

The Analysis Factors of Micro Small and Medium Enterprises Income in Indonesia

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Abstract: This study aims to analyze the factors that effect Micro Small and Medium Enterprises income in Indonesia by using the Ordinary Least Square (OLS) method. The source of data were Bank Indonesia and The Cooperative Ministry in 2010:1 – 2017:4. The results of data analysis indicates that: (1) Bank credit distribution has a positive and not significant effect on Micro Small and Medium Enterprises income in Indonesia, (2) Micro Small and Medium Enterprises Labor has a positive and significant effect on Micro Small and Medium Enterprises income in Indonesia, (3) Interest rate has a negative and significant effect on on Micro Small and Medium Enterprises income in Indonesia.

1 INTRODUCTION

The era of reform, the economy was built on the basis of a populist economic system. The main components of the people's economic system are human resources as consumers, as workers, and as entrepreneurs. Thus a populist economic system is an economic order that provides the widest opportunity for employment and effort for the community to achieve an even and equitable welfare improvement. Concretely, efforts to improve the community's economy must be carried out in various programs, including the development of Micro, Small and Medium Enterprises (MSMEs).

MSMEs are the key to economic growth because they can help the recovery of the economy with income earned (Brașoveanu and Bălu, 2014). According to Law Number 20 of 2008 Definition of Micro, Small and Medium Enterprises is a business carried out by individuals or groups of people on a small scale. The law also emphasizes that micro-enterprises are one form of productive business owned by individuals and / or individual business entities that conform to the criteria of micro-enterprises.

Furthermore, it is also explained about small businesses, namely a form of independent business

that is carried out by people per group or group of people or business entities that are not subsidiaries or branches of companies owned, controlled or become a part, either directly or indirectly from medium-sized businesses or large businesses that meet the criteria of small businesses. Whereas the definition of a medium business is a productive economic enterprise that is independent, carried out by individuals or business entities that are not subsidiaries or branches of the company owned, controlled, or become the amount of net assets or proceeds of sales as stipulated in Law Number 20 In 2008.

Based on data from the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia in 2011-2017, MSME revenue growth has fluctuated from year to year. The highest income growth occurred in 2016 amounting to 67.98% and the lowest growth occurred in 2017 at 4.68%. According to the 2016 World Business Activity Survey conducted by Bank Indonesia, MSME's rapid revenue growth in 2016 was due to the easier access to bank loans supported by lower interest rates, increased demand for goods and services, and an increase in the number of workers in several important sectors.

Whereas in 2017, there was a decline in MSMEs revenue growth in Indonesia due to a slowdown in business activities mainly due to the decline in business activities in the agriculture, plantation, livestock, forestry and fisheries deposits due to seasonal factors and unfavorable weather conditions, decreased activity industrial sector business, and the decline in the number of workers in the fourth quarter of 2017.

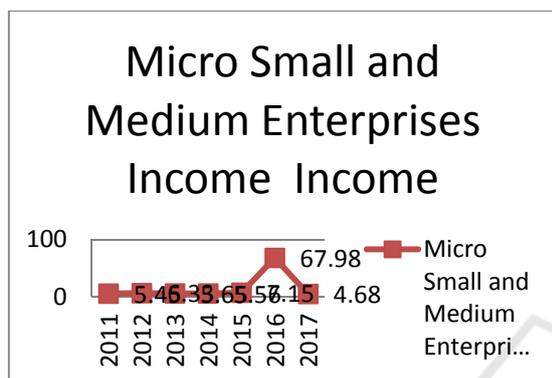


Figure 1: MSME Income Growth in Indonesia in 2011-2017

Based on the production theory, the factors that influence the increase in production associated with increased income are capital and labor (Sukirno, 2014). Since the 1970s, the Indonesian government has facilitated the distribution of funds to the MSMEs sector which began with two credit schemes from Bank Indonesia, namely Permanent Working Capital Credit (PWCC) and Small Investment Credit (SIC).

In addition, Bank Indonesia has issued Bank Indonesia Regulation (BIR) Number 3/2/PBI/20011 which requires banks to provide 20 percent of their total loans to small businesses. The regulation was issued to encourage banks to increase the distribution of funds to the MSMEs sector which is used as capital.

