THE INFLUENCE OF INFLATION AND DEBT ON FIRM VALUE IN FOOD AND BEVERAGES COMPANIES LISTED IN INDONESIA STOCK EXCHANGE (IDX)

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Abstract

This research aims to provide evidence related to the influence of inflation and debt on firm value. Population used in this research is 14 food and beverages companies from IDX. The research uses purposive sampling method for selecting the samples resulted 12 qualified companies during 2011-2014. Inflation is measured using the consumer price index released by the World Bank. Debt is measured using debt to equity ratio, and firm value is measured using tobins’ q. The data analysis is conducted using multiple regression analysis. Test result shows that inflation has no influence on firm value, since food and beverages companies is categorized as consumer staples, which refers to a business comprised of those companies, which sell the basic human needs. Meanwhile, debt has a significant influence on firm value because the selected companies can achieve optimal capital structure by using trade-off theory to maximize the value of the firm by balancing the costs and benefits of an additional unit of debt.

Keywords: inflation, debt, firm value.

A. INTRODUCTION

In the recent years, investment becomes a common word in the society. Reilly and Brown (2012:4) stated that an investment is the current commitment of dollars for a period of time in order to derive future payments. It is believed that people who are giving up their money for investment will have expected to receive a greater amount of money in the future than what they have in present days.

Although it has many advantages, capital market also poses many risks. Therefore investors need accurate information so investors will not get stuck in adverse conditions,
because investment in the capital market is a type of investment with a relatively high risk, despite relatively large gains too. As investor, they do not want to pay more for an asset than it is worth. As a consequence, an intelligent investor will consider an appropriate price to pay before making an investment in a portfolio.

Muliani et al. (2014) stated that firm value is a value that measure the company quality and a value that shows how much the level of interest of a company in the eyes of its investors. Firm value could be obtained through different measures, each of them will give a value that differs from that obtained by another measure. Thavikulwat (2004) mentioned one of the most popular methods of valuing a company is the market value of all its outstanding shares, which is reflected, in its stock price.

Investors not only assess the firm value before making an investment decision, but also need to know the variables that will affect the firm value of the company to be purchased. By knowing the influence of these variables, investors can have a strategy to select companies that are considered as healthy company, so the company is ready to compete, survive and thrive.

Bradford (1974) stated that firm value is influenced by the monetary position during a period of inflation or deflation. Thus, the researcher looks at the current inflation changes that occur in Indonesia. It can be seen through the official website of World Bank, that after crisis that happened in 2008, Indonesia inflation rate has been decreased to 4.8% in 2009. However, starting from December 2011, Indonesia inflation rate rose starting from 5.3% and remain increase to 6.3% in December 2014.

The financial statement is rated as the most important thing for the basic considerations in making investment decisions. Therefore, the company that issues stocks should report the financial statements periodically to the public. It is expected that stock prices can quickly react to the published information so that it will be achieved an easily liquefied, efficient, fair, and transparent securities trading. In the current economic volatility, debt becomes very crucial for the investors, because with high inflation rate, the purchasing power of money becomes lower, which makes the investors would receive high risk that is too high to be acceptable. The researcher is interested to find additional empirical evidence about the effect of inflation and company’s debt on the firm value.

According to the studies on the influence of inflation to firm value conducted by Siahaya (2011) and Yulianto (2014) found that inflation has a significant effect on stock price. However, based on Naik & Padhi (2012) and Akbar et al. (2012) research, inflation has negative effect on stock price, while Amperaningrum and Agung (2011), Kewal (2012), and Afriani (2014) found that there is no influence between inflation and stock price. In addition, the research finding about relationship between debt and firm value that conducted by Itan and Syakhozza (2003) and Fiantoro (2010) proved that debt has a significant effect on the stock price. Whereas, research conducted by Wibowo (2015) and Hanifah (2015) demonstrated the opposite results. Wibowo and Hanifah found that debt has negative influences on the stock price. However, research conducted by Tristania (2008), Sorganingsih (2010), and Kartikasari (2011) concluded that debt has no influence on the stock price.

