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Financial Sector Development Analysis to Support Sustainable Development in Indonesia Period 1998.1 – 2013.4

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Abstract: The objective of this research is to analyze the Financial Development and it identifies the various channels through which Financial Development is transmitted to saving, bank lending to manufacture industry, manufacture industry investment, and output manufacturing industry of the economy. Also identifies the effect of Financial Development on output manufacturing industry and influence on the environmental and poverty to support Sustainability Development.

The model of this research is simultaneous equations, the development of research Afangideh (2009) by adding two models; the influence of output for the environment and poverty to fill the gap from previous studies. This research also uses two approach Financial Development indicators; that is the ratio of credit/GDP and the ratio of M2/GDP. Secondary data obtained from BI, BPS, BEI and the World Bank during the period 1998 – 2013, with a method of Generalized Method of Moments (GMM).

From six models of simultaneous equations and one identity models, the results of the models are Financial Development indicators with the approach the ratio credit/GDP is more significant than the ratio M2/GDP. The result showed that gross national saving, investment is the channel of Financial Development that affect to the output manufacturing industry; which is influence to the environment and poverty.

Instrument determining financial development indicator in Indonesia is ratio credit/GDP. Based on existing models, saving and investment are substitute for Financial Development and the effect on real output of the manufacturing industry in Indonesia. Furthermore, the Financial Development through the output level will affect the environment and the poverty in a Sustainable Development.

The results showed that the determining of the financial development sector in Indonesia is ratio Credit/GDP. Savings and investment are substitute for financial development. Savings are important for economic development to transform into productive investments. Control of interest rates as a policy tool needs to be done carefully (Prudent behavior) because of competition the interest rate of financial liberalization. Credit should be directed to the productive sector and not the consumption because Financial Development Sector Indicators and Stock Market Indicators for bank loan didn't optimal. Economic outlook needs to be improved because of the low interest rate credit is not necessarily addressed by the community to improve the credit demand what if the economic outlook is weak. Stock market indicators needed to encourage investment due to the low use of capital markets for financing investment and limitations intermediation by non-bank financial institutions (eg, hedging and insurance facilities are inadequate). There is the influence causality between output and pollution (environmental). The financial development sector can contribute to the environment by providing incentives for companies to adopt environmentally friendly technique during the production process. So that a sound financial sector can improve the quality of the environment. The high Gini ratio shows that poverty inequality has not improved as a result of deterioration in the quality of economic growth because they have not determined the

structural changes in the poverty rate. Finally, the development of the financial sector can be a channel for sustainable development in Indonesia so that the policy taken by the government should pay attention not only on the output but also its impact on the environment and poverty.

Keywords:GMM, Financial Development, Gross National Saving, Investment, Bank lending, Output Manufacturing Industry, Environment, Poverty and Sustainable Development

Introduction

Financial development is an important thing for economic growth. Theoretically, the role of the financial development is a channel of capital accumulation and technological innovation, (see Levine, 1997; Schumpeter, 1912; and Afangideh, 2009). Goldsmith (1969) is the pioneere to examine the relationship between economic development and financial development, where there is a positive relationship between financial development with economic development. McKinnon (1973) and Shawn (1973) proved that the financial development holds a significant role in spurring economic growth. They argue that financial deepening and financial intermediation and savings will increase investment and have a positive impact on economic growth. Roubini and Sala-i-Martin, (1992) with cross-border framework also proved that there is a relationship between increasing function of the financial system to accelerate economic growth.

Fry (1980) stated that credit is an important determinant for new investments, and also the capacity utilization for the entire share capital. Therefore, the level of financial development is influenced by interest rate via two channels: first, the savings and investment; second, the capacity utilization of the entire share capital, ie additional capital ratio/output. Furthermore, Pagano (1993) explains, the financial intermediation can be attributed to the level of capital per share or level of productivity, but not for individual growth or considered as an exogenous technical progress. The findings of King and Levine (1993: 730) in his research on the development of the higher level suggests that the growth of the financial sector was significantly influenced by economic growth, capital accumulation and economic efficiency in both the short and long term. According to the research, the financial sector is not only just keep up economic growth but it is important in leading economic growth.

Based on research Neusser and Krueger (1996) with represents a third of the OECD group with a hypothetical two-way causality between financial development and economic growth expressed intermediation industry growth for economic growth, but it does not stand alone. The financial sector is relevant to the role of the interest rates. McKinnon (1973) and Shaw (1973), with their hypothesis states that the liberal regimes of interest rates will motivate depositor to convert some of their savings from productive real assets to financial assets and thus an increase in credit supply in the economy. This credit enhancement which then helps investors to expand industrial output so that the economy can grow. While, Robinson (1962) and Stiglitz (1994) argues industrial growth also creates additional demand for financial services that in turn led to the financial sector becomes more advanced.

Some previous researchers also studied the relationship between financial development with the other factors than economic growth. Shahbaz (2013) in his research suggests the development of the financial sector plays an important role in the reduction of CO2 emissions by providing an incentive for companies to adopt environmentally friendly techniques during the production process. In the end, a healthy financial sector could improve the quality of the environment through new technologies. This is in line with research Frankel and Romer (1999), which reveals that the development of the financial sector can attract direct investment from developed countries to developing countries through technology that will ultimately improve the quality of the environment.

In line with the main objective of the MDGs i.e. poverty (UNDP, 2003), the financial development in some developing countries can improve the poor's access to financial services, especially for credit and insurance to strengthen the productive assets that will ultimately improve the productivity and potential of poor people's livelihoods continuous (World Bank, 2001a).

