased GDP growth and deposits will increase credit growth. Besides, the narrowing of NIM will also increase credit growth.

V.3.Model 3: The influence of Deposit Growth, Liability to Non-resident Growth, Inflation, Lagged GDP Growth, Lagged BI rate, Lagged NPL to Credit Growth.

Model 3 (model 1: benchmark specification plus NPL variable) in column 3 of table 5 shows even NPL entered into the regression equation, all the signs of regression coefficients (except NPL) are still consistent and significant appropriate with the results benchmark specification models (basic models-model 1). It means when lending money, banks pay attention to deposit growth, GDP, BI rate but apparently pay less attention to NPL. Banks are less prudent. So in that period the banking ROA declined because of NPL increased.

V.4.Model 4: The influence of Deposit Growth, Liability to Non-resident Growth, Inflation, Lagged GDP Growth, Lagged BI rate, Lagged Credit Growth to Credit Growth.

In the last column (the column 4) is a test of the persistence of credit growth. Generally, the relationship between credit growth with credit growth of the next period is positive. In other words, a period of credit activity will affect the activity next period. But this research found different things (negative coefficient), although not significant.

Other findings are consistent with model 1 that is deposit growth, GDP growth and BI rate are the variables that influence and cause why credit growth is weakening.

All models above, as a model, has the goodness of fit and can be reliable to recommend for improving credit growth policy because the result is consistent with previous research, logic, supported by strong banking theory, moderate R^2, no autocorrelation problem The best linear unbiased estimator. Almost all variables when tested individually or simultaneously significant. Based on the above considerations, the above model can be used as a model for improving credit growth in Indonesia which has recently declined.

VI. MANAGERIAL IMPLICATIONS OF RESEARCH RESULTS

The following section gives a brief discussion of what are the implications forwards in the near future using the blue economy approach. The implications can be explained as follows :

1. The results of this study show liability to non-resident growth have no effect on credit growth. Because the domestic currency is unstable it continues to depreciate. It should banks do not rely on foreign sources or dollar loans as this will increase the cost of loanable funds for banks. So it is difficult to channel these funds in the form of credit. It is recommended that banks rely on sources of funds from cheaper domestic deposits. If the problem is addressed then banks can increase credit growth. Or if using overseas sources then the central bank should be able to maintain the stability of domestic currency namely rupiah. When this condition is achieved and more prospective economy so credit growth will increase (supply increases) and demand for credit will also increase because the source of funds from abroad is usually cheaper so that banks can offer a lower interest rate.

   It is suggested to the central bank to maintain the stability of the rupiah exchange rate against the hard currency by maintaining favorable inflation and reducing the volatility of the exchange rate. Keeping the money market conducive will make the central bank rate (BI-rate) is more competitive. If the condition can be maintained stable it will increase foreign as well as domestic deposits. At that condition, supply and demand are increasing. The supply and demand curve of credit shifts to the right. Credit quantity increases and credit interest decreases. That is, credit growth will be sustainable and recoverable. Further, stimulate entrepreneurship, create jobs and the people are more prosperous. The point is that when the stability of the rupiah exchange rate is kept stable then as it happens in nature (blue economy principle) then the effort will produce other or multiple benefits.

2. This study proves that the decline in loan growth is due to a decrease in deposit growth. Deposit growth declines because BI-rate is lowered (easy money policy) from 7.25% per year in early January 2016 to 4.75% by the end of 2016. Its effect on the average credit growth 0.62% per month which is smaller than the average monthly deposit growth of 0.77 %. So the effect of loosening money policy by Bank Indonesia (central bank) has more influence to decrease of deposit growth than the decrease of credit growth. Generally when it is decided to run an easy money policy then deposit growth will increase. In the case of Indonesia in that period, it does not happen. Even credit growth is decreasing because banks are more interested in investing their funds in Bank Indonesia certificates (SBI) that are considered more secure than increasing their credit offerings are riskier. Here the influence of easy monetary policy on the decrease of credit rate or an increase in credit growth is not effective. The decreasing lending rate response is even slower than the deposit rate response. The response of the deposit rate has become increasingly insensitive because the banks' credit portfolio shifts to SBIs. From this case it is advisable to Bank Indonesia to consider the sensitivity of the policy taken and to consider other factors such as borrower quality, business risk, economic prospects, investment

opportunities, banking NPLs, swap of the credit with government bonds by bank, worsening corporate cash flow and lack of information about potential borrowers. In banking systems, everything is connected and evolving towards symbiosis like a natural system.

