Volume: 18, Issue: 1
Page: 73-79
2023

International Journal of Science and Business

Journal homepage: ijsab.com/ijsb

Profitability Premium in Indonesia Stock Market

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Abstract

This paper examines the effect of profitability to stock return. Efficient Market Hypothesis predicts that no publicly available information can be used to predict stock return. However, several papers show that profitability, both gross and net, is positively correlated with stock return. This phenomenon is known as profitability premium and explained as the result of either risk premium or mispricing. Some papers also find that gross profitability is better predictor of future abnormal return compared to net profitability. MWe examine profitability premium in Indonesia stock market. Both gross and net profitability are used, and the result is compared to determine which one correlate more with stock return. It is shown that while gross profitability is positively related to future stock return, net profitability has no relation to future stock return. Interestingly, sales to asset ratio shows stronger relation to future stock return compared to gross profitability. The result will be important for stock investor in Indonesia as another tool that can be used in investing strategy.

IJSB
Accepted 18 January 2023
Published 19 January 2023
DOI: 10.5281/zenodo.7551226

Keywords: *Profitability Premium, Gross Profitability, Net Profitability, Sales to Asset Ratio.*

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1. Introduction

Two of the most commonly used models to calculate stock expected return are Capital Asset Pricing Model (CAPM) and Fama – French Three Factors Model. CAPM was proposed separately by Sharpe (1964) and Lintner (1965) and proposing that stock expected return is compensation for investor for assuming risk. There are two types of risk, individual risk of the stock and market risk. Individual risk can be eliminated using diversification, and thus is not compensated by expected return (assuming all investors hold fully diversified portfolio). In this way, CAPM shows the relation between stock expected return and the stock's market risk. The notion that higher a stock's market risk will result in higher expected stock return is the market premium. A similar but more complete model was proposed by Fama and French (1993). Fama and French (1993) found that there are two more types of risk that are not part of market risk, and they are also compensated with expected return. The two additional risk are size risk and value risk. Size risk refers to the higher risk faced by small sized companies compared to larger companies. Value risk refers to higher risk faced by companies with lower Market to Book Ratio. Similar to market premium, the two additional risk give rise to size and value premium. Carhart (1994) add one more dimension to expected return, namely momentum factor. Implication of CAPM and Fama – French Three Factors Model is that stock return depends only on the stock risk. This view is hard to reconcile with tendency of stock investors to own stocks with high profitability. Ask any stock investors, of the first parameters he or she checks when evaluating a stock to own is definitely the profitability of the company. It is hard to imagine that investors are indifference to companies with high profitability compared to companies with low or even negative profitability. Indeed various research in Indonesia stock market find positive relation between profitability and stock return (Daniswara and Daryanto (2020), Harlan and Wijaya (2022), Idawati and Wahyudi (2015), Nahdyayani and Suarjaya (2021), Luqman and Martono (2019) among others). The relation between profitability and stock return does not conform with CAPM or Fama – French Three Factors Model. Both models envision stock return as compensation for assuming risk. It is hard to understand profitability as some form of risk. Logically, highly profitable companies should have lower risk than less profitable companies. Based on this, less profitable companies should have had higher stock return. The result clearly does not match the logic presented here. The positive relation between profitability and stock return is known as profitability premium. Novy-Marx (2013) used dividend discount model to explain profitability premium. According to dividend discount model, the company value (and thus the stock price) is the present value of all dividend in the future discounted with the stock's cost of equity. If dividend is to be understood as profit minus retained earning, thus the dividend term in the dividend discount model can be changed to profit minus increase of equity. Holding increase of equity and cost of equity constant, higher profit means higher company value resulting in positive stock return. Novy-Marx (2013) however, found that gross profitability explains stock return much better compared to net profitability. The reason is that some expenses that deduct gross profit to become net income is actually an investment, which is positive for company value. Example for such expenses are R&D expense and advertisement expense. Consider two companies, A and B, with same level of gross profit. Company A has higher R&D expense, other expenses are the same. The result is that company A has lower net income compared to company B. If net profitability (for example ROA) is used as proxy for profitability, thus profitability premium suggests that the stock of company A will have lower return compared to company B. If R&D expense is considered positive for company value, thus company A stock return should be at least as high as company B stock return. Thus the preference of gross profitability as proxy to examine profitability premium. Unfortunately various research in Indonesia stock market that examine the relation between profitability and stock return use net profitability (in the form of ROA and ROE) instead of gross profitability. Kisser (2014) offers explanation of the positive relation between gross profitability and stock

