

# Capital Structure and Firm Performance: Evidence From Food Processing Industry in Malaysia

**Salawati Sahari\***

Faculty of Economics & Business, Universiti Malaysia Sarawak, Malaysia

**Noradilah Abdul Rahim**

Faculty of Economics & Business, Universiti Malaysia Sarawak, Malaysia

**Michael Tinggi**

Faculty of Economics & Business, Universiti Malaysia Sarawak, Malaysia

## Abstract

Despite numerous debates on the relationship between the capital structure and the firm performance, there is still lack of study focusing on the food processing industry, which is considered a nation contributor towards the economic growth especially in developing countries. Therefore, this study attempt to obtain empirical findings on the relationship between the capital structure and the firm performance among the food-producing firms in Malaysia for the year 2007 to 2016. The panel data analysis in this study has found that all variables in this study have a significant relationship towards firm performance. This study could contributes in such a way to fill the gap in the literature with regard to the study on capital structure and performance by highlighting such issue to the processing firm in Malaysia.

**Keywords:** Capital structure; Leverage; Food processing industry; Firm performance; Agency cost theory.



CC BY: [Creative Commons Attribution License 4.0](https://creativecommons.org/licenses/by/4.0/)

## 1. Introduction

A good firm does not exist just in a vacuum but instead, the firm must have a well-functioning capital structure itself in order to maintain the wellbeing of its performance. According to [Joshua \(2005\)](#), a big argument on the issue of under a tight assumptions of perfect markets, capital structure is irrelevant in order to determine a firm value and future performance. However, these restrictive assumptions do not hold in the real world, which lead many researchers to introduce additional rationalization for this proposition and its underlying assumptions showing that capital structure affects firm's value and performance. For instance, the amount of leverage in a firm's capital structure affects the agency conflicts between managers and shareholders by constraining or encouraging managers to act more in the interest of shareholders and, thus, can alter manager's behaviors and operating decisions ([Iavorskyi, 2013](#)). According to [Roshan \(2009\)](#), we are far from reaching a consensus on the perfect combination between the relation of capital structure and firm performance but most of the previous study prove that, capital structure has more valuable issue than the basic Modigliami-Miller model.

Despite numerous prior study on capital structure and performance, there were still lack of the said relationship focusing on a specific industry of food processing industry, especially in Malaysia. The important role of the food processing industry to an economy has been widely reported. [Morrison \(1997\)](#) noted that the food processing industry was a major force affecting the economic performance of industries in the USA. As for Malaysia, the food processing industry considered a significant and potential sector with number of opportunity especially in investment. However, during the period of 2000 until 2006, the food processing industry in Malaysia experienced a negative total factor productivity growth of -1.3 percent, which was mainly caused by the lack of technological change ([Mad et al., 2011](#)). The significance of growth issue in this industry within Malaysia and its role as a major driver towards economics performance has lead this study to focus on such industry. Hence, this study attempt to investigate the effect of capital structure on firm performance among the food processing industry in Malaysia.

## 2. Literature Review

Capital structure and performance has long been argued from number of prior literature. The generation of such relationship developed from different theories. This study would focus on agency cost theory to better understand the behavior of management. Later, the relationship between capital structure and performance are explained separately for each measurement of capital structure, namely leverage, age and size of the firm. Finally, this section includes the discussion on the importance to focus on food processing industry.

### 2.1. Agency Cost Theory

The agency theory concept was initially developed by [Berle and Means \(1932\)](#), who argued that due to a continuous dilution of equity ownership of large corporations, ownership and control become more and more

separated. But [Jensen and Meckling \(1976\)](#) was first explicitly this modeled because the issues about behavior of agent toward the principal. Whereby, manager argues that they are working to give benefits to other people. Because of that, some cases happen where the manager or CEO will spread the wrong information in order to get high profit or to cover the losses of the company. So the intellectual capital is important as an intangible asset who not only increase the value added of company but teach the individual to more think as a professional. Moreover, rising extend of intellectual capital also reduce the unethical behavior of the employees.

