

# THE IMPACT OF OFF-BALANCE SHEET ACTIVITY ON BANKING RISK IN INDONESIA

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## ABSTRACT

*This study aims to 1) to see the extent of Off balance sheets impact on banking risk and 2) to see other factors that affect banking risk in Indonesia. The sample of research is bank go public in Indonesia Stock Exchange during research period 2012 until 2015. Number of banks that become the object of research is 27 banks with total total observation is 108. Research variable used is return on asset, total risk, risk systematic, unsystematic risks, interest rate risk, foreign exchange rate risk. Research control variables are bank size, share equity ratio to banking asset, fixed asset to total bank asset ratio, and loan depreciation reserve ratio to banking assets. . The research equation used is OLS using panel data. The results of this study prove: first, Off Balance Sheet activity-bill can affect positively to total banking risk, but does not affect systematic risk, unsistematic risk, interest rate risk and exchange rate risk to be faced by banking, Second, Off Balance Sheet activity liabilities negatively affect the total risks and risks unsystematic and positively affect the systematic risk banking. but the risk of Off Balance Sheet liabilities has no impact on interest rate risk and foreign exchange rate risk. Thirdly, the control variables used in this research have a wide variety of influences on banking risk. The results of this study provide a positive implication if the economic conditions do not experience turbulence increase OBS bill will provide a beneficial impact for banks because it will reduce the risk of banking. for investors this is a signal of risk reduction so they will decide to buy the shares of the bank. In terms of Off Balance Sheet activity liability will happen otherwise, so banks need to be aware of the increase in Off Balance Sheet activity of this liability because it will have a negative implication for the bank because the risk of banking will rise so that banking shares will decrease.*

**Key words:** *Off Balance Sheet, Total Risk, unsystematic risk, systematic risk, interest rate risk dan forex risk.*

## INTRODUCTION

The Banking Industry faces various types of risks in its business activities. When compared with other industries, the banking industry has many risky activities. The types of risks that are often faced are credit risk, liquidity risk, market risk, interest rate risk, foreign currency risk, and other risks that are commonly faced by other industries. Furthermore, banking risk is the potential risk that will be suffered by banks. This potential arises in relation to activities carried out by banks either directly or indirectly (Sounders, 2013 and Hull, 2012).

One of the banking activities that tends to increase in the money market today is off-balance sheet activity or abbreviated as OBS (Sounders, 2014 and Aktan et.all, 2013). This is because the opportunity to get a fee base income is greater than the economic sacrifice generated from the OBS activities. However, this OBS activity has a high risk for banks (Choudry, 1990). Based on Karim and Chan (2007), the growth of OBS activity was driven by several factors, namely intense competition in established markets and deregulation in

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international financial markets, which triggered the growth of new financial instruments in banking risk management. Another factor is the increase in volatility in the financial markets so that stock returns increase, on the other hand the returns obtained in the on balance sheet activities are lower. This has encouraged the growth of OBS activities.

Increased OBS activities will improve bank profitability (Khambata, 1989 in Karim and Gee, 2007). However, it is inevitable that an increase in OBS activities can increase the risk of banking which has an adverse impact on the bank (Sounders 2013 and Hasan et.all 1993). High volatility of interest rates and foreign exchange rates on the money market can lead to interest rate risk and foreign exchange rates. This condition prompted the authorities to tighten regulations on banking OBS activities in Indonesia.

OBS activities carried out in the banking sector in Indonesia also experienced an increase. Based on data from the Indonesian Banking Statistics (SPI) issued by OJK at the end of August 2015, almost all types of commercial bank OBS activities from January to August 2015 increased compared to 2014. The largest number of OBS activities were commitment obligations from Rp1,678, 7 trillion in 2015, increased to Rp 1,955.12 trillion in the period from January to August 2015. The second largest number was OBS's commitment bill activities from Rp 473 trillion during the 2014 period to Rp 584.7 trillion during the period from January to August 2015. The increase related to a large potential fee base income, although the risks that will be faced by banks in the future are also high. However, this did not discourage banks from conducting OBS activities.