Researcher chooses food and beverages companies to be the population of this research because the existence of food and beverages companies has an important role in reducing unemployment in Indonesia. During 2010-2012 the amount of employment increased from
714,711 to 931,293, although in the next year the total amount of employment decreased to 877,424. The other manufacturing sector that has large number of employees is apparel industry noted at around 500,000 employees. In addition, Kementrian Perdagangan Indonesia website stated that food and beverages companies along with tobacco companies contribute the highest value to the Indonesia’s gross domestic product during 2010-2012. For three consecutive years, food and beverages companies contribute approximately 7% to gross domestic product, while other manufacturing sector contribute around 1-2%. Further, based on the Indonesia Investment Coordination Board, the food and beverages industry is the major sector to be invested based on the accumulated result of Domestic Direct Investment and Foreign Direct Investment. This condition apparently occurs because foreign and domestic investor is invested their money mainly on food and beverages industry.

B. LITERATURE REVIEW

THEORITICAL FRAMEWORK

Signalling Theory

Within the complexity of the market information, there is asymmetric information received by the user. This asymmetric information creates various decisions among users, as there is a problem to read the information by the users, the signaling theory is used to address this problem. Signaling theory firstly developed by Spence (1973), it is used to read the signal in labor markets. This theory shows how the asymmetric information reduced by the party with more information signal to others.

One type of information released by the company that can be referred as a signal to the investors is the annual report. The annual report should contain information that is relevant, faithful representation, comparability, and verifiability since the information on the annual report is important to be known by the investor. All investors need that information to evaluate the relative risk of each company so the investor can diversify their investment portfolio. It is supported by the study developed by Asiri (2015) that investors rely on the financial reporting to observe the company’s performance.

Firm Value

Before investors making an investment decisions, investor should determine the firm value of the company, because this value will give an idea of how well the company will grow in the future. According to Altan and Arkan (2011), firm value is the purchase and sale value of the firm estimated by volunteer buyers and sellers with full information about the firm without any pressure. While, Putu et al., (2014) stated that firm value is investors' perception toward firm that often associated with stock prices. In summary, firm value can be defined as the market value of the company which has the company's long-term goal to create a brand image, reflected in the company's high stock price.

One that assessed the best information about firm value is tobins’ q ratio. It is because tobins’ q ratio measures the firm value with equation of debt and equity. It is not only ordinary share and equity, but also the entire asset of the company. By considering the entire asset of the company, the company does not only focus on one type of investor who invests in stock but also on creditor who gives a credit investment according to Permanasari (2010). A company with a high tobins’ q brand image usually has a very strong company, thus, it can
be concluded that it is very profitable for the investor because the company has good growth prospects. While, the company that has low Tobin’s Q value is usually an industry began to shrink or it will not attract the investor's attention to invest their money in the company.

Inflation

Inflation is a process of rising prices in general and continuous that can be caused by various factors, such as increased consumption, excess liquidity in the market, which triggers consumption or speculation, or due to lack of launch distribution of goods. While, according to Case et al., (2009:436), inflation is an increase in the overall price level. When the price level rises, each unit of currency buys fewer goods and services.

According to Heathfield and Russel (1992:281), there are two inflation factors, which are demand-pull inflation and cost-push or supply-side inflation. Demand-pull inflation is an inflation initiated by an increase in aggregate demand. An increase in the medium of exchange volume or liquidity associated with an increase in demand for goods and services resulting in increased demand for the factors of production. The increasing demand for production factors then lead to increased prices of production factors. Cost-Push, or Supply-Side Inflation is an inflation caused by an increase in cost. It can also occur because of the production scarcity or distribution scarcity, even though demand in the market is not change significantly. A reduced production available from the average normal demand could trigger a price increase in accordance with the enactment of the law of demand-supply.