return that is closer to CAPM and Fama – French Three Factors Model. It was found that companies with high gross profitability have higher operating leverage compared to companies with low gross profitability. High operating leverage indicates high portion of fixed cost. High level of fixed cost is risky for the company because in the case of lower sales the company is stuck with high cost. The profitability premium is simply compensation for this higher risk, similar to market risk is being compensated with higher return in CAPM. Kisser (2014) further found that a measure of fixed cost level (fixed cost divided by total asset) can better explain the stock return compared to gross profitability. Different explanation on the source of profitability premium was proposed by Wang and Yu (2013). It was found that profitability premium has the same magnitude in favorable and unfavorable macroeconomic situation. If profitability premium was due to compensation for higher risk, then the magnitude should have been greater in unfavorable situation. Thus it is unlikely that higher stock return in highly profitable companies is due to risk compensation. Instead it was found that the magnitude of profitability premium is higher in situation where information is uncertain and arbitrage cost is higher. Wang and Yu (2013) cites Hirshleifer (2001) and Daniel, Hirshleifer, and Subrahmanyam (1998, 2001) who found that investors make bias decision when information is uncertain, and Shleifer and Vishny (1997) who found that stock mispricing is more pronounce when arbitrage cost is higher. Thus it is argued that profitability premium is due to mispricing instead of risk compensation. Wang and Yu (2013) use net profitability (in the form of ROE) to examine the profitability premium. However, Novy-Marx (2013) found that gross profitability is a better measure than net profitability to examine profitability premium. This paper evaluates the profitability premium in Indonesia stock market. Proxies used to measure profitability are gross profitability and net profitability. The proxies are chosen to evaluate claims that gross profitability is better predictor for future stock return compared to net profitability. The result is puzzling because net profitability captures companies expenditure more completely compared to gross profitability. The reason offered is that net profitability data are polluted with various accounting practices the companies follow. To further examines that claims, Sales to Asset Ratio is added as predictor. If it is true that pollution is an issue, sales to asset Ratio will show greater relation to future stock return compared to gross profitability

Research Problem
1. Is there any relation between sales to asset ratio and future stock return?
2. Is there any relation between gross profitability and future stock return?
3. Is there any relation between net profitability and future stock return?

2. Literature Review

Novy-Marx (2013) found that stocks with higher gross profitability show higher stock return. The result is strange for several reason. First, investors do not have claim for gross profitability. Investors' claim is in free cash flow or in net profit. However Novy-Marx (2013) result shows that gross profitability is better predictor to future stock return compared to cash flow or net profitability. Secondly, the result contradicts CAPM and Fama – French Three Factors Model where stock return only depends on the stock's risk factors. It is even more puzzling if companies with high profitability are understood as having less risk than companies with low profitability. CAPM and Fama – French Three Factors Model assume that companies with higher risk will result in higher stock return as investor demand higher return as compensation of assuming higher risk. In this view, companies with higher profitability should shows lower future stock return. However, this argument is strange if seen from investor's point of view. Investors usually seek companies with higher profitability. Higher profitability means higher future earning, and based on Dividend Discount Model, means higher fair value of the stock. One way to explain the positive relation between profitability and future stock return based on

