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Determinants of Firm Value as Measured by the Tobin’s Q: A Case of Malaysian Plantation Sector

Roseziahazni Abdul Ghani, A’tiqah Rashidah Abu Samah, Nurul Syuhada Baharuddin & Zuriyati Ahmad
Faculty of Business and Management, Universiti Teknologi MARA Cawangan Terengganu, Malaysia.
Corresponding Author’s Email: roseziah@uitm.edu.my

Abstract
Generally, a firm’s value indicates how well it has performed. Firms that perform well will attract more investor trust to invest in their business. Therefore, this study aims to investigate the factors that determine the value of Malaysian plantation sector companies using Tobin’s Q and several firm-specific variables. An empirical investigation was done to measure the influence of each size, sales, leverage, return on assets, current ratio and earnings per share ratio, and business liquidity on firm value using panel data procedures. A sample of 30 companies listed under the plantation sectors either under the main board or Ace market on Bursa Malaysia were utilized with the spanning period from 2005-2019. The results demonstrated that the size of the firm, firm sales, firm leverage, liquidity, and return on invested assets were the primary determinants of a corporation’s value. Earnings per share, on the other hand, was the only variable discovered to be insignificant in determining the firm’s value. The results of this study have implications for companies seeking to improve their firm value.

Keywords: Tobin's Q, Malaysian Plantation Sector, Firm Value, Leverage, Firm Size

Introduction
Malaysia continues to dominate the global market for the production and export of palm oil after Indonesia where the plantation industry has remained a significant component of the Malaysian economy for more than a century. The plantation sector experienced development in 2022 after the global COVID-19 epidemic hit in 2019. The plantation industry’s proxy, the Bursa Malaysia Plantation Index, increased by 8.1% in 2022 compared to 2021. The palm oil industry continues to be popular with Malaysian investors, along with other commodities including rubber, wood, and tea. Some of the leading companies in the plantation sector industry are Sime Darby Plantation, with a market capitalization of RM30.2 billion, IOI Corp, with RM24.8 billion, Kuala Lumpur Kepong, with RM23.3 billion, Batu Kawan, with RM8.8 billion, and Ladang Bersatu (RM6.3 billion).

Following their huge profit at the beginning of the year when CPO was sold at high prices, firms in the plantation sector have been encouraged to provide good dividends over
the previous 12 months by the favourable development for 2022. Hap Seng Plantations Holdings Bhd, Kim Loong Resources Bhd, United Plantations Bhd, Sime Darby Plantation Bhd, Batu Kawan Bhd, IOI Corp Bhd, and Sarawak Plantation Bhd are a few of the plantation firms anticipated to provide high earnings.

However, Sujoko and Soebiantoro (2007) assert that in addition to the amount of the current dividend distribution made to shareholders, investors and potential investors also consider several other critical factors when considering a firm. The worth of a firm is how an investor perceives it, thus, Profita and Ratnaningsih (2016) stated that the value of the firm is frequently reflected in firm share prices. When the price of the stock goes up, the valuation of the firm will also go up and vice versa. Besides share prices, stock returns, price-earnings ratio (PER), Tobin’s Q, and price-to-book value (OBV) are other metrics that can be used by the public or investors to measure the firm value (Hidayat et al., 2019).

In this study, Tobin’s Q-measurement will be employed to investigate the variables that influence firm value in the plantation sector listed on the Malaysian Stock Exchange from 2005 to 2019. Tobin’s Q is a popular metric for gauging performance based on the market. It reveals how investors feel about the company and serve as a useful predictor of business survival. For investors, this means that as Tobin’s Q rises, there is a likelihood that the firm’s value will expand as well. The relationship between a physical asset’s intrinsic value and market value is represented by the Tobins Q ratio. This ratio makes it simple to determine whether a specific firm, sector, or market is overpriced or undervalued. Also, it conveys the difference between a firm’s market value and replacement cost. The price a firm would shell out to replace an existing asset at the current market price is referred to as replacement value or replacement cost.

Literature and Hypothesis Development

Numerous researchers are curious about the relationship between corporate finance practices and firm values. Corporate finance refers to how a firm acquires and utilizes capital. Handling the necessary funds and their sources could be one of the responsibilities. This financial discipline aims to maximize shareholder value by employing both long- and short-term financial planning, and a few approaches. The course covers financing, capital structure, and investment options. Similar correlations have been examined on samples spanning many industries and time periods, providing clear and reliable results.