Previous research shows the positive impact of OBS activities on banking risk (Aktan et. Al., 2013; Chaudhry and Mukesin, 1980). Other research shows that there is no significant impact of OBS activities on banking risk (Karim and Chan, 2007). The research which contradicts the results with this research is the result of research by Al-Tahati and Ngira (2016) which shows that OBS activity has a negative impact on capital adequacy risk, and has a significant positive impact on market risk, liquidity risk and revenue growth. However, OBS does not have a significant impact on credit risk and leverage risk. The existence of various types of OBS activities with different characteristics related to the risks faced, the results of Mikati's (2013) research suggest that the impact of OBS activities on banking risk depends on the type of OBS activities. Another study was conducted by Karim and Gee (2007) who examined the impact of OBS activities on the performance of commercial banks in Malaysia. The result shows that OBS activity is not significantly related to interest rate risk, unsystematic risk, and total bank risk. But OBS activity is significantly related to market risk or systematic risk.

The difference in the results of previous studies related to the impact of OBS activities on bank risk, the authors are interested in conducting a study on the impact of off balace sheet activities on bank risk in Indonesia. The approach to measuring the banking risk used is the market approach according to the research of Aktan et.all (2013), Karim and Chan (2007), and Mikati (2013), so that the sample used is banks that go public on the Indonesia Stock Exchange in 2012 to 2015.

Banking risk can be measured by approaches to banking fundamental activities or market approaches. Banking risks measured by bank fundamental activities are credit risk, liquidity risk, solvency risk, interest rate risk, foreign exchange risk and OBS risk (Scott, 2013). While the banking risks measured by the market approach are systematic risk / market risk, unsysitematic risk, total banking risk, interest rate risk and foreign exchange risk / exchange rate. Measurement of the risk of the market approach is carried out using data in the money market and capital markets (Karim and Chan, 2007).

Market risk (Resti and Sironi, 2007) is the risk of changes in market value of an instrument or financial instrument portfolio, related to changes that cannot be predicted in volatile market conditions (stock price, interest rate, exchange rate, and volatility of this

variable). In Market risk, including the risk of currency, bonds and stock positions, this risk may be said to arise from all financial assets and liabilities traded by banks in the money market and capital markets and in the futures market.

Market risk is measured first with the CAPM framework, where market risk arises from the coefficients of the parameters of market returns on individual returns of the issuer (Chaudry, 1980). The formulation of the CAPM framework can simply be stated as follows:

$$R_{it} = \beta_0 + \beta_1 R_m + \epsilon_{it}$$

Furthermore Choudry (1980) and Aktan (2013) stated that the coefficient of parameter  $\beta_1$  describes market risk or also called systematic risk. The standard deviation of the error term describes the proxy from unsystematic risk, while the standard deviation of the company's stock return  $i$  describes the total risk of the company.

The market approach used in measuring forex risk and interest rate risk is using the APT model. The CAPM model above is expanded using the APT model by adding other factors that affect the returns of individual issuers' shares. Other factors used are interest rate risk and foreign exchange risk.

$$R_{it} = \delta_0 + \delta_1 R_{m,t} + \delta_2 DSBI_t + \delta_3 DKURS_t + \epsilon_{it}$$

Where  $\delta_2$  and  $\delta_3$  can be used to measure bank exposure in the form of interest rate risk and foreign exchange risk (Aktan et.al, 2013). In other words, Forex risk is obtained from the parameter coefficients of the variable foreign exchange rates in this study using the USD exchange rate against the Rupiah and the interest rate risk obtained from the interest rate parameter coefficient in this study is the SBI interest rate. This variable includes those used as consideration for whether an OBS activity is carried out or not by the bank. OBS activities in the form of derivative transactions will help secure the risks that will be faced by the bank related to changes in interest rates and foreign exchange rates.

OBS in banking is an activity that includes contingent commitment or a contract that generates income for a bank, but is not reported as an asset or liability in the company's normal accounting activities (Ghosh and Nachane, 2002).

The main objective of OBS activities in banking is to secure and reduce the risks that exist in on balance sheet items. Besides that, OBS activities were also carried out to obtain fee base income with very little capital but could potentially drain banking capital if OBS activities failed to achieve its objectives. This failure will create potential risks for banks (Karim and Chan, 2007; Sounders 2013, Aktan, 2013).