Inflation can be classified by how rapidly average prices rise, or whether people expect it. In Byrns and Stone (1992:140), there are three types of inflation, which are creeping inflation, galloping inflation, and hyperinflation. Creeping inflation is also known as mild inflation or moderate inflation. This type of inflation occurs when the price level persistently rises over a period of time at a mild rate. When the rate of inflation is less than 10 per cent annually, or it is a single digit inflation rate, it is considered to be a moderate inflation. While, galloping inflation is in the double or triple digit range of 20, 100 or 200 percent a year. The last type described is hyperinflation, which is a stage of very high rate of inflation. The prices are rising a million or even a trillion percent per year, which makes the prices go out of control and the monetary authorities, are unable to impose any check on it.

Debt to Equity Ratio

In order to calculate and compare different sizes of companies, the investors usually use the financial ratios. Such ratios are way of comparing and investigating the relationships between different pieces of financial information. Debt to equity ratio that gathered by dividing the total debt to total equity is indicates how much debt a company is using to finance its assets relative to the amount of value represented in shareholders’ equity. A high debt-to-equity ratio indicates that a company may not be able to generate enough cash to satisfy its debt obligations. However, low debt-to-equity ratios may also indicate that a company is not taking advantage of the increased profits that financial leverage may bring.

HYPOTHESIS DEVELOPMENT

Inflation and Firm Value

Inflation is defined as the increasing prices of goods massively. It is either because the demands of the services are greater than the supply that can be provided or the raising cost to produce the goods. The increase of inflation might harm the company profitability because the prices of equipment are high and the demand of services will be lower because the lower
purchasing power of customer is lower than the prices of the services. At the end, the investors get the lower capital gain than it has to be.

The negative association between similar researches is revealed by Akbar et al., (2012) and Naik and Padhi (2012), who researched the Indian stock market index (BSE Sensex) from April 1994 to June 2011. Akbar et al., found that a negative relationship between inflation and stock prices suggests that stocks are not a good hedge against inflation. While, Naik and Padhi revealed that the negative relationship between inflation and stock return can be explained through the dividend discount model. Since, stock price can be viewed as the discounted value of expected dividend, an increase in inflation may enhance the nominal risk free rate and thus the discount rate leading to declining stock price.

**H1: Inflation has negative influence to firm value.**

**Debt to Equity Ratio and Firm Value**

Theoretically, one of debt ratios often used by stock analysts is Debt Equity Ratio (DER). Bodie et al., (2004:479) stated that a too-high debt equity ratio indicates excessive indebtedness, signaling the possibility of the firm unable to earn enough to satisfy the obligations on its bonds. This ratio is about how far the company takes all the debt without crashing the creditors’ interest. Therefore, when the DER is high, the debt is higher than the equity and it gives pressure to the company in order to fulfill its payment duty to the creditor. In addition, it shows that the company depends on the creditor in terms of financing. This ratio also shows how well the company efficiency in using their equity to reduce the short-term and long-term debt.

The level of this ratio has a negative correlation with stock market prices. The lower this ratio, the greater the stock market prices because the lower this ratio indicates the companies can use their equity efficiently in anticipation of debt. Research conducted by Wibowo (2015), and Hanifah (2015) found the same result that DER has negative effect on stock price. Therefore, the hypothesis is that DER has a negative influence to firm value.

**H2: Debt to Equity ratio has negative influence to firm value.**

**C. RESEARCH METHOD**

**Type of Research**

This study was classified as quantitative research which according to Creswell (2009:4), quantitative research is a mean for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures.

Type of research implemented in this study is explanatory research. As stated by Saunders et al., (2009:141), explanatory research is type of studies that establish causal relationships between variables. Explanatory research is aimed to test a theory or hypothesis or strengthen or even to reject those existing theory or hypothesis.

**Sample and Population**

According to Sekaran and Bougie (2009:262), population refers to the entire group of people, events, or things of interest that the researcher aims to investigate. In this research, the population is companies that are listed in Indonesian Stock Exchange in Food and Beverages sub-sector. The total companies in Food and Beverages sub-sector listed in IDX
are 14 companies. However, after conducting sampling process that is using purposive sampling, there are 12 companies that fulfill the sampling criteria.