The following are data on bank credit distribution, MSMEs labor, interest rate and MSMEs income in Indonesia in 2014: 1-2017: 4:

Table 1: Bank Credit Distribution, MSMEs Labor, Interest Rate and MSMEs Income in Indonesia 2014:1-2017:4

Years	MSME Income (Billion)	Bank Credit Distribution (Billion)	MSME Labor (Million)	Interest Rate (%)
2014-1	374.92	637.52	27.82	7.5

2014-2	380.78	669.28	28.27	7.5
2014-3	387.15	683.02	28.75	7.5
2014-4	394.04	694.97	29.28	7.67
2015-1	270.04	702.85	30.71	7.58
2015-2	330.53	735.37	30.98	7.5
2015-3	444.10	752.36	30.93	7.5
2015-4	610.74	797.84	30.59	7.5
2016-1	1,090.56	815.33	28.62	7
2016-2	1,259.33	851.98	28.19	6.67
2016-3	1,377.15	868.25	27.99	5.58
2016-4	1,444.00	898.04	28.01	4.75
2017-1	1,459.90	888.37	28.25	4.75
2017-2	1,424.84	992.47	28.71	4.75
2017-3	1,338.82	942.69	29.39	4.5
2017-4	1,201.84	976.40	30.30	4.25

Source: Bank Indonesia, Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia

Based on table 1 above, in 2014: 4, when interest rates rose to 7.67%, bank lending also rose to 694.97 Billion and MSMEs income continued to increase. In fact, when interest rates should rise, bank lending falls which results in a decline in MSMEs income in Indonesia.

In 2016: 1-2016: 3, when the number of workers fell, MSMEs income continued to increase. In fact, the decline in the number of workers affects the production process. Then, in 2017: 1, when interest rates fell to 4.5%, bank lending fell to 942.69 Billion and MSMEs income continued to increase. In fact, when interest rates have dropped, bank lending has risen which has resulted in increased MSMEs income in Indonesia.

Because of the phenomena that contradict the theory, it is interesting to do further research on the factors that influence the income of MSMEs in Indonesia. The purpose of this study is to find out what factors influence the income of MSMEs in Indonesia in 2010: 1-2017: 4.

2 THEORETICAL FRAMEWORK

According to Sukirno (2014), production theory in economics distinguishes its analysis from two approaches, namely:

1. Production Theory with One Factor Changed

Production theory with one factor changes explains the relationship between the level of production of goods produced based on the amount of labor used. In the analysis of production theory with one factor

changes only the amount of labor can be changed in number.

Then the production function can be expressed as follows:

$$Q = f(L) \tag{1}$$

Where:

L = The Amount of Labor;

Q = The Amount of Production Produced.

2. Production Theory with Two Factors Change

According to Pracoyo and Pracoyo (2006), the theoretical concept of long-term production is if all the production factors used in the production process are variable. The concept of long-term production theory uses 2 variable inputs. According to Akhmad (2014), the production theory with two changing factors is a combination of labor and capital change. In this case, how changes in producer behavior choose the combination of labor and capital to produce the same output is explained by the isoquant and isocost curves.

a. Isoquant

According to Akhmad (2014), isoquant is a curve that describes various combinations of the use of two types of variable inputs efficiently with a certain level of technology to produce the same level of production. So production analysis with two factors (all factors) input is a variable, both capital and labor.

Then the production function can be expressed as follows:

$$Q = f(K, L) \tag{2}$$

Where:

K = The Amount of Kapital;

L = The Amount of Labor;

Q = The Amount of Production Produced.

The isoquant curve can be described as follows:

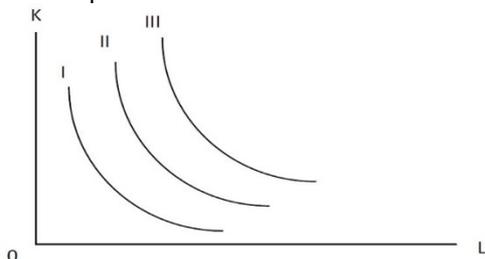


Figure 2: The Isoquant Curve

Caption: Isokuan shows a combination of 2 inputs namely capital and labor which can be used to produce the same level of output. Each point on the isoquant curve shows various combinations of the same input which can produce the same output. The

farther from the origin (upwards), the more output will be generated, because the use of input increases.

b. Isocost

In carrying out production activities, producers have problems regarding limited funds to allocate a number of inputs. The limitations of these funds are shown in a curve called isocos. According to Pracoyo and Pracoyo (2006), Isokos is a curve that describes the combination of two inputs that require the same cost.