OBS activity used in this study is the activity of OBS assets or bills of commitment and obligation commitment. Whereas OBS derivative activities are not used in this study because this activity is very small because those who do it are only large banks such as BMI, BRI, BCA, BNI, which are nonexistent and small in number.

The purpose of this study is to: 1) see how far the impact of OBS activities on bank risk and 2) look at other factors that influence the risk of banking in Indonesia. The results of this study are useful for the next researcher for the development of science. For practitioners, the benefits of this research are to obtain empirical data. For the banking services authority (OJK), the results of the study are useful as a basis for the policy of regulating OBS banking activities in Indonesia.

## METHODOLOGY

The research population is a commercial bank. Research samples are commercial banks that go public on the Indonesia Stock Exchange. Sample criteria are 1). Commercial banks that go public and are listed on the Indonesia Stock Exchange during the 2012 to 2015 research period, and 2). Banks whose shares are actively traded on the IDX.

The type of data used is the data balance panel, three years period (2012-2015) and observations of banks that go public on the IDX and meet the selection criteria of the research

sample above. Source of data from audited bank financial statements in the capital market and data on bank stock market prices on the IDX daily and daily JCI data. Interest and exchange rate data are obtained from Indonesian Banking statistics (SPI-OJK).

The definition of variables used in this study see table 1.

**Tabel 1: Definisi Variabel Penelitian**

No	Variabel	Definsi variabel	Formulasi variabel
1	Share Return (Ri)	Stock return	(R2-R1)/R1
2	Market Return (Rm)	Return of composite stock price index	(RIHSG2-RIHSG1)/RIHSG1
3	Interest rate of Certificate of Bank Indonesia (SBI)	Interest rates issued by Indonesia Bank	SBI
4	Kurs USD (KURS)	USD to Rupiah exchange rate.	KURS USD
5	Total risk (TOTRISK)	Banking stock price volatility	Standard deviation of stock price
6	Systematic Risk (SYSRISK)	Beta coefficient of risk premium on banking stock prices	Beta of market model
7	Unsystematic risk (UNSYSRISK)	Residuals from market models	Residuals from market models
8	Interest rate risk (INTERESTRISK)	Sensitivity of interest rate changes in the APT model	Interest parameters in the APT model
9	Forex risk (FOREXRISK)	Sensitivity of changes in the rate to total banking risk	Exchange parameters in the APT model
10	OBS asset (OBSA)	OBS activities are related to commitment bills	Ln(OBST)
11	OBS liability (OBSL)	OBS activities are related to commitment obligations	Ln(OBSL)
12	Loan to total aset bank ratio (TLTA)	Portion of loans to total assets	Loan/total asset
13	Bank Size (LNTA)	Total asset of bank	Ln total asset
14	Share holder equity to Banking asset ratio (REA)	The portion of the total bank's equity to total assets	Equity/total asset
15	Ffixed asset to asset liquid rasion (FATA)	The portion of fixed assets to total liquid assets	Fixed asset/aset likuid
16	Asset liquid to total banking asset rasion (LIQ)	The Portion of liquid assets to total bank assets	Aktiva liquid/total aset
17	Provision for loan impairment to banking asset ratio (CPDLA)	CPDL portion of total bank assets	CPDL/total asset

Sumber: diolah sendiri

Equation 1 of this study is used to measure total risk, systematic risk, and risk of unsystematic risk. Unsystematic risk is measured by the standard deviation of bank i stock returns.

$$R_{it} = \beta_0 + \beta_1 R_{m,t} + \epsilon_{it} \dots \dots \dots (1)$$

The variable  $R_{it}$  is the return of securities i at time t and  $R_{m,t}$  (m, t) is the return on a market index in Indonesia at time t. The coefficient of market stock return parameters can be proxied as systematic risk, the standard deviation of the bank's stock return data at time t is a measure of total risk. The standard deviation of the error term equation (1) above can be used as a measure of unsystematic risk.

Equation 1 above, if expanded by using the APT Model concept to see other factors that influence the return of issuers' shares, other factors are used, namely interest rate risk and foreign exchange risk.

$$R_{it} = \delta_0 + \delta_1 R_{m,t} + \delta_2 DSBI_t + \delta_3 DKURS_t + \epsilon_{it} \dots \dots \dots (2)$$

Where  $\delta_2$  and  $\delta_3$  can be used to measure bank exposure in the form of interest rate risk and foreign exchange risk (Aktan et.all, 2013). This variable includes those used as a consideration for an OBS activity carried out by banks. The use of OBS in the form of derivative transactions will help secure the risks faced by banks in relation to changes in interest rates and foreign exchange rates.

