

# **THE IMPACT OF FOOD CRISIS ON PERFORMANCE OF AGRIBUSINESS FIRMS IN MALAYSIA**

***Ilmas Abdurofi***

Faculty of Agriculture, University Putra Malaysia, Malaysia

***Mohd Mansor Ismail***

Institute of Agricultural and Food Policy Studies, University Putra Malaysia, Malaysia

***Juwaidah Sharifuddin***

Faculty of Agriculture, University Putra Malaysia, Malaysia

## **ABSTRACT**

The food crisis has adversely impacted many countries in the world especially the less developed countries. But the main exporters of agricultural products like Malaysia performed extremely well during this period. Since agriculture in Malaysia is one of the main sectors that contribute to the country's Gross Domestic Product (GDP), the impact of food crisis will be analysed in this paper through performance analysis of 40 agribusiness firms listed on Bursa Malaysia. The paper investigates the performance of agribusiness firms in Malaysia before (2006-2008) and after (2009-2012) the food crisis using financial statements analysis such as dividend yield (DY), earning yield (EY), book to market (BM), debt equity ratio (DER) and return on asset (ROA). The secondary data on financial statements from agribusiness firms in the Malaysian Stock Exchange Statistics for the period from 2006 to 2012 were utilised. The findings show that the overall performance of agribusiness firms in terms of profitability, leverage and market ratios fluctuated between 2006 to 2012, where there are significant differences in performance between the period 2006-2008 and the period 2009-2012. The paper concludes that the performance of agribusiness firms was better in 2006-2008 and this indicates that Malaysian agribusiness firms have benefited a lot during the world food crisis.

**JEL Classifications:** Q120, Q140

**Keywords:** Financial Statement Analysis, Financial Ratios, Food Crisis, Agribusiness Firms, Bursa Malaysia

**Corresponding Author's E-mail Address:** oficee\_2907@yahoo.com

## **INTRODUCTION**

The already worsening condition of global hunger was further compounded by 83% increase in global food prices between 2005 and 2008 while the price of staple food such as wheat and rice tripled (Mittal, 2009). According to the data of the Food and Agriculture Organization of the United Nations (FAO), the high price of staple food pushed the population of 40 million people into food insecure condition in 2008 from 923 million in 2007 (FAO, 2008a). Ramli et al. (2011) stated that the increasing prices of food prompted riots and protests in many countries like Egypt, Somalia, Cameroon, and Haiti.

According to many researchers and world organizations, several factors have affected the global food crisis. The FAO (2008b) estimated the prices of inputs (seeds, fertilizers, chemicals and fuel) were the main contributors to price hike since 2006. This condition prompted poor farmers to cut production. Furthermore, erratic climate conditions, overpopulation, and rising income resulted in a drastic increase in global demand for foods (Mcpherson, 2008). For instance, the drought in Ethiopia resulted in increasing food prices in the Amhara Region in 2007 (Ghosh, 2008). Similarly, Schaefer (2008) explained that the uncertain situation such as severe flooding and tropical storm in Bangladesh and Vietnam in 2007, reduced the food production at the time of rising food prices. In addition, another factor that contributed to the global food crisis is the food policy of some exporting nations including Indonesia and Kazakhstan that imposed export restraints on rice and wheat. Export bans decrease domestic prices and create short term deterrent to production consequently reducing the global supply which in turn contributed to the increasing price of food (Ramli et al, 2011).

However, the food crisis that caused global food insecurity and higher food prices in poorer countries can be a blessing to food exporting nations, farmers and big agribusiness firms that make huge profits from the crisis. The big farms could afford to absorb high input costs and able to expand planting areas. According to FAO, (2008a) the developed countries and food exporting nations had raised their food production by at least 10 per cent in 2008. The high price of food in the global market has urged the Malaysian government to apply the National Policy on Food Security with an allocation of RM 2.49 billion (778 million dollars) to increase food production, and more than RM 1 billion had been allocated to increase the rice buffer stock to ensure supply (Roberts, 2008). FAO, (2003) declared that food security may be fulfill when the dietary needs of nutritious food and healthy life are sufficient to spread out in all people. Furthermore, most of developing countries have, as part of their food security drive, implemented various policies to ascertain utilisation, availability and accessibility of food. . Shamsudin, (2013) additionally expressed limited investment in food production and the bigger challenge of international market in developing countries' food security would create agribusiness sector lagged on all front in terms of its development, efficiency and productivity. Therefore, the study aims to analyze the performance of agribusiness firms in Malaysia through financial ratios before and after the global food crisis that was happening in 2007-2008.