The linkages financial development and economic growth to the attention of some economies as proposed by previous researchers as: Goldsmith (1969), McKinnon (1973) and Shawn (1973), Fry (1980), Roubini and Sala-i-Martin, (1992), King and Levine (1993), Pagano (1993), Levine (1996; 1997). However, not many studies that examine of the financial development to the industry (Udoh and Ogbuagu, 2012), the financial development with the environment (Shahbaz, 2013) and the financial development with the poverty (Zhuang, 2009), (Sin Yu Ho and Odhiambo, 2011) or the link between the financial development with the economic growth, the environment and the poverty.

Based on the background above, this study will identify and analyze the financial development sector in supporting the sustainable development of which the financial development sector is characterized by a gap between investment and savings into the channel between the economic aspects of the manufacturing industry, particularly through the production and the effect of output the manufacturing industry to environment and poverty. This study is important because of how the financial sector can be an intermediary not only for economic development but for sustainable development that will simultaneously affect the economy, the environment and the social sectors (namely poverty and unemployment).

Theoretical Background

The role of financial sector in economic growth are considerably recognized in the previous literature development and has been the subject of great debate among economists obvious from the old to the new (Jao, 1976). This is because the financial development sector acting as the engine of economic growth. Patrick, (1996) in Maduka and Manuwa, (2013) shown there are two possible relationship between financial development and economic growth. First, if the economy grows it will generate a demand for financial services in this case is called the demand for money. Lack of financial institutions in developing countries is an indication of a lack of demand for financial services. Second, the establishment and expansion of financial institutions in the economy can improve growth, can be termed as financial supply - led growth hypothesis.

Levine (2004) in theoretical and empirical research argues that the financial system is better developed than on external financing because companies will face financing constraints. Theoretically, how the monetary policy in the sector will affect economic growth and inflation known as the transmission mechanism. This is in line with the thinking Levine et al, (2000) which suggests the composition of the financial assets include bank credit which includes credit to the private and public sectors as well as all instrument stock market developments both in the long term and in the short-term trading on the stock market will affect the construction sector finance and ultimately will affect the output level changes. Pagano (1993) show that financial development has a positive effect on economic growth through savings rate. Rajan and Zingales (1998) reveals that financial development can predict the economic growth due to the financial markets in anticipation of growth. Patrik (1966) in Afangideh (2009), identifies two types that distinguish the development of the financial sector, namely: "the following demand and supply leading". In this case, the expansion in real economic activity induces demand for financial services, which in turn will drive the growth of the real economy. King and Levine (2003) to build four indicators to measure the development of the financial sector, namely (i). Tehadap liquid liabilities ratio of GDP, which measures the overall financial depth to financial intermediaries; (ii). The ratio of commercial bank credit that is the sum of domestic commercial bank credit and domestic credit the central bank to gauge the relative importance of financial institutions; (iii). The ratio of credit issued to private companies non-financial to total loans; and (iv). The ratio of loans issued to companies - non-financial private enterprises to GDP.

Some results of previous studies on the financial development sector to economic growth is already done by Afangideh (2009), Nazmi (2005), Ndlovu (2013), Maduka and Onwuka (2013), Pan and Wan (2013), Anwar and Nguyen (2011), Chee-Keong Choong (2011), Halkos and Trigoni (2010). Afangideh (2009) concluded that the financial development sector affect the output of the agricultural sector in Nigeria through the channels of credit loans and investments. Developing financial systems can reduce financing constraints by increasing national savings, loans disbursed by banks and investment in the agricultural sector, which in turn will increase the output in the agricultural sector. Nazmi (2005) summed up the results using panel data for more than four decades in Latin America that the development of the financial sector has contributed positively to investment and economic growth. Ndlovu (2013), explains that there is a one-way causality from economic growth to the development of the financial sector. Maduka and Onkuwa (2013) explains that the structure of the financial markets has a negative impact on economic growth in Nigeria which reflects the low level of financial sector development. Therefore, policies in the financial sector is the only option for the achievement of balanced and sustainable growth. Pan and Wang (2013) based on the results of his research on the financial sevelopment sector and economic growth model Bayesian factor in 89 countries during the period 1970-2009 explained that the dynamics of the financial development sector is more affected by specific idiosyncratic factors of each country; developed countries, emerging markets and developing countries, because it is affected by government regulation and monitoring of financial and banking system are different. Anwar and Nguyen (2011) in his research on the financial development sector and economic growth in Vietnam conclude that there is a positive influence on the development of the financial sector by the ratio of credit/GDP and investment to economic growth while the stock of foreign investment negatively affect economic growth. Chee-Keong Choong (2011), explains that the investment and financial sector development indicators have a positive impact on economic growth in 95 developing countries over the period 1983 - 2006. Halkos and Trigoni (2010) study concludes that the development of the financial sector in the European Union in the period 1975 - 2005 weak effect on economic growth and in the long term, implied that the financial development sector in the banking sector have a negative impact on economic growth.

Results of previous studies on the financial development and the industry sector conducted by Udoh and Ogbuagu (2012) and Neusser and Kugler (1998). Udoh and Ogbuagu (2012) research in the industrial sector in Nigeria concluded that inefficiencies in the financial sector have an impact on the harm of industrial products that are needed to increase access to credit for small and medium enterprises. The industrial sector requires a lot of innovation and entrepreneurship by developing human capital. Neusser and Kugler (1998) concludes that the financial intermediary which affect domestic savings to productive domestic investment and the financial sector in OECD countries are not cointegrated with the manufacturing industry but cointegrated with total factor productivity manufacturing.

