# ANNALYZE THE COMPARISON OF MARKET RISK IN FOREIGN EXCHANGE AND STATE OWNED BANKS IN INDONESIA

(Case Study : 8 Foreign Exchange and 8 state owned bank period 2015-2018)

*ANALISA PERBANDINGAN PENGARUH RISIKO PASAR TERHADAP BANK DEVISA NEGARA DAN BANK DAERAH DI INDONESIA*

*(Studi Kasus: 8 bank devisa dan 8 bank daerah tahun 2015-2018)*

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**Abstract:** The development of the Indonesian banking industry has experienced lots of ups and downs, both that drive economic growth and those that are hampering. For the past few years Indonesian banking sector has been improving the performance and relience towards the economic stability in the present and future. By analyzing the market risk on both foreign exchange and BPD banks in Indonesia, this study aims to find out the comparison of which type of banks that affect the most. This study uses quantitative method with descriptive explanation. Secondary data are collected from Annual Reports of banks and analyzed with T-test, with the sample of 8 foreign exchange banks and 8 BPD banks. The finding of this paper is the effect market risk on private foreign exchange banks and state-owened banks is significantly has meandiference.

***Keywords:*** *Banks, Market Risk*

***Abstrak:*** *Perekonomian di Indonesia telah mengalami jatuh bangun dalam perkembangannya, baik perkembangan yang membangun maupun yang menghambat. Dalam beberapa tahun terakhir sektor perbankan Indonesia telah meningkatkan peforma dan tingkat kesehatannya terhadap stabilitas ekonomi sekarang dan masa yang akan datang. Penelitian ini menggunakan metode kuantitatif dengan penjalan secara deskriptif. Data sekunder yang dikumpulkan dari laporan tahunan bank dianalisa menggunakan independent sample T-test, dengan jumlah sampel sebanyak 8 bank devisa dan 8 bank non devisa. Hasil dari penilitian ini adalah pengaruh risiko pasar terhadap bank devisa dan bank BPD mean berdebda secara signifikan.*

**Kata Kunci:** *Banks, Risiko Pasar*

# INTRODUCTION

## Research Background

Banking is one insdustry that affects the economy of a country. In general banks are an intermediary between depositors and credit, collecting and channeling funds. Banks lead the world in helping companies, investors and governments operate, innovate and realize their ambitions. However, following the financial crisis, they still have work to do in recalibrating business models, building customer trust and engaging with the wider community.

The development of the Indonesian banking industry has experienced a lot of ups and downs, both those that drive economic growth and those that are hampering. A series of crises that occurred in 1998, 2008, 2011 is an experience that can be an input to improve banking quality. Since the crisis in 1997-1998, banks have tried to improve the system and began to be careful in making decisions in conducting transactions, especially in the form of FX transactions, as well as foreign exchange. With economic conditions that are less stable, market risk becomes a major chalenge. This is due to market risk indicators; interest rate risk that will affect the proxy profitability of bank performance, foreign exchange that can add to the burden if the bank has debts in the form of currency or foreign exchange, and equity and commodities if the stick market experiences a fluctuating graph movement.

According to Basel Accord, market risk represents risk of loss in balance and off-balance sheet items due to changes in market prices" (Basel Committee on Banking Supervision, 2005). Dominant factors which may cause emergence of market risk are: equity prices, interest rates, foreign exchange rate and commodity risk. Equity risk is related to risk of equity prices changes which have impact on balance and off-balance sheet items of bank. Equity risk contains: general price risk - related to changes on whole stock market; and specific price risk - related to changes of individual securities. Total exposure is expressed as net open position, after which all positions (balance and off-balance items that include securities) are subject of stress testing. If the bank has high level of exposure in several securities, then scenario analysis is much more adequate bearing in mind high concentration of trading securities portfolio.

