THE INFLUENCE OF FINANCIAL LEVERAGE ON BID-ASK SPREAD THROUGH MARKET CAPITALIZATION: A STUDY ON COMPANIES LISTED IN LQ 45 INDEX

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ABSTRACT

This study is aimed to examine empirically the influence of financial leverage on bid-ask spread through market capitalization. The population are companies that listed in the LQ45 Index during periods 2011-2012. This study uses 35 companies listed in the LQ45 index during periods 2011-2012 as many as 70 observations. Data are collected from Indonesian Capital Market Directory. This study uses path analysis to examine the hypothesis. The results show that (1) the influence of financial leverage on market capitalization is negative. (2) the influence of market capitalization on bid-ask spread is also negative. (3) the influence of financial leverage on the bid-ask spread is positive. (4) simultaneously, financial leverage and market capitalization have influence on bid-ask spread. Indirectly, financial leverage has influence on bid-ask spread through the market capitalization. Then, direct influence of financial leverage on the bid-ask spread is stronger than indirect influence of financial leverage on the bid-ask spread through the market capitalization. Therefore, it can be stated that the real influence of financial leverage on bid-ask spread is direct influence.

Keywords: Bid-Ask Spread, Financial Leverage and Market Capitalization.

Introduction

The phenomenon of the subprime mortgage market meltdown starting the financial global crisis in the United States since June 24, 2006 has influenced negatively on the stock market in almost all countries, including Indonesia (Kusuma, 2007). Indonesia stock market known as IDX (Indonesia Stock Exchange) it performance has grown rapidly post financial global crisis. However, unstable condition of global economic has influenced IDX’s performance. It appears from the IHSG (Composite Stock Price Index) increasing and decreasing quickly. Increasing of IHSG is proportional to growth of the market capitalization. Market capitalization is the value of a company based on the calculation of the share price multiplied by number of shares outstanding (Rusmanto, 2011). Increasing in stock prices (a proxy of market capitalization) is supported by increasing of demand for outstanding shares and improving of investors’ confidence to performance of listed companies at the IDX. Increasing of investors’ confidence to performance of listed companies is encouraged by companies’ financial leverage rate. Financial leverage is the ratio that measures how much of the total assets financed by debt of a company. Increasing of financial leverage affect investors decision. It depends on the condition of the economic.
When economic condition is prosperity, increasing of financial leverage show that management is optimistic to develop company in the future. Because of that, investors are more interested in buying shares of companies that have higher financial leverage. The higher demand on shares can cause the higher stock price and it will affect market capitalization. When economic condition is recession, increasing of financial leverage has influence on investors negatively. The increasing of financial leverage in economic recession can reduce earnings. Reducing of earnings will affect reaction of investors negatively in stock market. In this condition investors will sell their shares to avoid losses. It can reduce stock price and market capitalization (Sudana and Intan, 2008). Some studies show different results about relationship between financial leverage and stock prices as a proxy of market capitalization. Hidayat and Manao (2000) found that the stock price is not significantly affected by changes on debt to equity ratio (DER) as a proxy of financial leverage. In addition, the study of Miftah and Destari (2005) showed that financial leverage does not have influence significantly on stock prices as a proxy of market capitalization. On other hand, Natarsyah (2000) found that the DER affects stock prices significantly and positively. Murtiningsih (2010) also found that financial leverage affects market capitalization positively.

Increasing or decreasing of market capitalization will influence the liquidity of stocks. Bid-ask spread is a variable which is often used to measure the level of stock liquidity (Ekaputra, 2006). Liquidity is ability to trade stocks in large numbers in a short time and low cost (Hasbrouck & Schwart in Ekaputra, 2006). Spread relates to transaction costs to sell and buy shares in a short time. The smaller spread refer to the more liquid stock (Ekaputra, 2006). Bid-ask spread is a function of three components: inventory holding cost, order processing cost, and adverse selection cost (Stool, 1989). Loeb (Stoll, 1989) explained that the bid-ask spread is a function of market capitalization. The study of Loeb shows that the higher market capitalization will create smaller bid-ask spread. Some results of empirical study about the relationship between stock prices as a proxy of market capitalization and bid-ask spread indicates that the stock price affect bid-ask spread negatively (Susanti and Setiawan, 2005; Ekaputra, 2006; Ramantha, 2006; Sudana and Intan, 2008; Stoll, 1989).