Previous studies on the development of the financial sector to poverty is also done by Zhuang (2009), Sin Yu Ho and Odhiambo (2011), Jaillian and Kirkpatrik (2002) and Kirkpatrick (2000). Based on the research literature review conducted by Zhuang (2009) concluded that the economic system is effective in reducing poverty but also bring risks which the more advanced economies, the financial sector may lead to speculation that increases the volatility and risk of the financial crisis. Therefore, a country needs to develop a financial system that supports economic growth and poverty reduction. Research Sin Yu Ho and Odhiambo (2011) concluded there is a causal relationship between financial sector development and poverty reduction. In the short term, there is a quality two-way relationship between financial development and long-term poverty occurs unidirectional relationship between the financial sector and poverty in which the financial sector reduce poverty. Jailian and Kirkpatrick (2002) research results, financial sector policies do not contribute to poverty reduction in developing countries will however become effective instrument of poverty reduction. Kirkpatrick (2000), the financial development sector contributes effectively to economic growth and poverty reduction, and the imperfections of the financial markets is a major constraint to pro-poor growth.

Results of previous studies between financial development and the environment already done by Shahbaz (2013) concluded that the financial system would stimulate economic growth through increased investment and the development of the financial sector plays an important role in the reduction of CO2 emissions by providing incentives for companies that adopt environmentally friendly techniques during the production process. A healthy financial sector will motivate local companies in Pakistan to adopt environmentally friendly techniques so that a sound financial sector can improve the quality of the environment through new technologies. Research of financial sector development and sustainable development undertaken by Anwar and Nguyen (2011) concluded that financial development sector a positive impact on sustainable economic development in both the short and long term.

Research Methodology

The research model uses a modified research models Afangideh (2009) by adding endogenous variables that affect economic growth and sustainable development i.e. the impact on the environment and the poverty. The model presented are the simultaneous equations so the variables used in explaining the research problem consists of endogenous and exogenous variables. This study uses time series data and quarterly in the period 1998 - 2013. The data was collected from several sources such as the Indonesian Financial Statistics (SEKI) issued by Bank Indonesia; International Financial Statistics (IFS-On Line) issued by the International Monetary Fund (IMF); Financial Structure Database published by the World Bank; Industry statistics published by the Central Bureau of Statistics; and the Indonesia Stock Exchange. The following equation models were used:

Model 1. Gross National Savings

$$TNB_{ti} = \alpha_{0i} + \alpha_{1i}IPSK_{it} + \alpha_{2i}IPS_{it} + \alpha_{3i}SBR_{it} + \alpha_{4i}RPDB_{it} + \alpha_{5i}PBIM_{it} + \varepsilon_{it} \quad 1)$$

The expected value of coefficients parameter in equation (1) based on the hypothesis is: $\alpha_1, \alpha_3, \alpha_4, \alpha_5 > 0, \alpha_2 < 0$

Model 2. Banking Credit to the Manufacturing Industry

$$PBIM_{ti} = \beta_{0i} + \beta_{1i}IPSK_{it} + \beta_{2i}IPS_{it} + \beta_{3i}SBR_{it} + \beta_{4i}RPDB_{it} + \beta_{5i}OMI_{it} + \beta_{6i}TNB_{it} + \varepsilon_{it} \quad 2)$$

The expected value of coefficients parameter in equation (2) based on the hypothesis is: $\beta_1, \beta_2, \beta_4, \beta_5 > 0$ *dan* $\beta_3, \beta_6 < 0$

Model 3. Investment Manufacturing Sector

$$IMI_{ti} = \delta_{0i} + \delta_{1i}IPSK_{it} + \delta_{2i}IPS_{it} + \delta_{3i}SBR_{it} + \delta_{4i}OMI_{it} + \varepsilon_{it} \quad 3)$$

The expected value of coefficients parameter in equation (3) based on the hypothesis is: $\delta_1, \delta_2, \delta_4 > 0, \delta_3 < 0$

Model 4. Output Manufacturing Industry

$OMI_{ti} = \gamma_o + \gamma_{1i}IPSK_{it} + \gamma_{2i}IPS_{it} + \gamma_{3i}SBR_{it} + \gamma_{4i}POL_{it} + \gamma_{5i}RPDB_{it} + \gamma_{6i}PB_{it} + \varepsilon_{it}$ 4)

The expected value of coefficients parameter in equation (4) based on the hypothesis is: $\gamma_{1i}, \gamma_{2i}, \gamma_{5i}, \gamma_{6i} > 0, \gamma_{3i} < 0, \gamma_{4i} >< 0$

Model 5. Identity Real Gross Domestic Product

$RPDB_t = OP_t + OMI_t + OJ_t$ 5)

Model 6. Output of the Manufacturing Industry to Environment

$POL_{ti} = \theta_{ti} + \theta_{1i}OMI_{it} + \varepsilon_{it}$ 6)

The expected value of coefficients parameter in equation (6) based on the hypothesis is: $\theta_{1i} > 0$

Model 7. Output of Manufacturing Industry to Poverty

$POV_{ti} = \mu_{ti} + \mu_{1i}OMI_{it} + \mu_{2i}Unemploy_{it} + \varepsilon_{it}$ 7)

The expected value of coefficients parameter in equation (7) based on the hypothesis is: $\mu_{1i}, \mu_{2i} < 0$

where:

TNB = Gross National Saving
IPSK = Financial Development Indicator
IPS = Stock Market Development Indicator
SBR = Real Interest Rate
RPDB = Real Gross Domestic Brutto
PBIM = Bank Lending to Manufacturing industry
SBP = Lending Rate
OMI = Output in Manufacture Industry
IMI = Investment in Manufacturing Industry
POL = Poluttion in Manufacturing Industry
PB = Bank Loan
OP = Output in Agriculture
OJ = Output in Service
POV = Poverty
Unemploy = Unemployment
ε = *error term*

Result and Analysis

The results of simultaneous equations based on the order identifying are over-identified. The estimation approach for the model is Generalized Method of Moments (GMM). GMM method is a procedure that enables an economic model that is determined to avoid the classic assumption of unwanted or not needed as in determining the particular distribution for the error/error term, (Johnston and DiNardo, 1997).