Market risk could influence on company's business on several ways. Direct impact of market risk is impersonated in, for example, operational spread decline due to increase of raw material prices or devaluation of currency in countries marked as a targeted markets for observed company. Changes in market environment could enforce companies to adjust its prices of products and services, simultaneously changing sales volumes or competitiveness, depending upon positioning and market exposure of the main competitors (indirect impact of market risk on business operations of the company). In that sense, most companies intend to manage market risk on financial result of the company, especially it is case with non-financial institutions. With financial institutions, there exist overlapping of business and market risk.

Generally, market risk is defined as the risk of losses from balance sheet and off-balance-sheet positions arising from the movements of market price. The document refers to the positions in fixed income instruments and equities of the trading book and to the foreign exchange and commodities risk. The trading book boundary is based on the management intention. Two approaches are allowed: the standardized approach and the internal model approach.

## Research Objective

Despite the growth in banking sector in Indonesia, market risk still remains a major challenge. This paper covered period 2015-2018 comparison of market risk effect foreign exchange and BPD banks.

# THEORETICAL FRAMEWORK

## Market Risk

Risk is a variation of results that can occur during certain periods. - Arthur Williams Dan Richard, M.H. Market risk define as two type of market risk (Fahmi, 2010:69), whisch are: Accounting/Translation Exposure, Transaction Exposure, dan Economic Exposure (Operating/Competitive Exposure). Market risk divine as four categories, which are:

**Interest Rate Risk**

Interest Rate Risk is the potential loss on bank balance sheet position that arises because the market rate interest is controvert with the position, so market rate from the bank position is decreasing in value, or to bank transaction that contain rate interest risk.

**Foreign Exchange Risk**

Foreign exchange risk is the potential loss on foreign currency position belongs to that bank that value in domestic currency is decreasing because of exchange rate fluctuation. Foreign exchange risk causes by the bank has open position (FX gap) foreign currency.

**Equity Risk**

Equity Risk is the potential loss to market value bank position in term of stock, causes by fluctuation of stock price in the market. Commodity Risk is the potential loss on commodity position that the bank has, causes by fluctuation of commodity price. Equity risk is related to risk of equity prices changes which have impact on balance and off-balance sheet items of bank. Equity risk contains: general price risk - related to changes on whole stock market; and specific price risk - related to changes of individual securities. Total exposure is expressed as net open position, after which all positions (balance and off-balance items that include securities) are subject of stress testing. If the bank has high level of exposure in several securities, then scenario analysis is much more adequate bearing in mind high concentration of trading securities portfolio.

**Commodity Risk**

Commodity risk can occur in commodity positions including commodity derivative positions. Commodity risk only exists on bank that has subsidiary runs in securities sector.

**Previous Research**

The study from Alvita, Luh Putu and Luh Gede (2016) discuss about the kredit risk on stock return and found that statistic result showed that kredit risk has no significant relationship to stock return. Also to the profitability it has no significant relationship from kredit risk (NPL is the indicator). Also exchange risk showed the same statistical result that is exchange risk positively no significant relations to profitability proxy. As the finding above, this study can put a better view on testing the relation between market risk and profitability performance on banks.

The study of Audy and Suhadak (2017) study about the risk of foreign exchange and market risk to profitability. This paper find out that foreign exchange risk has significant relations to market risk, which means the higher is fx risk then the higher it gets also to the market risk. The result of market risk effect to profitability is that market risk has no significant relations to profitability, the higher is the market risk does not make the same movement to the profitability. The improvement of market risk does not affect the improvement of profitability on banks performance.

Study from Alif Hendra Prasetya amd Hizkia Tasik (2017) understand about the impact of stock financial variable to in-out of stock in LQ-45. The finding of this paper shows that Market Capitalization, ROA, and GDP have positive but insignificant influences. While Transaction Volume has positive and significant influence to IN-OUT stocks in LQ-45.

Study from Rian Reinhard Antou and Hizkia H.D. Tasik (2017) found out that market capitalization variable has significant and most consistent effect so it has positive information to non-LQ45 stock. From the result of this research become suggestion for non LQ45 stock to need to increase market capitalization of company to get into LQ45 index, supported by good / stable financial condition so that investor is interested to invest and automatic if many investor who transact at that company will increase the price Shares and the number of shares outstanding so that the auto market capitalization of the company will rise.