## MATERIALS AND METHODS

### Study area and data collection

The research focused on agribusiness firms in Bursa Malaysia or Kuala Lumpur Stock Exchange (KLSE) located on 10th Floor, at the Exchange Square Bukit Kewangan, 50200 Kuala Lumpur, Malaysia. The study draws on quantitative data obtained from the company's annual reports, financial statements and stock prices. Furthermore, the study employed 40 agribusiness firms selected through purposive sampling. The study covered the period of 7 years, starting from 2006 to 2012.

### Data analysis

The choice of Financial Ratio Analysis (FRA) in this study is considered by the review of past study and the theory linked to the FRA. The main contribution of FRA is its effectiveness and ability in distinguishing the performance of agribusiness firms and controlling any size impact on the financial variables (Samad, 2004). In order to examine whether the differences in the financial ratio performance of the agribusiness firms before and after the food crisis in 2006-2008 is significant, a student t-test is utilized.

The following hypothesis has been tested:

$$H_0: \mu_1 = \mu_2,$$

Where,  $\mu_1$  is the mean for before food crisis (2006-2008) and  $\mu_2$  is the mean for after food crisis (2009-2012) from the agribusiness' financial ratios. Inferences about the hypothesis are made by looking at test statistics and critical values associated with the mean. If P-value  $\leq \alpha$ , reject the null hypothesis. If P-value  $> \alpha$ , do not reject the null hypothesis.

### Financial Ratio Variables

#### A. Market Performance.

Market performance measure the response of investor to a firm's stock.

- **Dividend Yield (DY).** Investors prefer high dividend but this will restrict company expansion. Thus, high dividend yield is considered high risk to a company. In contrast low dividend yield offers a positive outlook for investments since a company can expand in the future (Browne, 2007). The following formula demonstrates how to calculate the dividend yield:

$$\text{Dividend yield (\%)} : \frac{\text{Annual dividend per share}}{\text{Average market price per share}} * 100\% = \text{Percent}$$

- **Earnings Yield (EY).** The ratio can reveal the effectiveness of a market especially in the emerging markets. A high yield stock (high EPS) value proposes that a stock is undervalued and low yield (low EPS) indicates that the stock is overvalued (Delich, 2003). The formula to calculate earning yield is:

$$\text{Earnings yield} : \frac{\text{Earnings per share (EPS)}}{\text{Stock price}} * 100\%$$

- **Book to Market (BM).** This ratio attempts to recognize undervalued or overvalued securities by taking the book value and dividing it by market value. In basic terms, if the ratio is above 1 then the stock is undervalued, if it is less than 1, the stock is overvalued (Dempsey, 2010). The following formula is used for calculating book to market value:

$$\text{Book to Market: } \frac{\text{Book value of firm}}{\text{Market value of firm}}$$

#### B. Leverage Performance

The leverage measures the ability to repay the long term debt. **Debt to equity ratio (DER)** as one of the leverage ratios, indicates the proportion of both firms' equity and debt are used to finance its assets. A high value of this ratio means that the firm has been aggressive in financing a company's growth by using debt (Nagaraju, 2011). The Formula to calculate debt to equity is:

$$\text{Debt to equity: } \frac{\text{Total debt}}{\text{Shareholders' equity}} = \text{Percent / ratio}$$

#### C. Profitability Performance

**The Return on Assets (ROA)** is an indicator of company's profitability performance. It represents how competent an enterprise in using its assets to generate earnings. Higher value of ROA indicates a profitable firm (Gitman, 2009). The following formula is used for calculating Return on Assets:

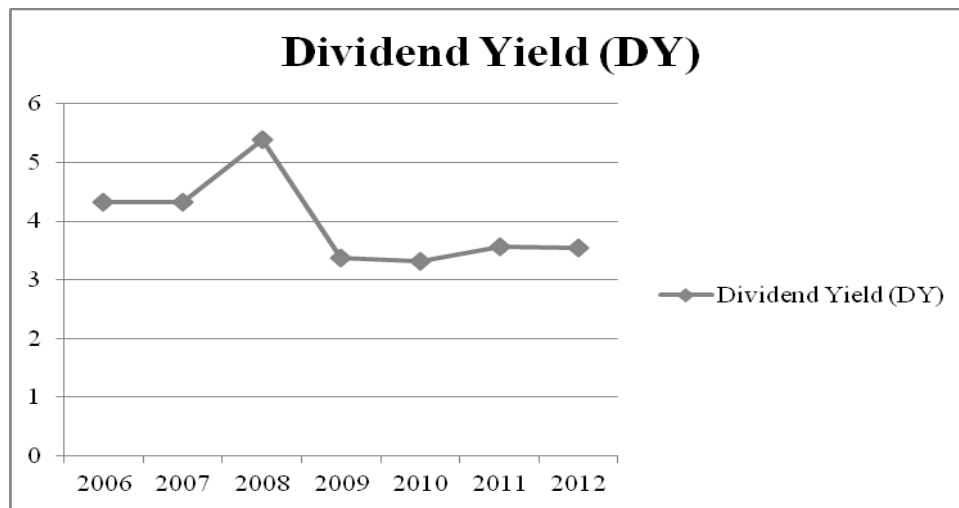
$$\text{Return on total assets: } \frac{\text{Earnings}}{\text{Total assets}} = \text{Percent}$$

