THE IMPACT OF MACROECONOMIC VARIABLES ON INDONESIA ISLAMIC BANKS PROFITABILITY

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ABSTRACT

Economic development of Indonesia has an important role in the growth of Islamic banking sector. It is clear that the Islamic banking sector in Indonesia needs a conducive economic situation to make a better performance. The objective of this study was to investigate the influence of macroeconomic variables on the profit of Islamic Banks in Indonesia. Macroeconomic variables used in this study were Gross Domestic Product (GDP), Inflation rate, and BI Rate (interest rate of the central Bank of Indonesia). In addition, Non Performing Financing (NPF) was included in this model to represent another determinant for banks in gaining profit. Econometric model by formulating a multiple regression model was used to estimate the impact of GDP, BI Rate, Inflation rate, and NPF on the profit of Islamic banks. The results of this study showed that partially, all explanatory variables (GDP and BI Rate, Inflation Rate and NPF) have a significant effect on the Profit of Islamic Banks.

Kata Kunci:
Variabel Ekonomi Moneter, Bank Islam, Non-Peforming Financing

ABSTRAK

Pertumbuhan ekonomi Indonesia memiliki peranan penting dalam pertumbuhan sektor perbankan syariah. Hal ini sangatlah jelas bahwa bank Islam di Indonesai memerlukan keadaan ekonomi yang kondusif untuk membuat *performace* yang baik. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh variable ekonomi makro terhadap laba Bank Islam di Indonesia. Variabel ekonomi makro yang digunakan dalam penelitian ini adalah *Gross Domestic Product* (GDP), tingkat Inflasi, dan *BI rate* (suku bunga Bank Indonesia). Selain itu, *Non Perfoming Financing* juga dilibatkan dalam model untuk mewakili determinan lain bagi bank dalam memperoleh keuntungan. Model ekonometri dengan menggunakan regresi berganda yang digunakan untuk mengestimasi pengaruh GDP, BI rate, tingkat infasi, dan NPF pada laba Bank Islam. Hasil dari penelitian ini

menunjukkan bahwa secara parsial seluruh variabel (GDP, *BI rate*, tingkat inflasi, dan NPF) memiliki pengaruh terhadap profit Bank Islam.

INTRODUCTION

Islamic banking has amazing growth in the past decade in Indonesia's Islamic finance sector. The largest Muslim-majority country in the world and the biggest economy in Southeast Asia has had consistent GDP growth for more than a decade and seen the strong development of Islamic finance. Recently regulators in general and within the industry in particular need to assess what supported this success and determine how Indonesia can remain on track to a vibrant and thriving Islamic finance sector.

The Indonesian case is unique and differs from Islamic finance practitioners in the MENA countries (Middle East and North Africa), which focus on Islamic investment banking. Yet Indonesia has strong Islamic finance fundaments on a broad spectrum, including full-fledged Islamic banks, Shariah-compliant banking windows, and compliant multi-finance institutions, rural banks and Islamic cooperatives.

In 1998, Bank Indonesia gave official recognition to a dual banking system, and since then Indonesia has been eager to support the growth of its Islamic finance sector. Full-fledged Islamic commercial banks grew relatively moderately, while Islamic business units experienced rapid growth. This trend will change as more Islamic business units spin off to become Islamic commercial banks, as long as they can meet the criteria regarding capital and operations.

At the end of 2012, Indonesia's Islamic banking sector boasted 11 full-fledged Islamic commercial banks and 24 Islamic business units with branches and offices all over the country (see chart). The banking sector has tried to respond to real demand: in the past year, more than two million new Islamic banking accounts were opened, and as of the end of the forth quarter of 2012 there were more than 10 million customers (Bank Indonesia, Islamic Banking Statistic 2012).

In Indonesia, the development of Islamic banking is based on two considerations. *Firstly*, there is a large niche market in Indonesia, which refuses to be serviced and catered by conventional banks, because of Islamic principles. The introduction of an Islamic banking system will assist the banking system as a whole to effectively mobilize funds in this market. *Secondly*, the Islamic banking is an alternative system, which could be implemented as one of the banking-restructuring programs initiated by the Indonesian government (Siregar, 2001).

