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An Empirical Study on Influence of Specific Bank's Variables on Bank's Default Risk: The Study Case of Foreign Exchange Banks in Indonesia

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Abstract---*Purpose: Risk management is an integral part of a sustainable foreign exchange banks in Indonesia. Purpose of this study was to conduct an empirical investigation and to determine the risk for sustainable management of foreign exchange banks in Indonesia, especially default risk. Design/methodology/approach: The method used in this article is using logit model. Goodness of fit test used to examine fit model or otherwise. Likelihood, Cox & Snell R Square and Hosmer-Lemeshow test used to verify the model. Wald statistic used to examine the effect of each independent variable on the dependent variable. Findings: The findings showed that risk on foreign exchange banks in Indonesia is influenced by specific's dan macroeconomics variables that affect the performance of foreign exchange banks. Non performing loan, credit quality, capital requirement, interest rate and inflation have an effect on the occurrence of default risk in foreign exchange banks in Indonesia. Research limitation/implications: This research uses secondary data from foreign exchange banking statistics for 68 months from July 2011 to February 2017 in Indonesia. Practical implications: This study contribute policy to mitigate risk bank (default risk) that can affect performance of foreign exchange banks in the challenge of being able to compete on a regional and international scale. Originality/value: In this study independent variable divide into the specific bank's variables (internal variables) and macroeconomics. The internal variables are non performing loan, capital requirement, credit quality and bank size. Interest rate and inflation are chosen as macroeconomics variables.*

Keywords---*Risk management, Default risk, Banking sustainability*

JEL Classification: *G1 • G15 • G32*

I. INTRODUCTION

In the macroeconomic order, banks are transmission belts that transmit monetary policy, whereas in the micro-economic order, banks are a source of financing for business and individual needs (Koch & Mac Donald, 2000). The role of banks in meeting the needs of business and individuals is very vital while making banks very vulnerable to risk. After the crisis in Indonesia there was a phenomenon of an increase in undisbursed loans in terms of the amount and proportion to the bank credit ceiling. The cause of the increase in undisbursed loans was allegedly due to the lack of optimal performance of banks consider that they do not significantly reduce lending rates and ease credit withdrawal requirements. The increase in loan interest rates was felt by the debtor and was the cause of high non

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performing loan. This situation can cause the bank to lose and lead to default risk (Puspitasari,2015).

The economic impact caused by bank failures in risk management is a very important topic because most of the core activities of each bank are credit financing. The main problem in banking industry in case of placement funds is weakness of risk management that was identified as main reason of probability default. The phenomenon of attracting credit risk or default risk in banking industry in Indonesia are:

1) Bank as intermediary institution have ability to create and place funds, thereby increasing bank risk exposure (Allen & Gale; 2003). It caused by low credit quality (Duffie & Singleton;1999).
2) Thehighcreditriskordefaultriskishauntedbythepotentialformismatchmaturity.

   To mitigate these risks, adequate capital is needed (Melese & Laximinkantham; 2015).
3) The slowing growth of third party funds in the period 2011-2017 had an impact on decline innational banking performance stability (Bennet *et al* ., 2014; Suhartono, 2012; Kithinji, 2010).

The enactment of ASEAN Economic Community (AEC) and Free Trade International are focused on foreigner change banks to be able to compete on a regional and international scale. This research contributes to investigate influence of specific bank's variables (internal variables) and macroeconomics variables toward risk on banking in Indonesia, especially foreign exchange bank.

II. LITERATURE REVIEW

Based on the Price water house Coopers (PwC) release of the 2017 Banking Survey towards Indonesia's top bankers have succeed to identify several risks. PwC released that macroeconomic and credit risks have been regarded as the top risk for the Indonesian banking industry (Hussain et al., 2018). Credit risk or often referred to as default risk is related to the possibility that at the time of maturity, where the banks involved with other parties and failure to fulfill obligations on derivative contracts, and settlement with exchange rates, interest rates and derivative products or the counterparties fails to fulfill its obligations to the bank (Ikatan Bankir Indonesia, 2014). Non-performing loan scan affect profits received by banks (Puspitasari *et al*., 2015). According to Bennet *et al.* (2014) non performing loan have a significant positive impact on credit risk. Study conducted in Japan and European Union found that collapse of banking industry happened due to an increase in non-performing loans which had an impact on default risk (Altunbas, 2000; Fillippaki & Mamatzakis, 2009). Duffie and Singleton (2009) found that probability default influenced by specific factors and macroeconomics.