If it is assumed that producers only use two inputs in their production, namely labor and capital, the production costs that must be spent are:

$$TC = rK + wL \tag{3}$$

Dimana:

r = Rent;

K = The Amount of Kapital;

w = Wage;

L = The Amount of Labor.

The isocost curve can be described as follows:

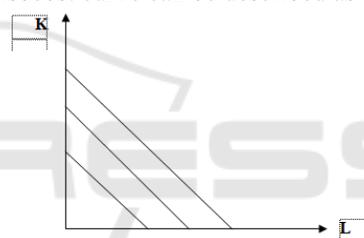


Figure 3: The Isocost Curve

Caption: The isocos curve shows various combinations of 2 inputs, namely capital and labor used to produce output at the same cost. If the producers' funds change, while the price of the two inputs is fixed, the isocos will shift parallel to the previous one, because it has the same slope. If the price of one or both inputs changes, while the funds held are fixed, the slope of the isocos will change.

In this study, the amount of production is considered as income earned by MSMEs from capital (bank credit), labor and interest rates that have been empirically proven by other researchers.

According to Kasmir (2014), the more loans channeled, the better, especially in terms of increasing income. Thus, it can be said that credit distribution has a positive effect on income.

According to Sindani's (2018) research on the effect of trade accounts receivable financing on the growth of SMEs in Kakamega District, Kenya with OLS estimation (Ordinary Least Square), the result is trade receivables financing positively and significantly affects SME growth in Kakamega

District, Kenya individually without include other factors.

Whereas according to research conducted by Nwosa and Oseni (2013) about the impact of bank loans on SMEs in the manufacturing sector in Nigeria with estimation of ECM (Error Correction Mode), the result is bank loans have no significant effect both in the short and long term for SMEs in the manufacturing sector in Nigeria.

In addition to lending, labor is an important factor in production, because labor is the driving force of other input factors, without the presence of labor, other production factors will not stop. According to Todaro (2000) labor force growth is traditionally regarded as one of the positive factors that spur economic growth, a greater number of labor means that it will increase the level of production.

According to Maryati (2014) about the role of Sharia Community Financing Banks in the development of MSMEs and rural agribusiness in West Sumatra, the result is large productive financing and business assets that have a significant and positive effect on the value of business production, while labor has a significant and negative effect on business production.

Meanwhile, according to research conducted by Ulrich and Cyrille (2016), we examine the effect of commercial bank credit on SME income in Cameroon: Empirical evidence from 1980-2014 with OLS (Ordinary Least Square) estimates. The result is that the stock of capital and labor has a positive impact on the income of SMEs in Cameroon. Also revealed that commercial bank loans and real interest rates have a negative and significant impact on the income of SMEs in Cameroon.

According to Mishkin (2008) the stability of interest rates is highly expected, because the stability of interest rates also encourages financial market stability so that the ability of financial markets to channel funds from people who have the opportunity to produce investment can run smoothly and economic activity also remains stable. When interest rates are low, the more funds flow, resulting in increased economic growth and vice versa (Sundjaja and Berlian, 2003).

3 RESEARCH METHOD

This type of research is quantitative research using secondary data from 2010: 1-2017: 4. Data on bank creding distribution in billion rupiah units is obtained from Bank Indonesia and interest rates in

percent units are obtained from Bank Indoensia. The MSMEs labor in units of millions per person was obtained from the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia and MSMEs income in billion units was obtained from the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia

The analytical method used in this study is Multiple Regression Analysis where regression analysis is known as Ordinary Least Square (OLS) analysis with classic assumption tests, namely normality test, mutlikollinearitas test and heteroscedasticity test. The hypothesis test conducted is t test, F test and R² test.

