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INCOME DIVERSIFICATION, PROFITABILITY, AND RISK IN ISLAMIC BANKING IN INDONESIA

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ABSTRACT
This study investigates the factors that affect income diversification and the associated risk in Indonesian Islamic banking. Panel regression is used to examine the correlation between risk factors, including primary operating revenue, fee-based income, internal and external factors, and the profitability of Islamic banks. Panel regression analysis has been conducted on the data from 2012-2016 to determine the factors that affect profitability and risk. The results show that pretax profit, after-tax profit as a proportion of total assets, and after-tax profit as a percentage of total equity react differently to income diversification. According to the findings, an increase in profit before taxes can be expected as the number and diversity of a company's revenue streams continue to expand. This indicates that the financial health of Islamic banks improves when they have access to many revenue streams. Furthermore, the standard deviation of baseline income shows that diversifying sources of income has little effect on internal risk.

Keywords:
Income diversification, risk, Islamic banking, profitability, panel regression

INTRODUCTION

Banks in South and Southeast Asia have had to undergo substantial changes to increase the variety of services they offer customers in response to intensifying competition. The banking system relies on income from lending activities and increases the potential for income from non-lending activities like fees, commissions, and securities trading (Elsas et al., 2010). Income diversification is essential in the banking industry due to the high level of competition. Traditional banking institutions use the term "non-interest income" to describe the diversification of their revenue streams (Smith et al., 2003). However, Islamic banking has a unique revenue model compared to its conventional counterpart.

Islamic banking relies heavily on the margin of murabahah for its primary source of income. This sum results from subtracting the agreed-upon profit from the asset's purchase price by the bank and the customer. Islamic banking also has mudharabah and musyarakah profit-sharing income, which are obtained by the bank derived from the financing given to the customer, where the profit is distributed based on the profit-sharing ratio according to the agreement at the beginning agreement (Trinugroho et al., 2018). Wadiah Certificate Interest from Bank Indonesia is another source of revenue. This money comes from Bank Indonesia as a bonus for participating in Islamic investment banking. Meanwhile, the other operating income will be earned through profit sharing and the sale and purchase of securities issued due to bond issuance. Customers receive a portion of the administrative profit. Islamic banking generates non-operating income by writing off receivables, grants, and other assets that customers are unlikely to pay back shortly (Khattak et al., 2021).

The margin of murabahah is the primary source of profit for Islamic financial institutions. This gain results from the asset's purchase price minus the bank's agreed-upon profit from the transaction with the client (Shaban et al., 2014). Mudharabah and musyarakah profit-sharing income is also obtained by the bank from financing provided to the customer, with the profit being distributed based on the profit-sharing ratio agreed upon at the outset of the transaction. The Bank Indonesia Wadiah Certificate Income is another source of revenue. This money comes from Bank Indonesia's investment Islamic banking bonus program. Income from the sale and purchase of securities, including bonds, and the distribution of profits make up the other components of operating income. Clients receive a portion of the money made from running the business. Islamic banks generate non-operating income by releasing assets, grants, or receivables that would otherwise be written off as uncollectible.

Profit from the margin of murabahah is the lifeblood of the Islamic banking industry. This sum results from the asset's purchase price minus the agreed-upon profit shared by the bank and the client. Mudharabah and musyarakah profit-sharing income are also a part of Islamic banking. This income is earned by the bank when providing financing to a customer, and the profit is then split between the bank and the customer by the profit-sharing ratio agreed upon at the outset of the relationship. Bank Indonesia Wadiah Certificate Income is another source of funding. Bonuses for Islamic investment banking at Bank Indonesia are the source of this revenue. Revenue from bond sales and purchases and profit-sharing arrangements comprise the remainder of the company's operating income. Customers receive a cut of the administration's profits. Islamic banking generates non-operating income by writing off receivables, grants, and other assets that customers are unlikely to pay back in the near term but may be able to do so in the long run.

Islamic banking relies heavily on the margin of murabahah as its primary source of income. This sum results from subtracting the asset's purchase price from the mutually agreed-upon profit between the bank and the client. The profit-sharing income in Islamic banking comes from two different sources: musyarakah and mudharabah, both are derived from the financing provided to the customer and then split according to the profit-sharing ratio agreed upon at the outset. Income from Bank Indonesia Wadiah Certificates is another option. This money comes from Bank Indonesia's investment Islamic banking bonuses. The issuance of bonds and the subsequent sale and purchase of related securities constitute the other operating income. In contrast, profit sharing and the sale of securities include the other operating income. Customers receive a cut of the administrative profits. Islamic banking generates non-operating income by writing off receivables, grants, or other assets that customers are unlikely to pay back shortly.