Empirical equation 3 in this study is used to see the impact of OBS activities on banking risk.

$$BANKRISK_{it} = \phi_0 + \phi_1 LNOBSA_{it} + \phi_2 LNOBSL_{it} + \phi_3 TLTA_{it} + \phi_4 LTA_{it} + \phi_5 REA_{it} + \phi_6 FATA_{it} + \phi_7 LIQ_{it} + \phi_8 CPDLA_{it} + \mu_{it} \dots\dots\dots (3)$$

Where  $BANKRISK_{it}$  is comprised of five types of bank risks used, namely total risk, systematic risk, unsystematic risk, interest rate risk and exchange rate risk,  $LNOBSA_{it}$  is the OBS bank bill activity i in year t,  $LNOBSL_{it}$  is the OBS liability bank activity i in year t,

From the results of previous research and the theory described above, the research hypothesis is Ha1: OBS activities affect banking risk and Ha2: Research control variables affect banking risk. Test hypotheses one and two were tested using the t test with an alpha significance of 1%, 5% or 10%.

## RESULTS AND DISCUSSION

The population of this study were 41 banks listed on the Indonesia Stock Exchange. Of these, 27 banks were taken as samples, the remaining 14 banks were not used as samples because the bank had just gone public after 2012. The total data of the observation (Balance Data) was 108 observations over 4 years (2012-2015).

The research data was taken from the bank's financial statements for 4 years and daily stock price data from the 27 public go banks and the daily JCI was taken from the site <http://jsx.co.id>. Statistical data from the research variables are found in table 2.

**Tabel 2. Deskriptif Statistik Penelitian (2012-2015)**

	TOTRISK	SYSRISK	UNSYSRISK	INTERESTRISK	FOREXRISK	LNOBSA	LNOBSL
Mean	2.3519	0.4387	2.2349	-0.4598	-0.0005	12.6182	15.7742
Median	2.1654	0.2933	2.0115	-0.2245	-0.00010	13.8647	15.5945
Maximum	6.8989	1.6847	6.8607	17.645	0.00668	17.7700	19.1310
Minimum	0.0860	-0.38132	0.0860	-14.658	-0.0077	0.00000	0.0000
Std. Dev.	1.1003	0.49267	1.1405	4.9026	0.0025	4.4385	2.5629
Skewness	1.8924	0.8559	1.8668	0.4489	0.0132	-1.3700	-2.4032
Kurtosis	8.0644	2.79398	7.6438	5.0559	3.71590	4.1621	15.4580
Observations	108	108	108	108	108	108	108
Cross sections	27	27	27	27	27	27	27

Sumber: diolah

	TLTA	LTA	REA	FATA	LIQ	CPDLA
Mean	0.6165	17.6815	0.1205	0.0150	0.2719	0.0136
Median	0.6652	17.9627	0.1199	0.0110	0.2614	0.0086
Maximum	0.8202	20.5560	0.2947	0.1122	0.4852	0.1748
Minimum	0.0016	14.7480	0.0146	0.0008	0.0493	5.13E-07
Std. Dev.	0.1733	1.60313	0.0478	0.0134	0.0743	0.0254
Skewness	-2.6195	0.00420	1.0392	3.8892	0.7033	4.9697
Kurtosis	9.4457	1.84460	6.3222	27.0062	4.5652	30.548
Observations	108	108	108	108	108	108
Cross sections	27	27	27	27	27	27

Sumber: diolah .

Based on Table 3, shows the correlation between variables below 0.8 so that there are no symptoms of multicollinearity between the independent variables of the study.