The following is a multiple linear regression equation:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e_i \tag{4}$$

Where:

- Y = MSMEs Income;
- X₁ = Bank Credit Distribution;
- X₂ = Labor;
- X₃ = Interest Rate;
- β₀ = Parameter Constants;
- β₁ = Bank Credit Distribution Regression Coefficient;
- β₂ = Labor Regression Coefficient;
- B₃ = Interest Rate Regression Coefficient;
- e_i = Disturbance Error.

4 ANALYSIS

4.1 Classic Asumption Test

4.1.1 Normality Test

The normality test is used to test whether in the regression model, the independent variable and the dependent variable are normally distributed or not. A good regression model is if the data distribution is normal or near normal. Tests are carried out using the Jarque Bera Test or J-B Test. The following are the results of the normality test:

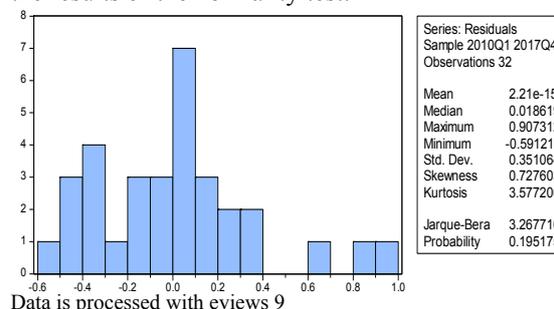


Figure 4: Result of Normality Test

Based on the data above, Jarque-Bara value is 3.267716 with p value of 0.195175 > 0.05, it can be concluded that the data used is normally distributed.

4.1.2 Uji Multikolinieritas

Multicollinearity is the condition of a linear relationship between independent variables. Multicollinearity testing uses a variance inflation factor (VIF). If the VIF value of a variable is not more than 10, then the variable does not multiply with other variables in the model (Gujarati, 2003).

The following are the results of the multicollinearity test:

Table 2: Result of Multicollinearity Test

Variance Inflation Factors
Date: 12/03/18 Time: 01:49
Sample: 2010Q1 2017Q4
Included observations: 32

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	203.6926	47769.19	NA
LNBCD	0.006453	274.5416	1.201890
LNSMEs_			
L	0.737744	50684.12	1.206438
IR	0.004360	42.48433	1.015031

Data is processed with eviews 9

Based on the data above, it shows that the VIF values of all variables are less than 10. This means that all variables in this study are not multicollinearity with other variables in the model.

4.1.3 Heteroscedasticity Test

Heteroscedasticity aims to test whether in the regression model there is an inequality of variance from the residual one another observation. A good regression model is homoscedasticity or heteroscedasticity does not occur.

Table 3: Result of Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.805684	Prob. F(3,28)	0.5013
Obs* R-squared	2.542840	Prob. Chi-Square(3)	0.4676
Scaled explained SS	2.508726	Prob. Chi-Square(3)	0.4737

Data is processed with eviews 9

Based on the data processing above, where the value of p value is indicated by the value of the Prob. chi square (3) in Obs * R-Squared which is equal to 0.4676. Because the p value is 0.4676 > 0.05, it can be concluded that there is no problem of heteroscedasticity.

4.2 Ordinary Least Square (OLS) Test

This study uses multiple linear regression with an estimation model of Ordinary Least Square (OLS). The following are the results of Ordinary Least Square (OLS) calculations:

Table 4: Result of Ordinary Least Square (OLS) Test

Dependent Variable: LNSMEs_Income
Method: Least Squares
Date: 12/03/18 Time: 01:35
Sample: 2010Q1 2017Q4
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-49.50241	14.27209	-3.468477	0.0017
LNBCD	0.053353	0.080329	0.664183	0.5120
LNSMEs_L	3.759710	0.858920	4.377251	0.0002
IR	-0.387454	0.066027	-5.868097	0.0000
R-squared	0.660139	Mean dependent var		13.09665
Adjusted R-squared	0.623725	S.D. dependent var		0.602193
S.E. of regression	0.369393	Akaike info criterion		0.962557
Sum squared resid	3.820632	Schwarz criterion		1.145774
Log likelihood	-11.40091	Hannan-Quinn criter.		1.023288
F-statistic	18.12885	Durbin-Watson stat		0.443552
Prob(F-statistic)	0.000001			

Based on the data in table 2 above, the Ordinary Least Square (OLS) equation is obtained:

$$Y = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + e_t$$

$$Y = -49.50241 + 0.053353 X_1 + 3.759710 X_2 - 0.387454 X_3$$

This means that bank lending has a positive effect on MSME income in Indonesia, labor has a positive effect on MSME income in Indonesia and interest rates have a negative effect on MSME income in Indonesia.