**Type and Data Source**

The data used in this research is secondary data. The secondary data, which used in this research, is the time series data. Time series data are data collected over several time periods that can be implied from the data gathered from four-year-annual report of food and beverages companies and also the inflation rate that collected during 2011 to 2014. Debt equity ratio as the fundamental analysis is accumulated from annual reports gathered from Galeri Investasi BEI Brawijaya University. Whereas, the inflation rate as the macroeconomic analysis is gathered from the official website of World Bank.

**Dependent Variable**

The dependent variable of this research is firm value. Firm value in this research is measured by using tobin’s q. This variable also used by Puspitaningtias (2007), and Amanullah (2016). Thus, this research use Tobin’s Q as the measurement.

\[
Tobin's\ Q = \frac{EMV + D}{EBV + D}
\]

EMV : Equity Market Value, obtained from company share’s price on IDX closing price in 31 December each year multiplied with the volume in 31 December each year.

EBV : Equity Book Value, obtained from company share’s price on company’s financial report multiplied with the volume in 31 December each year.

D : Debt, liabilities book value.

**Independent Variable**

1. **Inflation Rate**

   Inflation is the price, which increases simultaneously and occurs in general. According to Blanchard and Johnson (2013:7), inflation rate is the rate at which the average price of the goods in the economy is increasing over time. The data of inflation rate is collected using the inflation report that is issued by World Bank.

2. **Debt to Equity Ratio**

   The debt to equity ratio is an important ratio that provides a measure of the risk assumed in a given business. This ratio measures the ability of the company to assure the debt using the equities. DER is the ratio of the debt that is owned by the company.

\[
\text{Debt Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}
\]

**DATA ANALYSIS**

**Multiple Linear Regression Analysis**

According to Anderson et al., (2012:676), multiple regression analysis enables the researcher to understand how a dependent variable is related to two or more independent variables. The regression analysis is used to check if the hypothesis proved significant or not. The equations of multiples regression analysis are described below:

\[
\text{Firm Value} = \alpha + \beta_1 \text{INF}_{i,t} + \beta_2 \text{DER}_{i,t} + \epsilon_i
\]

**Note:**

- \(\alpha\) : Constanta
- \(\beta\) : Regression coefficient
- \(t\) : 1, 2, ..., T; where as T is number of time
\[ i : 1,2,\ldots, N; \text{where as } N \text{ is number of observation} \]

\[ \text{INF} : \text{Inflation} \]

\[ \text{DER} : \text{Debt to equity ratio} \]

\[ \varepsilon : \text{Residual error} \]

**Coefficient of Determination**

According to Gujarati and Porter (2009:73), the coefficient of determination \((R^2)\) is a summary that tells how well the sample regression line fits the data. The determinant coefficient is between 0 and 1. Higher score of \(R^2\) means the more the dependent variable is explained by the independent variable.

**HYPOTHESIS TEST**

**F-Test**

Anderson *et al.*, (2012:640), the F-Test is used to determine whether a significant relationship exists between the dependent variable and the set of all the independent variables.

**t-Test**

According to Anderson *et al.*, (2012:640), if the F-Test shows that the multiple regression relationship is significant, a t-Test can be conducted to determine whether each of the individual independent variables has significant effect towards the dependent variable.

**D. RESULTS AND DISCUSSIONS**

All the data gathered are proven qualified to be processed using regression formula since those have fulfilled the criteria of classical assumptions. It means the data are normally distributed, contained of no multicollinearity, autocorrelation and heteroscedasticity. The results below will be more concerned in elaborating the relationship between dependent variable and independent variables using the designated regression formulas.

Based on the multiple linear regressions analysis, the regression model will be **Tobins’ \( Q = 0.910 + 0.009 \text{ INF} + 0.055 \text{ DER}. \)** The calculation results of multiple regression analysis show that 36.8\% of firm value is influenced by the independent variable, which is Inflation and debt to equity ratio. The remaining 63.2\% of firm value is influenced by other variables not addressed in this study.