risk is to examine whether higher profitability carries certain type of risk. Kisser (2014) found that companies with high profitability as defined as the ratio of net income to total asset have higher operating leverage compared to companies with low profitability. High operating leverage among companies with high profitability means higher ratio of fix cost to asset. Higher fix cost will cause higher variation of profitability on relation with change of sales, that suggests higher risk. On the other hand, companies with low profitability usually carry high amount of cash. High amount of cash corresponds to precautionary motives that can mitigate various possible negative events, and thus lowering the risk for the company. In this view, high profitability companies are actually carry higher risk than low profitability companies, and thus are compensated with higher return as predicted by CAPM and Fama – French Three Factors Model. Wang and Yu (2013) proposed that profitability premium can be explained better through behavioral point of view compared to risk point of view. First, it was shown that the size of profitability premium is the same between the time of recession and non-recession. If the profitability premium is due to risk factor, thus it would be expected that the size of risk premium was greater during recession. It was also found that profitability does not correspond with various risk factors of the company. Instead, it was found that profitability premium is higher in stocks that are difficult to arbitrage. Difficulty to arbitrage was proxied by companies that are young, smaller market capitalization, less analyst forecast, less analyst coverage, fewer institutional holding, higher bid-ask spread, and lower credit rating. The result suggest that the source of profitability premium is mispricing as mispricing is more difficult to correct in companies with less arbitrage possibility. The mispricing itself is the result of investor behavioral problem. Wang and Yu (2013) further found that the higher stock return due to profitability premium has no long term reversal, suggesting investor underreaction. That means investors underreact to profitability news, causing undervaluation to companies with high profitability and overvaluation in companies with low profitability. Underreactions can stem from conservatism bias, overconfidence on private signal (thus discounting public news), or investors inattention. Further, it was shown that the most likely behavioral bias that causes profitability premium is the investor inattention. Ball et al. (2015) addressed the difficulty of Novy-Marx (2013) result that shows gross profitability is better predictor to future stock return compared to net profitability and cash flow. The usual explanation is that gross profitability suffers less data pollution than net profitability or cash flow. Ball et al. (2015) devised a new measure of profitability called operating profitability that takes into measure parameters that are captured in net profitability (as compared to gross profitability), but is relatively clean from pollution. The result shows even greater relation to future stock return as compared to gross profitability.

3. Hypothesis

The goal of this paper is to examine profitability premium in Indonesia stock market. The usual proxies used for profitability is gross and net profitability. Sales to asset Ratio is added to check whether data pollution is an issue in profitability measurement

H1: There is relation between Sales to asset Ratio and future stock return
H2: There is relation between gross profitability and future stock return
H3: There is relation between net profitability and future stock return

4. Method

Sample used in this research is taken from KOMPAS100 index. KOMPAS100 index is an Indonesia stock index that consists of one hundred stocks from Indonesian stock market that are chosen based on their liquidity and market capitalization. The purpose to use KOMPAS100 index is to eliminate inactive stocks from sample. Inactive stocks are stocks with low

transaction volume in long period, and thus will result in zero stock return. Price Earning Ratio (PER) and Market capitalization are added as independent variables. This is because according to Dananjaya and Magdalena (2021) PER and Market Capitalization affect future stock return according to Fama and French Three Factors Model. Beta is not included because it was also found that Indonesian investors do not see beta as a risk factor, and thus has no relation with future stock return. Yearly data is used, with research period from 2016 to 2020. Stocks from financial subsector are excluded as financial companies have different capital structure compared to other type of companies. Companies with negative PER, and stock return greater than 100% per year are excluded from the sample. One year stock return is calculated from the period of 1st April to 31st March the following year. The reason is that in Indonesia stock market, full year financial report is released every March the following year. Stock return is defined as dividend yield plus capital gain, and thus shows the total return enjoyed by investors. Data of stock PER, market size, sales, gross profit, net profit and total asset are from S&P Capital IQ. Data of stock price are from investing.com. Instead of abnormal return, dependent variable used in this paper is excess return defined as the difference between stock return and market return. The use of excess return is the irrelevance of beta in determining expected return in Indonesia stock market (Dananjaya and Magdalena, 2021)