According to the principles of The blue economy (Pauli,2010), a bank in order to boost its declining credit growth to sustainable credit growth, the company must innovate its business model naturally. It means that banks are capable of bringing competitive products and services to the market responding to basic needs while building social capital and enhance mindful living in harmony with nature's evolutionary path. How nature so did the company. Nature searches for economies of scope. One natural innovation carries various benefits for all.

3. This study proves that declining GDP growth contributes to weaker credit growth because of the decreasing demand for credit. So to increase credit growth it is advisable for governments to increase GDP growth by making better investment climate, increasing government spending, and encouraging consumption by pressing unemployment. Currency to keep it stable so that exports increase and imports decrease. For all, it needs support from the central bank with easy monetary policy and from banking namely easy credit procedures, loosens credit restrictions and improves bank flexibility in the negotiation of collateral and interest rates. In line with principles of The blue economy (Pauli,2010), the bank must know in banking system like in nature system. What prevails in nature will apply the same in the business world. Once a good process starts, it will generate multiple benefits for the bank. And this principle needs to be consciously known.

   This study shows that one of the reasons why credit growth is weak is the occurrence of deflation so that demand for credit declines. The inflation rate reached 8% per year in August 2015 and continues to decline to 3% per year in December 2016. It is this deflationary condition that drives down demand for credit. The central bank is advised to maintain a loose monetary policy and not to worry about causing an increase in inflation. Because of that period, the inflation rate is low especially in the last months of 2016. With the easy monetary policy is expected to grow credit. In order that monetary policy of central bank reaches the target, it is necessary to be supported by banks such as banks to reduce restrictions in lending, lower interest rates at a reasonable rate. In essence, any monetary policy taken by the central bank should be supported by appropriate banking policies. For the above reasons, it is recommended to Bank Indonesia (central bank) to maintain a conducive inflation rate by maintaining the stability of the rupiah currency. If this can be maintained then the demand for credit will increase as a result the credit growth of banks will increase. The point is that when the stability of the inflation rate is kept stable then as it happens in nature (blue economy principle) then the effort will generate multiple benefits.

4. This study shows that one of the reasons why credit growth is weakening because of the determination of BI rate which is not competitive. As a result, banks will tend to deposit their funds on BI certificates. SBI as second layer portfolio of banks, plus more swap of the credit with government bonds. Because besides liquid placement, this instrument also generates income for the bank (liquidity preference hypothesis). It is recommended to Bank Indonesia (central bank) to keep the interest rate of this BI certificate in order not to be too high. This will encourage banks to increase their credit growth. According to The blue economy principles, like what happens in nature, a competitive BI rate will lead to a balance of banks in deciding how best to allocate funds efficiently. Benefiting from banks and benefiting borrowers.
5. This study shows that NIM has no significant effect on credit growth. Even NIM is maintained but ROA is still down. Maintaining NIMs will still cause credit growth to decline. In general, banks in Indonesia, when the BI rate falls, adjustments to credit interest rates are slow and decline slightly compared with deposits rate which the adjustment larger and faster. Not sensitive to credit but

more sensitive to deposits. It is recommended that banks reduce NIMs for increased credit growth as a result will increase ROA. Narrowing the NIM will be successful for the banking growth in credit growth if upward economic outlook, lower NPLs, improved cash flow borrowers in the coming years and more flexible credit procedures. Minimizing the NIM width is the same as nature that provides room for entrepreneurs who do more with less. Nature is contrary to monopolization.

6. During the period of declining credit growth, credit growth in one period did not significantly affect the credit growth of the next period. Because the changes in credit growth from period to period fluctuate and the changes are not significant The most variable determinant of credit growth in one period in all models in this study is the deposit growth then GDP growth, inflation, and BI rate (central bank rate). These variables should be the main concern by the banking and central banks in Indonesia.

VII. WHAT SHOULD THE CENTRAL BANK, THE FINANCIAL SERVICES AUTHORITY (OJK), BANKS and CORPORATIONS DO TO OVERCOME THE DECLINE in CREDIT GROWTH?