Increasing of financial leverage will reduce the agency cost between investors and managers. On other hand, increasing of financial leverage will increase default risk. Therefore managers should take the best decision for the company to avoid bankruptcy. Dealers who hold stocks of company which have high financial leverage tends to sell shares to reduce the influence of default risk so that the cost of ownership will be lower. The condition causes the selling price (ask price) and buying price (bid price) be lower so that the bid-ask spread be smaller. The study results of Sudana and Intan, (2008); Frider and Martell (2002) showed that the debt ratio influence bid-ask spread negatively.

Based on background that has been described before, the purpose of this study is to examine the influence of financial leverage on bid ask spread through market capitalization in listed companies at LQ45 period 2011-2012.

Literature Review and Hypotheses Development

The Relationship Between Financial Leverage and Market Capitalization

There are several advantages of using debt for the company (Jensen: 1986): (1) The use of debt can save taxes, (2) Encourage management to be more discipline, (3) Creditors only get interest which are relatively fixed. The condition causes investors consider buying shares of a company that has a higher debt ratio at a higher price. Several studies have described the relationship between the debt ratio and market capitalization. The study results of Sudana &
Intan (2008) and Murtiningsih (2010) showed that the debt ratio affects market capitalization negatively. Based on the literature review, this study proposes the following hypothesis:

Ha1: There is negative association between financial leverage and market capitalization of companies in listed the LQ45 index period 2011-2012.

The Relationship Between Market Capitalization and Bid-Ask Spread

The size of the market capitalization is determined by one or two factors: the volume of outstanding shares and the market price of stock. The number of shares outstanding is relatively fixed during several time periods. Sharpe, Alexander, and Bailey (1995:73) in Sudana and Intan (2008) stated that "higher company's market capitalization will create higher liquidity for investments". Market capitalization indicates that the stock is traded frequently by investors, so bid-ask spread will be lower. Bid-ask spread is function of market capitalization. Loeb (1983) in Stoll (1989) found that the higher the stock price and number of outstanding shares will create bid-ask spread be smaller.

Higher stock price identifies that the shares are traded actively. If stock is traded actively, dealer will take to keep shares for long time. It will reduce cost of ownership and it will create bid-ask spread be higher (Stoll: 1989). The argument is supported by Hidayat and Halim (2000) who found that the stock price affects bid-ask spread negatively.

Ha2: There is negative association between market capitalization and bid-ask spread of companies in listed the LQ45 index period 2011-2012.

The Relationship Between Financial Leverage and Bid-Ask Spread

Corporate financial decisions is taken by management based on company's financial leverage. Increasing of financial leverage can give positive and negative influence on investors depending on economic conditions. Increasing of financial leverage encourages managers to make the best investment decisions, reducing of information asymmetry between managers and investors. It will create bid-ask spread be lower. The higher of debt ratio will create higher of the level of risk, so investors tend to avoid to buy company share which has higher debt ratio. The condition causes the dealer have to hold the shares for long time. It can make the cost of share ownership will be higher, so that bid-ask spread also will be higher.

Ha3: There is association between financial leverage and bid-ask spread of companies in listed the LQ45 index period 2011-2012.

Research Method

Population

Enterprises selected for the population in this study is the company incorporated in LQ45 Index period 2011-2012 which has joined in three semester. The total of population in this study is 35 companies which 70 observations. Secondary data in the study of the financial report, bid price, ask price of the stock and closing stock price data and outstanding stock in companies incorporated in LQ 45 index period 2011-2012. The data obtained from the Capital Market Reference Center, BEI building, 1st floor tower 2, Sudirman street, lots 52-53, Jakarta
Operationalization of Variables

Dependent Variable (Z)
Bid-Ask Spread
Bid-ask spread is the range in purchase price (bid) the highest trader willing to buy at sale price (ask) the lowest traders willing to sell such securities. It can be formulated as follows:

\[ RBA_t = \frac{HA_t - HB_t}{0.5(HA_t + HB_t)} \times 100\% \]

Description:
RBA = relative bid-ask spread on day- t
HA = lowest ask price on day- t
HB = the highest bid price on day- t

Independent Variable (X)
Financial Leverage
Financial leverage is the ratio that measures how much the company's total assets are financed by debt (Besly and Brigham, 2005:382). It can be formulated as follows:

\[ Financial \text{ Leverage} = \frac{Total \text{ Debt}}{Asset} \]

Intervening Variables (Y)
Market Capitalization
Market capitalization is the value of a company based on the calculation of the share price multiplied by number of shares outstanding (Rusmanto: 2011). Measurement of market value performed by using natural logarithm (Ln) daily market capitalization (Sudana and Intan: 2008), which is measured by the formula:

\[ KP = Ln (Vs \times Ps) \]