Altunbas (2000), Filippaki & Mamatzakis(2009), Bennet *et al*.(2011)and Gosh(2013) found that their study found that banking industry's collapse caused defaults. Default is caused by increasing non-performing loans or bad loans that reflected low credit quality, this result supported previous research (Gorby *et al*., 2000; Altunbas, 2000; Mingo, 2000; Altunbas *et al*., 2007; Ahmad & Arif, 2007; Kithinji, 2010; Fadare, 2011; Ayeni & Oke, 2012; Waemustafa & Sukri, 2015). The impact of a bank failure either partially or thoroughly will cause economic effects nationally and negative impact on the economy as a whole (not only one mployees, shareholders and customers), financial crisis and systemic impact or often called systemic risk.

The size of the bank or size can be seen from the number of assets or assets of the bank, the increase in bank wealth indicates an increase in the amount of investment. In terms of this context, several studies measure the size of the amount of capital owned. The previous research found that bank size is positively and significantly related to the risk of default or default risk (Waemustafa&Sukri,2015).ThisstudyisreinforcedbyastudyconductedbyAyeniandOke (2012), Suhartono (2012), Filippaki & Mamatzakis (2009), Mingo (2000), Altunbas (2000) and Gordy *et al.* (2000), where large banks have a tendency to take big risk by investing funds in the form of one of them financing (credit) in an effort to produce the expected return or profit in accordance with the size of the bank seen from the capital deposit. This is contrary to the results of the study of Engida (2015), Melese & Laximikantham (2015), and Dermin & Carvalho (2005) which showed a significant negative relationship between size and default risk. The results of other different studies, Bennet *et al.* (2014), Fordelisi & Ibanez (2011)and Mingo (2000) showed an insignificant relationship between bank size and defaultrisk.

The findings of several studies support the theory that the unsystematic conditions of international and national macroeconomic variables and a series of bank-specific factors that do not systematically affect the probability of

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default risk (Altunbas *et al*., 2007; Filippaki & Mamatzakis, 2009; Bennet *et al*., 2011; Fadare, 2011; Waemustafa & Sukri, 2015). Amongthe many factors to identify risk, non-performing loans (NPLs) are a central factor in the analysis of how default risk occurs after the 1997 Asian financial crisis that affected the banking system (Takayasu *et al*., 2000; De la Hoz-Rosales et al., 2019).

Among external factors, a decrease in economic performance is a significant determinant of defaultrisk (Dermine & Carvalho, 2005; Suhartono, 2012; Waemustafa & Sukri, 2015). During the economic turndown, the quality of bank assets tends to deteriorate and increase bank risk. This condition requires an increase incapital requirements (Ahmad & Ariff, 2007; Altunbas *et al*., 2007; Fukuda *et al*., 2008; Barry *et al*., 2009; Allen & Powel, 2010; Robe & Podpiera, 2010; Melese & Laximikantham, 2015; Hogan, 2015). Most banks such as Indonesia, Malaysia, Thailand, Japan and Mexico have experienced high non-performing loans (NPLs) and default risks which were very significant during the financial and banking crisis. Ended at the close of a number of banks in Indonesia and Thailand. Based on the credit risk model that is built both based on the categories of credit pricing models and the portfolio of credit value at risk, there are two main factors that can affect probability default risk, namely bank (internal) and external factors. Bank-specific factors that affect credit risk are capital adequacy (CAR)to measure the capacity of banks to absorb risk, non-performing loans to measure credit quality, credit growth to measure growth in illiquid assets, bank size and loan loss provisions (reserves of impairment losses).