Therefore, this study aims to determine the effect of income diversification on profitability, both through non-financing and financing activities. Additionally, it seeks to identify the factors that affect risk in order to maintain stability in diversification.

Literature Reviews

It is more profitable for banks to earn money from various financial sources, especially if these sources of income are not perfectly correlated. According to the standard banking model, income volatility can be mitigated by increasing a bank's exposure to non-traditional sources of revenue. Non-financing activities can be profitable for a bank that has diversified its operations. Traditional banking institutions have been the primary sites of prior studies on income structures. Chiorazzo et al. (2008) investigated the impact of revenue diversification on Italian banks' bottom line. According to the findings, small banks can benefit from non-interest income only if they start the period with a small non-interest income share. Non-interest income should be prioritized based on its total amount rather than its source. Hidayat et al. (2012) investigated the connection between product variety and financial institution vulnerability from 2002 to 2008. The findings indicate that the level of product diversification at a bank is related to the bank's size in terms of assets.

Nonetheless, there has been some investigation into Islamic financial institutions. Molyneux Yip (2013) examined how Islamic banks in Malaysia, Saudi Arabia, Kuwait, the United Arab Emirates, Bahrain, and Qatar fared after they diversified their sources of revenue. As the results show, banks' risk-adjusted performance in terms of ROA suffers when their income sources are spread out. Due to relying more heavily on fewer revenue streams, Islamic banks experience less earnings volatility. Compared to conventional banks, Islamic financial institutions offer a lower return on investment.

Lepetit et al. (2008) indicate that the tiny banks in Europe's banking system benefit significantly by engaging in non-interest activities like trading, commission, and fee collection. In fact, for smaller financial institutions, engaging in a greater volume of trading operations is often correlated with reduced asset and default risks. Given that Islamic banks have a narrower range of revenue streams, they are less vulnerable to earnings fluctuation. Islamic banks have poorer profitability (on average) when risk is considered compared to their conventional counterparts.

Meanwhile, Nisar et al. (2018) have conducted thorough research on the two hundred commercial banks across the South Asian region. Based on the findings, commercial banks in South Asia tend to benefit financially and structurally when they diversify their revenue streams. Fee-based income hurts their profitability and stability, while non-interest income positively impacts them. Therefore, the banking industry can increase its profitability by diversifying its revenue into specific types of non-interest income-generating activities. Najam et al. (2022) suggest that income diversification improves asset returns across various countries and performance quartiles. This study concludes that, despite disparities in bank size and between nations, banks that successfully diversify their income are likely to produce superior returns on assets. Uddin et al. (2022) indicate a highly significant positive correlation between income, asset diversification, and bank profitability. This study's findings suggest that banks can increase their bottom lines in two ways: by diversifying their income streams (income diversification) and their portfolios (asset diversification). Kozak and Wierzbowska (2022) proves that the European banking industry would benefit from an increase in the proportion of non-interest income to overall revenues. The financial success of European banks benefits from the diversification of their income from non-interest sources, including service fees, commissions, and income from other forms of services. Alouane et al. (2022) discover that banks profit from diversification, but this improvement is countered by their greater exposure to risky non-interest revenue.

The latest research by Adem (2023) distinguishes between pre-tax and post-tax earnings, which helps determine how much diversification impacts after-tax revenue. A more nuanced view of the impact of diversity on after-tax profits can be gained by drawing this distinction. This method allows for a more exact analysis of how diversification affects the companies' bottom lines being studied. In the pandemic, Ho et al. (2023) suggested that banks should be encouraged to seek alternative sources of income to lessen the impact of economic shocks or external events that could threaten their financial stability. They compare industrialized and developing nations and indicate that the effect of income diversification varies according to its components, notably before and during a crisis such as COVID-19. They suggest that, to strengthen their institutions' financial performance and stability in the face of external shocks, bank management should actively pursue different revenue sources, such as fee-based services, trading activities, and foreign exchange.

Meanwhile, Ashraf et al. (2023) provide solid proof for a variety of criteria that are critical to consider when evaluating financial institutions' non-interest income. Bank size, ownership, capital adequacy, net interest margin, loan-to-asset ratio, implied interest payments, and management quality are all examples of such criteria. The income diversification of international banks in Pakistan is greater than that of domestic banks. Non-interest revenue is typically higher for foreign banks than for local ones.