Although banking experts do not yet have the same understanding of what is meant by credit decline/crunch and the causes are. However, all agree that to overcome this problem, the way is to encourage banks and non-bank financial institutions to lend more credit to companies that require financing.

VII.1 What should The Central Bank and The Financial Services Authority (OJK) do when facing credit decline?

Based on the results of research and discussion of the results then there are some suggestions that should be done by the central bank/government:

1) Social inclusiveness: a sustainable credit growth is based on active and effective stakeholder engagement and participation.
2) Implement "easy money" policy which has characteristics such as low-interest rates, high bank flexibility in the negotiation of collateral, interest rates, and lending practices. Thus the cost of the loan will be cheaper.
3) Bank Indonesia as a central bank must be careful and prudent to address this credit decline. If the handling fails then the credit decline will be repeated again in the near future and raising the interest rate. The central bank can learn from patterns in the past. Usually, the growth of credit will be lower following the growth of GDP and the growth of deposits. Therefore the central bank can make regulations that encourage and conducive to deposits such as easier credit procedures and relaxed credit restrictions.
4) Perform supervision to financial institution either the bank or nonbank in order to operate more efficiently so that credit interest can be made lower. As a result, will cause banks to increase their credit offer. In the high-interest rate situation, banks are required to improve their efficiency. So that the operational costs can go down. Without it, the cost of funds will continue to be high and it will be difficult to suppress credit interest
5) The Financial Services Authority (OJK) is expected to immediately realize the elimination of the regulation of the maximum limit of deposit interest rates, especially for commercial banks. Therefore, the release can be an option for banks to deal with liquidity that is currently depressed. This problem becomes more complicated solved because banks are more difficult to find public funds because the government also collects funds from Sovereign Debt Instruments. These factors make it difficult for banks to raise funds from the public. If successful but with a more expensive cost. Consequently reduced credit supply
6) In terms of macroeconomic policy, policymakers should concentrate on increasing aggregate demand. Monetary and fiscal policies should support this aggregate demand increase. This increase will increase the demand for credit

which further increases the supply. The important thing here is that the increase in credit supply is able to keep up with the increase in demand. If so the interest on credit will go down.

7) The central bank needs to maintain the stability of the local currency (rupiah against the dollar) by keeping inflation and interest rates stable. Stability of the exchange rate will improve the business climate and encourage economic growth (GDP). The growing economy will increase demand and supply of credit.

8) The central bank issued a regulation to banks that provided lower credit interest incentives to the business sector that encouraged the blue economy. Blue economy is the concept of building an economy with a business model that diverts society from scarcity to abundance "with what is locally available", by addressing the problems that cause environmental problems and problems in new ways. The Blue Economy emphasizes access to needs like health, consumption, and education by applying local production and consumption systems based on what community already have (Pauli,2009). Thus this sustainable economic and business development will require sustainable credit growth support.

VII.2 What should banks do when facing credit decline?

1) At the time of credit decline, banks are advised to reduce their dependence on short-term funding sources. History noted that during the financial crisis of 2007 such banks were very vulnerable to instability. It is recommended that at that time banks would rely more heavily on funding in wholesale funds which is believed to be cheaper. So it is easier for banks to offer their credits (Allen & Paligorova; 2011). The literature notes that these banks are the ones that give the most credit.

2) At a time when credit growth continues to decline, banks are advised to rely on their sources of funding with wholesale funding. Sources of this type of funds can be obtained by banks in large quantities at a lower cost than other sources of funds. Therefore banks that rely on this source of funds will be resistant to liquidity or credit risk. So these banks are able to give credit more stable.
3) Furthermore, banks are advised to foster closer and longer-term relationships with their borrowers. This relationship approach plays an important role as it reduces information asymmetry. Banks will have sufficient information about the borrower (particularly its financial condition). When the information about the debtor is more complete then the credit decision will be more qualified. So it can suppress the reluctance of banks to distribute credit and vice versa increase the lending.
4) Banks are advised to maintain strong capital because strong capital will facilitate banks in providing credit with cheap financing and vulnerable to shocks or accommodate the risk of losses that may be faced by banks. The stronger the capital, the better the bank's ability to assume risk from any earning asset or credit. If the capital is strong then the bank is able to finance its operational activities and contribute substantially to profitability through the provision of adequate credit.
5) In order to improve the credit capacity, banks are encouraged to reduce non-performing loans (NPLs). If bank NPLs continue to increase, banks are required to increase the reserves of their earning assets to overcome credit risk. So it will reduce the ability of banks in lending. In the end, leading to decreased profitability.
6) In the face of weakened credit growth, banks should adjust their crediting standards with economic fundamentals such as economic growth, inflation, and interest rates.