Based on the results of the study of Hogan (2015) capital dequacy (CAR) has a positive effect on default probability, this research is reinforced by previous research (Altunbas, 2000; Altunbas *et al*., 2007; Ahmad & Ariff, 2007; Fukuda *et al*., 2008; Altunbas *et al*., 2009; Allen & Powel, 2010; Robe & Podpiera, 2010; Melese & Laximikantham, 2015). This is contrary to the study of Mingo (2000) and Gordy (2000) who show capital adequacy (CAR) has a negative effect on default probability. According to the research of Altman *et al.* (2003), Filippaki & Mamatzakis (2009), Fiordelisi & Ibanez (2011), Suhartono (2012), Bennet *et al.* (2014) argue that insignificant capital adequacy (CAR) has an effect on default probability.

Other macro economic factors are inflation. Inflation causes inflation to cause a lot of distortion in the economy and it will undermine people's purchasing power, especially retirees and those with fixed income (Engida, 2015). When prices increase, the consumer cannot buy goods or services as before, thus affecting the ability to repay loans and reduce the desire to save because the money value of money today is more valuable than the future, consequently inflation affects the risk of the bank (Moore, 2009). The results of this study are reinforced by the results of Filippaki & Mamatzakis (2009), Fiordelisi & Ibanez (2011), Suhartono (2012), Castro(2012), and Waemustafa & Sukri's research (2015). This is contrary to the results of the study of Altunbas (2000), and Altman *et al.* (2003) which show an insignificant relationship between inflation and default risk. Other macro economic factors are inflation. Inflation causes inflation to cause a lot of distortion in the economy and this will undermine people's purchasing power, because interest is closely related to one of the macroeconomic factors. Interest rates are prices that must be paid by the debtor (borrower) to the creditor (lender) as a return on the use of funds. Research results of Altunbas *et al.* (2007), Altunbas *et al.* (2009), Fiordelisi & Ibanez (2011), Fadare (2011), Castro (2012), and Bennet *et al.* (2014), showed a significant positive relationship between interest rates and default risk. This is contrary to the results of the study of Vasqueza *et al.* (2012) which shows a significant negative relationship between interest rates and default risk. Other different results are indicated by the results of the study of Altunbas (2000), Altman *et al.*(2003),Robe&Podpiera(2010),andAllen&Powel(2010),whichshowedaninsignificant relationship between interest rate and default risk. especially pensioners and those with fixed income (Engida, 2015). When prices increase, the consumer cannot buy goods or services as before, thus affecting the ability to repay loans and reduce the desire to save because the money value of money today is more valuable than the future, consequently inflation affects the risk ofthebank(Moore,2009).Theresultsofthisstudyarereinforcedbytheresult'sstudyofLopez& Saidenberg (2000), Filippaki & Mamatzakis (2009), Fiordelisi & Ibanez (2011), Suhartono (2012), Castro (2012), and Waemustafa & Sukri (2015).

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Table 1: *Correlations between Default Risk with Specific Variables and Macroeconomics*

Study	**Specific Bank's Variables and Macroeconomics**					
	NPL	BS	CQ	IR	CAR	**INF**
Puspitasari *et al* (2015)	+		+		+	
Waemustafa & Sukri (2015)		+		+/-	+/-	+
Hogan (2015)		+			+	
Engida (2015)		-				
Melese& Laximikantham (2015)	+	-			+	
Bennet *et al* (2014)	-	+/-	-	-	+/-	
Ayeni & Oke (2012)	+	+	+			
Vasquez *et al.,* (2012)			+	+/-		
Puspitasari *et al.,* (2012)	+	+			+/-	
Suhartono (2012)		+			+/-	+
Castro (2012)				+		+
Fiordelisi & Ibanez (2011)	+	+/-		+		+
Fadare (2011)	+		+	+		+
Puspitasari, D.M (2011)	+		+	+	+	
Kithinji (2010)	+		+			
Robe & Jeanne (2010)					+	
Allen, D.E & Powel. R (2010)					+	
Filippaki & Mamatzakis (2009)	+		+		+/-	+
Ahmad & Ariff (2007)	+				+	
Altunbas *et al*.,(2007)	+		+	+	+	+
Dermine & Carvalho (2005)			+			
Altman *et al.*,(2003)		+/-	+			+
Mingo (2000)	+	+/-	+		+	
Altunbas (2000)	+	+		+	+/-	+/-
Gordy *et al.,* (2000)	+	+	+		-	

