# Stock price analysis of sustainable foreign investment companies in Indonesia

**Khaira Amalia Fachrudin**

Management Department, Faculty of Economics and Business, Universitas Sumatera Utara, Medan, Indonesia

E-mail: khaira@usu.ac.id

**Abstract**. The stock price is determined by demand and supply in the stock market. Stock price reacts to information. Sustainable investment is an investment that considers environmental sustainability and human rights. This study aims to predict the probability of above average stock price by including the sustainability index as one of its variables. The population is all foreign investment companies in Indonesia. The target population is companies that distribute dividends – also as a sample. The analysis tool is a logistic regression. At 5% alpha, it was found that sustainability index did not have the probability to increase stock price average. The significant effects are free cash flow and cost of debt. However, sustainability index can increase the Negelkarke R square. The implication is that the awareness of sustainability is still necesary to be improved because from the research result it can be seen that investors only consider the risk and return.

## 1. Introduction

Sustainable and responsible investment is an investment that is considered socially responsible because of the nature of the business and company products. Sustainable and Responsible Investment Indonesian Biological Diversity Index (Sri Kehati Index) is an index in Indonesian Stock Exchange for sustainable and responsible companies stocks. The indexed companies are companies which economically profitable and have awareness on environment, good corporate governance, society, people and have behavior dan ethical business which is accepted nationally and internationally. A company which applies sustainable concept have high revenues [1].

Foreign investment, in this case direct foreign investments, are foreign funds injected into domestic production. Potential positive effects generated by foreign direct investment lead countries to create an investment climate that is more attractive to investors, and contribute to the economic growth and economic development. Voica [2] said that the most important targets where foreign direct investment can go are green investments that generate an increase in clean energy production and clean tech innovation. Environmental effect is important because of the need for investments in climate change reduction projects and a greener way of doing business.

The market price is the stock price in the financial markets. A company's market price incorporates the information available to investors. If the market price reflects all relevant information, then the observed price is also intrinsic or fundamental, price, in this case, market is equilibrium [3]. The stock price is simply the current market price, and it is easily observe to publicly traded companies. [4] found that current stock price of foreign institutional ownership reflects more information about future earnings. Foreign institutional ownership has a positive relation with stock return volatility [4].

The primary objective of financial management is to maximize the intrinsic value of a firm's stock [3]. In corporate valuation, there are some keys to consider, namely net operating profit after taxes, required investments in operating capital, the cost of debt, and cost of equity. The intrinsic value of a stock can be estimate by discounting the dividends at the rate of return required by stockholders [3]. True expected future cash flow and true risk are the components to valuate stock's intrinsic value. Perceived expected future cash flows and perceived risk generate the stock market price.

Free cash flows are the cash flows available for distribution to all of a firm's investors (shareholders and creditors) after the firm has paid all expenses (including taxes) and has made the required investments in operations to support growth [3].

Maksi and Chen [5] said there are many definitions of free cash flow in accounting literature that they found, but according to their research, the definition of free cash flow that significantly associated with stock price changes is free cash flow from operating activities less capital expenditure required to maintain productive capacity less preferred stock dividends. Mundia [6] said that the criteria to measure and evaluate firm's performance are income, dividends, and free cash flow. He found that free cash flow has a positive and strong effect on stock prices. High free cash flow leads to high stock price.

In valuation, there are two definitions of free cash flow namely free cash flow to equity and free cash flow to a firm. Free cash flow to equity is used to estimate the intrinsic value of equity. Free cash flow to a firm is used to estimate the intrinsic value of the firm.

Pratt [7] and Damodaran [8] said that net cash flow to equity or free cash flow to equity is net income plus noncash charges minus capital expenditure plus or minus changes in net working capital plus or minus net changes in long term debt. Net cash flow to overall invested capital or free cash flow to the firm is net income plus noncash charges minus capital expenditure plus or minus changes in working capital plus interest expense after tax plus preferred dividends. An alternative formula for net cash flow to overall invested capital is earnings before interest and taxes minus taxes on earnings before interest and taxes at effective tax rate plus noncash charges minus capital expenditure plus or minus changes in working capital.

The cost of capital reflects risk. The cost of debt and cost of common stock are an element of cost of capital. Cateris paribus, the higher cost of capital, the lower the intrinsic value. Sulistiyo [9] found that cost of capital has a negative and significant effect to the firm's value. Atyeh [10] test the degree of correlation between the cost of capital and the market value. The results show a negative correlation between the cost of capital and the share prices.

The intrinsic value of a financial asset is the present value of expected economic income. The expected economic income will grow. Free cash flow to the firm, as an economic income, according to Damodaran [8] based on operating income growth. The higher expected growth, the higher the intrinsic value.

Dividends is another economic income in the valuation beside free cash flow to firm and free cash flow to equity. Dividend policy is the decision to pay out earnings versus retaining and reinvesting them [3]. Gordon [11] suggested valuation models relating the market value of the stock with dividend policy, and proposed that the dividend policy affects the market value of stocks even in the perfect capital market. He said that dividend policy is relevant.

