

# The Effect of Fee Based Income and Trading Income on Market Performance and Risk in the Banking Industry in Indonesia

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**Abstract:- This study aims to examine the effect of bank income on market risk and performance. Income is measured by the proportion of income that comes from fees and trading income. Market performance is measured using the Tobins' Q ratio, while market risk is measured using stock beta. By using panel data from 27 banks that public in Indonesia during the 2015-2019 period.**

**The results showed a positive and significant relationship between fee-based income and market-based performance based on the proxy of Tobin's Q value. It is different from trading income, which shows a positive and insignificant relationship with market performance. The results of this study also indicate that both fee-based income and trading income have no significant negative effect on the beta value of stocks.**

**Keywords:- Fee Income, Trading Income, Performance, Bank Risk.**

## I. INTRODUCTION

In Indonesia, the financial system is still focused on the banking sector which has a crucial role in real economic financing activities so that it can be categorized as a bank-based country, where people are more likely to meet their financial needs, both for saving and borrowing money which is generally sourced from the bank. Quoted in the Indonesia Stock Exchange Fact Book (2017), it is said that banking is the dominant sector in the financial industry, especially in Indonesia. This can be seen from the market value of financial companies listed on the Indonesia Stock Exchange where banks dominate the financial system structure by 93%.

In carrying out the main activities of the bank (activities to channel and raise funds), banks also have a motive to make a profit. In banking, the component that becomes a cost factor comes from the expense of interest on deposits, while the income factor for banks comes from loan interest income. The banking industry has benefited largely from the difference between loan interest and deposit interest (spread based). This causes banks to try to increase lending to debtors as much as possible to increase bank income.

In its development, the banking industry which is increasingly modern is faced with several obstacles. Tight competition for lending, high levels of bad credit and a projection of lower interest rates. In addition, business actors and corporations have reduced their activities so that the demand for investment and working capital loans has decreased. In overcoming these obstacles, efforts must be made to create new opportunities. In this case, to minimize and reduce risk, banks can take efforts to diversify the sources of bank income, namely by increasing and developing non-interest income.

On the other hand, the trend of increasing non-interest income has basically begun to bloom in Indonesia in the last decade. Quoted from the Indonesian Banking Development Institute (2011), banks in Indonesia are also actively diversifying their income sources to reduce dependence on loan interest income. Basically, non-interest income is used to control the cost of loanable funds so that interest income can be optimized. Currently, the banking sector is undergoing a transformation and changes which also affect its function as an intermediary institution. Non-interest income is a diversification of income that can provide performance improvement benefits with a small level of risk compared to interest income (net interest margin).

Diversification activities in the banking industry can be seen through the proportion of non-interest income to operating income. Non-interest income consists of two types, namely income from fees, commissions and fees (fee based income) and income from foreign exchange transactions and increases in the value of securities (trading income). The source of bank income has a different effect on risk.

Data obtained from the December 2017 edition of the Indonesian Banking Statistics, it can be seen that the proportion of non-interest income to interest income at commercial banks in Indonesia continues to increase but has not been able to shift income from interest income. The ratio of non-interest operating income to interest income was 26.1% (Rp. 148,439 billion) in December 2014, 32.6% (Rp. 210,957 billion) in December 2015, and 36.6% (Rp. 249,691 billion) in December 2016. From these data, it can be seen that there is an increase in the proportion of non-interest operating income each year and this increase is a reflection of the focus of the banking industry on increasing non-interest income.

Despite all the reasons for diversification of bank revenues, there is currently no consensus on the benefits of diversification among experts. There are still pros and cons as to whether diversification can actually provide benefits for a bank, or in fact creates a risk for the bank. Several studies that support the benefits of diversification are research by Baele et al. (2007) in European banking and Sawada (2013) in Japan who found that income diversification can improve market performance and reduce bank risk. This implies that the public views the bank's efforts positively in diversifying its income. However, the research results of Kwan and Laderman (1999), Lepetit et al. (2008) and Stiroh (2004) state that the decision to diversify bank income is less effective in an effort to provide risk reduction benefits. Kwan and Laderman (2011) revealed that the wider the scope of bank activity, the higher the trade-off between the yield and the risk. The positive effect between diversification and this risk depends on the type of activity it does, because there are some activities that naturally have a higher risk, for example from insurance.

Another explanation is provided by DeYoung and Roland (2013) which states that interest income tends to be more stable and less risky when compared to non-interest income. This is because in lending activities, there are generally quite high switching costs and information costs that make it difficult for both creditors and debtors to move. On the other hand, in commission-based activities, generally there is fairly tight competition between banks and low information costs so that customers will have more alternatives in choosing services at other banks.