**Conceptual Framework**

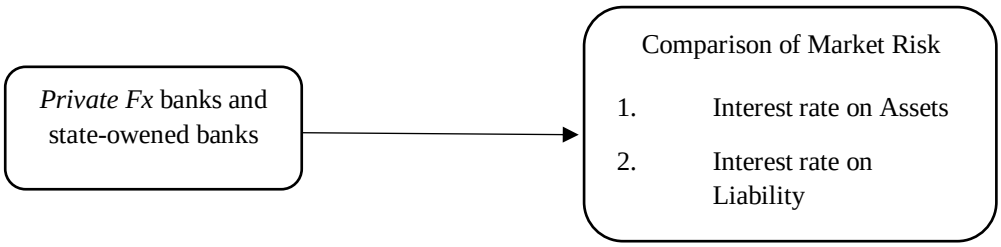


**Figure 1. Conceptual Framework**
*Source: Data Processed, 2019*

**Research Hypothesis**

$H_0$ : There is mean difference between effect of market risk on *fx* banks and state-owened bank based on IRR Assets.

$H_1$ : There is mean difference between effect of market risk on *fx* banks and state-owened bank based on IRR Liability.

$H_0$ : There is no mean difference between effect of market risk on *fx* banks and state-owened bank based on IRR Assets.

$H_1$ : There is no mean difference between effect of market risk on *fx* banks and state-owened bank based on IRR Liability.

## RESEARCH METHOD

**Type of Research**

This research is a casual quantitative type of research using t-test which compares two type banks means to determine whether the banks means are significantly different. Type of t Test adapted in this paper is independent t-test because the two groups under comparison are independent of each other. The t-test is to see the comparison of market risk effect between private foreign exchange bank and state-owened bank.

**Place and Time of Research**

This research was conducted in Manado for 3 months, on April to July, 2019.

**Population and Sample**

Population in this paper is the list of private foreign exchange banks and state-owened banks in Indonesia. The sample is represented by 8 private foreign exchange banks and 8 state-owened banks in Indonesia.

**Data Analysis Method**

**Independent Sample *t*-Test**

The independent-samples t-test evaluates the difference between the means of two independent or unrelated groups. That is evaluate whether the means for two independent groups are significantly different from each other. According to Black (2010:356) the formula and of the t test for samples that are mutually independent are as follows:

$$t = \frac{(x1 - x2) - (\mu 1 - \mu 2)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

$x_1$-$x_2$ = Mean of the first set of values.
$\mu_1$-$\mu_2$ = Mean of the second set of value.
$s_1$ = Standard deviation of first set of values.

$s_2$ = Standard deviation of second set of values.
$n_1$ = Total number of values in first set.
$n_2$ = Total number of values in second set.

## RESULT AND DISCUSSION

### Independent Sample *t*-Test

**Table 1. Group Statistics**

| Banktype | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| logAsset | Devisa | 32 | 13.4207 | 0.79917 | 0.14128 |
| | non devisa | 32 | 12.8378 | 0.90429 | 0.15986 |
| logLiab | Devisa | 32 | 13.2849 | 0.98777 | 0.17461 |
| | non devisa | 32 | 12.7827 | 0.89366 | 0.15798 |

*Source: SPSS Output, 2019*

From The table 1, showed the variable between private fx banks and state owened banks. The result show that the mean difference from both banks where private fx banks log asset is 13.4207 and state owened banks log asset is 12.8378 and for the log liability of private fx banks is 13.2849 and state-owened banks is 12.7827. Based from the data above private fx banks has higher mean on both asset and liability than the state-owened banks does.