Description:
KP: Market Capitalization
Vs: The number of daily shares outstanding during the observation period
Ps: the daily closing share price during observation period

Data Analysis
Data are analyzed by using path analysis. Path analysis model is formulated as follows:

\[ Y = \rho_{yx} \cdot X + \varepsilon_1 \]  \hspace{1cm} (1)
\[ Z = \rho_{zx} \cdot X + \rho_{zy} \cdot Y + \varepsilon_2 \]  \hspace{1cm} (2)

Description:
X = Financial Leverage
Y = Market Capitalization
Z = Bid-Ask Spread
\( \rho_{yx}, \rho_{zx}, \rho_{zy} \) = Path Coefficient
\[ \epsilon_{1,2} = \text{Others variable effected} \]

To determine accepted or rejected the hypothesis, it is necessary to test the hypothesis. This study test the hypothesis by using path analysis model which is an extension of the multiple linear regression analysis. This study uses census, so that no test for significance, both t-test and F-test. Conclusions take from path coefficient value of each variable and the coefficient of determination \((R^2)\). The data processed by SPSS (Statistical Package For Social Science).

**Results**

To examine the influence of financial leverage on market capitalization and indirectly influence on the bid-ask spread is used path analysis method. The influence of financial leverage on the market capitalization can be seen in Table 1.

Table 1. The influence of financial leverage on the market capitalization

<table>
<thead>
<tr>
<th>Model</th>
<th>(R)</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.027(a)</td>
<td>0.001</td>
<td>-0.014</td>
<td>1.1414614</td>
</tr>
</tbody>
</table>

Based on Table 1 the variable correlation is indicated by the value of the path coefficient \((\rho)\) is -0.027. It shows that the correlation variable financial leverage and market capitalization is -0.027. Coefficient of determination \((R^2)\) is 0.001 or 0.1%. It mean that financial leverage has very weak influence on market capitalization only 0.1%, while 99.9% is explained by other variables that are not discussing in this study. It also shows that financial leverage is less able / unable to explain the variation of the market capitalization of the company incorporated in LQ45 the period 2011-2012. Furthermore, the influence of the market capitalization on bid-ask spread can be seen in Table 2.

Table 2. The influence of Market Capitalization on Bid-Ask Spread

<table>
<thead>
<tr>
<th>Model</th>
<th>(R)</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.531(a)</td>
<td>0.281</td>
<td>0.259</td>
<td>0.27947</td>
</tr>
</tbody>
</table>

Based on Table 2, the correlation between dependent variable and independent variable is indicated by the path coefficient \((\rho)\). Table 2 shows that the path coefficient \((\rho)\) is -0.531 which indicates that the correlation variable market capitalization and bid-ask spread is -0531. The coefficient of determination \((R^2)\) is 0.281. It shows that market capitalization considerable influence on the bid-ask spread is only 28.1%, while 71.9% is explained by other variables. It also indicates that the market capitalization is quite able to explain the bid-ask spreads variation on companies incorporated in LQ 45 2011-2012. The influence of financial
leverage on the bid-ask spread can be seen in Table 3.

Table 3. The Influence of Financial Leverage on Bid-Ask Spread

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.211(a)</td>
<td>0.044</td>
<td>0.030</td>
<td>0.3463632</td>
</tr>
</tbody>
</table>

Based on Table 3, the correlation between dependent variable and independent variable is indicated by the path coefficient. The path coefficient (\( \rho \)) is 0.211 which indicates that the correlation variable financial leverage and bid-ask spread is 0.211. The coefficient of determination (\( R^2 \)) is 0.044. It indicates that the influence of financial leverage on the bid-ask spread is 4.4%, while 95.6% is explained by other variables. It also shows that financial leverage is less able to explain the bid-ask spread variation companies incorporated in LQ 45 period 2011-2012. The influence of financial leverage and market capitalization simultaneously on bid-ask spread can be seen in table 4.

Table 4. The Influence of Financial Leverage and Market Capitalization Simultaneously on Bid-Ask Spread

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.566(a)</td>
<td>0.320</td>
<td>0.300</td>
<td>0.2943316</td>
</tr>
</tbody>
</table>

Based on table 4, the influence of financial leverage and market capitalization simultaneously on bid-ask spread can be seen from the value of R square. R-square value is used to examine influence of financial leverage and market capitalization simultaneously on bid-ask spread of companies incorporated LQ45 index period 2011-2012 is 0.320. It indicates that financial leverage and market capitalization simultaneously have considerable influence on the bid-ask spread. It is only 32%, while 68% is explained by other variables that are not explained in the study. It also shows that financial leverage and market capitalization are sufficient to explain the bid-ask spread variation on companies incorporated in LQ 45 period 2011-2012. The indirectly influence of financial leverage on bid-ask spread through the market capitalization is 2 \((0.221 \times 0.531 \times 0.027) \times 100\% = 0.6\%\). The complete calculation of direct and indirect influence is showed in table 5.