Variables used are calculated as follow:

$$\text{Actual Stock Return (t)} = \frac{\text{Price (t)} - \text{Price (t}-1)}{\text{Price (t}-1)} + \frac{\text{Div (t)}}{\text{Price (t}-1)}$$

$$\text{Market return (t)} = \frac{\text{IHSG(t)} - \text{IHSG(t} - 1)}{\text{IHSG (t} - 1)}$$

Where IHSG (Indeks Harga Saham Gabungan) is the value of Indonesian stock index

$$\text{Excess Return (t)} = \text{Actual Stock Return (t)} - \text{Market Return (t)}$$

$$\text{PER (t)} = \frac{\text{Price (t)}}{\text{EPS (t)}}$$

$$\text{Size (t)} = \log \text{Price (t)} \times \text{Outstanding Shares}$$

$$\text{Sales to Asset Ratio (t)} = \frac{\text{Sales (t)}}{\text{Asset (t)}}$$

$$\text{Gross Profitability (t)} = \frac{\text{Gross Profit (t)}}{\text{Asset (t)}}$$

$$\text{Net Profitability (t)} = \frac{\text{Net Profit (t)}}{\text{Asset (t)}}$$

5. Result and Discussion: The regression result is as follow

Simple regression:

Table 1: Regression result of profitability to excess stock return

Regression	Dependent Variable	Independent Variable	R Square	Standardized Coef	t sig
1	Stock Excess Return	Sales to Asset Ratio	0.045	0.212	0.00
2	Stock Excess Return	Gross Profitability	0.013	0.114	0.04
3	Stock Excess Return	Net Profitability	0.000	0.011	0.85

Table 1 shows that in 95% confidence level Sales to Asset Ratio and Gross profitability have positive and significant relation to future stock return, confirming the profitability premium in Indonesia market. Net profitability however, is not significantly related to future stock return. Note that Sales to Asset Ratio is better related to future stock return compared to gross profitability, lending support that the lower the number is in income statement, the more polluted the data and thus less and less related to stock return.

Multiple regression:

Table 2: Regression result of profitability to excess stock return with PER and Market Cap as additional independent variables

Regression	Dependent Variable	Independent Variable	Adj R Square	F sig	Standardized Coef	t sig
4	Stock Excess Return	Sales to Asset Ratio	0.049	0.000	0.221	0.000
		PER			-0.095	0.082
		Market Cap			-0.063	0.252
5	Stock Excess Return	Gross Profitability	0.019	0.028	0.143	0.014
		PER			-0.096	0.086
		Market Cap			-0.084	0.144
6	Stock Excess Return	Net Profitability	0.001	0.368	0.019	0.740
		PER			-0.086	0.125
		Market Cap			-0.050	0.390

Table 2 shows that with PER and Market Cap as additional independent variables, the results of table 1 holds. Sales to Asset Ratio and Gross Profitability are still positively related to stock return, with Sales to Asset Ratio has higher explanation power. Net profitability is not related to stock return. As expected, both PER and Market Cap has negative coefficient, in accordance with Fama and French Three Factors Model.

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6. Discussion

It is shown that Sales to Asset Ratio and gross profitability are positively related to future stock return. Net profitability, contrary to previous results, does not related to future stock return. It seems the higher the number in income statement, the better it explains future stock return. This result supports the explanation that the lower a number is in income statement, the more polluted that data is. Data pollution can stem from different accounting practices among companies, or from earning management either to reduce or amplify the net income. The problem might be more severe in Indonesia compared to American stock market due to lack of supervision. The result thus suggests that Indonesian investors will do well in paying extra attention to sales level of a company. The future research is to find the exact circumstances where profitability premium is more pronounce. Previous research found that profitability premium is due to investor underreaction to profit news. If the same phenomenon happens in

Indonesia market, stocks with characteristics such as small market cap, low stock liquidity, and low analyst coverage will enhance the effect of profitability premium.

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Cite this article:

Dr. Yanuar Dananjaya (2023). Profitability Premium in Indonesia Stock Market. *International Journal of Science and Business, 18*(1), 73-79. doi: https://doi.org/ 10.5281/zenodo.7551226

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