**Tabel 2. Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| logAsset | Equal variances assumed | 0.748 | 0.391 | 2.732 | 62 | 0.008 | 0.58289 | 0.21334 | 0.15643 | 1.00934 |
| | Equal variances not assumed | | | 2.732 | 61.077 | 0.008 | 0.58289 | 0.21334 | 0.15630 | 1.00947 |
| logLiab | Equal variances assumed | 1.237 | 0.270 | 2.133 | 62 | 0.037 | 0.50221 | 0.23547 | 0.03151 | 0.97291 |
| | Equal variances not assumed | | | 2.133 | 61.389 | 0.037 | 0.50221 | 0.23547 | 0.03142 | 0.97301 |

*Source: SPSS Output, 2019*

Based on the Independent Sample Test output in the Equal of Varieances assumed Section of log Asset (data of interest rate on Asset) , F= 0.748 the Sig. is <0.05 which is 0.748 this means that there are no variant differences between the market risk on private *fx* banks and state-owened banks. This means that the data of both private fx banks and state owened banks is equal.

On the Varieances assumed Section of log Liab (data of interest rate on Liability), F=1.237 the Sig. is <0.05 which is 2.133 both with the equal variances not assumed, this also means that there are no variant diffences between the market risk on risk on private *fx* banks and state-owened banks.

Based on the same section on Sig. (2-tailed) of logAsset showed that Sig.(2-tailed) is 0.008 < 0.01 and the Si. (2-tailed) of logLiab is 0.037 < 0.05 , so that the market risk effect on the Independent Sample t-Test can concluded that $H_0$ and $H_1$ is accepted and $H_2$ and $H_3$ is rejected. The data explain that there is significant difference between private fx banks and state-owened banks. So it can be concluded that there are differences from market risk effect between fx banks and state-owened banks in Indonesia. With the confidence level is 95%, the gap between private foreign exchange banks and state-owened banks is 0.15 and 1.00.

**Discussion**

In this paper tries to anwer the problem statement as describe from the based of objective of this study. Therefore, this paper has identified that there are differences between the effect of market risk on private fx banks and state-owened banks.

**Market Risk Effect**

As explained from the result of this paper there is significant differences in market risk effect between private fx banks and state owened banks because each type of banks has different the potential loss on; bank balance sheet position, exchange rate fluctuation, fluctuation of stock price in the market, and fluctuation of commodity price. These difference can be causes by many reason, because by the belonging category, these two type of banks have different role by the fucntion, owner, and status.

Private foreign exchange banks that analyzed on this paper shown the asset and liability movement as the figure 2.