Based on this background, it is found that there is a gap between the trend of diversification of banking income in several countries which is increasingly increasing the proportion of bank non-interest income and the results of empirical studies which state that diversification of bank income can also increase bank risk. The impact of income diversification on banks in Indonesia is still quite limited. This makes the issue of bank income diversification interesting to review its impact on market performance and risk.

## II. LITERATURE REVIEW

### 1. Portfolio Theory

Portfolio theory states that diversification will provide risk reduction benefits, especially company-specific risks and increased performance. This has encouraged bank managers to diversify their business. The Bank no longer focuses on lending activities, but has expanded its activities to business lines serving customers in trading and investing in securities, selling insurance, being underwriters, and serving transaction activities.

### 2. Income Diversification

The banking industry in various countries has undergone considerable changes in recent years. Deregulation resulted in the banking sector growing to be very competitive. The banking industry and other financial institutions are currently competing to offer bank services.

On the other hand, banks also diversify in various services to increase profits (Madura, 2006: 531).

Bank diversification can be defined as an effort to provide more products and services by financial institutions (banks). Income diversification includes the bank's ability to obtain other sources of income, in the form of fee-based income, trading income and diversification of investment, as well as the application of accounting principles in the recognition of revenues and expenses. Companies, especially public companies have a responsibility to shareholders. Therefore, consideration is required when making a business decision regarding the risks and benefits of diversifying bank revenues.

### 3. Fee Based Income

Fee-based income or non-interest income is income derived from fees, fees or commissions received by banks from product marketing or banking service transactions that are charged to customers in connection with the bank products and services they enjoy. In other words, fee-based income can be interpreted as the benefits obtained from transactions provided in other bank services (Kasmir, 2002: 6). Fee based income is considered a potential source of income because it can be obtained from both credit-giving and other non-credit activities. In addition, fee-based income is said to contain relatively small unpaid risk because the fee payment is received immediately when the transaction occurs or when the fee is effectively charged.

### 4. Trading Income

Trade-based income or what is commonly referred to as trading income is bank income that comes from foreign exchange transactions and increases in the value of securities. In its activities, banks invest in the capital market in the form of stocks and bonds. If the bank invests its money in stocks, the bank will try to get capital gains, besides that the bank must analyze and predict stocks in order to know the price movements

### 5. Market Performance Using Tobin's Q

In addition to using financial ratios, in measuring its performance, banks can also use Tobin's Q value. Tobin's Q value was found by a Nobel Prize winner from the United States, James Tobin. Tobin's Q is the comparison between the company's market value and the book value of total assets.

### 6. Bank Risk

According to Sjahrial (2010: 67), risk is the possibility of a loss or deviation from the expected results. The definition of risk contains an uncertainty associated with the variability of the rate of return on a particular asset. Market risk can be classified into several parts, namely interest rate risk, capital risk and security prices, and exchange rate risk.

### III. DEVELOPMENT OF HYPOTHESIS

#### ➤ *Effect of fee based income and trading income of the Bank on Market Performance and Market Risk*

Several studies have found a positive effect of income diversification on bank performance (Sawada, 2013; Elsas et al., 2010; Baele et al., 2007). Performance improvement is indicated by the increasing bank market value, this is due to investors seeing diversification as able to stabilize bank income.

Research conducted with a portfolio approach (Stiroh, 2006) found that income diversification can increase total risk, systematic risk, and non-systematic risk. The increased risk is due to internal agency problems. Meanwhile, research by Baele et al. (2007) on banks in Europe found that income diversification is able to reduce non-systematic risk. The reason for this result is the low correlation between various sources of bank income. Kusuma's (2012) study of banks in Indonesia for the period 2005-2009 found that non-interest income had a negative effect on systematic risk. Based on the context in Indonesia, it is hoped that diversification will be able to reduce risk because there are still potential economies of scale and economies of scope that banks can obtain.

Another study in Japan conducted by Sawada (2013) shows that fee income can reduce non-systematic risk. Fee income is seen as a more stable source of income. Lapetit et al. (2008) show that there is an increase in total risk and non-systematic risk for banks in Europe if they are increasingly involved in activities that generate fee income. This is due to the volatility of fee income which is higher than credit income as well as the high cost of employees and additional technology to support these activities. Kusuma (2012) found that fee income has a negative effect on systematic risk. This is because investors still view fee income as a more stable source of income.

Research examining the effect of trading income on risk was carried out by Sawada (2013) and suggested that the risk decreases if banks are increasingly involved in trading activities. This is due to regulations that do not allow banks to conduct transactions in stocks so that the volatility of their earnings is lower. Lapetit et al. (2008) found that trading income has no effect on risks to banks in Europe. Meanwhile, research by Kusuma (2012) and Hidayat et al. (2012) found that trading income increases risk to banks in Indonesia, due to cross-selling. The increasing position of the bank on exchange rates and securities caused the volatility of trading income to be higher.