Note :

(+sig) = positive & significant; (-sig) = negative & significant; (+/-) = insignificant CAR = capital adequacy ratio; NPL = non performing loan; CQ = credit quality BS = bank size; INF. =inflation
Source = summary of previous study

This is contrary to the results of the study of Altunbas (2000) and Altman *et al.* (2003) which show an insignificant relationship between inflation and default risk. The independent variables used in this study are non performing loans, capital requirements, credit quality, bank size, interest rates, inflation and default risk as dependent variables. Variables are chosen based on the gap from previous studies. Table 1 explains correlation between default risk with specific variables and macroeconomics variables, which is non performing loan, bank size, credit quality as specific (internal) variables, interest rate and inflation as macroeconomics variables.

Facing severe conditions in 2016, such as slowing growth of global and domestic economic performance makes tight competition in the banking industry especially foreign exchange banks. They must be able to compete in regional industry competition (Puspitasari *et al*., 2017).

III. MATERIALS AND METHODS

This study used secondary data and descriptive verification that are implemented using SPSS (version 12). Data sources used were from the Indonesian Banking Statistics information conventional foreign exchange banks period from July 2011 until February 2017 in Indonesia (Bank Indonesia, 2017). This study using non performing loan, capital requirements, credit quality, bank size, interest rates, and inflation are as independent variables and default

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risk as the dependent variable.
This study uses the following hypothesis:

Hypothesis 1	All variables are non performing loan (NPL), capital requirement (CAR), credit quality (CQ), bank size (BS), interest rates (IR), and inflation (INF) significant effect on default risk (DR)
Hypothesis 2	Variable non performing loan (NPL) significant effect on default risk (DR)
Hypothesis 3	Variable capital requirement (CAR) significant effect on default risk (DR)
Hypothesis 4	Variable credit quality (CQ) significant effect on default risk (DR)
Hypothesis 5	Variable bank size (BS) significant effect on default risk (DR)
Hypothesis 6	Variable interest rates (IR) significant effect on default risk (DR)

Logistic Regression Model

$$\text{Ln}\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 NPL + \beta_2 BS + \beta_3 CQ + \beta_4 IR + \beta_5 CAR + \beta_6 INF + \varepsilon \quad (1)$$

IV. RESULT AND DISCUSSION

Based on table 2, the test showed non performing loan, bank size, credit quality, interest rate, capital requirement and inflation with α test criteria 5% has probability to affect the default risk of foreign exchange banks in Indonesia using logit regression. This result confirmed that hypothesis 1 is accepted. The others values (100% - 87.6% = 12.4%) explained by other variables which is not included in this study.

Table 2: *Model Summary*

Step	-2 Log Likehood	Cox & Snell R Square	Nagelkerke R Square
1	15.784	0.675	0.876

Source: Results of data processing

Hosmer and Lemeshow test on table 3 showed the significance probability 0.876 (>0.05), it indicates that hypothesis 1 accepted (model is fit). The model confirmed fit to detect default risk.

Table 3: *Hosmer and Lemeshow Test*

Step	Chi-square	df	Sig
1	2.786	6	0.864

Source: Results of data processing

The model with α test criteria 5% correct to detect default risk 91%. This result showed on table 4 as follow.