According to [Lambert \(2001\)](#), the agency theory recognizes the existence of conflict of interest and incorporates alienability and suggests that multi-person, incentive, asymmetric information and coordination issues are important to understanding how the organization operates. So what actually the agency theory in more detailed is about a relationship between principal and the agents. In finance, the agency theory occurs between shareholders known as principle and executives as agents.

This theory concerned on resolving the problems that can exist in agency relationships due to the unaligned goals or different a version level to risk. Manager is self-interest in agency theory where they are responsible to take actions on behalf of the shareholder which involves the delegation of some decision where manager decision lead to profit generation or interest for shareholder. This being taken as unquestionable that uninformed principal can benefit from this delegation to an informed agent and that it is fact that uninformed principal is actually lack of skills, information, qualifications, knowledge, and experience discuss by [Bendor et al. \(2001\)](#).

This situation gives professional managers an opportunity to pursue their own interest instead of that of shareholders. According to [Iavorskyi \(2013\)](#), the agency cost hypothesis predicts that higher level of debt is associated with better firm performance. Agency costs are costs which arise in agency conflict. There are several mechanisms through which high leverage may reduce agency costs and as a result increase firm value, namely (1) Monitoring activities of debt holders, (2) Managers' fear of firm bankruptcy and liquidation, following misuse of funds, which may lead to losses of reputation and salaries (3) Reduction of over-investments.

## 2.2. The Relationship of Leverage and Profitability

Leverage is an amendment whereby how much the equity and debt have been used in a firm in order to commerce its assets which have the capability to affect a system by enlarge the outcome of a firm. For this study, the leverage can be gained by dividing the total liabilities with total assets. In other words, leverage could be explained as the situation of a firm with a little amount of cost yield but will have large amount of returns. High financial leverage leads to increment of interest paid, which indirectly decrease the earning per share. Therefore, leverage was used to maximize the benefits of the shareholder of a firm.

There are few researchers tested the effect of leverage on firm performance by applying the agency cost theory. For instance, [Berger and Patti \(2006\)](#) analyzing the relationship between these two variables where the study has found that there is statistically significant and positive relationship of leverage and firm performance. Another study by [Malmendier et al. \(2007\)](#) which focus on capital structure-related hypothesis by using two alternative measures of managerial irrationality. They found that manager that has high confident level will prefer debt to equity conditional upon using external financing. [Gleason et al. \(2000\)](#) indicates that the utilization of different level of debt and equity in the company's capital structure as one of the company specific strategy that used by the manager to improve their company performance. As a result, a lot of firm have put their effort to achieve an optimal capital structure in order to reduce the cost of capital or to increase the firm value so that they can improves their competitive advantage in the marketplace through the combination of debt and equity financing.

## 2.3. The Relationship of Firm Age and Profitability

According to [Thornhill and Amit \(2003\)](#), there is a positive and significant relationship between the age of the firm and profitability. They have found that when a fresh company have a low management skill, they tend to have poor competitive advantages. Since they have poor competitive advantage, they cannot compete with other firms in the industries, thus may reduce their profitability.

Furthermore, [Loderer and Waelchli \(2010\)](#) stated that one could argue that mature firms are likely to operate in relatively old and unattractive industries. Therefore, they manage to find that the link between age of firm and its performance was significant but negative in relationship. As a firm grew older, their profitability seems to decline.

## 2.4. The Relationship of Firm Size and Profitability

Larger companies tend to be much more profitable than the smaller one because of their economies scale, bigger diversification and their capability to acquired cheaper source of fund. Hence, by purchasing low-priced source of fund, they can reduce their business risk and thus contribute to a great company performance. Therefore, there is a significantly positive relationship between company size and profitability of the company ([Allen, 2004](#)).

This is similar with another study by [Keshar \(2004\)](#) where that study discovered that there was a positive relationship between size of the firm and performance. What he found was that larger firm could easily excess the capital market and could generate more income. Additionally, larger firms will receive higher credit issues and as a result they will pay lower interest rate of debt capital. Another advantages of larger firms are that it will have lower risk of bankruptcy. The lower the bankruptcy cost will lead to higher debt level. This theory also proves the positive relationship between capital structure and size of firm.