In addition to the coefficient of determination, the researcher also obtains the correlation coefficient that shows the relationship between the independent variable items, which is inflation and debt to equity ratio with firm value. The correlation coefficient (R Value) score at 0.628 indicates that the relationship between the independent variables is categorized as strong relationship, because they are at an interval of 0.6 to 0.8.

After conducting the F-Test, it can be concluded that inflation and debt to equity ratio influence firm value significantly. If the f-test shows that the multiple regression relationship is significant, then the t-test is conducted. The following table will show the t-test result:
According to Table 1, $t_{\text{count}}$ value between inflation and firm value is 1.342, while the $t_{\text{table}} (\alpha = 0.05; \text{df residual} = 45)$ is equal to 2.014. Because the $t_{\text{count}} < t_{\text{table}}$ which is 1.342 < 2.014 or sig. F (0.186) > $\alpha$ (0.05), then it can be concluded that the firm value is insignificantly affected by inflation, or in short, there is no correlation between inflation and firm value. While, $t_{\text{count}}$ value between debt to equity ratio and firm value is 4.987, while the $t_{\text{table}} (\alpha = 0.05; \text{df residual} = 45)$ is equal to 2.014. Because the $t_{\text{count}} > t_{\text{table}}$, which is 4.987 > 2.014 or sig. F (0.000) < $\alpha$ (0.05), then it can be concluded that firm value can be affected significantly by debt to equity ratio.

**DISCUSSIONS**

**Inflation and Firm Value**

As depicted from the result, inflation has no correlation with firm value. As Carrel (2016) mentioned that food and beverages companies is categorized as consumer staples, which refers to a business comprised of those companies, which sell the most common consumer products. Consumer staples have a low correlation to the gyrations of the stock market because people need to buy these items to carry on their everyday lives. Consumer staples have steady sales and predictable cash flow, which translates into a stock that does not fall much during economic downturns including inflation. So, even how bad economic condition within the country can be, it is almost to be ensured that the products will still have consumers buying for it, the products therefore are needed very much by consumer. Thus, with stable earnings that food and beverages produced during inflation or not, the investor will not change their demand for the company's stock.

**Debt to Equity Ratio and Firm Value**

Based on the research findings, debt to equity ratio has a significant correlation against the firm value, which means that food and beverages companies listed in IDX is capable to manage the funds derived from debt to finance the company's assets and also company's obligation to pay interest. The positive significant correlation occurs because, according to Ghazouani (2013), there is an optimal capital structure that maximizes the value of the firm in balancing the costs and benefits of an additional unit of debt characterized as trade-off theory. Financing with debt instead of equity increases the total after-tax dollar return to debt and equity investors, and should increase firm value. However, debt levels should be efficiently chosen to balance interest tax shields against the costs of financial distress.
**E. CLOSING REMARKS**

**Conclusions**

This research is conducted to answer the purpose of the research that is analyzing the influence of inflation and debt to equity ratio on firm value of food and beverages companies listed in Indonesian Stock Exchange during the year of 2011 - 2014. Multiple regression analysis is used for studying the relationship between dependent and two independent variables, which is inflation and debt to equity ratio and firm value as dependent variable.

The F test result showed that inflation and debt to equity ratio has significant influence toward tobins’ q. However, after conducting the t-test, it can be concluded that debt to equity ratio has significant influence against firm value, while, inflation has no correlation toward firm value.

**Research Limitations**

Since there are only two independent variables in this research, it might be possible that the other company performance ratios and macroeconomic variables, which are not included in this research, are more influential to the firm value. In addition, the analysis of this research is limited due to the range of time, which is from 2011 - 2014 and conducted mainly focused on food and beverage companies.

**Suggestions for Future Research**

The next researcher should add more independent variable to understand more about firm value of the company such as net profit margin, price to book value, exchange rate and others to get more sophisticated result. Further, adding the range of the investigation time and other subsector industry is very useful to generalize the result of the research that will be found. Because the research will become wider and it will result in a better analysis.

**REFERENCES**