Table 1
A number of Islamic Banks

No.	Type of Islamic Bank	2006	2007	2008	2009	2010	2011	2012
1.	Islamic Commercial Bank	3	3	3	6	11	11	11
2.	Islamic Business Unit	20	26	27	25	23	24	24
3.	Islamic Rural Bank	111	114	131	138	150	155	158

Source: Statistik Perbankan Syariah (Islamic Banking Statistics), December 2002 and 2012, Bank Indonesia

Table 1 also shows that unlike conventional banks, the number of banks that applied shariah law bank grow rapidly from 2007 to 2012. For example, *full fledge* banks grow from 3 to 11 percent, while office channeling banks grow from 20 to 24 banks. This indicates that this system well accepted in this country where Moslem is the majority of the population.

The Islamic banking activities essentially are an extended service of the conventional banks, which provide an interest free banking activity. It accommodates the needs of customers who need interest free products and services based on shariah laws. Scholars and banking practice observers confident that this type of banking system can be such an alternative way of escaping from the economic crises. This point of view was successfully tested and proved to be true. When the monetary crises heavily hit Indonesia in the 1997/98 period, many conventional banks failed and liquidated, banks which applying shariah law were surviving and have little or were not affected by the crises and have a faster recovery than that of conventional banks. For example, after the crises the Non-Performing Financing (NPF) of the Islamic banks is far below than that of conventional banks (NPL). In 2000 the NPF of the Islamic banks is 12.96 percent, while the NPF of conventional banks was 26.77 percent. This indicates that Islamic banks face less risk compared to conventional banks (Viverita, 2011).

Islamic Banking as part of the national banking, Islamic banking is also required to be able to channel financing at reasonable rates. Current tariff perceived financing in Islamic banks is still quite high when compared to conventional bank lending rates. Higher pricing in Islamic bank is not independent of its unique operational in Islamic banking. From a financial perspective, the lower BI rate will trigger a decline in interest rates, so the margin will be increasingly competitive Islamic banks. However, determination of pricing in Islamic banks is also based on the analysis of various risk factors, which is somewhat different from conventional banks. Distribution of Islamic bank financing will always be based on analysis of risks that will arise. Currently these products are channeled financing by Islamic banks can be grouped into two types. *First*, the financing that will provide certainty of payment for

Islamic banks, both in terms of quantity and time. *Second*, the financing does not provide certainty of income for Islamic banks, in terms of quantity and time. The level of revenue would be positive, zero, or even negative. Given the characteristics of the two groups are different contract, then the financial risk analysis of the two groups were also different (Sudarwanto, 2011).

As a country with a large Muslim population, there is a big opportunity to speed up the development of Islamic bank industry in Indonesia. Until now, the regulation allows both Islamic and conventional banks to compete for local business within their separate areas. In addition, the regulation also allows both Islamic and conventional banks to offer Islamic services through *Islamic windows*. Therefore, the important issue is whether the performance of shariah-based banks as good as the conventional banks (Viverita, 2011).

The considerable development of the Indonesian economy has a significant impact on the Islamic bank Industry. It indicates by the growth of Islamic banking performance. For example, the total assets of Islamic banks in 2009 were 41.07 percent, compared to the conventional banks which only grew by 9.68 percent. Considering the significant growth of the shariah-based banking industry, it is important to keep good performance.

By evaluating the Islamic banking ability in gaining profit will provide policy makers some directions in making decision on how to improve their performance. This paper employs macroeconomic variables to examine the profit of Islamic banks. This study, therefore, attempts to assess the influence Indonesian economic condition on the profit of Islamic banks, as well as to test whether there is significant impact among those independent variables in the profit of Islamic banks as the dependent variable. This study uses a match sample bank over the very recent period.

Based on the objectives, the present study seeks to test the following hypothesis:

H1: There is a significant relationship between real Gross domestic Product and the profit of Islamic banks.

H2: There is a significant relationship between BI Rate and the profit of Islamic banks.

H3: There is a significant relationship between Inflation Rate and the profit of Islamic banks.

H4: There is a significant relationship between Non Performing Financing and the profit of Islamic banks.