Moreover, bigger firm has more advantage in term of profit accumulation. This is because, firm that has more advantages in economics scale has more capacity and resource. Because of that, a firm that has more strong economic scale and can get more resource as compared to the small firm. Prior research suggest that firm's size may

influence its performance, larger firms have greater variety of capabilities and can enjoy economies of scale, which may influence the results and the inferences (Frank and Goyal, 2003).

## 2.5. The Food Processing Industry

The significant role of the food processing industry to an economy has been widely reported. Adelaja *et al.* (2000) calculated the industry's share to be as high as 8.9 percent of employment, 11 percent of the value-added and 13.5 percent of gross sales in the USA manufacturing sector. In Australia, Kidane (2006) concluded that the processed food industry accounted for about 68 percent of the real value of food exports and 20 percent of the merchandise real export value of the country. Mikami and Tanaka (2008) presented similar findings that the food processing industry is an important contributor to a nation's economic growth.

The significance of food industry in India was very strong that India is the world's second largest producer of food next to China, and has the potential of being the biggest with the food and agricultural sector. The total food production in India is likely to double in the next ten years, and there is an opportunity for large investments in food and food processing technologies, skills and equipment, especially in areas of canning, dairy and food processing, specialty processing, packaging, frozen food or refrigeration and thermo processing. Moreover, India is becoming the eastern hub of the food industry. Not only does it have leading production of various materials like milk, fruits and vegetables, grains and animal products but the food processing sector is also growing at a rapid rate to cater to the domestic needs and the export market. Therefore, analyzing the relation between capital structure (CS) and P of food products manufacturing firms becomes significant. categories of sizes of firms The study concentrates on three categories of the food industry viz., tea, dairy and vegetable oil firms. India has also emerged to be the world's leader in tea production, consumption and export. India's tea production alone accounts for 31% of global production. And it is also the largest oilseeds and vegetable oil producing country in the world, but equally it is the biggest consumer of vegetable oil too (Azhagaiah and Deepa, 2012).

As for Malaysia, Mad *et al.* (2011) in their study that attempts to evaluate the market competitiveness of SMEs in the Malaysian food processing industry in terms of efficiency and productivity growth. They stated that since the country is a net importer of food products, the development of domestic food producers, is a critical issue. The findings of that study map the performance of SMEs in the food industry in Malaysia in terms of growth, technical efficiency and technological change. Some of the industries produce primary export commodities while others may potentially be substitutes for imported food stuffs. Empirically, they found the average technical efficiency of SMEs in the Malaysian food processing industry to be 0.756, indicating that the industry can augment its output by as much as 24.4 percent at the same level of inputs. The manufacture of palm oil, pineapple, sugar, glucose and the manufacture of flour from beans are sub-industries with low technical efficiency. On the other hand, soft drink, alcohol, animal feed, kernel oil and refined palm oil are industries with high technical efficiency. During the period of 2000 until 2006, the food processing industry experienced a negative total factor productivity growth of -1.3 percent, which was mainly caused by the lack of technological change (Mad *et al.*, 2011). Hence, by highlighting the significance role of food processing industry to the economics and the growth of a country, it is important to study the significance impact towards the firm performance since this industry is a critical industry not just in Malaysia but globally all around the world.

## 3. Methodology

The independent variables in this study include financial leverage, size and age of a firm. Meanwhile, the dependent variable is the profitability of a firm. In this research, secondary data collection via Datastream are obtained for the listed firms from the food processing industry in Malaysia. There have been observed that there are 45 food processing companies listed in Bursa Malaysia. The data collected was from 2007 to 2016. Hence, there are a total of 450 observations made.