Miller and Modigliani (MM) in 1961 said that the value of the firm is subjected to the firm's earning. The dividend does not affect the shareholders' value in the world without taxes and market imperfections. Dividend and capital gain are two ways that can contribute profits of a firm to shareholders. In a perfect market, dividend policy does not affect the shareholder's return. Dividend policy is irrelevant. Although the MM proposition argues, the share price is not independent of the dividend announcement. In this research, dividend policy refers to Hashemijoo [12], that is a company's policy which determines the amount of dividend payments and a number of retained earnings for reinvesting in a new project.

The purpose of this study is to analyze the effect of Sri Kehati Index and fundamental factors such as free cash flow to a firm, the cost of common stock, the cost of debt, expected growth, and dividend

policy to above average the stock price in the foreign company that listed in Indonesia Stock Exchange. Above average stock price is the stock price that greater than average value of stock price. It is important to increase the awareness about green investment and to educate investors.


## 2. Method

This research is using a quantitative approach; the data used are secondary data from the Indonesia Stock Exchange. The population of this research is foreign investment companies which listing in Indonesia Stock Exchange as 102 companies; the target population is the companies at the population that distribute dividends, not delisting, and not suspend – 31 companies. In this case, all of the target population become the sample. Logistic regression statistical techniques are used to draw conclusions and test the empirical relationships in data. Logistic regression has been done two times, one for the equation with Sri Kehati Index Variable, and then without Sri Kehati Index.

Binary logistic regression:

$$Y = a + b_1X_1 + b_2X_2 + + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$$

Function of logistic distribution :

$$P = 1/ [1+ \exp ( a + b_1X_1 + b_2X_2 + + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 )]$$

Logistic model :

$$\ln [P / (1-P)] = a + b_1\ln X_1 + b_2\ln X_2 + + b_3\ln X_3 + b_4\ln X_4 + b_5\ln X_5 + b_6\ln X_6$$

Y = Stock price, where Y equals 1 for a price above average, and 0 for otherwise.
P = Probability of stock price above average

Independent variables consist of :
$X_1$ = Sri Kehati Index, dummy variable where 1 for the company listed in Sri Kehati, and 0 otherwise
$X_2$ = Free Cash Flow to Firm (FCFF)
    Formula :
    Earning Before Interest and Tax ( 1 – Tax Rate) x (1- Reinvestment Rate).
    Data is in a million rupiahs.
$X_3$ = Cost of Common Stock
    Formula
    Rf + (Rm – Rf) x Beta
$X_4$ = Cost of Debt
    This is the weighted average of  cost of debt in the companies
$X_5$ = Expected Growth
    Formula :
    Return on Capital  x Reinvestment Rate
    Where Return on Capital = Earning Before Interest and Taxes ( 1 – Tax Rate) / Capital Invested
    Reinvestment Rate = (net capital expenditure + change in noncash working capital) / Earning
    Before Interest and Taxes ( 1- Tax Rate)
$X_6$= Dividend Payout ratio
    Formula :
    Dividend per Share / Earning per Share

## 3. Results and Discussions

The results are in Table 1.

**Table 1**. Results of logistic regression – without Sri Kehati Index.

| Independent Variable | B With Sri Kehati Index | Exp(B) With Sri Kehati Index | B Without Sri Kehati Index | Exp (B) Without Sri Kehati Index |
|---|---|---|---|---|
| Sri Kehati Index | 3.010 (0.274) | 20.280 | | |
| FCFF | 6.8 E-06 (0.027) | 1.0000068 | 5.98E-06 (0.046) | 1.00000598 |
| Cost of Debt | -49.714 (0.027) | 2.56E-22 | -44.752 (0.030) | 3.67E-20 |
| Cost of Common Stock | -173.237 (0.098) | 5.80 E-76 | -118.960 (0.137) | 2.17 E-52 |
| Expected Growth | -8.219 (0.351) | 0.00027 | -5.311 (0.500) | 0.005 |
| Dividend Payout ratio | -0.696 (0.708) | 0.499 | -0.245 (0.893) | 0.782 |
| Constant | 17.967 (0.101) | 63532196 | 12.330 (0.144) | 226461 |
| n | 31 | | 31 | |
| Hosmer and Lemeshow test | 0.941 | | 0.927 | |
| -2LL | 22.486 | | 23.884 | |
| Nagelkerke R Square | 0.644 | | 0.613 | |

Numbers in brackets indicate significance

Hosmer and Lemeshow goodness of fit test statistics for both of the models show significance probability 0.941 (for a model with Sri Kehati Index) and 0.927 (for the model without Sri Kehati Index) which greater than alpha 5% means that this model is accepted for further analysis. -2LL figure is 22.486 (for a model with Sri Kehati Index)  and, 23.884 (for the model without Sri Kehati Index) show that the model are fixed because that figures greater than critical values of chi square at 5% alpha. Negelkerke R square is 0.644 and, 0.613 shows that variability of dependent variable which can be described by independent variable are 64.4% for a model with Sri Kehati Indeks and 61.3% for a model without Sri Kehati Index.