**Tabel 3 Korelasi Antar inpedent Variable**

	LNOBSA	LNOBSL	TLTA	FATA	LTA	LIQ	REA	CPDLA
LNOBSA	1							
LNOBSL	0.71052	1						
TLTA	-0.14568	-0.22053	1					
FATA	-0.32210	-0.18123	-0.18499	1				
LTA	0.55759	0.70199	-0.31584	-0.16613	1			
LIQ	-0.02398	-0.09816	-0.25043	0.08679	-0.18675	1		
REA	0.30486	0.12684	-0.042739	0.07304	-0.17046	0.06614	1	
CPDLA	0.11717	0.02107	0.10728	-0.09350	0.00198	0.19415	-0.06407	1

Sumber: Diolah

There are five results of research regression because the dependent variables are five variables. This is related to the five types of risk included in the dependent variables, namely total risk, unsystematic risk, systematic risk, forex risk, interest rate risk funds. Based on the results of chow and Housman test equations that are more appropriate to be used for each of the research equations can be seen in Table 4.

**Tabel 4. Hasil Uji Model Terbaik**

Variabel Independen	Uji Chow,(P-Value)	Uji Hausman, (P-Value)	Model yang dipilih
TOTAL_RISK	0.802361, (0.4956)	-	<i>Common effect model</i>
SYS_RISK	6.391478, (0,0000)	0.000000, (1.0000)	<i>Random effect model</i>
UNSYS_RISK	4.150049, (0,0000)	0.000000, (1.0000)	<i>Random effect model</i>
INTEREST_RISK	1.212755, (0.2566)	-	<i>Common effect model</i>
FOREX_RISK	1.202371, (0.2654)	-	<i>Common effect model</i>

Sumber: Diolah

Based on the Durbin Watson test (DW) in table 5, there is no autocorrelation, because the DW value ranges from 1.5 to 1.8. Based on Field (2009), the Durbin Watson statistical value with a range of 1.5-2.5 does not show symptoms of autocorrelation.

**Tabel 5. Hasil Uji Autokorelasi Model**

Variabel Independen	Durbin Watson Statistic
Total Risk	1.698075
Systematic Risk	1.775586
Unsystematic Risk	1.548923
Interest Rate Risk	2.204130
Foreign Exchange Risk	2.267608

Sumber: Diolah

The fifth heteroscedasticity test the regression results were not carried out because the five regressions used the white model so that heteroscedacity testing was not needed. The following is the result of the regression of the research equation in table 6.

**Tabel 6. Hasil Regresi**

	Total Risk	Systematic risk	Unsystematic risk	Interest rate risk	Forex Risk
LNOBSA	0.048675 (0.010114)***	-0.013217 (0.012489)	0.054899 (0.039834)	0.034429 (0.126802)	7.50E-05 (6.27E-05)
LNOBSL	-0.075521 (0.020014)***	0.021355 (0.011162)*	-0.092113 (0.031497)***	0.243335 (0.220227)	-0.000111 (0.000108)
TLTA	0.271062 (0.120304)**	-0.301534 (0.260872)	0.218135 (0.409826)	0.556749 (1.046028)	-0.000766 (0.000487)
LTA	-0.123926 (0.038064)***	0.150311 (0.053486)***	-0.222043 (0.108333)**	-0.393405 (0.125405)***	-2.86E-05 (7.68E-05)
REA	1.498496 (0.523422)***	1.063376 (0.825453)	-4.381870 (1.438684)***	6.664912 (3.437098)*	-0.003926 (0.003765)
FATA	0.255765 (2.140783)	-3.737096 (2.918339)	-0.853524 (5.220684)	1.939110 (7.058170)	0.015762 (0.003659)***
LIQ	1.812293 (0.259388)***	1.711618 (0.347171)***	0.735201 (0.970790)	12.30611 (2.314531)	0.006774 (0.000976)***
CPDLA	-1.979793 (0.504643)***	-1.703322 (1.634363)	2.354986 (4.987606)	2.041227 (23.48777)	-0.023323 (0.009605)**
Constant	4.201038 (0.774350)***	-2.717644 (1.233846)**	7.095639 (2.445722)***	-	-
Obs	108	108	108	108	108
Adj. R-squared	39,91	17,73	0,13	0,28	10,35

Sumber: Diolah

### Analysis of the Impact of Off-Balance Sheet Activities on Banking Risk

The results of the research show that the impact of OBS activities on banking risk is different for each type of bank risk. In this research the types of risks used are total risk or bank risk, systematic risk, unsystematic risk, exchange rate risk and interest rate risk. OBS activities used in this research are bills of commitment and contingency and obligations of commitments and contingencies.