LITERATURE REVIEW

Several studies have been devoted in evaluating the influence of macroeconomic variable on the profit or net income gained by banking sector. Although there are such substantial numbers of studies examining the performance of the banking industry, but there have been fewer studies done using Islamic banking data.

Arpaat.al (2010) in their study on the influence of macroeconomic developments on Austrian banks: implications for banking supervision conclude that bank operating income can be drawn for the development of the operating result of Austrian banks. In particular, declining inflation, i.e rising competition in Austria during the 1990s, appears to have a negative impact on the operating result of Austrian banks. However, short-term interest rates seem to have no significant influence on the banks' operating results. Real long-term interest rates have a significant negative correlation with the operating result, real short-term interest rate is completely insignificant.

The findings concerning the impact of macroeconomic variables, Arpaat.al (2010) found that overall, some macroeconomic variables like interest rates and consumer prices, but not real GDP or domestic demand growth rates, can be used to explain the risk provisions, operating income, and operating results of Austrian banks during the 1990s. Consequently, the macroeconomic dimension must not be neglected by supervisory authorities. However, macroeconomic developments alone cannot explain the development of macroeconomic bank data in a sufficient way. Other factors apart from macroeconomics obviously play a major role in banking.

Sufian and Zulkhibri (2011) in their paper measured the relationship between economic and market conditions and Islamic banks' performance, use LNGDP, INFL, CR3, and Z-SCORE variables. Gross domestic product (GDP) is among the most commonly used macroeconomic indicators to measure the total economic activity within an economy. The GDP is expected to influence numerous factors relating to the supply and demand for loans and deposits. Favorable economic conditions will affect positively on the demand and supply of banking services, but will have either positive or negative influence on bank profitability levels.

Another important macroeconomic condition which may affect both the costs and revenues of banks according to Zulkhibri and Sufian (2011) is the inflation rate (INFL). Inflation may have direct effects, i.e. increase in the price of labor and indirect effects, i.e. changes in interest rates and asset prices on the profitability of banks. The effects of inflation on bank performance depend on whether the inflation is anticipated or unanticipated. In the anticipated case, the profit rates are adjusted accordingly, resulting in revenues to increase faster than costs subsequently positive impact on bank profitability. On the other hand, in the unanticipated case, banks may

be slow to adjust their interest rates resulting in a faster increase of bank costs compared to bank revenues and consequent negative effects on bank profitability.

Guru et al. (2002) attempt to identify the determinants of successful deposit banks in order to provide practical guides for improved profitability performance of these institutions. The study is based on a sample of seventeen Malaysian commercial banks over the 1986-1995 period. The profitability determinants were divided into two main categories, namely the internal determinants (liquidity, capital adequacy, and expense management) and the external determinants (ownership, firm size, and external economic conditions). The findings of this study revealed that efficient expense management was one of the most significant in explaining high bank profitability. Among the macro indicators, high interest ratio was associated with low bank profitability and inflation was found to have a positive effect on bank performance.

Bashir (2000) examines the determinants of Islamic banks' performance across eight Middle Eastern countries for 1993-1998 period. A number of internal and external factors were used to predict profitability and efficiencies. Controlling for macroeconomic environment, financial market situation and taxation, the results show that higher leverage and large loans to asset ratios, lead to higher profitability. The paper also reports that foreign-owned banks are more profitable that the domestic one. There is also evidence that taxation impacts negatively bank profitability. Finally, macroeconomic setting and stock market development have a positive impact on profitability.

Samy Ben Naceur, Mohamed Goaiedin their paper revealed that the empirical test is concerned with the determinants of interest margin and profitability of the Tunisian deposit banks. They used capital ratio, overhead, loan and liquidity ratios as proxies for internal indicators. Meanwhile macro-economic measures and financial structure indicators are used as external factors.Two macro-economic variables are used: inflation (INF) and GDP per capita growth (GROWTH).

There are several previous studies that have reported a positive association between inflation and bank profitability. High inflation rates are generally associated with high loan interest rates, and therefore, high incomes. However, if inflation is not anticipated and banks are sluggish in adjusting their interest rates then there is a possibility that bank costs may increase faster than bank revenues and hence adversely affect bank profitability. The GDP per capital growth is expected to have a positive impact on banks' performance, according to the well-documented literature on the association between economic growth and financial sector performance.