METHOD

In this study, our focus is on the population of Islamic banks in Indonesia. We have conducted panel regression analysis on the data from 2012-2016 to determine the factors that affect profitability and risk. By utilizing panel regression, we aim to examine the correlation between profitability-risk with primary operating income, fee-based income, and both internal and external factors. The formula used for this analysis is stated as below:

$$\pi_{it} = \alpha_0 + \alpha_1\, DIV_{it} + \alpha_2\, CAP_{it} + \alpha_3\, FUND_{it} + \alpha_4\, ASSQ_{it} + \alpha_5\, GDPg_t + \alpha_6\, INF_t$$
$$\sigma_{it} = \alpha_0 + \alpha_1\, DIV_{it} + \alpha_2\, CAP_{it} + \alpha_3\, FUND_{it} + \alpha_4\, ASSQ_{it} + \alpha_5\, GDPg_t + \alpha_6\, INF_t$$

Whereas π_{it} is profitability represented by elemental earning power (BEP), net interest margin (NIM), return on assets (ROA), and return on equity (ROE) in bank i and year t. This research divides profitability into two groups. Firstly, we use profitability before tax, which consists of pretax income (BEP) and the income from the operation (NIM). Second, we use profitability after tax, which consists of net income based on management (ROA) and owner (ROE).

Then, σ_{it} is the risk represented by the BEP, NIM, ROA, and ROE standard deviation in bank i and year t. Each bank's standard deviation for profitability is calculated over the past three years. We also use the risk-adjusted of BEP, NIM, ROA, and ROE. The formula is defined as profitability divided by the standard deviation of profitability. Meanwhile, ADZP is the risk that consists of the combination of ADZP1 and ADZP2. ADZP1 is a measure of bank portfolio risk, defined as the average of profitability divided by the standard deviation of profitability. ADZP2 is a measure of leverage risk, defined as average capital divided by the standard deviation of profitability (Lepetit et al., 2007).

The independent variable is diversification, which consists of this formula:

$$1 - (SH^2NET + SH^2NON)$$
$$SH^2NET = NET/(NET + NON)$$
$$SH^2NON = NON/(NET + NON)$$

where SH2NET is the share of net interest income (squared), SH2NON is share of non-financing income (squared), NET is net financing income, and NON is non-financing income. A higher value of DIV indicates a more diversified income mix, whereas zero means all revenue comes from a single source (100% concentration).

Table 1 The Operational Variable Definition

Dependent Variables - Profitability	**Formula**
Basic Earnings Power (BEP)	Pretax Income/Total Assets
SHBEP (Risk-Adjustment of BEP)	BEP/SDBEP
Net Interest Margin (NIM)	Net Interest Income/Total Assets
SHNIM (Risk-Adjustment of NIM)	NIM/SDNIM
Return on Assets (ROA)	Net Income/Total Assets
SHROA (Risk-Adjustment of ROA)	ROA/SDROA
Return on Equity (ROE)	Net Income/Total Equity
SHROE (Risk-Adjustment of ROE)	ROE/SDROE
Dependent Variables – Risk	**Formula**
Standard Deviation of BEP (SDBEP)	The standard deviation for each bank is calculated over the past 3 years
ADZPBEP (Risk)	$\frac{Average\ BEP}{SD\ BEP} + \frac{average\ TETA}{SDBEP}$
Standard Deviation of NIM (SDNIM)	The standard Deviation for each bank is calculated over the past 3 years
ADZPNIM (Risk)	$\frac{Average\ NIM}{SD\ NIM} + \frac{average\ TETA}{SDNIM}$
Standard Deviation of ROA (SDROA)	The standard Deviation for each bank is calculated over past 3 years
ADZPROA (Risk)	$\frac{Average\ ROA}{SD\ ROA} + \frac{average\ TETA}{SDROA}$
Standard Deviation of ROE (SDROE)	Standard Deviation for each bank is calculated over past 3 years
ADZPROE (Risk)	$\frac{Average\ ROE}{SD\ ROE} + \frac{average\ TETA}{SDROE}$
Dependent Variables	**Formula**
DIV (Income Diversification)	$1-(SH^2NET+SH^2NON)$ $SH^2NET=NET/(NET+NON)SH^2NON=NON/(NET+NON)$
Capital (CAP)	Total Equity/Total Assets
Funding Deposit (FDR)	Total Fundings/Total Deposits
Assets Quality (ASSQ)	Impaired loans/Gross loans
GDPg	GDP growth annually
Inflation (INF)	Customer Price Index

RESULTS AND DISCUSSION

This research approach makes a clear distinction between pre-tax and post-tax earnings, which helps in determining the impact of diversification on after-tax revenue. By drawing this distinction, a more nuanced understanding of how diversity affects after-tax earnings can be achieved. This method enables a more precise analysis of how diversification influences the bottom line of the companies under study.