The debate focuses on how corporate financial practices can provide optimal value to a firm’s value. Questions such as whether the level of debt consumption affects the firm’s value or whether the earning per share of the firm has a significant impact on the value of the firm or the way the firm manages its liquidity can also affect the value of the firm. These questions will be answered through a literature review of past studies conducted by researchers in relation to corporate finance practices and their relationship to firm values.

A firm value is a perception by the investor of the level of a firm’s success. Firms with strong values will be of interest to investors and build stakeholder confidence. It is thought that the firm’s value reflects both the company’s current performance and its future possibilities. It is very important for a firm to maintain its value to continue investing funds in the company. As a result, firms that list on the stock exchange will strive their best to provide
the public with the greatest information on the state of their operation as a foundation for making investment decisions.

Based on prior research, there are several approaches to determining a firm's value. Risk and return are crucial factors to take into consideration when making an investment or establishing a firm. This is because maximizing the firm's value and shareholders' wealth is the primary goal of establishing a business. The Tobin Q is one of the measures used to assess firm value. The use of Tobin Q as the indicator for firm value or firm financial performance in relation to corporate finance activity has been conducted by (Ahmad et al., 2023; Jonnius and Marsudi, 2021; Hilal and Samono, 2019; Qeisari and Ahmadi, 2016; Sucuahi and Cambarihan, 2016).

Size and Firm Value
Past research examining the relationship between the size of a firm and its worth has indicated that the amount of asset wealth owned tends to reflect the organization’s overall size. Investors may be attracted to invest in large companies because they believe the amount of assets, they own reflects the large capital measures the company has. As a result, it is believed that large companies have more flexible and controlled management, which will result in an increase in the value of the company (Handriani & Robiyanto, 2018; Handriani & Irianti, 2015; Madanoglu et al., 2011). In reference to the descriptions given above, the following hypothesis is proposed:

\[ H_1: \text{Size of Firm has a significant positive effect on Firm Value} \]

Sales and Firm Value
Rahman et al. (2022) discovered that sales ability not only increases firm value directly but also indirectly through the contingent participation of internal and external factors in US-based manufacturing and service enterprises from 2014 to 2020. Considering the preceding descriptions, the following hypothesis is suggested:

\[ H_2: \text{Sales has a significant positive effect on Firm Value} \]

Leverage and Firm Value
There has been numerous prior research on the relationship between firm value and leverage levels. The relationship between leverage and firm value can be positive or negative. As debt usage increases, firm values rise, reaching their peak when the marginal benefits of leverage and the marginal costs of bankruptcy are equal. Higher levels of debt usage cause firm values to stop rising and perhaps begin to decline. Hirdinis (2019); Asad and Cheema (2017); Khumairoh et al. (2016) revealed evidence that firm size has a significant negative relationship with firm value. In reference to the descriptions given above, the following hypothesis is proposed:

\[ H_3: \text{Leverage has a significant positive effect on Firm Value} \]

Profitability and Firm Value
Profitability reflects a firm’s ability to make a profit or the efficiency of the management of the company. The firm’s profitability is a relatively important factor because it will determine
whether the profit is dispersed as dividends, withheld for cash holdings, or reinvested in the firm with the expectation that the firm would make a profit in the future. A high ROA ratio implies that a firm can generate revenue for all its capital expenditures. On the other hand, a negative ROA sign ratio signifies that the firm is losing money. The findings by Hendrani and Septyanto (2021); Nuradawiyah and Susilawati (2020) indicated that Return on Assets (ROA) has a favorable and significant impact on firm value. In reference to the descriptions given above, the following hypothesis is proposed:

\textit{H}_4: \textit{Profitability has a significant positive effect on Firm Value}

\textbf{Liquidity and Firm Value}

The Liquidity ratio measures a firm’s ability to fulfill its short-term liabilities. The ratio is crucial for streamlining a company's entire operation. The signal theory postulates that the stock market will respond favourably to a firm’s ability to meet its immediate obligations by elevating the company’s worth. Therefore, it is possible to assert that liquidity affects a company’s worth. There are numerous studies that demonstrate how liquidity can increase a company’s value (Ihadi, Vilantika, Hashemi, Arifin, Bachtiar, & Sholichah, 2021; Reschiwati, Syahdina, & Handayani, 2020, Lukita & Ariesta, 2019; Massie et al., 2018; and Putra & Lestari, 2016). In reference to the descriptions given, the following hypothesis is proposed:

\textit{H}_5: \textit{Liquidity has a significant positive effect on Firm Value}

\textbf{Earnings Per Share and Firm Value}

The EPS ratio is a measure of the profit (income) that shareholders receive for each share they own. Earnings per share (EPS) is sometimes regarded as the most important variable in determining the firm’s stock price or the firm’s value in most of the research, thus being used by individual investors in deciding their investments. Previous studies have shown results that are incongruent when comparing the EPS variable to the firm's value. While Nafisah et al; (2020); Sidauruk et al (2019); Chandra et al (2020) indicated that EPS has a positive influence on a firm’s value. Nuradawiyah and Susilawati (2020) found that EPS negatively influences the value of the firm. According to the most recent research by Maulina et al (2023) EPS has no impact on firm value. In reference to the descriptions given, the following hypothesis is proposed:

\textit{H}_6: \textit{Earning Per Share has a significant positive effect on Firm Value}

\textbf{Methodology}

This analysis examined companies that were listed in the plantation sector either under the main market or the ACE market on the Malaysian Stock Exchange for the years 2005 to 2019. Using the approach of purposive sampling, samples are chosen to obtain a sample of 30 companies. The sample becomes 427 total observations from 2005 to 2019 as a result of studies using pooled data to provide more accurate conclusions in accordance with the present scenario. Datastream and the Eikon Database served as the study’s sources of data.

Data were analyzed using Stata software. In particular, the independent variables for this study include company size, sales, leverage, profitability, liquidity, and earnings per share.
The dependent variable is the firm value as measured by Tobin’s Q. The hypotheses testing uses multiple regression, and the estimation of the regression model is as follows:

$$FVal_{it} = \beta_0 + \beta_1 LgTA_{it} + \beta_2 LgSales_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 CR_{it} + \beta_6 EPS_{it} + \varepsilon_{it} \ldots \ldots 1$$

Where,

- **FVal** = Firm Value
- **LgTA** = Lagged total assets
- **LgSales** = Lagged sales
- **LEV** = Leverage
- **ROA** = Return on Assets
- **CR** = Current Ratio
- **EPS** = Earnings Per Share

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and $\beta_6$ are the coefficients of the regression model.

This study employs a quantitative approach, panel data regression analysis Pooled Ordinary Least Square (POLS) to determine if the proposed hypothesis will be accepted or rejected. Also, the significance of the coefficients will be analyzed by comparing the p values with $\alpha = 5\%$, and $1\%$ levels of significance. Preliminary analysis of strong correlations and non-multicollinearity problems are also highlighted. Additionally, Table I shows the proxy or measurement for each variable used in this study.

**Operational Variable Definition**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm value</td>
<td>Tobin Q measures how investors feel about the firm and serve as a useful predictor of business survival.</td>
<td>Tobins’ Q = [(\text{Current price} \times \text{Total Share}) + \text{Total liabilities}] / \text{Total assets}</td>
</tr>
<tr>
<td>Firm size</td>
<td>The amount of assets owned by the firm is stated at the end of the accounting period.</td>
<td>Size = Natural logarithm total assets</td>
</tr>
<tr>
<td>Sales</td>
<td>The number of sales or revenue at the end of the accounting period.</td>
<td>Sales = Natural logarithm total sales</td>
</tr>
<tr>
<td>Leverage</td>
<td>Leverage is a ratio that can be used to measure how much a firm's assets that are being financed by the debt</td>
<td>Debt Ratio = Total Debt / Total Assets</td>
</tr>
</tbody>
</table>
Profitability

Returns on Assets measure the ability of a firm to utilize its assets to generate profits.

Return on Asset = \( \frac{\text{Net Profit}}{\text{Total Assets}} \)

Liquidity

The liquidity ratio is a measure of a firm’s ability to fulfill its short-term liabilities.

Current ratio = \( \frac{\text{Current assets}}{\text{Current liabilities}} \)

Earnings Per Share

The EPS ratio is a measure of the profit that shareholders receive for each share they own.

\( \text{EPS} = \frac{\text{Current assets}}{\text{Current liabilities}} \)

Finding and Discussion

Table 1 summarizes the descriptive statistics which include mean, maximum, minimum, standard deviation, and coefficient of variation. The summarization's overall findings show that the mean and standard deviation are barely different from one another, which suggests that the data is evenly distributed.