## RESULTS AND DISCUSSION

### Dividend yield (DY) performance

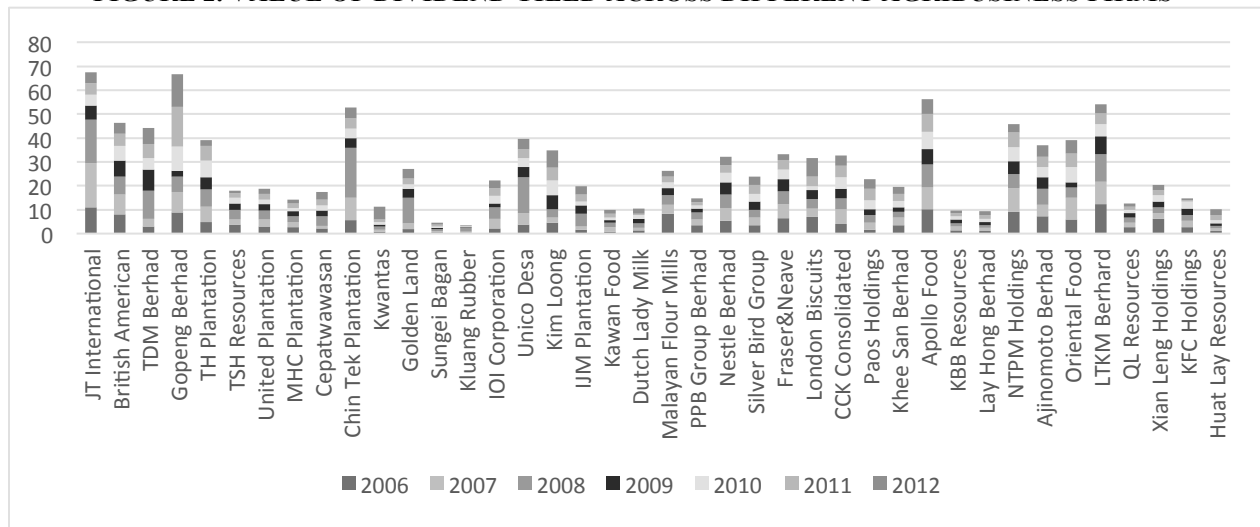
Following Gitman (2009), market ratios provide insight into how well investors in the market feel about the firms' performance in terms of risk and return. For instance, dividend yield is a way to measure how much cash an investor receives for each ringgit invested in a particular equity. Normally, a high dividend yield may be a good sign for investors to gain income from their stocks but some analysts also believe a low value of dividend yield is good for the company's share price in the long run. The figure below shows the dividend yield performance of Malaysian agribusiness firms in the period 2006-2012.

FIGURE 1: DIVIDEND YIELD



The figure illustrates that DY had a slight decrease from 2006 to 2007 and it reached its peak in 2008. The trend declined drastically from 5.4% in 2008 to 3.36% in 2009 before finally settling at a low of 3.31% for the year 2010. In 2011, dividend yield increased to 3.36% before declining at the end of 2012. As we can see in the figure, the trend generally shows a fluctuated path. This indicates that the majority of agribusiness firms in Malaysian Stock Exchange tried to manage their cash properly either using cash to develop company future or distributing a high dividend to investors. During the year from 2006 to 2008, the agribusiness firms seemed to choose higher dividend pay out to investors. Conversely, after a dramatic decline from 2009 to 2012, most agribusiness firms solely focused on their long term profit by reducing dividend. The figure below shows the value of divided yield based on each agribusiness firms in Malaysian Stock Exchange.