According to Roshan (2009) the method of data analysis used in this research work is the descriptive, correlation and regression technique. STATA12 software was used in order to test the hypotheses concerning the relationship between the dependent and independent variables. Deriving from the theoretical model, this study specifies the Pooled, Fixed and Random impact of capital structure on firm performance. Hence, to test the three hypotheses this study specifies the following models:

Performance=f( leverage, age of firm, size of firm)

$$ROA_i = \alpha_0 + \alpha_1 \text{LEVERAGE}_{it} + \alpha_2 \text{AGE OF FIRM}_{it} + \alpha_3 \text{SIZE OF FIRM}_{it} + \epsilon_i$$

Where:

Leverage=Total liabilities/Total assets

Age of firm = counted years from the date of firm in corporation

Size of firm= Total assets= total equity +total liabilities

The firm performance was measured by profitability as Return on Assets (ROA) since ROA contribute a measure for managerial performance and the efficiency of asset management. ROA is calculated by:  $ROA = (\text{Net Income}) / \text{Total Assets}$ , where the higher the ROA, the better the performance.

According to Fama and French (1998), the connection between tax, financial options, the price of the firm and completed debt does not recognize tax advantages. In addition, the high level of debt generates agency issues among shareholders and creditors, which predicted a negative relationship between leverage and profitability. Therefore, negative information related debt and profitableness obscure tax cut debt. The leverage in this study measured as  $\text{DEBT-TO-EQUITY RATIO} = (\text{Total liabilities}) / (\text{Total assets})$ . The hypothesis predicted as follow:

**H<sub>1</sub>:** There is a negative significant relationship between debt ratio and firm's performance.

As for the size of the firm, this study applied the formula  $TOTAL\ ASSETS = Total\ Equity + Total\ Liabilities$ . Keshar (2004) discover that there is a positive relationship between size of the firm and capital structure. What he found that when the firm is large, it has easy excess to the capital market. Therefore, this study develop similar hypothesis as follow:

**H<sub>2</sub>:** There is a significant positive relationship between size of firm and firm's performance.

The next independent variable, namely the age of the firm is measured as  $AGE\ OF\ FIRM =$  Counted years of the firm from the date of its in corporation. According to Thornhill and Amit (2003), there is a positive relationship between the age of the firm and profitability. They found that when young company have a low management skill, they will have poor competitive advantages. Thus the following hypothesis was predicted:

**H<sub>3</sub>:** There is a significant positive relationship between age of firm and firm performance.

## 4. Results and Discussion

### 4.1. Descriptive Analysis

**Table-1.** Descriptive Statistics of corporate characteristics

| Variable             | Mean     | Std. Dev. | Min      | Max      |
|----------------------|----------|-----------|----------|----------|
| ROA                  | -3.19544 | 1.176105  | -11.2838 | 1.664026 |
| Debt-to-equity ratio | -1.47412 | 1.98505   | -12.135  | 1.105939 |
| Age of firm          | 3.074723 | 0.32121   | 2.397895 | 3.871201 |
| Size of firm         | 13.30348 | 1.337469  | 9.015905 | 16.98706 |

Table 1 shows a brief descriptive coefficients that gives summaries on 450 data observations from 45 listed food producing firms from Bursa Malaysia in 2007-2016. The descriptive analysis indicates negative value mean of ROA which is -3.195 that have the minimum value of -11.284 and the maximum value of 1.664 whilst D/E RATIO, AGE and SIZE, the mean values are -1.474, 3.075, and 13.303 respectively. The mean of D/E ratio is between the minimum value and maximum value of -12.135 and 1.106, while for the AGE of the firm, the mean is between 2.398 and 3.871. In this research, the size of firm is at the value 9.016 to 16.987.

ROA obtained indicates that in average, Malaysia food producing firms generate losses for the period of 2007-2016. Furthermore, the mean of overall D/E RATIO of the 450 observations data is -1.474, which indicates that in average, the food producing companies in Malaysia does not making much debt as a means of leveraging. The D/E ratio also indicates that in average, the companies were not aggressive in financing their debt as they are low D/E ratio. Usually, money borrowed by the firm was used to fund various projects if the firm attempted to rise the firms' value. A low D/E RATIO generally means that a company only made a small amount of debt and low leveraging practices are often relates to low levels of risk and vice versa.