<table>
<thead>
<tr>
<th>Statistical summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fval</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Std Dev</td>
</tr>
<tr>
<td>Coefficient of Variation</td>
</tr>
<tr>
<td>No of Obs</td>
</tr>
</tbody>
</table>

The minimum and maximum firm values are 0.2281 and 14.3877, respectively. Igsize has a minimum value of 17.26095 and a maximum value of 23.89721. Lgsales have a minimum value of 10.77176 and a maximum value of 23.79356. The debt-to-income ratio ranges from 0.29% to 163.57%. The Current Ratio ranges from a minimum of 0.02 times to a maximum of 252.74. Return on Asset has a minimum value of -21.1% and a maximum value of 37.4%. Earnings Per Share have a minimum value of -0.67 cents and a maximum value of 2.03 cents.
According to Table 3, Return on Assets (ROA) and natural logarithm (Ln) total sales (Lgsales) have the most effects on firm value (Fval). Likewise, both independent variables positively impacted the firm value. The firm value will increase as the combined effect of the two causes grows. The correlation study also demonstrates that only liquidity (CR) has a negative correlation with firm value and has the lowest correlation with other independent variables.

Variance inflation factor (VIF) analysis is performed to verify the existence of the multicollinearity problem. Table 4 below summarizes the findings for VIF and tolerance level.

Table 4  
*The Vector Inflation (VIF)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/vIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lgsales</td>
<td>4.82</td>
<td>0.207482</td>
</tr>
<tr>
<td>Lgsize</td>
<td>4.06</td>
<td>0.246341</td>
</tr>
<tr>
<td>DR</td>
<td>1.58</td>
<td>0.631598</td>
</tr>
<tr>
<td>CR</td>
<td>1.33</td>
<td>0.749179</td>
</tr>
<tr>
<td>ROA</td>
<td>1.99</td>
<td>0.503137</td>
</tr>
<tr>
<td>EPS</td>
<td>1.90</td>
<td>0.525270</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>2.61</td>
<td></td>
</tr>
</tbody>
</table>

The result shows that the individual VIF is less than 5 thresholds with a mean of 1.63. This demonstrates that the model does not have a significant multicollinearity problem. According to Gareth et al (2013), if the VIF value is greater than the threshold value of 5, it means that multicollinearity problems are present in the model and should be addressed before the regression analysis is performed.

Table 5 shows the results of POLS at 5% and 1% levels of significance. The R-squared of the regression model is 0.3006 which indicates that 30.06% of the variation in the value of the firm can be explained by four independent variables (firm size, sales, leverage, liquidity, and profitability). The only variable that is not significant is earnings per share. The probability of F statistics (0.00) indicates that all independent variables taken collectively are significant in explaining the firm value.
Table 5
Multiple Regression
Pooled Ordinary Least Square (POLS) Regression

<table>
<thead>
<tr>
<th></th>
<th>Coef</th>
<th>Std-Error</th>
<th>t-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FVal</td>
<td>-0.3222324***</td>
<td>0.0561963</td>
<td>-5.73</td>
<td>0.000</td>
</tr>
<tr>
<td>Lgsize</td>
<td>0.2614177***</td>
<td>0.0368254</td>
<td>7.10</td>
<td>0.000</td>
</tr>
<tr>
<td>Lgsales</td>
<td>0.500957***</td>
<td>0.1904466</td>
<td>2.63</td>
<td>0.009</td>
</tr>
<tr>
<td>DR</td>
<td>0.0060917***</td>
<td>0.0018805</td>
<td>3.24</td>
<td>0.001</td>
</tr>
<tr>
<td>CR</td>
<td>2.622722***</td>
<td>0.6223285</td>
<td>4.21</td>
<td>0.000</td>
</tr>
<tr>
<td>ROA</td>
<td>0.2828525</td>
<td>0.1513705</td>
<td>1.87</td>
<td>0.062</td>
</tr>
<tr>
<td>EPS</td>
<td>0.3006</td>
<td>0.2906</td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

Notes: ***Significant at 1%, ** Significant at 5%,

The finding of the first alternative hypothesis test reveals that the size of a firm has a significant negative effect on firm value. However, this result does not parallel to the assumption of a positive relationship between firm size and firm value. The finding is in line with Olawale, Ilo, and Lawal (2017); Ibrahim (2017); Rajan and Zingales (1995) who indicated that size has a negative significant impact on firm value due to the less asymmetrical information about the larger firm which lowers the likelihood for new shares offering will be undervalued encouraging larger firms to adopt equity financing.