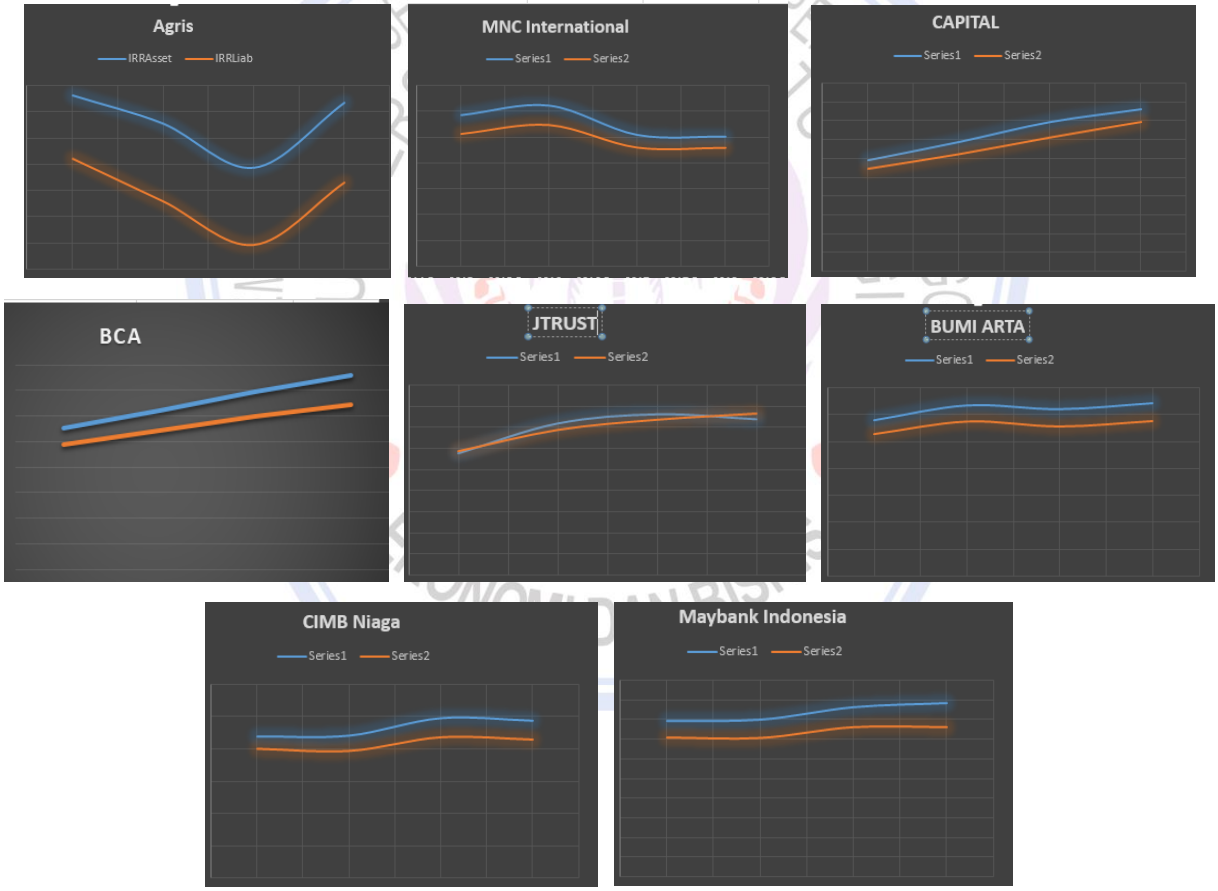


**Figure 2. Asset and Liability growth on private fx banks 2015-2018**
*Source: SPSS Output, 2019*

The movement of asset mostly followed by the movement of liability, from the figure above it can be explain that the movement of assets and liability that represent the market risk indicator has very simmilar path from each banks, means when the assets increasing it is followed by liability. When the value of assets decreasing it is followed by the value of liability too. But the movement of market risk indicator has not shown any drastict

movement except for Agris Bank, during the year 2015-16 it decreasing and during 2017-2018 its increasing again.

State-owened banks exchange banks that analyzed on this paper shown the asset and liability movement as the figure 3.