The macroeconomic indicators (i.e. inflation and economic growth) are insignificant in return on assets regressions. However, inflation has a positive impact on banks' interest margins. This may suggest that banks tend to profit in an

inflationary environment by increasing their margins, but the effect cancels out in the return on asset measures. In addition, economic growth does not reflect any aspects of banking regulations and technology advance in the banking sector omitted from the regressions.

Another variable using in this study is Non Performing Financing. Non Performing Financing **/** NPF of Islamic bank or Non Performing Loan **/** NPL of conventional bank, occurs due to the problems happening during the financing/loan are being processed within the bank, or after the financing/loan is granted. Nevertheless, NPF and NPL are created in different banking systems. Islamic bank has a number of fundamental factors that can prevent the creation of NPF from becoming worse (Herijanto, 2011).

The factors causing NPF/NPL during the internal process of bank are basically the same, that relates to the following internal factors: financing/credit knowledge and skills, professionalism and integrity, and spirituality level of the people, corporate culture, credit/financing culture that develops in the institutions, moral leadership, as well as reward & penalty system that implemented firmly. The process itself needs to do a reputation check, due diligence & care, and internal credit supervision or credit audit. The causes of NPF/ NPL after the financing/credit is granted are related to borrowers, i.e, to their honesty and trust, their business acumen, their business commitment, and their moral commitment to keep their written promise to pay. All these factors must be analyzed or scrutinized by conventional or Islamic banks, by using the internal above said earlier (Herijanto, 2011).

Rachmadita et.al. (2013) in their study examined the influence of deposits, equity, Non-Performing Financing (NPF), and the results of the financing on Islamic Banks in Indonesia. From the results of the partial regression testing, they found that three of the four independent variables investigated, namely Savings, NPF, and Profit Sharing display significant influence on the financing of Islamic banks in the years 2007-2010, while the other variable of Equity has no significant effect on financing of Islamic banks in the year 2007-2010. Savings displayed a significant negative effect on financing. The Islamic banks reduce the amount of financing disbursed by banks to concentrate on reducing the ratio of NPF / non-performing loans and to hold expansion on financing. They conclude that NPF has a significant positive effect on financing. As written in Business Indonesia, an increase in the distribution of funding coupled with an increase in the ratio of the amount of financing problems (Non Performing Financing / NPF). Those are due to a static level of income with an increasing need of financing, especially for the funding of working capital.

RESEARCH METHOD

The data of individual banks were collected from the monthly financial reports of Islamic bank published by the Central Bank of Indonesia. The period chosen was 2006 to 2012 to provide sufficient data for a match sample Islamic bank. The quarterly data is chosen to adjust with the banks' obligation to disclose their financial reports to the public.

Furthermore, to test whether there is significant impact macroeconomic variables and non performing finance on the profit of Islamic banks, multiple linear regression analysis is applied. It is one of the most widely used of all statistical methods. In banking and finance literature, regression analysis is a very common method used to find the determinants of bank performance. The linear regression model employed in this study is shown in below equation.

$$LNPRO = \beta 0 + \beta 1\ LNGDPR + \beta 2\ BIR + \beta 3\ INF + \beta 6\ NPF + \varepsilon$$

Where:

LNPRO	= Natural Logarithm of the profit of Islamic banks
LNGDPR	= Natural Logarithm of Real Gross Domestic Product
BIR	= BI Rate (Interest rate of the central bank of Indonesia)
INF	= Inflation rate
NPF	= Non Performance Financing
ε	= error term

The underlying classical assumptions must be satisfied in order to get a more valid model. Diagnostics for the underlying assumptions must be done and remedial measures can then be taken accordingly.

RESULT AND DISCUSSION

Multiple linear regression models can be termed as a good model if the model meets the criteria BLUE (best linear unbiased estimator). BLUE can be achieved if it fulfills the classical assumptions. Classical assumption is the statistical requirements that must be met in multiple linear regression analysis based on Ordinary Least Square (OLS). So the analysis is not based on the OLS regression does not require the classical assumption requirements. There are at least five classic assumption test, namely test multicollinearity, heteroscedasticity test, normality test, autocorrelation test, and linearity test. There is no definite provision about the order in which the first test that must be met. The analysis can be done depends on the available data.