### 4.2. Diagnostic Test

Diagnostic tests that has been used in this study is the multicollinerity test by using Variance Inflation factor (VIF) to determine the existence of exact or inexact linear relationship among explanatory variables. When there is a perfect linear relationship among the predictors, the estimates for a regression model cannot be uniquely computed. VIF stands for variance inflation factor. As a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation. Tolerance, defined as  $1/VIF$ , is used by many researchers to check on the degree of collinearity. A tolerance value lower than 0.1 is comparable to a VIF of 10. It means that the variable could be considered as a linear combination of other independent variables.

**Table-2.** The result of Multicollinerity test using VIF

| Variable             | VIF  | 1/VIF  |
|----------------------|------|--------|
| Age                  | 1.51 | 0.6643 |
| Size                 | 1.40 | 0.7146 |
| Debt-to-equity ratio | 1.09 | 0.9169 |
| Mean VIF             | 1.33 |        |

Based on the results (see Table 2), VIF obtained from multicollinerity test are 1.33 which is less than 10. Therefore, these results indicate that there is no presence of multicollinerity among explanatory variables.

### 4.3. Pearson Correlation Test

**Table-3.** Pearson Correlation Matrix Analysis

|                | ROA      | D/E     | AGE    | SIZE |
|----------------|----------|---------|--------|------|
| ROA            | 1        |         |        |      |
| Debt-to-equity | -0.241 * | 1       |        |      |
| Age            | 0.130**  | -0.248* | 1      |      |
| Size           | 0.202 *  | -0.0745 | 0.424* | 1    |

Where, \* and \*\* indicates significant to 1% or 5% significant level respectively



Table 3 indicate the Pearson Correlation test of the listed food producing firm to understand whether there is a relation between each of the variables. The correlation between return on assets (ROA) and debt to equity (D/E) ratio is negatively associate of -0.2414 with 1% significant level, where the D/E ratio will be inversely proportional to ROA, the decrease in D/E ratio, will increased ROA. In another words, the lower the debt of the listed producing firms, the greater the profits. As for the age of the firm, there are positive relationship to ROA with 0.1301 and is significant at 5% significant level. This indicates that the longer the firm operate its business, the higher the profitability. The same goes to SIZE of firm that also has a positive relationship to ROA with the value of 0.2021 and significant at 1% significant level. This indicates that the larger the firm, the higher the profitability. In short, ROA has negative relationship to D/E ratio but significant at 1 % significant level. The ROA also have positive relationship to AGE and SIZE of firm and significant at 5% and 1% significant level respectively.

#### 4.4. Panel Estimation

In this research, dataset was observed through time. The variables of this study which is profitability that represent by ROA, debt of equity ratio, size of firm and age of firm are something that cannot be measure or observe through bare eyes. Thus, panel data or also known as cross-sectional time series data is used as it can control those variables.

##### 4.4.1. Bruesch-Pagan LM Test

Bruesch-Pagan LM test conducted to choose between random effect regression and simple pooled OLS regression. The test will determine whether the variance across the entities is zero or not. This will also determine if there is significant relationship across units or not. The Hypothesis for Bruesch-Pagan LM test are:  $H_0: \sigma^2\lambda = 0$  and  $H_1: \sigma^2\lambda \neq 0$ .

**Table-4.** The result for Bruesch-Pagan Test

|      | Var    | Sd = sqrt (Var) |
|------|--------|-----------------|
| ROA  | 1.3921 | 1.1799          |
| Size | 0.7576 | 0.8704          |
| Age  | 0.4427 | 0.6654          |

chibar2 (01) = 127.89 prob > chibar2 = 0.0000

Based on the Table 4, the p-value recorded is 0.000 which is less than 0.01 of significant level so the null hypothesis will be rejected. Thus, from the result, it could be concluded that the random effects are an appropriate model.