Analysis of Economics

The results of data using two indicators of financial development approach i.e. the ratio of Credit/GDP equal with (IPSK1) and the ratio of M2/GDP equal with (IPSK2). Based on statistical test, a proxy of the Financial Development Indicators by using a Credit/GDP shows the parameters of the model are much for support the hypothesis. While the approach of M2/GDP less, especially the influence of manufacturing industry output to investment in the manufacturing industry.

Model of Gross National Savings

The results of the financial development sector equation through gross national savings, show that indicators of financial development, real interest rates, real income and bank loans to the manufacturing industry was statistically significant against gross national savings. Thus, we can conclude that these variables as a determinant of gross national savings of 91.39 percent. Shaw (1973) describes the development indicators of the financial sector which is the accumulation of financial assets faster than non-financial wealth accumulation.

Indicators of financial development sector proxied the ratio of Credit to GDP, is used as the amount of credit given to the financial sector does not include the public sector and the government in the credit because the sector is assumed not to make the selection of projects to be invested and provide credit to financial institutions that have a function extend credit. While the weakness of the credit-to GDP ratio is the ratio of the increase does not mean an increase in the allocation of funds for investment (King and Levine, 2003). In theory, domestic credit provided by the financial development sector has a positive influence on gross national savings, this

suggests that if there is an increase in private credit will increase the level of private savings in the banking sector, as this may be followed by an increase in the supply of savings and deposits, which become attractive savings facilities and better. In addition, savings and credit growth in Indonesia is moving in the direction of the increase in credit was followed by an increase in savings. In theory, the greater the credit granted to the private sector in terms of consumption will increase private consumption and will lower the percentage rate of savings (negative effect) but if the credit enhancement is allocated for the capital increase will increase revenue and ultimately will improve savings (positive effect). Correspondingly, based on research conducted by Pagano (1993) show that financial development has a positive effect on economic growth through savings rate. The theory underlying this thinking is the theory of Endogenous Growth. Based on that idea, Pagano connect their efficiency in the production sector as a result of the accumulation of human resources (human capital accumulation) as a result of the process of financial liberalization.

Empirically, the data of real gross national savings have increased in the last five years (2009 - 2013). The real savings growth in 2012 experienced is higher growth which amounted to 16.88. However, in 2013 decreased growth in the real gross national savings. This is because the growth of the domestic economy is still in the trend slowed in the fourth quarter of 2013 were sourced from a weakened investment activity, especially in non-construction investment. Stock Market Indicators (IPS) was statistically significant against gross national savings with a probability of 0.000. In theory, the direction of influence between Stock Market Indicators for determined saving in line with the hypothesis are negative. Much better the stock market developments in some country, the investment in the form of financial assets through the stock market will be even greater, so the greater the return on offer (as described El Wassal, 2005) so that the lower the risk of financial investments in the stock market. This condition will eventually impact on the least allocation of public savings to the banking sector due to substitution between savings and stocks market. Results of statistical calculations, the value of coefficient parameters Stock market indicators negative for 2.6489 million through the financial sector growth indicators of proxy in the money supply. Empirically sales volume and value share in Indonesia in the period 1998 - 2013 have increased in line with the increasing number of companies listed on the exchange and commitment to encourage the presence of new issuers in order to improve the competitiveness of the capital market in Indonesia. This means the stock market can be made in the development of alternative financial instrument which is the unity in the financial system.

Real interest rates (SBR) was statistically significant against gross national savings with probability 0.000. However, the direction of the effect of the interest rate with the gross national saving is not in accordance with the theory. Rising interest rate of 1 percent would reduce the savings of Rp. 4469.935. In theory, the effect of the interest rate on savings is positively influenced by rising interest rates will increase the incentive to save money so that it will increase the savings, this is in accordance with the saving-investment theory and the theory of demand for money Classic. Based on classical theory of savings, the interest rate will affect the savings which the rise in interest rates resulted in people going to sacrifice current consumption to increase savings. While the investment side, the decline in interest rates will boost investment spending when the expected return of the investment is greater than the interest rate. This resulted in businesses not heed the high level of interest in making investment decisions for the financing cost (cost of capital) became smaller. So when interest rates are low, the rising investment income from the investment will increase the savings. Based on empirical findings above, shows that in Indonesia is still facing a phenomenon of imbalance between investment needs with the availability of community savings funds are managed in gather (gap savings - investment). Furthermore, capital-requirement rules on the control of interest rates as a policy tool needs to be done carefully (prudent behavior) because of competition over the current interest rate is caused by financial liberalization can contribute to the fragility of the financial sector due to the inefficiency of Pareto banks are forced to control large amounts of capital and not efficiency, Hellman, Murdock and Stiglitz (2000).

Parameter real GDP has positive and significant impact on gross national savings.Theoretically, JM Keynes proposed savings are part of the level of income that is not spent. If consumption is positively influenced by income level then saving be influenced by the level of income. Other Keynesian flow that Milton Friedman in his theory of permanent income theory, stating that saving and consumption is not only influenced by the level of current income but is also influenced by the level of income in the future.