VII.3 What should corporations do when facing credit decline?

What strategy does the company do when credit growth is weakened resulting in the application of loan credit is rejected.

1) The company may issue commercial paper (short-term, unsecured) as an alternative. As credit growth weakens on the lending market (supply side), banks typically tighten borrowing standards. At that point, it is better for companies to publish a commercial paper. By issuing this the company will bear the cost of low-interest loans compared to the credit to the bank. This issuance will be low-interest and competitive if the issuer is a company that has a good reputation and is credible. In general, healthy companies with good prospects can set a lower interest rate than bank loans. If so then many institutional investors will buy the commercial papers. Need to be noticed, companies that publish this commercial paper should be aware that investors who will buy this commercial paper are the investors who put a high value on the security of the securities and they are dealing with high-quality borrowers (Simon, 2002).
2) When credit growth weakens it will be difficult for companies to get additional loans for their investment. This difficulty will result in the increasing inability of the company to pay the loan. If this is not handled properly then it will cause financial distress. Therefore, the company should pay attention to there are some signs of beginning if a company will enter the stage of financial distress (Yakola, 2014).

   For example :

   - from working capital/ liquidity: declining or negative free cash flow and large contingent liabilities.
   - from profitability and industry outlook: deteriorating industry fundamentals and reduced capital investment program.
   - from financial: declining stock prices and diminishing liquidity and

- from employees: management turnover, large or unplanned reductions in workforce and others.

3) The low credit growth offered by the bank comes from the low quality of the borrower or the lack of information about the borrower. The quality of the borrower is largely derived from the weakness of the company's financial condition. Banks become difficult to distinguish which companies are creditworthy and which are not feasible. So that the company is advised to improve the quality of the company's health and should be oriented both to operational and market performance as well as to basic financial metrics and cash flow (Yakola,2014).
4) Many companies still have not been optimal in the use of their own capital. They are accustomed to in its capital rely on bank loans. Therefore, when credit growth from banks declines, it is advisable for the company to optimize its own capital use by increasing retained earnings and capital payments from owners. In this way, the company will be able to enjoy a lower cost of capital and get faster funding needs and easier. In addition, the company can look for other alternatives such as from the capital market, foreign loans, bond issuance as well as loans from its own business group.
5) Reduced debt-equity ratios increased due to declining loan growth.
   It is recommended to companies that have a high debt to equity ratio to first lower the ratio than to invest. Due to high-interest rates during declining credit growth periods will result in decreased cash flow and asset value of the company. So it is advisable that the company strengthens its internal financial condition rather than expand. So it is not surprising why credit demand is declining.
6) Companies must change the way of thinking as advised by the blue economy that is innovative, competitive, create jobs, regenerate, change rules and choose the best (Pauli, 2010). Because of that, the company will be able to compete

and grow. So, demand for credit increased which will encourage sustainable credit growth.

VIII CONCLUSION

When banking credit growth declines and is left uncontrolled. It has an effect on the business failures and worsening the quality of bank lending and financial crisis. Central Bank will experience difficulties and interfere with the effectiveness of monetary policy control. Related to overcome the problem, this research aims to draw up a model to determine the variables that affect the growth of the bank credit declined . by using macro data as well as micro.

The model used in this study by using multivariate statistical analysis approach has a goodness of fit. In general, almost all variables of all models such as Deposit Growth lagged GDP Growth, Inflation and Lagged BI rate consistently have a significant effect on Credit Growth (2012M1-2016M12), except Liability to Non-resident Growth. The above model can be recommended for improving credit growth policy. Although these variables are beyond the control of policymakers (Central Bank of Indonesia), they can be influenced by regulation, BI rate or discount rate which conducive to banking. The results of this study also suggest that the Central Bank of Indonesia and Financial Services Authority of Indonesia are cautious of declining credit growth in recent years. Variable solutions to increase credit growth are encourage deposit growth, increase GDP growth and lower Central Bank of Indonesia rate (BI rate).