H1a: Fee income has a significant positive effect on performance

H1b: Trading income has a significant positive effect on performance

H2a: Fee income has a significant negative effect on market risk

H2b: Trading income has a significant positive effect on market risk

### IV. RESEARCH METHOD

#### 1. Type of Research

This research is a quantitative research with an emphasis on theory testing which is carried out through measuring variables with numbers. Then the data analysis is carried out through statistical procedures (Indriantoro and Supomo, 2002). This research is also hypothesis testing because it has clarity and description, so that hypothesis testing is intended to explain the causal relationship between research variables (Sekaran, 2006).

#### 2. Population and Sample

The population in this study is financial report data on 41 banking industries listed on the Indonesia Stock Exchange (BEI). Sampling was determined by purposive random sampling technique with the following criteria:

- Registered as a listed banking company in the 2015-2019 period
- Banks that have consistently published annual reports from 2015-2019
- A bank that has a license to carry out foreign exchange transactions

Based on predetermined criteria, a sample of 28 banks was obtained. In this study, several banks were excluded from the research sample because they had extreme data, especially trading income data. So that the sample selected in this study amounted to 27 banks.

#### 3. Data Collection and Analysis Methods

The data collection method in this research is carried out by the documentation method which is applied by viewing, using, as well as studying the financial statements of the companies that are the research samples. Data analysis was performed using multiple linear regression models.

#### 4. Operational Definition

##### a. Independent Variable

##### 1. Fee Based Income

Fee Based Income is the income from fees, fees or commissions received by banks from marketing of other banking products and services against operating income charged to customers in connection with the bank products and services it enjoys

$$\text{fee based income} = \frac{\text{fee} + \text{commission}}{\text{operating income}}$$

##### 2. Trading Income

Trading income is calculated by the proportion of income originating from foreign exchange transactions and the increase in the value of securities to operating income

$$\text{trading income} = \frac{\text{valas transaction} + \text{profit on sales and securities}}{\text{operating income}}$$

b. Dependent Variable

The dependent variable in this study is

1. Market performance

Performance is a subjective measure describing how well a company can use assets for various types of business and generate income. The market assesses a bank's performance based on the value creation for its shareholders. Market performance in this study is measured using Tobin's Q approach.

$$Tobin's\ Q = \frac{\text{market value of equity} + \text{book value of liability}}{\text{book value of assets}}$$

2. Market Risk

Market risk is the risk arising from movements in interest rates or market prices. Deep market risk can be measured using the beta concept. Beta is a measurement of the systematic risk level of a stock or portfolio relative to market risk. Beta also functions as a measure of the volatility of the stock's return, or portfolio.

$$ER = R_f + \beta (R_m - R_f)$$

Information:

ER: The expected rate of return (expected return)

Rf: Risk free interest rate (risk free)

β: The level of sensitivity of a stock or asset to market movements

Rm: The market rate of return (market return)

**V. RESEARCH RESULTS**

a. Descriptive statistics

Descriptive statistics describe descriptive data from all variables to be included in the research model. For more details, see Table 1 below:

Table 1: descriptive statistics  
**Descriptive Statistics**

	Median	Mean	Std. Deviation
FEE BASED INCOME	0.529877	0.524567	0.276608
TRADING INCOME	0.176784	0.275266	0.256788
Valid N (listwise)			

Source: processed data, (2020)

Based on the descriptive statistical table, the number of observations in this study was 50 observations. Based on the table, the average fee-based income value is 0.524567 with a standard deviation of 0.276608. This average value is greater than the average value of trading income which has a value of 0.275266. This indicates that, in increasing revenue sources, the go public banking sector in Indonesia is more focused on providing services to its customers, such as remittances, clearing, collection, and so on.

b. Hypothesis Testing

1. Significance Test of Hypothesis 1

Based on the model used in this study is the fixed effect model. The effect of fee-based income and trading income is tested on the dependent variable Tobin's Q value. The output results obtained from the regression test can be seen as follows:

$$Y_{it} = \alpha + \beta_1 FBI_{1t} + \beta_2 TI_{2t} + it + \mu_{it}$$

Table 2: Hypothesis Model 1

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
Konstanta	3.323460	0.657102	5.367502	0.0000
Fee Based Income	0.265765	0.098499	2.831287	0.0064
Trading Income	0.085657	0.096656	0.678552	0.5135

Source: processed data, (2020)

Interpretation of the results of hypothesis testing is as follows:

Based on the results of panel data regression testing using fixed effects model techniques, in Table 2 it can be seen that the partial influence of the independent variables, namely fee-based income and trading income, with the dependent variable, namely the Tobin's Q value. The probability of the T value is used to measure the significance of the independent variables. The effect of independent variables on the dependent variable:

- 1) The fee based income variable has a probability value of 0.0064. This probability value is smaller than  $\alpha = 0.10$ , so it can be concluded that the fee-based income variable has a significant effect on Tobin's Q value. The variable coefficient value, fee-based income, is 0.265765. This shows that the fee-based income variable has a positive effect on the value of Tobin's Q. In other words, if the fee-based income has increased by 1 unit, it will encourage an increase in bank performance by 0.26 units.
- 2) The coefficient value of the trading income variable is 0.085657. This means that the trading income variable has a positive effect on the value of Tobin's Q. In other words, if the trading income has increased by 1 unit, it will encourage an increase in bank performance by 0.08 units. However, the trading income variable has a probability value of 0.5135. This probability value is greater than  $\alpha = 0.10$ , so it can be concluded that the trading income variable has no significant effect on Tobin's Q value.

2. Hypothesis Significance Test 2

The model used in this study is the common effect model. The effect of fee based income and trading income will be tested on the dependent variable beta value. The output results obtained can be seen as follows:

$$R_{it} = \alpha + \beta_1 FBI_{1t} + \beta_2 TI_{2t} + it + \mu_{it}$$

Table 3: Hypothesis Model 2

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
Konstanta	-25.85735	24.79946	-1.055894	0.2986
Fee Based Income	1.237927	4.038923	0.297982	0.7771
Trading Income	3.656004	4.630455	0.798835	0.4454

Source: processed data, (2020)

Based on the results of regression testing, namely:

- 1) The fee based income variable has a probability value of 0.7771. This probability value is greater than  $\alpha = 0.10$ , so it can be concluded that the fee-based income variable has no significant effect on the beta value.
- 2) The trading income variable has a probability value of 0.4330. This probability value is greater than  $\alpha = 0.10$ , so it can be concluded that the trading income variable has no significant effect on the beta value.

## VI. DISCUSSION

### a. Effect of fee based income and trading income on performance (market based)

Based on the partial test results, it states that fee-based income has a significant positive effect on market-based bank performance as measured by Tobin's Q value. This shows that if fee-based income increases, bank performance will also increase. Fee based income is a non-interest income earned by a bank by providing services to its customers. If the bank has high income, then the profitability or profit that the bank will get will also be higher. This proves that the bank's performance is getting better and the market will respond positively to this increase in profits.

The results of this study are consistent with Sawada's (2013) research on bank diversification in Japan. His research found that fee based income has a positive and significant effect on bank value. This implies that the capital market evaluates the diversification of bank income positively or increases dependence on non-interest income.

Furthermore, the test results partially state that trading income has a positive and insignificant effect on market-based bank performance as measured by the Tobin's Q value. Trading income is income earned by banks through activities in the capital market such as trading in securities, securities, and currency transactions. foreigners, and so on. The results of this study are inconsistent with the research conducted by Sawada (2013) in Japan which states that trading income activities affect bank value positively and significantly. This is because banks in Japan generally invest in and trade in securities. Meanwhile, banks in Indonesia still lack trade-based activities. Banking conditions in Indonesia often experience losses from activities in the capital market as well as losses due to currency depreciation. This is because Indonesia's economic conditions are still not stable enough and often experience upheavals.

b. The effect of fee based income and trading income on market-based risk

The results showed that fee based income had a negative and insignificant effect on bank market risk as measured by the beta value. Systematic risk or also known as market risk is the risk that comes from factors that systematically affect the company and cannot be eliminated by diversification Markowitz (1952). The results of this study are consistent with research conducted by Sawada (2013) which found that income diversification did not significantly affect beta. This is because fee based income is income based on services to customers, for example transfer, collection, clearing, bank guarantees, and others, where these revenues do not have a direct relationship with the market.

Research on trading income has a negative and insignificant effect on bank risk through the beta value. This is because banking in Indonesia is on generally investing in risk-free securities such as government bonds. These results are consistent with research conducted by Sawada (2013) in Japan which found that trading income has a negative and insignificant effect on market risk.

## VII. CONCLUSION

Based on the research results, it can be concluded that income diversification through fee-based income has a positive and significant effect on market-based performance, while trading income has a positive and insignificant effect on market-based performance. Meanwhile, the effect of fee-based income and trading income shows a negative and insignificant result on market-based risks in go public banks in Indonesia.

This research is limited to non-linear regression so it is not possible to know the maximum proportion that is still able to reduce bank risk. Further research will be better if it is to be increased by using other variables such as innovation to support income and risk diversification activities. The sample used in the next research needs to use all banks operating in Indonesia so that it can be seen the effect of income diversification on overall risk.

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