**FIGURE 2. VALUE OF DIVIDEND YIELD ACROSS DIFFERENT AGRIBUSINESS FIRMS**

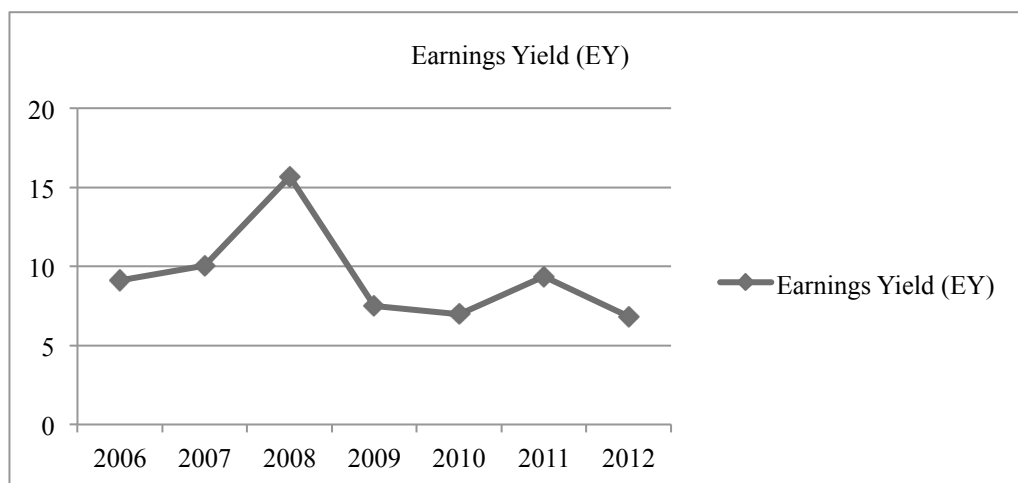


The value of dividend yield varied across different agribusiness firms. The higher dividend yield is recorded by JT International Berhad which constituted an average of 9.65 %. In this case, JT International Berhad was very aggressive to share its profit by giving high cash dividend. On the other hand, Kluang Rubber Berhad holds a lower proportion, that is, on average 0.49%. This suggests company retained its cash and was reluctant to distribute current earnings as dividends. The average dividend yield is 3.98% where 17 agribusiness firms are above industry average and 23 companies are below industry average. Thus, more than 43% of agribusiness companies preferred to reward investors by giving high percentage of dividend yield.

### Earnings Yield (EY) performance

Earnings yield as one of the market ratios, is applied by market investors to evaluate the net worth of a particular stock. Essentially, the value of earnings yield is just the inverse of price earnings ratio (PER). Usually, a high value of earnings yield indicates the stock is undervalued (cheap stock) while a low earnings yield indicates the stock is overvalued (expensive stock). The Figure below shows the earnings yield performance of Malaysian agribusiness firms in the period 2006-2012.