OBS activities related to commitment and contingency bills only have a negative impact on total banking risk. Increasing the bank's commitment and contingency billing activities, the bank's risk exposure will decrease. This means that this activity will have an impact on the bank in the future in the form of fee base and revenue that arise, due to an increase in interest that arises after the commitment is fulfilled by a third party. While in terms of contingency bills, these results indicate that the increase in contingent bills will reduce the risk of banking. Banking contingency bills on average provide profits in the future. The Bank has conducted OBS activities related to contingency bills in accordance with the objectives of the conference activities and applies better prudential principles.

The results of this study are in accordance with the results of research conducted by Aktan et.al (2013), Karim and Gee (2007), Mikati (2013) and al-tahati and Ngira (2016). The results of this study are not in accordance with the results of research conducted by Chaudry (1980), differences in the results of research conducted by Chaudry, because of the positive impact of OBS activities only on the risk of market risk (systematic risk), interest rate risk, unsystematic risk while the impact of this activity on total risk does not exist. This condition occurs because of differences in the location of the research site. Choudry conducted research on banks in America during the period 1987 to 1991. While the research conducted by the author was banking in Indonesia with different time periods, namely 2012 to 2015. Different periods of time with different economic events. in 1987 to 1991 was 6 years before the monetary crisis in 1999, where the USA also felt the impact of this crisis so that the increase in OBS activities would be responded negatively by the market so that the risk of banking increased. Whereas in Indonesia, the period of research conducted is in stable economic conditions, so that the increase in OBS activities related to the commitment and contingency bills will be responded positively by the market so that the risk of banking will decrease.

The impact of OBS activities is related to the obligation of commitment and contingency to bank risk, depending on the type of risk. If the type of risk is total risk, unsystematic risk and forex risk, then the impact is negative, meaning that the increased OBS activity will decrease the banking risk. Same as the impact of the commitment and contingency bills specifically for total risk. For the same reason, it shows that the OBS activity of this obligation will reduce the bank's risk because this increase in off balance sheet will have an impact on increasing the bank's profit. this is due to a decrease in risk in the form of realization of commitments and contingencies that will create profits for the bank in the future. These results are consistent with the results of research conducted by Aktan et.al (2013), Karim and Gee (2007), Mikati (2013) and Al-tahati and Ngira (2016). The results of this study are not in accordance with the results of research conducted by Chaudry (1980).

OBS activities related to commitment and contingency obligations have a different impact on systematic risk, which has a positive impact. This means that the increased off-balance activity obligations of commitment and contingency will increase the systematic risk that will be faced by banks. If banks will increase their OBS activity in conditions of deteriorating macroeconomic indicators, this will have an impact on the increase in bank risk exposure. This result is in accordance with the results of Chaudry's (1980) study and is not in accordance with the results of research from Aktan et.al (2013), Karim and Gee (2007), Mikati (2013) and Al-tahati and Ngira (2016).

### **Implications of Research Results**

The results of the research on the impact of commitment and contingency bills on Banking Risk have implications for banks and investors. For banks, in the absence of economic turmoil, an increase in off-balance sheet activity related to bills of commitment and contingency is more profitable for banks because it will reduce the risk of repayment. And in economic conditions that are experiencing a crisis or problem, banks must reduce off-balance

sheet activities related to bills of commitment and contingency. The implication for investors is that the increase in OBS activity in a stable condition is a signal that there will be a decrease in risk so that it is a positive signal for investors. This is expected to increase the price of banking shares. This needs to be proven by other research to see the impact on stock price changes.

The results of the research on the impact of commitment and contingency obligations on the Bank's risk have implications for banks that in the unfavorable macroeconomic conditions, the bank is expected to refrain from increasing its off balance sheet activities related to commitment and contingency obligations. For investors, if macroeconomic indicators deteriorate and on the one hand banks increase their OBS activities related to commitment and contingency obligations, the market will respond negatively.

## CONCLUSION

The conclusion is that this research is first, OBS banking bill activity can significantly influence the total banking risk. But it does not affect systematic risk, unsystematic risk, interest rate risk and exchange rate risk that will be faced by banks. Second, OBS liability activities have a significant negative effect on the total risk and unsystematic risks that will be faced by banks. This off balance sheet liability activity also has a significant positive effect on the systematic risk of banking. While the impact on interest rate risk and currency exchange risk is no impact.