The impact of diversification on pretax income is shown in Table 2. Based on the output, it is found that income diversification, both through financing and non-financing activities, has a positive effect on income before tax. Islamic banks that can generate many revenue streams exhibit superior financial performance in terms of revenues. Interestingly, it is seen that the level of earnings diversification does not have an impact on internal risk, which is quantified by the standard deviation of underlying earnings (Uddin et al., 2022; Kozak & Wierzbowska, 2022). The data above indicate that Islamic banks, while potentially falling short of attaining optimal diversification, can anticipate growth in profitability without the need to escalate internal risk. These financial institutions must acknowledge that distributing pre-tax earnings will not substantially escalate the risks they encounter. On the other hand, diversifying income sources can contribute to mitigating portfolio risk and leverage, as evidenced by the ADZPBEP indicator. The findings above offer valuable insights for Islamic financial organizations in effectively managing their portfolios. Banks operating in the Islamic banking sector can enhance their performance through the strategic optimization of income diversification without augmenting their risk exposure. This approach is crucial in attaining financial objectives and upholding stability within the fiercely competitive Islamic banking landscape.

Table 2 Output Result Using Basic Earning Power

Variables	BEP	SHBEP	SDBEP	ADZPBEP
DIV	7.893*	6.423	-0.166	-126.113*
CAP	0.091	-0.267**	0.101**	-0.617
FUND	0.048	0.149**	0.016	-0.484
ASSQ	0.044	-0.967**	0.664**	-15.656**
GDP	2.335**	1.93	0.281	-6.682
INF	-0.273	-0.581	0.072	-2.161
R^2	***0.2291***	***0.4444***	***0.610***	***0.2442***
Prob > chi	***0.041***	***0.000***	***0.000***	***0.013***

Table 3 displays the impact of diversification on net interest income (the income from banking operations represented in this table). The more money that comes into Sharia banking from various financing and non-financing activities, the more money there is to use for day-to-day operations. It's important to remember that revenue diversification helps banks enhance their earnings in this setting. This study demonstrates that increasing the variety of a company's revenue streams (both monetary and otherwise) can boost pre-tax profits (Alouane et al., 2022). Interestingly, these results also demonstrate that internal risk in banks, as assessed by the standard deviation of underlying earnings, is unaffected by earnings diversification. In other words, these financial institutions can raise their earnings without considerably increasing the dangers they confront. While banks should improve their diversification, they should be aware that doing so should not increase their risk exposure. The ADZPNIM statistics and leverage risks show the bank's portfolio risks, which can be efficiently handled by increasing the diversity of income sources, even though internal risks remain stable. Therefore, Islamic banks should consider improving their portfolio diversification techniques to ensure long-term growth in income without increasing exposure to unnecessary risks.

Table 3 Output Result Using Net Interest Margin

Variables	NIM	SHNIM	SDNIM	ADZPNIM
DIV	6.806*	-14.055	-5.666	-77.449*
CAP	0.295**	-0.145	-0.178**	-0.286
FUND	-0.008	0.266	0.022	0.648
ASSQ	-0.055**	-0.223	1.383**	-5.883**
GDP	1.881	-7.624	1.227	-29.082**
INF	-0.389	-0.941	0.349	-6.824**
R^2	***0.7329***	***0.2102***	***0.6137***	***0.2883***
Prob > chi	***0.000***	***0.041***	***0.000***	***0.0001***

Table 4 shows that diversification has a negative and significant influence on after-tax income based on the management point of view, which is represented by return on assets. This finding emphasizes that the net profit earned from total assets will decline as Sharia banking generates more income from financing and non-financing activities. Risk-adjusted returns and internal risk (as assessed by the standard deviation of underlying earnings) are unaffected by earnings diversification in this setting. While this outcome could be better, it is crucial to remember that diversified income does not considerably raise risk, especially considering after-tax income about total assets. These findings show that revenue diversification helps lessen reliance on a single revenue source without negatively affecting internal risk or risk-adjusted performance. Therefore, it is crucial that Islamic banks highlight the measures they have taken to diversify their revenue streams without increasing their risk profile. This makes it more likely that they will be able to achieve their financial objectives.