The results of the second alternative hypothesis test demonstrate that firm sales significantly increase firm value. A firm can contribute to revenue advantage and cost advantage through the effective use of its sales resources, which will enhance the firm's value (Chen et al., 2015; Guenzi et al., 2016; Rahman et al., 2020). While Chandra and Ro (2008) held the view that the importance of revenue or sales is greater than the importance of earnings in valuing a firm, this was also supported by the findings from this study.

The results of the third alternative hypothesis test show that firm leverage significantly increases firm value. This finding is in line with Hirdinis (2019); Asad and Cheema (2017); Khumairoh et al (2016); Buigut et al (2013), but it deviates from Gharaibeh and Qader (2017); Qeisari and Ahmadi (2016); Siahaan (2014), who found that leverage has a negative, and yet statistically insignificant, relationship with firm value.

The findings of the fourth hypothesis test alternative also suggest that a considerable increase in firm value can be attributed to increased profitability at the firm. If a firm's profitability (ROA) increases by one unit, then the value of the company will likewise increase by the same amount. This is indicated by the coefficients of 2.622722, which suggest a positive association direction. This finding is in line with findings from earlier studies by Sudiyatno et al (2017); Endri and Fathony (2020), which demonstrated that profitability had a significant and positive impact on firm value and this impact can be evidenced by the fascinating profitability of the firm. This finding is consistent with those earlier studies. This helps to explain the "signal theory," which postulates that the market will initially interpret the information it receives and that the firm's profit is generally viewed as a "good signal" for the
firm's potential in the future. This theory states that the market will initially interpret the information it receives (Indasari, 2018).

According to the results of the fifth alternative hypothesis test, firm liquidity significantly boosts a firm's value. The firm will profit from having more current assets than current liabilities by being able to be more flexible and attract additional investments in the future, which will raise the firm's worth even more. This result is consistent with earlier hypotheses and findings (Ihadi et al., & Sholichah, 2021; Reschiwati et al., 2020; Lukita & Ariesta, 2019; Massie et al., 2018; and Putra & Lestari, 2016).

Finally, the results of the sixth alternative hypothesis test show that the effect of firm EPS on firm value is negligible. Although EPS and firm value have a positive relationship, this relationship has little impact on the percentage increase in firm value. Even though the EPS is rising, the value is not rising by a significant amount, according to the analysis. The findings are against earlier studies by Chandra et al (2020); Sidauruk et al (2019); Nafisah et al (2020), which emphasized that EPS had a positive impact on firm value. In line with research by Khan et al., this analysis suggests that EPS cannot be a significant factor that can affect changes in firm value 2014. Several macroeconomic variables should be considered by investors when determining the firm's value rather than only the EPS.

Conclusion and Recommendations

This study seeks to comprehend the relationship between corporate finance practices and firm value in the Malaysian plantation sector. The statistical results of the study indicated that sales and profitability, as assessed by return on assets, were statistically found to be significant positive determinants in determining the value of a plantation firm. This finding suggests that the financial manager of the plantation industry can raise the firm's value by raising sales while maintaining appropriate operational costs. Another important factor that profoundly influences a firm's value is its size. However, based on the findings of this study, potential investors were counseled to invest in smaller firm sizes when determining whether to engage in plantation firms because the larger a firm is in terms of total assets, the lower its firm value.

The leverage ratio, which is measured as total debt divided by total assets, and liquidity ratio, which is calculated as current assets divided by current liabilities, both demonstrated positive critical elements in assessing a firm's value. The likelihood that the firm's management will spend the money effectively and efficiently to add value to the firm's value increases with the amount of debt the firm has. Management must continue to monitor the increase in debt in the capital structure to make sure it doesn't surpass sales growth. If these additions are not appropriately monitored, they will reduce the firm's value. According to signaling theory, a firm's rising earnings per share (EPS) is a sign that it has promising prospects. This study has established a favorable association between EPS and business value. Although the EPS is only significant at 1%, it appears to be a less relevant factor than the above variables in determining the value of plantation firms.

By analyzing the corporate finance practices used by firms in the Malaysian plantation sector, this study contributes empirically to the literature. Firms can use the findings from this research to boost the performance of their firm. Management can use the study's findings to
create effective corporate monitoring systems that compel managers to operate in the best interests of shareholders.

References