Parameter bank lending to the manufacturing industry (PBIM) based on the results of statistical affect the gross national savings is positively and significantly associated with the probability of 0.000. Coefficient parameter indicates the increase of bank lending will increase the savings of 0.276681 billion dollars. In theory, through the transmission mechanism of credit lines to explain if the central bank's expansive monetary policy, the interest rate in the market will go down, including interest rate bank loans. This condition will push the stock price increases thus the market value of the company will increase capital and leverage ratio (ratio of company assets derived from debt or capital) will be decreased so as to improve the feasibility of the proposed loan application to the bank company. These conditions encourage lending by banks so that bank loans will be

increased which further increases the investment and ultimately increase output. If output increases, will increase the savings rate.

The following table calculation results for Model of Gross National Savings:

Model of Gross National Savings with proxy IPSK1 (Credit/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK1	1139.368	(+)	0.0000	hypothesis supported
IPS	-4113245.	(-)	0.0000	hypothesis supported
SBR	-4413.197	(+)	0.0000	hypothesis is not supported
RPDB	0.539115	(+)	0.0000	hypothesis supported
PBIMR	0.077281	(+)	0.9337	hypothesis supported and not sig
Model of Gross National Savings with proxy IPSK2 (M2/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK2	733.3384	(+)	0.0000	hypothesis supported
IPS	-2648900.	(-)	0.0000	hypothesis supported
SBR	-4469.935	(+)	0.0000	hypothesis is not supported
RPDB	0.640792	(+)	0.0000	hypothesis supported
PBIMR	0.276681	(+)	0.0000	hypothesis supported

Source: data processed, 2014

Model of Banking Credit to Manufacturing Industry

Results equations bank credit to the manufacturing industry, showed that the financial development indicators, stock market indicators, gross national savings, real interest rates, real incomes and output of manufacturing industries was statistically significant to the banking credit to the manufacturing sector. However, the direction of partial effect for financial development indicators, and the stock market indicators hypothesis is not supported. However, the coefficient of determination financial development indicators with ratio M2/GDP only amounted to 0.511 percent while the value of the coefficient of determination by using the indicators of the banking sector development in the ratio of credit/GDP less the value of 0.1242 percent. Based on existing findings, it can be concluded that the independent variables in the model above list is not all bank credit as a determinant model of bank credit to the manufacturing sector. In theory, Siamat (2005) states that the loan portfolio is the nature of business of banks as intermediary institutions between suplus unit by unit deficit. The source of bank funding comes from the public and channeled back to the community in the form of loans, known as third-party funds.

Partially, the effect of financial development indicator approach with M2/GDP have a significant probability that 0,000, but toward the negative influence 206.8686. Similarly, the influence of financial development indicators with approach credit/GDP will significantly but the direction of the effect is not consistent with the hypothesis, negative 423.2268, significant increase in indicators of financial development will reduce bank credit. This condition is due to the financial development, either with the approach ratio of M2/GDP and Credit/GDP shows that the greater the loan, the amount of money in circulation will increase as well. However, when viewed from the depths of the use of credit to GDP will go down. Empirically, the development of lending to the manufacturing sector has increased in line with the decline in loan interest rates during the period 1998 - 2013. Meanwhile, the report of the Financial Services Authority (2014), sectors which absorb most of the bank credit is the household sector (21, 5%), wholesale and retail trade sector (19.7%), and the manufacturing industry (17.9%) with a total proportion of 59.1% of total bank credit. Dominance in household credit demand influenced by the increase in retail sales of food goods group, housewares and clothing.

Stock Market Indicators are statistically significant, but the sign has a negative influence on bank credit amounted to 484,087. This condition is suspected because of the financial cycle in the financial system that is running whether expansion or contraction, which in case of expansion of the stability of the financial system is done is through macroprudential policies are generally intended to dampen the formation (build up) systemic

risk. While the contraction during the given space for absorption of risk (risk absorption) (BI, 2014). The main component of Indonesia's main financial cycle is affected by the credit (narrow credit) and the ratio of credit / GDP due to credit is a source of funding. In theory, according to Borio (2012) in Bank Indonesia (2014), the financial cycle component represents at least have two elements, namely (i) the perception of value and risk are represented with for example asset prices in property prices and stock prices, (ii) financing constraints represented by credit in the broad sense that the total financing for the private sector, among others, obtained from the financing banks, money markets (stocks and bonds) and foreign debt.

Empirically, the projected financial cycle is based on the results of credit and GDP, projections which indicated financial cycle peaked around the third quarter of 2013 and financial cycle has decreased in line with the projection of credit growth and credit/GDP yearly. As for sources of financial imbalances is the first, Prosiklikalitas; the condition of the banking behavior to excessive bank lending. Secondly, the increase in property prices, it is driven by the increasing demand for good individual properties for residential purposes or for the purpose of profit rental investment and speculative purposes by utilizing the property prices which in turn is likely to encourage excessive property prices, which in turn can push the occurrence of price bubbles. Third, Foreign Debt Increased for Private Non-Bank. (Bank Indonesia, 2014).

Parameter of interest rate loan expected significant with a negative coefficient value of 319.9741 the effects on bank credit. In theory, through the transmission mechanism, the expansion of the monetary policy will have an impact on the decline in the BI rate. If the BI rate down, it will increase monetary liquidity and interbank money market rate. The decline of Interbank rate marked by a decline in interbank rates, which in turn was followed by a decrease in interest rates on savings and interest rates on loans (credit). The fall in interest rates on loans will be responded with a rise in credit demand by the debtor that will increase production in the real sector.