4.3 Hypothesis Test

4.3.1 F-Test

This test aims to see whether there is a significant influence between independent variables on the dependent variable simultaneously or together. In the context of this study, this simultaneous testing wanted to see whether the variables of Banking Credit Distribution, MSMEs Labor and Interest Rate had an effect on MSMEs Income or not. To see whether or not the influence of the independent variables on the dependent variable is seen from the significance value. If the significance value is $< \alpha$, then there is a significant effect between the independent variables on the dependent variable. And vice versa, if the value of $\text{sig.} > \alpha$, then there is no significant effect between the independent variables on the dependent variable.

After testing, it can be seen from Table 4. above, the results of the significance value are $0.000001 < 0.05$, which means that independent variables (Bank Credit Distribution, MSMEs Labor and Interest Rate) have a significant effect on MSMEs Income or jointly influence revenue MSMEs, so that changes in MSMEs income can be explained by the independent variables tested.

4.3.2 t-Test

The t test statistic shows how far the influence of one free variable individually in explaining the variation of the dependent variable. To do the t test by Quick Look, is if the prob value $< \alpha$ then there is a significant effect between the independent variables on the dependent variable, and vice versa.

a. The Bank Credit Distribution

After testing using the eviews 9.0 application, it can be seen from Table 4. above, that the probability value for the bank lending variable is $0.5120 > 0.05$. This shows that the variable of bank credit distribution does not have a significant effect on MSMEs income in Indonesia. The direction of the regression coefficient for the bank credit distribution variable is positive, the positive value has the meaning that the higher bank credit distribution will be followed by an increase in MSMEs income in Indonesia.

The coefficient value of 0.053353 means that the value that will be obtained if bank credit distribution rises by 1 billion, it will be followed by an increase in MSMEs income of 0.053353 billion. Likewise, on

the contrary, if there is a decrease in bank credit distribution of 1 billion, it will be followed by a decrease in MSMEs income of the same value, namely 0.053353 billion, *ceteris paribus*.

b. The MSMEs Labor

Based on the results of the study, it shows that the probability value for the labor variable is $0.0002 < 0.05$. This shows that labor variables have a significant effect on MSMEs income in Indonesia. The direction of the regression coefficient for the labor variable is positive, the positive value has the meaning that the higher the number of workers it will be followed by an increase in MSMEs income in Indonesia.

The coefficient value of 3.759710 means that the value that will be obtained if the amount of labor increases by 1 million people will be followed by an increase in MSMEs income of 3.759710 billion. Likewise, on the contrary, if there is a decrease in the amount of labor of 1 million people, it will be followed by a decrease in MSMEs income of the same value, namely 3.759710 billion, *ceteris paribus*.

c. The Interest Rate

Based on the results of the study, it shows that the probability value for the interest rate variable is $0.0000 < 0.05$. This shows that the interest rate variable has a significant effect on MSMEs income in Indonesia. The direction of the regression coefficient for the interest rate variable is negative, the negative value means that the higher the interest rate will be followed by a decrease in MSMEs income in Indonesia.

The coefficient value of -0.387454 means that the value to be obtained if the interest rate rises by 1 percent will be followed by a decrease in MSMEs income of 0.387454 billion. Likewise with the opposite, if there is a decrease in the interest rate of 1 percent, it will be followed by an increase in MSMEs income of the same value, which is 0.387454 billion, *ceteris paribus*.

4.3.3 Determination Test (R^2)

Based on Table 4. above, it is known that the results of the data show that the value of R^2 obtained from the estimation results is 0.660139. This means that 66.01 percent of the variation in MSME income is explained by the variable bank lending, MSME

labor and interest rates. While 33.99 percent is explained by other variables outside the model.