##### 4.4.2. Hausman Test

Hausman test was run in order to choose between fixed or random effect. In a simple way, Hausman test is conducted to test whether error term ( $\mu_i$ ) are correlated with the regression. The null hypothesis indicated the data is not correlated. The hypothesis for Hausman test are:  $H_0$ : Random Effect is preferred and  $H_1$ : Random effect is not preferred. If the null hypothesis is rejected, the test indicates that random effect is not the preferred model, then fixed effect will be chosen as alternative.

In order to interpret the result, the significant level of 0.01 should be first determine. If the p-value is less than significant level 0.01, then the null hypothesis will be rejected. Based on the result interpreted by STATA12 software in the Table 5, the p-value recorded is 0.00 which is below than 0.01 so the null hypothesis is rejected. The result indicates that random effect will not be the best model and the fixed effect will be an appropriate model for this group of data.

**Table-5.** Hausman test to decide fixed effect or random effect

|                      | Coefficients |         |            |            |
|----------------------|--------------|---------|------------|------------|
|                      | Fixed        | Random  | Difference | Sqrt (S.E) |
| Debt-to-equity ratio | -0.1398      | -0.1577 | 0.0179     | 0.0286     |
| Size                 | -0.7864      | -0.0969 | -0.6895    | 0.1051     |

Chi2(2) = 44.26 Prob > chi2 = 0.0000

##### 4.4.3. Fixed Effect Model

As from the previous test, it indicates that fixed effect was the best model to use for this research. Fixed effect determine the association between two variables within determinants. Each determinant has its special own characteristics that may not influence the independent variables. Assume that, there is something within the variables that may bias the independent and dependent variables. Thus, it should be control when fixed effect was applied. Fixed effect diminished the impact of those time-invariant characters so that the relation of independent variables towards dependent variable can be obtained.

Based on the result in the Table 6, the model is acceptable since the F test is 0.00 which is the value is less than 1% significant level. This also indicates that all the coefficients in the model are not zero.

**Table-6.** The result for Fixed Effect Model Regression

| ROA      | Coeff.   | Std.error | t     | P> t  | [95% Conf. interval] |         |
|----------|----------|-----------|-------|-------|----------------------|---------|
| DE ratio | -0.1398  | 0.0502    | -2.78 | 0.006 | -0.2387              | -0.0409 |
| Age      | Omitted* |           |       |       |                      |         |
| Size     | -0.7864  | 0.1354    | -5.81 | 0.000 | -1.0528              | -0.5199 |
| Cons.    | 7.1619   | 1.8376    | 3.90  | 0.000 | 3.5469               | 10.7769 |

F (4, 329) = 6.73 Prob &gt; F = 0.000

\*age omitted because of collinearity

## 4.5. Discussion on Major Findings

### 4.5.1. Financial Leverage of Firm

In year 2007 to 2016, food producing firms of Malaysia shown a statistically significant and negative relationship between leverage and firm performance. In other words, leverage is inversely proportional related to firm performance. This indicate that when the financial leverage of a firm was low, the firm performance are higher as measured by profitability. This results supported by [Kunga \(2015\)](#), where the said study explained that the firm has to pay more than what they borrowed to debt creditor in total including the amount of interest that leads to lower net income as well as reducing the firm profitability. In other prior literature from [Iavorskyi \(2013\)](#) with sample from Ukraine, also support that leverage has statistically significant and negatively related to firm performance. In his study, [Iavorskyi \(2013\)](#) found that the reasons of negative relation of leverage and firm performance in Ukraine are, market for corporate control is not effective as they only exists if efficient market for corporate control exists followed the cash flow hypothesis. Furthermore, [Iavorskyi \(2013\)](#) explained that debt financing in developing countries have great potential to make a firm to commit future fixed payments and thus deters investing in immediately available projects with higher returns rates but high real interest rates threaten future financial stability of in term of debt financing. Leverage also seems not to discipline managers due to soft budget constraints and lack of governance control ([Iavorskyi, 2013](#)).