Empirically, during 2004 - early 2012, the average income on loans in the banking sector amounted to 53.52 percent of total bank operations that the average proportion of income on loans increased by 5, 83 percent each year, Asmara (2013). The amount of the contribution of interest income on loans provide an understanding that the determination of lending rates is an important function in the operational activities of the bank. Correspondingly, Hadad et al (2003) in Asmara (2013) explains that the level of lending rates of commercial banks in Indonesia is set relatively high (overpriced), which is the average of the actual development of credit interest rate in Indonesia is still higher when compared with the level of interest in Southeast Asian countries, it is because commercial banks in Indonesia to interest rate setting mechanism-based credit risk (risk adjusted) in accordance with the framework of the Basel II capital adequacy level that is required by the bank to absorb credit risk.

Parameter estimation results for GDP and output industrial manufacture to the credit consistent with the hypothesis set out with a significant probability. The rise in GDP will increase the demand for bank credit amounting to 0.1154 percent. While, for the parameters of the manufacturing industry output expected yield of 0.5622 percent parameter values are statistically significant. In theory, output and GDP have effect to bank credit, the greater the output will drive the demand for credit, working capital loans are especially consumer credit, (Barro and Sala-i-Martin, 1995).

The parameter of gross national saving based on the probability of $\alpha = 10\% > 0.0212$ statistically significant effect with a negative parameter value of 0.044 percent of the loans granted to the manufacturing sector. In theory, based on the Ricardian theory propounded by David Ricardo, that important savings for capital formation, so that if the savings go up, the number of credit demand will decline.

The following table calculation results for Model of Banking Credit to Manufacturing Industry:

Model of Banking Credit to Manufacturing Industry with proxy IPSK1 (Credit/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK1	-423.2268	(+)	0.0000	hypothesis not supported and sig
IPS	-536110.6	(+)	0.0004	hypothesis not supported and sig
SBPR	-637.6305	(-)	0.0052	hypothesis supported
RPDB	0.211041	(+)	0.0000	hypothesis supported
OMIR	0.536747	(+)	0.0000	hypothesis supported
TNBR	-0.151438	(-)	0.0001	hypothesis supported
Model of Banking Credit to Manufacturing Industry with proxy IPSK2 (M2/GDP)				

Variables	Coefficient	Hypothesis	Prob.	Conclution
IPSK2	-206.8686	(+)	0.0000	hypothesis not supported and sig
IPS	-484087.7	(+)	0.0000	hypothesis not supported and sig
SBPR	-319.9741	(-)	0.0058	hypothesis supported
RPDB	0.115472	(+)	0.0000	hypothesis supported
OMIR	0.562278	(+)	0.0000	hypothesis supported
TNBR	-0.044882	(-)	0.0212	hypothesis supported

Source: data processed, 2014

Model of Investment Manufacturing Sector

The model for investment equation on manufacturing industry shows the results of the regression coefficient of only 0.4980, which means only 49 percent on Indonesia's manufacturing industry is influenced by the financial sector development indicators, indicators of the stock market, interest rates and output of the manufacturing industry itself. While the rest of 0.502 influenced by other variables such as inflation.

In partially, indicators of financial development have a positive effect on the manufacturing sector investments, increase in indicators of financial development will improve the investment on manufacturing industry. Empirically, the value of the parameter expected positive development of the financial sector (314.80) for the manufacturing sector investments this because Indonesia is still an investment of 55.4 percent is an investment in the industrial sector with a value of US $ 15.8 billion (Wirakusumah, 2014).

Based on the results expected parameter of the stock market indicator to investment of the manufacturing sector has a significant probability only marks the hypothesis is not supported. In theory, if the capital stock increases, Stock Market Indicators will rise and create demand for larger-scale businesses. Larger-scale enterprises will generally increase the efficiency so that will encourage investment. Empirically, the stock market performance in 2013 increased both the volume and value of stock transactions. It is also supported by the increasing number of companies listed on the exchange, only its effect will be seen in the long term.

Real lending rate does not affect to the manufacturing sector investments. In theory, the lending rate is the opportunity costs that influence the decision to make the investments where rising lending rates will reduce demand for investing in community. Investment is influenced by the level of interest rates in the opposite direction i.e. the high interest rates will dampen investment and low interest rates will stimulate investment. If the result shows lending rates negatively affect the investment (118.63) and in accordance with the existing theory, based solely on statistical probability calculations insignificant.

Parameters for output the manufacturing industry have significant influence with probability 0,000 where's the increase in manufacturing output will increase investment of 0.1535 billion. Based on the above calculation, it appears that the influence of the financial sector would be more efficient if it can mobilize funds and provide opportunities for the extension of credit to investment opportunities in the industrial sector of manufacturing.

Next page

The following table calculation results for Model of Investment Manufacturing Sector:

Model of Investment Manufacturing Sector with proxy IPSK1 (Credit/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK1	314.8079	(+)	0.0000	hypothesis supported
IPS	-732070.9	(+)	0.0000	hypothesis is not supported but sig
SBPR	-118.6394	(-)	0.5473	hypothesis is not supported
OMIR	0.153538	(+)	0.0006	hypothesis supported
Model of Investment Manufacturing Sector with proxy IPSK2 (M2/PDB				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK2	406.9820	(+)	0.0000	hypothesis supported
IPS	-528746.8	(+)	0.0001	hypothesis is not supported but sig
SBPR	43.92785	(-)	0.8106	hypothesis is not supported
OMIR	-0.379738	(+)	0.0000	hypothesis is not supported but sig

Source: data processed, 2014

Models of Output Manufacturing Industry

On models for output manufacturing industry the variables are financial development indicators, stock market indicators, the real interest rate, pollution, real GDP and bank lending affect to output manufacturing industry with coefficient of determination equal to 95, while the remaining 87 percent influenced by other variables including price levels , population and others.