Table 4: *Classification Table*

Observed		**Predicted**		
		No Default Risk	**Default Risk**	**Percentage Correct**
Step1	**No DefaultRisk**	17	27	**88.0**
	Default Risk	**21**	**23**	**96.0**
	OverallPercentage			91.0

Source: Results of data processing

Based on table 5 non performing loan, credit quality, interest rate, capital requirement and inflation be examined

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by Waldtest (sig)<0.05. It explained that each variable affects to detect probability default risk in the model partially. Only bank size, partially does not affect to detect probability default risk in the model. This result confirms that hypothesis 2, hypothesis 3, hypothesis 4, hypothesis 6 and hypothesis 7. Otherwise, hypothesis 5 is refused. The Logistic Regression Model as a follow:

$$\text{Ln}\frac{P}{(1-P)} = \beta_0 + 12043.16\text{NPL} - 680.3512\text{BS} + 1590846\text{CQ} - 189.0430\text{IR} - 2560201\,\text{CAR} + 115.7810\text{INF} + \varepsilon \quad (2)$$

Table 5: *Variable in the Equation*

		B	S.E	Wald	df	Sig
Step 1	NPL	12043.16	1.268	0.097	1	0.0459
	BS	-680.3512	2.001	5.014	1	0.2751
	CQ	15.90846	2.649	0.021	1	0.0116
	IR	-189.0439	1.684	0.037	1	0.0489
	CAR	-256.0201	1.682	0.043	1	0.0211
	INF	114.7810	1.694	0.032	1	0.0389
	Constanta	136.6061	2.694	8.133	1	0.0722

Source: Results of data processing

V. CONCLUSION

In this study, we investigate the relationship between non performing loan, bank size, credit quality, capital requirement, interest rate, inflation with default risk. In examining this relationship, we use log it regression to capture significances between internal, external variables and risk. We contribute to the literature using data of 44 Indonesian foreign exchange banks over the period July 2011 until February2017.

Our empirical evidence suggests that bank risk (default risk) and variables (non performing loan, bank size, credit quality, capital requirement, interest rate, inflation) are simultaneously related. Based on this simultaneous relationship, we find that higher levels of probability default risk are credit quality. This evidence may be due not only to regulatory pressure but also reflects the risk-facing by foreign exchange banks in Indonesia that need to compete on a national and regional scale. Nevertheless, our extended analysis suggests that this relationship Only holds during a normal period, as banks shall take more risks to maintain their asset and capital levels when the market and economic conditions are in distress.

The implication of these result is that shareholders of foreign exchange banks in Indonesia should realize to concern on credit quality to mitigate probability default risk. Default bank could impact contagion effect and stimulate systemic risk. In other words, as long as the risk is isolated in the individual banks, it does not threaten financial system as a whole.

These findings also have several policy implications. Within default risk and risk variables framework, credit quality contributes to the high levels of default on foreign exchange banks, which should be mitigated. Therefore, following the result of this study, need to continue the implication of effective credit management regulations to minimize the potential risk coming from the banking system. Nevertheless, regulators have to be aware of the stringency levels of monitoring of these regulations as more restrictive regulations may have an adverse impact on the credit sector development in banking. For further research, it is necessary to examine variables that are not included in this study, especially the credit sector (productive or consumptive) and customer behavior in the use of credit.

REFERENCES

[1] Ahmad, N. H., & Ariff, M. (2007). Multi-Country Study of Bank Credit Risk Determinants. *International Journal of Banking and Finance*, *5*(1),6.

[2] Allen, D. E., & Powell, R. (2012). The Fluctuating Default Risk of Australian Banks. *Australian Journal of Management*, *37*(2),297-325.

[3] Altman, E., Resti, A., & Sironi, A. (2004). Default Recovery Rates in Credit Risk Modelling: A Review of the Literature and Empirical Evidence. *Economic Notes*, *33*(2), 183-208.

[4] Altunbas, Y., Carbo ,S., Gardener, E.P., &Molyneux, P.(2007). Examining the Relationships between

DOI: 10.37200/IJPR/V24I2/PR200569
Received: 30 Dec 2019 | Revised: 13 Jan 2020 | Accepted: 25 Jan 2020

Capital, Risk and Efficiency in European Banking. *European Financial Management*, *13*(1),49-70.

[5] Altunbas, Y., Liu, M. H., Molyneux, P., & Seth, R. (2000). Efficiency and Risk In Japanese Banking. *Journal of Banking & Finance*, *24*(10), 1605-1628.