Normality assumption is very important in terms of significance testing (significance) regression coefficients, if the regression model is not normal, then the

conclusion of the F test and T test is doubtful, because the statistical F test and t test on regression analysis derived from a normal distribution. This study used a single sample test Kolmogorov-Smirnov normality test regression model.

The probability value (sig.) obtained from the Kolmogorov-mirnov test was 0.656. The probability value in Kolmogorov-Smirnov test is still greater than the error rate of 5% (0.05), then it can be concluded that the regression model are normally distributed.

Multicollinearity means that there is a strong relationship between some or all independent variables in the regression model. If there is Multicollinearity the regression coefficient being not necessarily, the error rate becomes very large and is usually characterized by the coefficient of determination very large, but for testing the partial regression coefficients, does not exist or if there are very few significant regression coefficients. In this study, we used the Variance Inflation Factors (VIF) as an indicator of whether there is multicollinearity among the independent variables.

Based on the VIF value, there is no strong correlation among the independent variables, where the values of the two independent variables VIF smaller than 10 and it can be concluded that there was no multicollinearity between the four independent variables.

Heteroscedasticity is not an indication of residual variance between resulting homogeneous values obtained estimates are no longer efficient. To test whether the variance of the residual homogeneous rank test was used partial correlation test, is to correlate the independent variable to the absolute value of the residual (error). If the correlation coefficient of each variable no significant independent error rate of 5%, indicating presence of heteroscedasticity. In Table 4 below can be seen the value of significant correlation coefficient of each independent variable on the absolute value of residual (error).

Based on the results obtained correlation gives an indication that the residual (error) which arise from regression equations show some of independent variables free of happening heteroscedasticity, where the value of significance (sig.) of each of the coefficient correlation of the two independent variables with the absolute. Value of error is greater than 0.05.

Autocorrelation is defined as the correlation between the measured observations in the time series regression model or in other words the error of observation of the current year is affected by errors of observation the previous year. On testing autocorrelation Durbin-Watson test was used to determine whether there is autocorrelation in the following regression model and the Durbin-Watson value is obtained through the estimation regression models.

Based on the results obtained by processing the value of Durbin-Watson statistics (DW) = 1.535, while from the table for the number of independent variables d = 4 and the number n = 28 observations obtained lower limit value table (dL) = 1.104 and the limit upper (dU) = 1.747. Because the value of Durbin-Watson regression model (1.535) is between dL (1.104) and dU (1.747), the area of no decision. To ascertain whether there is autocorrelation test is continued using runs test (Gujarati, 2003; 465). The test results using run test showed that the Z test significance level (0.563) and was greater than 0.05, which indicates there is no autocorellation in the regression model. The regression model arising from the above data is of the form;

LNPRO = -36.841 + 2.574LNGDP - 0.106 BIR + 0.271INF - 0.231NPF

The model means that Islamic Bank Profit (LNPRO) that are dependent on the Gross Domestic Product (GDP), Bank Indonesia (Central Bank) Rate, and Non Performing Financing (NPF). The coefficient of Gross Domestic Product is 2.574 indicating that the amount of GDP contributes positively to the Islamic Banking Profit and significantly. Additionally, Islamic Banking Profit increases with the increase of Inflation Rate and significantly. On the contrary, Islamic banking profit increases with the decreases of Bank Indonesia Rate and Non Performing Financing and significantly. There is therefore a positive relationship between the amount of LNGDP and the amount of LNPRO, amount of INF and amount of LNPRO. While there are negative relationship between the level of BIR and LNPRO, and the level of NPF and LNPRO.