Tabel 5. The Influence of Financial Leverage and Market Capitalization on Bid-Ask Spread

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.211(a)</td>
<td>0.044</td>
<td>0.030</td>
<td>0.3463632</td>
</tr>
</tbody>
</table>
Directly and Indirectly

<table>
<thead>
<tr>
<th>Variable</th>
<th>Direct Influence</th>
<th>Indirect Influence</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>X to Z</td>
<td>$(0.211)^2 \times 100% = 4.4%$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y to Z</td>
<td>$(-0.531)^2 \times 100% = 28.1%$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X to Y</td>
<td>$(-0.027)^2 \times 100% = 0.1%$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X to Z Through Y</td>
<td>$2 \times (0.221x-0.531x0.027) \times 100% = 0.6%$</td>
<td></td>
<td>0.6%</td>
</tr>
</tbody>
</table>

Simultaneously influence X and Y on Z

Other Variable

0.32

0.68

The result of data processing seen in Table 6.


<table>
<thead>
<tr>
<th>Variable Influence</th>
<th>Accepted H_A Requirement</th>
<th>Calculation Score</th>
<th>Accepted/ Rejected H_A</th>
</tr>
</thead>
<tbody>
<tr>
<td>X to Y</td>
<td>$\rho_{xy} &lt; 0$</td>
<td>-0.027</td>
<td>Accepted H_A</td>
</tr>
<tr>
<td>Y to Z</td>
<td>$\rho_{yz} &lt; 0$</td>
<td>-0.531</td>
<td>Accepted H_A</td>
</tr>
<tr>
<td>X to Z</td>
<td>$\rho_{xz} \neq 0$</td>
<td>0.211</td>
<td>Accepted H_A</td>
</tr>
<tr>
<td>X and Y to Z</td>
<td>$R^2 \neq 0$</td>
<td>0.320</td>
<td>Accepted H_A</td>
</tr>
<tr>
<td>X to Z through Y</td>
<td>$2(\rho_{xz} \times \rho_{xy} - \rho_{yz}) \neq 0$</td>
<td>0.006</td>
<td>Accepted H_A</td>
</tr>
</tbody>
</table>

Y = $-0.027 \times X + \varepsilon_1$ ......................(1)
Z = $-0.531Y + 0.211X + \varepsilon_2$ ......................(2)

Keterangan:
X = Financial Leverage
Y = Market Capitalization
Z = Bid-Ask Spread
$\varepsilon_1$ = The influence of others variable on Y
$\varepsilon_2$ = The influence of others variable on Z

Conclusion

Based on the study results, it can be concluded as follows:
1. Financial leverage influence market capitalization negatively on companies incorporated LQ45 index period 2011-2012.
4. Financial leverage and market capitalization influence simultaneously on bid-ask spread
companies incorporated LQ45 index period 2011-2012.

5. Financial leverages influence indirectly on bid-ask spread through market capitalization on companies incorporated LQ45 index period 2011-2012.

Limit

This study has several limitations as follows:

1. The selection of variables expected to influence market capitalization and bid-ask spread consists only one variable. It’s possible other factors that may have influence on market capitalization and bid-ask spread.

2. The results of this study only be used to analysis on the limited subject on the companies belonging to the LQ45 index period 2011-2012, so that there are many companies that have not entered into this study, for example, banking and finance companies, manufacturing, and other sectors. If the object of this study different, it can contribute different results with study that involve object of research on companies belonging to the LQ45 index.

3. Time of observations only two years of financial leverage, and observations to the closing stock price and the bid-ask price only 7 days, which is 3 days before publication, publication day, and 3 days after the publication of the financial statements in 2010 and 2011 that led to the findings of this study could not see the trend in the long term.

Suggestion

To add a reference to further study, the following suggestions considered:

1. There are many other variables has the potential influence market capitalization and bid-ask spread, such as profitability, cash flow, earnings variability, risk stocks, and trading volume so it can be investigated further.

2. To expand the study object, it can be incorporated another companies besides companies incorporated in LQ45.

3. Next studies can use the data more than two years in order to better describe the results of existing conditions and provide more comprehensive results.

References


Hidayat, Haries & Hekinus Manao. 2000. Asosiasi Laba Tahunan Emiten dengan Harga Saham