### 4.5.2. Age of Firm

As for the relationship between the age of the food producing firm and profitability, in year 2007 to 2016, it was found that there is a significantly positive relationship between age of firm and firm performance as tested using Pearson Correlation test. However, according to [Loderer and Waelchli \(2010\)](#) who found that firm performances decline as firms grow older that means there is no significant relationship of firm age towards firm performance. Furthermore, after being tested through extended panel estimator by fixed effect model, the result omitted the value of age. Thus, there is no evidence on age of firm towards firm performances can be interpreted by value in this research due to time constraint and limited space of research. However, referring to prior study by [Loderer and Waelchli \(2010\)](#), surprisingly, they also meet with this omitted value of age which is significant and negative in value in the first test, which later goes away as soon as the regression extended. They propose that the control variable erase the significant value of age. Taken together, their findings suggest that firms face a serious aging problem. They are robust to different estimation techniques and specifications, and cannot be explained away with alternative interpretations related to factors such as risk, ownership structure, age of officers and directors, industry age, quality of corporate governance, and sample selection ([Loderer and Waelchli, 2010](#)).

### 4.5.3. Size of Firm

In year 2007 to 2016, food producing firms of Malaysia shown a significantly and positive relation between size and firm performance. This indicates, the larger the firm size, the greater the firm performance. This results can be supported by [Kunga \(2015\)](#) which predicted that the size of firm is positively related to its performance. However, [Kunga \(2015\)](#) found that in Kenya, size of firm was not significantly related to the firm performance which is against the findings in Malaysia. Contradict to the said finding, in other prior literature from [Larry and Slutz \(1994\)](#), they have found that the negative association between size of firm and its performance. [Khodamipour et al. \(2013\)](#), on the other hand, found that there is no significant relationship between company size and firm performance. They stated that the reason for company size to be insignificant towards firm performance was due to the effect of external factor or macroeconomic of a country like inflation.

## 5. Conclusion

In conclusion, this research holds a territory evidence on empirical results and findings on the relationship between the corporate characteristics and the performance across listed firms of food producing industry on Bursa Malaysia. This research study has examine variables like leverage, size, age and firm performance. The research done by using secondary data collected from annual report of targeted firms from a sample period of 10 consecutive years of 2007 to 2016. There were about 450 panel observations from 45 listed firms analyzed in order to gain the results based on fixed effect model. The objectives of this study are to evaluate the relationship of leverage, age and size towards firms' performance among food producing industry.

It was interesting to highlight that the descriptive findings where there was a negative mean of ROA as a measurement of the financial performance, where this indicate that in average, the food producing firms incurred losses during the period of 2007 to 2016. When testing the hypothesis, the Pearson correlation test was performed, where the results are interpreted as follows:

- Leverage is statistically significant and negatively related to firm performance.
- Size is statistically significant and positively related to firm performance.
- Age is statistically significant and positively related to firm performance.

### 5.1. Limitation of Study

There are several limitation that the researchers have been stumble upon as the research goes by. With regards to the sample selection, the findings of the period of 2007 to 2016 could be selected longer to increase the number of sample since the number of sample listed was only 45 companies in food manufacturing industry.

Furthermore, some of the company did not provide enough financial information as some annual reports has an ambiguous data that were supposed to be collected in order to measure the determinants of this research. The collected data of this research faced difficulty as some annual reports does not include a restated value for each year, hence the result of this research study will not be fully precise.

Additionally, primary data collection could be collected in order to find the reason that lies behind the relationship between corporate characteristics in the food processing industry towards performance. The significant of certain issues for instance, the leverage towards performance might be difference within the food processing industry as compared to other type of industry. Primary data collection also could suggest what other factors that might influence the performance of food manufacturing industry in Malaysia besides the characteristics in this study, such as weather condition, changes in related governmental policies, or government funding's that may affect the financial performance in agricultural productions.

### Acknowledgement

This research is supported by Fundamental Research Grant Scheme (F01/FRGS/1605/2017). We would like to thank you the Ministry of Higher Education for funding this research.