Table 4 Output Result Using Return on Assets

Variables	**ROA**	**SHROA**	**SDROA**	**ADZPROA**
DIV	-1.131	-3.223	-0.426	-148.299
CAP	-0.135**	-0.097*	0.079**	-1.184
FUND	0.002	0.023	0.021	-1.981
ASSQ	-0.418**	-0.475	0.506	-15.244*
GDP	0.031	5.235**	0.259**	70.821
INF	0.359	0.039	0.040	-0.246
R^2	***0.8364***	***0.2001***	***0.6142***	***0.216***
Prob > chi	***0.000***	***0.0041***	***0.0000***	***0.004***

Table 5 shows that diversification negatively and significantly influences after-tax income based on the owner's perspective, represented by return on equity. This research reveals that as Sharia banking generates more income from a wider range of financing and non-financing activities, the net profit as a percentage of total equity will inevitably decline. There appears to be no relationship between the standard deviation of basic income and risk-adjusted returns or internal risk when income is diversified in this way. It is essential to stress that the risk of after-tax income based on total equity is not significantly increased by income diversification, even when the problems differ from expected conditions. This study's findings suggest that Islamic banks should not view income diversification as a way to boost their income at the expense of taking on additional risks, even though doing so would have no adverse effect on risk-adjusted returns or internal threats. It is important to note, however, that diversifying sources of income can assist in mitigating the ADZPROE-measured portfolio risk and leverage risk associated with a bank. Islamic banks should carefully explore income diversification options to achieve greater income diversity without adding unnecessary risks. By doing so, they can realize their financial potential within an acceptable risk environment.

Table 5 Output Result Using Return on Equity

Variables	ROE	SHROE	SDROE	ADZPROE
DIV	-4.966	-1.676	20.163**	-23.488*
CAP	-0.237**	-0.058	0.085**	-0.044
FUND	-0.085	0.081	0.039	-0.046
ASSQ	-2.015**	-1.137**	0.726**	-2.918**
GDP	6.965**	-0.476	0.222	-2.837
INF	0.157	0.087	-0.130	-0.0387
R^2	***0.356***	***0.277***	***0.304***	***0.232***
Prob > chi	***0.003***	***0.035***	***0.004***	***0.011***

It can be concluded that there is a disparity in the outcomes between pre-tax and post-tax profitability. Income diversification exhibits a noteworthy correlation with pre-tax profitability, although it does not exert any discernible impact on post-tax profitability. The imposition of taxes in the context of Islamic banking hinders the establishment of a notable correlation between income diversification and profitability.

CONCLUSION

The research concluded that diversifying income has varying effects on pretax profit, posttax profit as a percentage of total assets, and posttax profit as a percentage of total equity. As the variety of sources of revenue (finance and otherwise) grows, profit before taxes increases. This suggests that Islamic banks' financial performance improves when they have the potential to generate income from several sources. Moreover, the study reveals that diversifying income does not affect the internal risk as evaluated by the standard deviation of basic income. This indicates that these financial institutions can increase their profits without significantly increasing their internal risk. Contrarily, studies demonstrate that after-tax profits based on total assets and total equity are negatively affected by income diversification. The greater the overall revenue from all sources, the smaller the net profit as a percentage of total assets and equity. Although this is not ideal, diversified income has no adverse effect on internal risk or risk-adjusted returns. Therefore, Islamic banks must understand that spreading their income around isn't a safe way to boost their bottom line by taking on more risk.

In order to ensure their long-term financial health, Islamic financial institutions can benefit from implementing income diversification strategies. This can be done by adding new items and services that bring in more money. While income diversification has little effect on internal risk, banks should still prioritize risk management. Careful attention should be paid to managing diversifiable portfolio and leverage risks. To successfully meet their long-term financial goals, Islamic banks should be willing to take on additional risk when expanding into new areas. However, they must also calculate how much revenue diversification they can undertake without taking on too much risk. By taking these steps, Islamic banks can diversify their income and meet their financial goals while remaining competitive in the dynamic field of Islamic finance.

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