[6] Bank Indonesia. (2009). *Laporan Perekonomian Indonesia Tahun 2008*. Direktorat Riset Ekonomi dan Kebijakan Moneter. Bank Indonesia. http://www.bi.go.id/id/publikasi/laporan-tahunan/perekonomian/Pages/lpi_2008.aspx

[7] Bank Indonesia. *Sejarah Bank Indonesia: Perbankan*. Unit Khusus Museum Bank Indonesia. http://www.bi.go.id/id/tentang-bi/museum/sejarah-bi/bi/Pages/sejarahbi_3a.aspx

[8] Bennett, R. L., Güntay, L., & Unal, H. (2015). Inside Debt, Bank Default Risk, And Performance During the Crisis. *Journal of Financial Intermediation.* Elsevier

[9] Castro, V. (2013). Macroeconomic Determinants of the Credit Risk in the Banking System: The Case of the GIPSI. *Economic Modelling*, *31*, 672-683.

[10] Cuadra, G., Sanchez, J. M., & Sapriza, H. (2010). Fiscal Policy and Default Risk in Emerging Markets. *Review of Economic Dynamics*, *13*(2), 452-469.

[11] Dermine, J., & Neto De Carvalho, C. (2005). How to Measure Recoveries and Provisions On Bank Lending: Methodology and Empirical Evidence. *Recovery Risk: The Next Challenge in Credit Risk Management. Risk Books*, 101-119.

[12] De la Hoz-Rosales, B., Camacho, J.,& Tamayo, I. (2019). Effects of innovative entrepreneurship and the information society on social progress: an international analysis. Entrepreneurship and Sustainability Issues, 7(2), 782-813.

[13] Engida, A.M., Faika, S., Nguyen-Thi, B.T., &Ju, Y.H.(2015). Analysis of major antioxidants from extracts of Myrmecodia pendans by UV/visible spectrophotometer, liquid chromatography/tandem mass spectrometry, and high-performance liquid chromatography/UV techniques. *Journal of Food and Drug Analysis*, *23*(2), 303-309.

[14] Fadare,S.O.(2011). Banking Crisis and Financial Stability in Nigeria. *International Research Journal of Finance and Economics*, *63*(3),1234-1256.

[15] Fiordelisi, F., & Marques-Ibanez, D. (2013). Is Bank Default Risk Systematic? *Journal of Banking & Finance*, *37*(6), 2000-2010.

[16] Fiordelisi, F., Marques-Ibanez, D., & Molyneux, P. (2011). Efficiency and Risk in European Banking. *Journal of Banking & Finance*, *35*(5), 1315-1326.

[17] Fukuda, S. I., Kasuya, M., & Akashi, K. (2008). *Impaired Bank Health and Default Risk (Forthcoming in" Pacific-Basin Finance Journal".)* (No. CARF-F-122). Center for Advanced Research in Finance, Faculty of Economics, The University of Tokyo.

[18] Gordy, M. B. (2000). A Comparative Anatomy of Credit Risk Models. *Journal of Banking & Finance*, *24*(1-2), 119-149.

[19] Hogan,T.L.(2015).Capital and risk in commercial banking: Acomparison of capital and risk- based capital ratios. *The Quarterly Review of Economics and Finance*, *57*,32-45.

[20] Hussain, H.I., Abidin, I.S.Z., Ali., A. & Kamarudin, F. (2018) Debt Maturity and Family Related Directors: Evidence from a Developing Market. *Polish Journal of Management Studies*, *18* (2), 118 – 134.

[21] Ikatan Banking Indonesia. (2014). Manajemen Kesehatan Bank Berbasis Risiko. *PTGramedia Pustaka Utama*,23.

[22] Kithinji, A. M. (2010). Credit Risk Management and Profitability of Commercial Banks in Kenya.

[23] Koch, T.W., & Mac Donald, S.S.(2000). *Bank Management*, The Dryden Press/Harcourt College Publishers, Hinsdale, IL/Orlando, FL.