5 RESULTS

5.1 Effect of Bank Credit Distribution on MSMEs Income in Indonesia

Based on the results of the study, it was shown that positive credit distribution for MSMEs income in Indonesia, but not significant. The effect of insignificant credit disbursement on MSMEs income in Indonesia with research conducted by Nwosa and Oseni (2013) on the effect of bank loans on SMEs in the manufacturing sector in Nigeria with estimation of ECM (Error Correction Mode), which is not significant bank loans in the long run short and long for the SME sector in Nigeria.

5.2 Effect of Labor on MSMEs Income in Indonesia

Based on the results of the study showed that labor has a positive and significant effect on MSMEs income in Indonesia. This is in accordance with the production theory which states that labor is a factor that affects production. If the number of workers increases, it will affect the amount of production that increases the income of MSMEs in Indonesia.

5.3 Effect of Interest Rate on MSMEs Income di Indonesia

Based on the results of the study indicate that interest rates have a negative and significant effect on MSMEs income in Indonesia. This is in line with the statement of Sundjaja and Berlian (2003) when interest rates are low, so more funds flow so that economic growth also increases and vice versa. Thus, Bank Indonesia must maintain the stability of interest rates, because it encourages financial market stability so that the ability of financial markets to channel funds from people who have the opportunity to produce investment can run smoothly and economic activity also remains stable.

6 CONCLUSIONS

MSMEs are the key to economic growth that can help the Indonesian economy from income earned by MSMEs. Based on the production theory, the main factor that helps increase income is capital and

labor. The business capital obtained by MSMEs comes from bank lending.

Based on the research that has been done, the results obtained are that bank lending has a positive and not significant effect on MSMEs income in Indonesia. MSMEs labor has a positive and significant effect on MSMEs income in Indonesia and interest rates have a negative and significant effect on MSME income in Indonesia.

REFERENCES

- Akhmad. (2014). *Ekonomi Mikro Teori dan Aplikasi di Dunia Usaha*. Yogyakarta: ANDI.
- Braşoveanu, Iulian Viorel dan Bălu, Petronela – Evelina. (2014). *The Influence of the Business Environment on Small and Medium Enterprises*. Journal of Knowledge Management, Economics and Information Technology. Vol. IV, Issue 2. Pp 1-13.
- Gujarati, Damodar, (2003), *Ekonometri Dasar*. Terjemahan: Sumarno Zain, Jakarta: Erlangga.
- Kasmir. (2014). *Dasar-Dasar Perbankan Edisi Revisi*. Jakarta: PT Raja Grafindo Persada.
- Maryati, Sri. (2014). *Peran Bank Pembiayaan Rakyat Syariah dalam Pengembangan UMKM dan Agribisnis Pedesaan di Sumatera Barat*. Journal of Economic Education. Vol 3. No. 1. Pp 1 17.
- Nwosa, Philip Ifeakachukwu and Oseni, Isiaq Olasunkanmi. (2013). *The Impact of Banks Loan to SMEs on Manufacturing Output in Nigeria*. Journal of Social and Development Sciences. Vol. 4, No. 5. Pp 212-217.
- Pracoyo, Tri Kunawangsih dan Pracoyo, Antyo. (2006). *Aspek Dasar Ekonomi Mikro*. PT Gramedia Widiasarana Indonesia: Jakarta
- Sindani, Mary Nelima Lyani. (2018). *Effects of Accounts Receivable Financing Practices on Growth of SMEs in Kakamega County, Kenya*. Expert Journal of Finance. Vol. 6. Pp 1-11.
- Sukirno, Sadono. (2014). *Mikroekonomi Teori Pengantar. Edisi Ketiga*. Jakarta: PTRaja Grafindo Persada.
- Sundjaja, Ridwan S dan Inge Berlian. (2003). *Manajemen Keuangan 2*. Edisi Keempat. Yogyakarta: Literata Lintas Media.
- Todaro, Michael P. 2000. *Pembangunan Ekonomi di Dunia Ketiga*. Erlangga. Jakarta

Ulrich, D’Pola Kamdem dan Cyrille, Tour Moise Alexis. (2016). *The Effect of Commercial Bank Credit on The Output of Small and Medium Enterprises in Cameroon: Empirical Evidence From 1980-2014*. Maghreb Review of Economic and Management. Vol, 03, No. 02. Pp 43-53.