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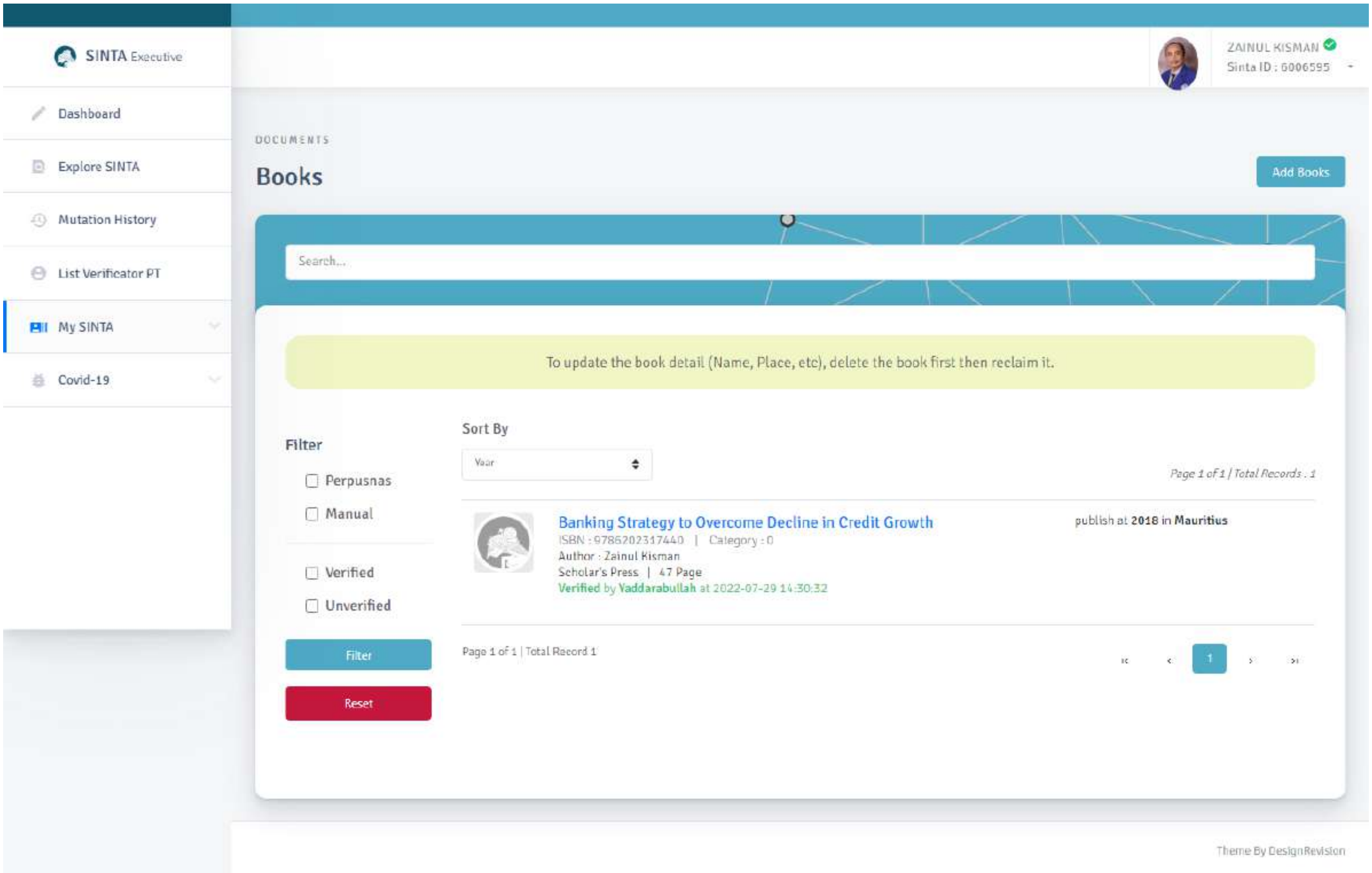
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