Table 2
Coefficients of Regression

Model	Variabel	Coefficients	Nilai t	Nilai Sig. *)
1	(Constant)	-36.841	-1.679	.107
	LNGDP	2.574	2.429	.023
	BIR	-.106	-2.291	.031
	INF	.271	1.965	.062
	NPF	-.231	-1.913	.068

a. Dependent Variable: LNPRO

The R-Square indicates that only 71.5% of the Islamic Banking Profit is explained by Gross Domestic Product, BI Rate (Interest Rate of Bank Indonesia), Inflation Rate, and Non Performing Financing. The adjusted R-Square of 66.5% however indicates that Gross Domestic Product, BI Rate, Inflation Rate, and Non Performing Financing explain 66.6% in the amount of Islamic Banking Profit (LNPRO) made by Islamic banks. This means that there are still other important factors that Islamic banks should also focus on to enhance Profit in their operation. ANOVA F statistic of 14.413 is significant with a P-value < 0.05. So, the model establishes a

relationship between Islamic Banks Profit and Gross Domestic Product, BI Rate, Inflation Rate, and Non Performing Financing.

Table 3
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.845	.715	.665	.37825	1.535

a. Predictors: (Constant), NPF, INF, BIR, LNGDP

b. Dependent Variable: LNPRO

The t-test indicates that LNPRO depends on LNGDP, BIR, INF and NPF is significant. The test of significance indicates that the coefficient of 2.574 in the case of Gross Domestic Product and the other coefficients - 0.106, 0.271, and - 0.231 in the case of BI Rate, Inflation Rate, and Non Performing Financing indicate that there is positive and significant association between LNGDP and the amount of LNPRO and the level INF and the amount of LNGDP. Meanwhile association between BIR and the amount of LNPRO, level of NPF, and amount of LNPRO are negative and significant. Ordinarily, Islamic commercial banks should focus on the factor LNGDP and BIR rather than INF and NPF if their objective is to enhance LNPRO. Obviously, it can be stated that all hypothesis mentioned above have been accepted and all independent variables have a significant impact on the profit of the Islamic.

CONCLUSIONS

By using time series data, the study attempts to examine the impact of macroeconomic variables and non performing financing on the profit of Islamic banks operating in Indonesian banking sectors during the period 2006 Quarter 1 – 2014 Quarter 4. We find that all macroeconomics variables influence Islamic bank both full fledge Islamic bank and Islamic business unit in gaining profit. The empirical findings seem to suggest that real gross domestic product is a prerequisite to improve the profitability of Islamic banks operating in the Indonesian banking sectors. Similarly, we find that higher interest rate (Bank Indonesia rate) has a negative and significant influence on the profit of Islamic banks operating in the Indonesian banking sectors. In addition, there is a finding that shows that Islamic banking can operate positively in higher rate of Inflation. Whereas, non performing financing represented internal factor influenced Islamic banking in gaining profit negatively and significantly.

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APPENDIX

Appendix 1
Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		28
Normal Parameters[a,,b]	Mean	.0000000
	Std. Deviation	.34911214
Most Extreme Differences	Absolute	.139
	Positive	.112
	Negative	-.139
Kolmogorov-Smirnov Z		.733
Asymp. Sig. (2-tailed)		.656

a. Test distribution is Normal.

b. Calculated from data.

Appendix 2
Coefficients[a]

Model		**Collinearity Statistics**	
		Tolerance	**VIF**
1	(Constant)		
	LNGDP	.333	3.006
	BIR	.638	1.568
	INF	.898	1.114
	NPF	.321	3.117

a. Dependent Variable: LNPRO

Appendix 3
Partial Correlations

Control Variables			LNGDPR	BIR	INF	NPF
LNPRO	LNGDPR	Correlation	1.000	.181	-.448	-.528
		Significance (2-tailed)	.	.366	.019	.005
		Df	0	25	25	25
	BIR	Correlation	.181	1.000	-.160	-.625
		Significance (2-tailed)	.366	.	.424	.000
		Df	25	0	25	25
	INF	Correlation	-.448	-.160	1.000	.281
		Significance (2-tailed)	.019	.424	.	.156
		Df	25	25	0	25
	NPF	Correlation	-.528	-.625	.281	1.000
		Significance (2-tailed)	.005	.000	.156	.
		Df	25	25	25	0

Appendix 4

Runs Test Results to Ensure Presence of Autocorrelation

	Unstandardized Residual
Test Value[a]	.04363
Cases < Test Value	14
Cases >= Test Value	14
Total Cases	28
Number of Runs	13
Z	-.578
Asymp. Sig. (2-tailed)	.563

a. Median