This study has limitations in terms of sample size, a period of only 4 years and has not tested other types of risks such as solvency risk, capital adequacy risk, and types of risk based on bank fundamentals.

In connection with the limitations and implications of the research, the first suggestion of the research is that the next research will further expand the number of samples and time periods and other types of risks such as solvency risk, capital adequacy risk, and types of risk based on bank fundamentals. Secondly, the next research must explore more reference sources derived from the results of previous studies that are relevant to this study. Third, in the economic conditions, it is expected that management reduces OBS activities related to commitment and contingency obligations. Fourth, to reduce the risk of banking in stable economic conditions in the economic conditions of 2011 to 2015, banks can increase OBS activities related to bills of commitment and contingency. And fifth, the results of the research can be used by regulators as a basis for regulating OBS activities, both in the form of bills and commitment obligations and contingencies.

## REFERENCE

- Aktan, Bora, Sok-Gee Chan, Sasa Zikovic, and Pinar Evrim Mandaci (2013), "Off –balance sheet activities impact on commercial bank's performance: an emerging market perspective", *Ekonomska Istrazivanja-Economic Research*, (ISSN 133-677xprint), vol 26(3): p.117-132.
- Brooks, C. (2008). *Introductory econometrics for finance*. New York: Cambridge University Press.
- Bank Indonesia, (2008), Circular letter of the implementation of PAPI No.11 / 5 / DPNP, dated January 27, 2009
- Calms, Christian and Raymond Theoret (2009), "The impact of off-balance-sheet activities on banks returns: an application of the ARCH-M to Canadian Data", *Seminar Participant at UQO and at the CD Howe Institute Conference on Financial Service's initiative*. September 11, 2009.
- Chaudhry, Mukesin (1980), "Commercial Bank's off-balance sheet activities and their relation with market-based", *4<sup>th</sup> afir international colloquim*. P.1241 – 1276.



- Field, A. (2009). *Discovering statistics using SPSS*, SAGE Publications
- Ghosh, Saibal and DM Nachane (2002), "Off-Balance sheet activities in banking: theory and indian experience", *MPRA paper No.17408*, post 20 September 2009, Reserve Bank of India.
- Hull, John C. (2012), *Risk Management and Financial Institutions, Third Edition*, United State of America: John Wiley & Son, Inc.
- Kangarluei, Saied Jabbarzadeh and Morteza Motavasel (2012), "The effect of off-balance sheet financing on profitability and leverage ratios", *Business Intelligence Journal* - January, 2012 Vol.5 No.1, p.85-90.
- Karim, Mohd. Zaini Abd, and Sok Gee Chan (2007), "Off-balance sheet activities and performance banks in Malaysia", *ICFAI Journal of financial economic*, Des2007, Vol 4 issue 4, p67-80, 14p, p.67-86.
- Mikati, Noma Ziadeh (2013), "Bank risk exposure, bank failure and OBS activities: an empirical analysis for US. Commercial Banks", *University of Limoges, LAPE, 5 rue Félix Eboué, 87031 Limoges Cedex, France*. Paper presented at the 10th International Paris Finance Meeting December 20, 2012,
- Sakaran, Uma and Roger Bouquie (2010), *Research methods for business-a skill building approach, fifth edition*, India: Willey & Son Ltd..
- Sounders, Anthony (2011), *Financial institutions management – a risk management approach, Seventh Edition*, Singapore: Mc.Graw-Hill.
- Resti, Andrea and Andrea Sironi (2007), *Risk management and shareholders' value in Banking-from risk measurement models to capital allocation policies*, England: John Wiley & Sons Ltd.
- Wibowo, Purwo Adi (2012), "Off-balance sheet activity, risk, performance, risk-performance profile" S-2 Thesis Management at Gajah Mada University, Yogyakarta: UGM Library, through  
[http://etd.repository.ugm.ac.id/index.php?mod=peneliti\\_detail&sub=PenelitiDetail&act=view&typ=html&buku\\_id=55236](http://etd.repository.ugm.ac.id/index.php?mod=peneliti_detail&sub=PenelitiDetail&act=view&typ=html&buku_id=55236).