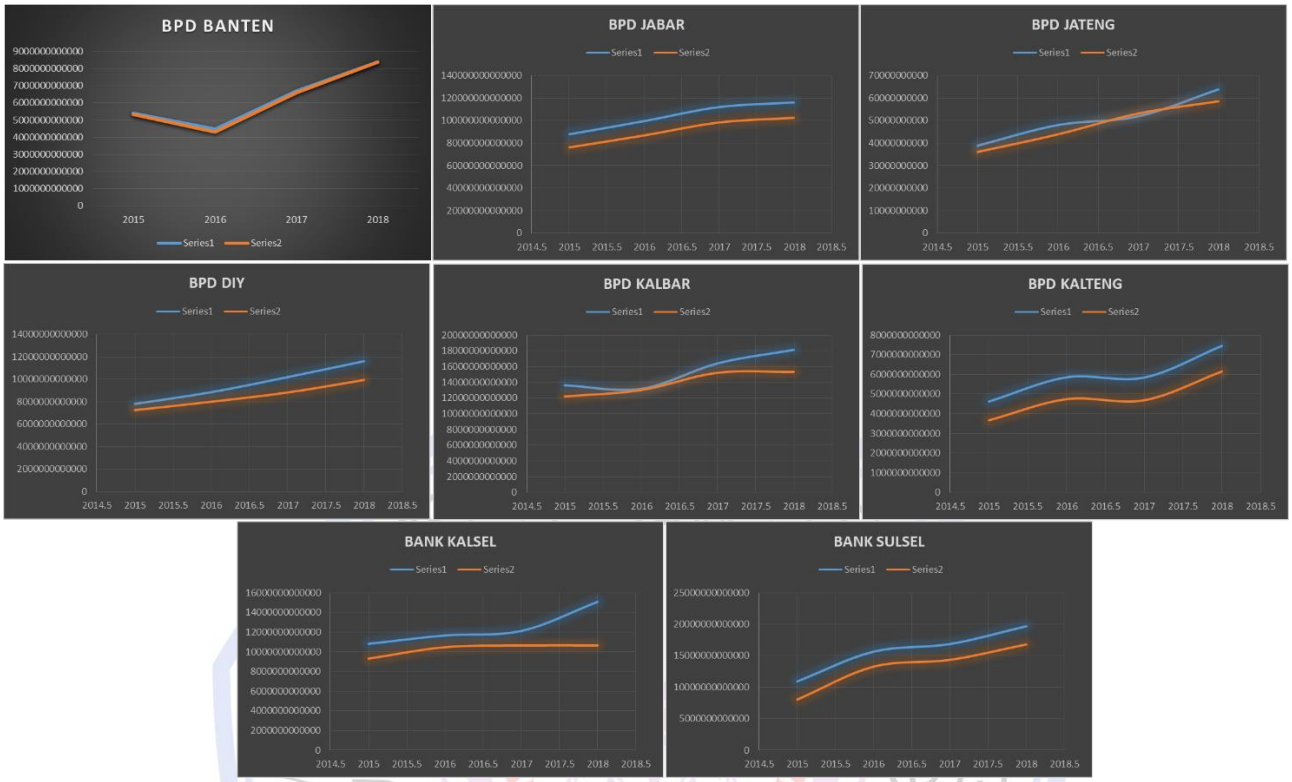


**Figure 3. Asset and Liability growth on state-owened banks 2015-2018**
*Source: SPSS Output, 2019*

The same description can be given to state-owened banks also. The movement of asset and liability as the market risk indicator is in the same path also. Even it pointed in different numbers, but the scatter line move mostly to the same direction.

This what makes the means are different between private foreign exchange banks and state owned banks assets and liability.

## CONCLUSION AND RECOMMENDATION

### Conclusion

Based on the analysis of the data, the conclusion of this paper outline is there were significant difference between the market risk effect that represented by the number of interest rate on market risk section from annual report data that shown as the interest rate of assets and liability of private foreign exchange banks and state-owned banks. These difference can be causes by many reason of the market risk variables and indicator also the difference banks performance. Based on the status, the sample of banks that used for this paper is private foreign exchange bank and stated-owened banks. *Fx* banks have more fluctuation on their interest rate performance because the activity of operation on *fx* banks is more connected to rupiah's exchange rate and the interest rate of it could be up and down during curency fluctuation. While Indonesian economic has experienced many number of fluctuation during the past 4 years 2015-2018. Based on the analysis of Audy and Suhadak (2017) the result show that foreign exchange do affect market risk, if the bank experience non performing loan in terms of foreign curency in the market that not reach the expectation or increasing of interest rate in market it will cause market risk. If the rate of loan performing is reach the number of normal or even show the relience performance it will decrease risk on foreign exchange. This show the positive relation between foreign exchange and market risk.

**Recomendation**

From this paper, there are some recomendation that are suggested to the banks and other researcher that want to do the same research model, this research can be expand to other topics by using more market risk indicators and determin more financial performance of banks. Using more sample also will be better in the future research. The model of research can be analyze with other methodology that can give more spesific explanation about the difference of the effect of market risk, and be specify to what financial performance affected the most, and to determine which factors that affect the causes. For the banking industry this research can be one of the consideration on risk management towards decision making in the company, and to other department or divisions to help them minimalize the risk

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