Sri Kehati Index has positive and insignificant effect at Alpha 5% to the probability price above average, but it can increase Negelkerke R square – without Sri Kehati Index 0.613, with Sri Kehati Indeks 0.644.   It means that Sri Kehati Indeks can explain the model.  It can be described the price increasing but not much.  Investors take appreciation with stocks from sustainable and responsible companies.

For the model with Sri Kehati Indeks and without Sri Kehati Index, the interpretation for variable FCFF, the cost of debt, the cost of common stock, expected growth, and dividend payout ratio are the same at Alpha 5%.

FCFF has a positive and significant effect to probability increasing price above average.  Every 1 million rupiah increase in FCFF, probability price above average will increase one time. Investors have attention for the ability of foreign companies to produce free cash flow to the firm, such as firm operation, inventory control, sales, account receivable management, and capital expenditures.  This result confirms with Mundia [6] which said that the higher the cash flows taking into consideration revenues and collection of account receivables then the higher the stock price. Free cash flow is a

component to determine the intrinsic value of the firm. Firm's that have strong availability of FCF will have more profitable expenditures to undertake. Free cash flow is a better indicator of a firm's financial health.

The cost of debt has the negative and significant effect on the probability price above average. Exp(B) for the cost of debt is very small. The companies in this study have more debt in banks rather than in bonds, so the weighted average of their debt is dominated with interest rate. Higher interest rate makes investors put their fund in deposits or bonds so the stock price decreases.

The cost of common stock has the negative and insignificant effect to probability price above average at Alpha 5%. It means that investors paid little attention to the risk in the market, especially beta.

Expected growth has the negative and insignificant effect to probability price above average at Alpha 5%. It means the growth of capital and working capital in the companies is not important to the investor when making decissions about stock trading. The important for them is the output of that capital such as free cash flow to the firm.

Dividend payout ratio has the negative and insignificant effect to probability price above average at Alpha 5%. It means the dividend policy has no impact on the value of the firm. Dividend policy is irrelevant in this study.

## 4. Conclusions

Sustainable and responsible investment in the foreign company is still under consideration in stock trading decision making. Investors take more attention about free cash flow to firm and cost of debt. They are about return and risk. Dividend policy also not important to investors in this case - dividend policy is irrelevant. Awareness of sustainable and responsible investment needs to campaign because it is also return for future generations.

## References

[1] Fachrudin Khaira Amalia and Hilma Tamiami Fachrudin 2015 The Study of Investment Portfolio Management and Sustainability of Property and Real Estate Companies in Indonesia Stock Exchange *Procedia Social and Behavioral Science* 177-83

[2] Voica Marian Catalin, Mirela Panait, and George Alin Haralambia 2015 The Impact of Foreign Direct Investment on Sustainable Development *Economic Insight- Trends and Challenges* **IV** 89-103

[3] Brigham Eugene F and Michael C Ehrhardt 2011 *Financial Management: Theory and Practice* (South – Western Cengage Learning)

[4] Han Syungjin 2015 Foreign Investors, Stock Price Informativeness, and Multinational Corporations *Dissertation of Kenan-Flagler Business School of the University of North Carolina*

[5] Maksy Mostafa M and Gary T Chen 2013 Which Free Cash Flow is Value Relevant? The Case of the Energy Industry *Journal of Finance and Accountancy* **14** 1-14

[6] Mundia Webster Israel 2016 Relationship Between Free Cash Flows and Stock Prices of Non Financial Firms Listed at the Nairobi Securities Exchange *Thesis Master of Business Administration of the University of Nairobi*

[7] Pratt, Shannon P and Alina V Niculita 2008 *Valuing a Business* Fifth Edition (McGraw Hill)

[8] Damodaran Aswath 2012 *Investment Valuation* Third Edition (John Willey & Sons)

[9] Sulistiyo, Hari 2017 Analisis Struktur Modal terhadap WACC dan Analisis WACC terhadap Nilai Perusahaan *Jurnal Pendidikan Unsika* **2** 260–72

[10] Atyeh Mohamad H and Wael Al-Rashed 2015 Correlation among Cost of Capital, Book Values and Shares Prices : The Case of Kuwait Listed Companies *Journal of Economics, Business and Management* **3** 136-39

[11] Gordon M J 1962   *The Investment, Financing, and Valuation of the Corporation*   (Irwin Publisher)

[12] Hashemijoo Mohammad, Aref Mahdavi, and Nejat Younesi   2012   The Impact of Dividend Policy on Share Price Volatility in the Malaysian Stock Market   *Journal of Business Studies Quarterly*  **4** 111-29