Partially, the parameters of financial development indicators significantly and positively consistent with the hypothesis of the output of manufacturing industries with elasticity of 405.8032. This is consistent with existing theory, the higher the rate of progress of the economy, increase the use of money by the public, as reflected by the level of financial deepening of the financial sector in economic development, which in turn will increase the production output in the real sector and the real sector. In contrast to the above findings, based on the findings Udoh and Ogbuagu, (2012) in Nigeria explained that the inefficiencies in the financial sector have an impact on the loss of industrial products. Therefore, the Nigerian government has sought to improve access credit on small and medium enterprises (SMEs) through a scheme of SMEs and micro finance institutions.

Stock market indicators parameter is not statistically significant with a probability of more than 5%. In theory, the effect of stock market indicators through the asset price, the channel in case of contraction of monetary policy will affect to asset prices and wealth of society. It will consequently to affect changes in investment and consumption demand output.

Parameter real interest rates influence on the output of manufacturing industries by proxy IPSK1 i.e. the ratio of Credit/GDP and statistically significant prediction that hypothesis is supported. Meanwhile, the real interest rate parameter influence on the output of the manufacturing industry by proxy IPSK2; ratio of M2/GDP is not significant. This conditions are the increases on interest rates caused a decline in investment, which in turn will lower the level of output in the manufacturing industry.

The results for pollution parameters on the manufacturing industry with statistically significant and estimation hypothesis relates positively or negatively. Estimation shows, the increase in pollution causes an increase of the output of the manufacturing industry. This condition is contrary with existing theories, because the industrial sector is an economic activity which the supporting of the environment. The industry will contributes to the economy and employment. However, industrial activity is also an activity which is considered responsible for the environmental pollution. This relates to the offer of resources for the benefit of the production comes from nature and pollution or externalities that are considered damaging and lowering the quality of the environment (Tiana, 2006). According Suparmoko (2000) in Tiana (2006), cost of pollution prevention will be cheaper than the cost to repair the polluted environment.

The parameters GDP to output the manufacturing industry have a statistically significant effect on the probability of 0,000 <5%, but, in theory hypothesis is not supported with a negative value. The increase of revenues for the country will reduce production capacity of industrial sector output. This is because the import of industrial products Indonesia is quite high. In 2013 of which 70 percent is imported from raw materials and auxiliary materials, capital goods imports 17 percent and 13 percent of imports of consumer goods. As for the

raw material inputs are imported sequentially include machinery, steel, electronics, basic chemicals and automotive (Wirakusumah, 2014).

The parameter of bank lending have a positive influence on the level of manufacturing industry output. This is supported by the results of processing statistically significant with coefficient value of 0.19 percent. In theory, a decrease in lending rates will provide the opportunity for businesses to increase the scale of its business by borrowing from the banking sector, which in turn will increase the output in the industrial sector.

The following table calculation results for Models of Output Manufacturing Industry:

Models of Output Manufacturing Industry with proxy **IPSK1 (Credit/GDP)**				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK	2401.594	(+)	0.0000	hypothesis supported
IPS	-4788872.	(+)	0.0003	the hypothesis is not supported
SBR	-2048.371	(-)	0.0001	hypothesis supported
POL	4802.650	(+)/(-)	0.0000	hypothesis supported
RPDB	0.159330	(+)	0.2217	the hypothesis is not supported
PBR	-1.183731	(+)	0.0005	the hypothesis is not supported but sig
Models of Output Manufacturing Industry with proxy **IPSK2 (M2/GDP)**				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
IPSK	405.8032	(+)	0.0000	hypothesis supported
IPS	82234.89	(+)	0.4854	the hypothesis is not supported
SBR	-67.76566	(-)	0.4651	the hypothesis is not supported
POL	709.6590	(+)/(-)	0.0001	hypothesis supported
RPDB	-0.175640	(+)	0.0000	the hypothesis is not supported
PBR	0.191356	(+)	0.0000	hypothesis supported

Source: data processed, 2014

Models of Output Manufacturing Industry to Environment

The results of equations for manufacturing industry on the environment, shows that the output of manufacturing industries was statistically significant on the environment estimated by pollution in the manufacturing industry. Value of determination coefficient of 0.749624 percent, which means 74.96 percent of production output in manufacturing industry affects the environment through pollution. In theory, based on the theory of the Environmental Kuznets Curve (EKC) by Kuznets (1955) that environmental degradation will initially increases with income per capita, but once it reaches a certain point (the turning point) environmental degradation will decrease when there is an increase in the welfare of the population. From the industry side, with the change in the pattern of industrialization from small industries to large industries led to an increase in natural resources, which in turn will increase the environmental degradation. In line with that, Donella and Meadows (1972) through the concept of limits to growth shows that the impact of economic growth on environmental degradation is a trade off. If the industrial output increased, cause to higher natural resource exploitation.

Empirically, the manufacturing industry in Indonesia is still focused on primary goods. For example, the export performance of Indonesia's industrial products to the world by the year 2013 was dominated by the first oil palm, rubber pengelolahan, electronics and pulp & paper (Wirakusumah, 2014). Based on information from the Ministry of Industry (2015), more than 60% of Indonesia's manufacturing exports are still dominated by natural resource-based sector (SDA), the semi-finished products and low-tech. In 2012, manufacturing exports are targeted to increase to US $ 140 billion, up 14.6% compared to the year 2011 of US $ 122.2 billion. The contribution of manufacturing industries in 10 years ago about 70% of the total Indonesian exports, a decline which decrease the contribution of manufactured products to national export performance, among others, due to increased exports of raw minerals such as copper, nickel and bauxite. The same thing was stated by the head of LIPI, Lukman Hakim stated that, the national manufacturing industry is still dominated by products of low technology content, this happens because the government and private investment in research and development

(R & D) low technology. LIPI noted, in 2010, exports of low-tech products reached US $ 52.7 billion, medium-low of US $ 14.6 billion, medium-high of US$ 3.96 billion, and a high of US$ 9.02 billion. (http:www.kemenperin.go.id/artikel).