[24] Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit Risk and Commercial Banks' performancein Nigeria: A Panel Model Approach. *Australian Journal of Business and Management Research*, *2*(2),31.

[25] Koutsomanoli-Filippaki, A., & Mamatzakis, E.(2009). Performance and Merton-TypeDefault Risk of Listed Banks In The EU: A Panel VAR Approach. *Journal of Banking & Finance*, *33*(11), 2050-2061.

[26] Laximikantham, N. M. D. (2015). Assessment of Banks Liquidity: Empirical Evidence On Ethiopian Commercial Banks. *Assessment*, *5*(21).

[27] Mingo,J.J.(2000). Policy Implications of the Federal Reserve Study of Credit Risk Modelsat Major US Banking Institutions. *Journal of Banking & Finance*, *24*(1-2),15-33.

[28] Podpiera, J., & Ötker, M.I. (2010). The Fundamental Determinants of Credit Default Risk For European Large Complex Financial Institutions (No. 10-153). *International Monetary Fund.*

[29] Price Waterhouse, (2017).Weathering The Rise in Credit Risk. What's next for Banks in Indonesia, Indonesia Banking Survey 2017.

DOI: 10.37200/IJPR/V24I2/PR200569
Received: 30 Dec 2019 | Revised: 13 Jan 2020 | Accepted: 25 Jan 2020

[30] Puspitasari, D. M., Setiadi, N. J., & Hasrantih, M. (2012). Islamic Bank Preparation Toward Go Public. *International Conference On Business, Entrepreneurship and Management 2012,* San Beda College.

[31] Puspitasari, D. M. (2015). Analisis Fenomena Undisbursed Loan. Jurnal Bisnis, Manajemen dan Ekonomi, Fakultas Bisnis dan Manajemen, Universitas Widyatama, Volume 14 Nomor 1. (*http://repository.widyatama.ac.id/xmlui/handle/123456789/7943*)

[32] Puspitasari, D.M., & Setiadi, N.J. (2016). The Role of Islamic Banking System as The Milestone Towards Indonesia Creative Economy Development. *Indian Journal of Arts,6*(17), 16-33.

[33] Puspitasari, D.M., Setiadi, N.J., & Rizkiyanti, N. (2015). Implementation of The Indonesian Banking Architecture As A Blueprint Of The Direction And Order Of The National Banking System: Empirical Study Of Indonesian Commercial Banking. *Journal The WINNERS, 16* (1), 6-14.

[34] Suhartono, S. (2013). Macroeconomic and Bank-Specific Determinants of Loan Loss Provisioning In Indonesia. *Journal of Economics, Business & Accountancy Ventura*, *15*(3),359-372.

[35] Takayasu, K., & Yosie, Y., (2000). Non-Performing Loan Issue Crucial to Asia'sVazquez,F., Tabak,B.M., &Souto,M. (2012). Amacro Stress Test Model of Credit Risk for The Brazilian Banking Sector. *Journal of Financial Stability, 8*(2),69-83.

[36] Waemustafa, W., & Sukri, S. (2015). Bank Specific and Macroeconomics Dynamic Determinants of Credit Risk in Islamic Banks and Conventional Banks. *International Journal of Economics and Financial Issues*, *5*(2), 476-481.

[37] Vishnu, V., Shefrin, S., Sreelaxmi, C.S., Nair, S.C.Aquasomes: An excellent and promising system for novel drug delivery(2018) International Journal of Pharmaceutical Research, 10 (2), pp. 207-215.

[38] Ozaifa kareem, nasir nisar, nahida tabassum (2017) mu-opioid receptor antagonists and their role in treatment of chronic constipation. Journal of Critical Reviews, 4 (5), 1-6. doi:10.22159/jcr.2017v4i5.22260

[39] Jadeja, Siddharth, Girish Pai, Krishnamurthy Bhat, and Muddukrishna Badamane Sathyanarayana. "President's Emergency Plan for AIDS Relief." Systematic Reviews in Pharmacy 9.1 (2018), 6-9. Print. doi:10.5530/srp.2018.1.2

DOI: 10.37200/IJPR/V24I2/PR200569
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