### References

- Adelaja, A. O., Nayga, R. M., Jr., S., B. J. and Tank, K. R. (2000). Understanding the challenges facing the food manufacturing industry. *Journal of Food Products Marketing*, 6(2): 35-55.
- Allen, J. (2004). Efficiency and economies of scale of large canadian banks. Working paper. Available: <https://www.banqueducanada.ca/wp-content/uploads/2010/02/wp05-13.pdf>
- Azhagaiah, R. and Deepa, R. (2012). Determinants of profitability of food industry in india, A size-wise analysis. *Management*, 7(2): 111-28.
- Bendor, J., Glazer, A. and Hammond, T. (2001). Theories of deregulation. *Annual Review Political Science*, 4: 235-69.
- Berger, A. and Patti, E. B. (2006). Capital structure and firm performance, A new approach to testing agency theory and an application to the banking industry. *Journal of Banking & Finance*, 30(2006): 1065-102.
- Berle, A. and Means, G. (1932). *The modern corporation and private property*. Transaction Publishers: USA.
- Fama, E. and French, K. (1998). Taxes, financing decisions, and firm value. *The Journal of Finance*, 53(3): 819-43.
- Frank, M. and Goyal, V. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67: 217-48.
- Gleason, K., Mathur, L. and Mathur, I. (2000). The interrelationship between culture, capital structure, and performance: Evidence from european retailers. *Journal of Business Research*, 50: 185-91.
- Iavorskyi, M. (2013). The impact of capital structure on firm performance: Evidence from ukraine. Available: <http://www.kse.org.ua/download.php?downloadid=306>
- Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4): 305-60.
- Joshua, A. (2005). The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *The Journal of Risk Finance*, 6(5): 438-45.
- Keshar, J. (2004). Determinants of capital structure, A case study of listed companies of nepal. *Journal of Nepalese Business Studies*, 1(1): 1-13.
- Khodamipour, K., Golestani, S. and Khorrami, M. (2013). The relationship between liquidity and the company size with company value in companies listed on the Tehran stock exchange. *European Online Journal of Natural and Social Sciences*, 2(3): 1210-17.
- Kidane, H. (2006). Export impediments and opportunities for australian processed food industry. *Journal of Asia-Pacific Business*, 7(3): 23-43.
- Kunga, L. (2015). The relationship between financial leverage and profitability of firms listed at the nairobi securities exchange. Available: <http://erepository.uonbi.ac.ke/bitstream/handle/>
- Lambert, R. A. (2001). Contracting theory and accounting. *Journal of Accounting and Economics*, 32: 3-87.
- Larry, H. and Slutz, R. (1994). Tobin's q, corporate diversification, and firm performance. *Journal of Political Economy*, 102(6): 1248-80.
- Loderer, C. F. and Waelchli, U. (2010). Firm Age and Performance. Available: <https://ssrn.com/abstract=1342248>
- Mad, N. S., Yodfiatfinda, Z. A., Mohamed, Z. Y. and Alias, R. (2011). Evaluation of market competitiveness of smes in the malaysian food processing industry. *Journal of Agribusiness Marketing*, 4: 1-20.
- Malmendier, U., Tate, G. and Yan, J. (2007). Corporate financial policies with overconfident managers. Working papers. Available: <http://www.nber.org/papers/w13570>

- Mikami, K. and Tanaka, S. (2008). Food processing business and agriculture cooperatives in Japan, Market power and asymmetric information. *Asian Economics Journal*, 22(1): 83–107.
- Morrison, C. J. (1997). Structural change, capital investment and productivity in the food processing industry. *American Journal of Agricultural Economics*, 79(1): 110- 25.
- Roshan , B. (2009). Capital structure and performance of mauritius listed firms, Theoretical and empirical evidences. Available: <http://www.nyu.edu/classes/keefe/EvergreenEnergy/boodhoorebook.pdf>
- Thornhill, S. and Amit, R. (2003). Learning about failure: Bankruptcy, Firm age, And the resource-based view. *Organization Science*, 14(5): 497–509.