The following table calculation results for Output Manufacturing Industry to Environment:

Models of Output Manufacturing Industry to Environment with proxy IPSK1 (Credit/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
OMIR	0.000227	(+)	0.0000	hypothesis supported
Models of Output Manufacturing Industry to Environment with proxy IPSK 2 (M2/GDP)				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
OMIR	-0.000229	(+)	0.0000	the hypothesis is not supported but sig

Source: data processed, 2014

Models of Output Manufacturing Industry to Poverty.

Model of output the manufacturing industry on poverty shows the results of determination coefficient of 77.99 percent while the rest influenced by other factors. The output of manufacturing industries have an impact on poverty with a value of 0.000176, which means the increase in output of the manufacturing industry will reduce the level of poverty.

Empirically, according to the head of the Central Statistics Agency (BPS), Rusman Heriawan; in 2010, the average incomes of the lower class, amounting to 50.15 million people (representing 60 percent of the recipient's income) amounted to US $ 2,284 per year. While the middle class numbering 25 million people or 30 percent of the average income of US $ 5,326 per year. While the upper class which amounts to 8.3 million people or 10 percent of the average income of US $ 14,198 per year (BPS, 2011).

Theoretically, this is in accordance with the findings Buys et al, (2010) which states that investment in human capital have a significant effect on economic growth, which in turn will reduce the level of poverty. Stiglitz (1998) also revealed that the market failure is the fundamental cause of poverty as well as the information that a high symmetrical and the maximum lending limit for the small business market is the failure of the formal financial sector as the fundamental cause of poverty.

The expected parameters for an unemployment through the poverty have a significant probability coefficient only generated a negative sign 0.6673. Empirically, the picture of the unemployment rate in Indonesia a like the Kuznets curve "inverted U, this is in line with the early growth stages of a centralized modern industrial sector proposed by Lewis which is at an early stage, limited employment opportunities, but wages and high productivity levels. The income gap between the modern industrial sector with a traditional agriculture sector will initially widened and narrowed back. While income inequality in the modern sector will grow more rapidly than in the traditional sector are relatively stagnant or constant.

The following table calculation results for Models of Output manufacturing Industry to Poverty

Models of Output manufacturing Industry to Poverty with proxy IPSK1 (Credit/GDP).				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
OMIR	-0.000175	(-)	0.0000	hypothesis supported
UNEMP	-0.667390	(+)	0.0000	the hypothesis is not supported but sig
Models of Output manufacturing Industry to Poverty with proxy IPSK2 (M2/GDP).				
Variables	**Coefficient**	**Hypothesis**	**Prob.**	**Conclution**
OMIR	-0.000176	(-)	0.0000	hypothesis supported

UNEMP	-0.723898	(+)	0.0000	the hypothesis is not supported but sig

Source: data processed, 2014

Conclusion and Suggestion

Economic development is essential for the achievement for a country as the direction and objectives of sustainable development of a country's to achieve improved welfare. Indicators to measure the depth of the financial development using two approaches, the first indicator is the ratio of M2/GDP and second, is the ratio of Credit/GDP. Based on the analysis in the previous chapter, the conclusions of this study are:

1. The empirical results of the determinants of the development of the financial sector (with the ratio of Credit/GDP) is the indicator of financial development sector, stock market indicators, affecting the real gross domestic product gross national savings. While indicators of financial development sector with the ratio of M2/GDP, significant variables are financial development indicators, stock market indicators, real gross domestic product and bank lending for the manufacturing industry affect gross national savings. Based on the above conclusions, financial development indicator through ratio (Credit/GDP) and ratio (M2/GDP) showed that if lending by the financial sector, increasing the bank lending and money supply. Based on empirical results, the factors that affect bank lending in the manufacturing sector with good financial sector development indicators ratio of Credit/GDP and M2/GDP is the lending rate, the level of gross domestic product, industrial output for manufacturing industry to gross national savings.
2. Based on the analysis, investment model to the manufacturing industry, only influenced by the indicators of financial development and output on the manufacturing industry.
3. For models of output manufacturing industry, factors affecting the manufacturing industry output is financial development indicator, real interest rates, pollution and bank loans. As for the variable stock market indicators, gross domestic income is not significant.
4. Output of manufacturing industries affect the environment through air pollution generated by the manufacturing industry. Based on the results of the model equation 4 and equation 6, there was a causal relationship between the level of output and pollution.
5. Output of manufacturing industry affect the poverty level while the unemployment rate does not affect the output of the manufacturing industry.

Conclusion of analysis indicates that financial development in Indonesia simultaneously acting as the intermediary function of the monetary sector and the real sector to sustain the sustainable development through real sector output and influencing to the environment and the poverty. The ratio of Credit/GDP are lock or instrument determination of the depth of the financial development for the real sector in Indonesia. Credit should be directed to the productive sector and not consumptive. Savings is important and need for transforms into productive investments. Control of interest rates needs to be done carefully (prudent behavior).

Economic outlook needs to be improved because of the low level of lending rates are not necessarily addressed by society to increase credit demand when the economy is sluggish.Stock market indicators are needed to encourage investment due to the low use of capital markets for financing investments and limitations of intermediation by non-bank financial institutions. Financial development can contribute to the environment by providing incentives for companies to adopt environmentally friendly techniques during the production process. So that a sound financial sector can improve the quality of the environment. Financial development impact on poverty through manufacturing industry output.

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