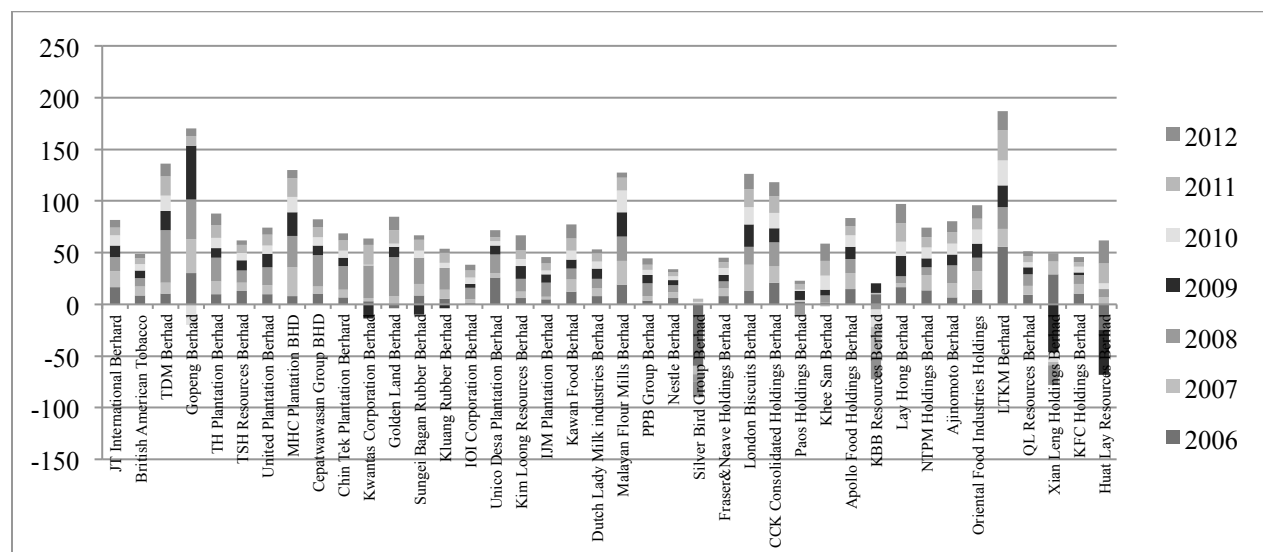
**FIGURE 3. EARNING YIELDS**



From the trend displayed by the figure above, EY increased by 0.92% from 9.12% in 2006 to 10.04% in 2007 and increased sharply in 2008 to 15.69%. In 2009 EY dropped drastically to 7.84% and continued to drop in 2010. In 2011, the EY gradually increased to 9.37% before finally posting a lower value of 6.84%. The trend of EY

seems similar to DY trend that depicted a fluctuated trend with two distinct market performances in terms of future earnings power. First, from the year 2006 to 2008, the value of EY offered cheap stock prices because high EY resulted in undervalued stocks. Conversely, the second type illustrated the expensive stocks from 2009 to 2012 as overvalued stocks, even the EY increased in 2011 but the EY percentage is still lower than the first 3 years. The figure below shows the value of earnings yield based on each agribusiness firms in Malaysia.

**FIGURE 4. VALUE OF EARNING YIELDS**



The figure shows that LTKM Berhad produced the highest value of EY (26.69%). Thus, stock price of this company is highly undervalued compared with other agribusiness firms in Malaysian stock exchange. On the contrary, Silver Bird Group showed the lowest EY of -12.11%. The result indicates that the price of this stock is highly overvalued. The EY's average industry is 9.36% where 18 agribusiness firms are undervalued while another 22 agribusiness firms are categorized as overvalued stock.

### Book to market ratio (B/M) performance

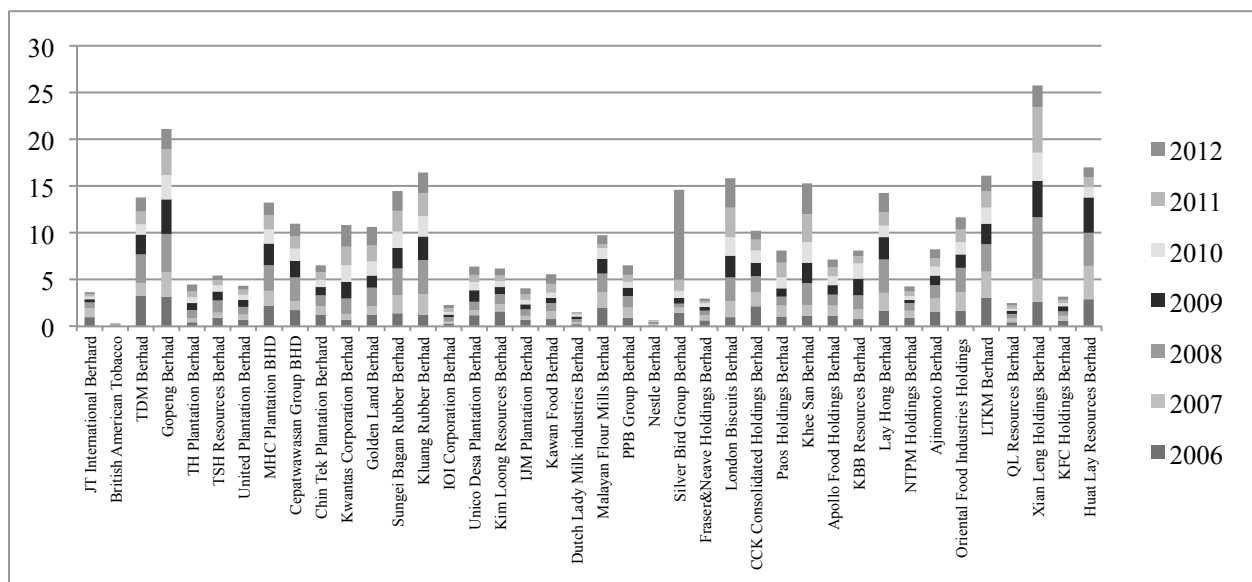
Book to market ratio is one of the key ratios to predict future return of stock's investment. This ratio compares the book value of a company to firms' market value that explains the market price of a firm relative to its actual worth. Similar to EY, B/M also attempts to identify either a firm's stock is undervalued or overvalued. Khan et al. (2012) pointed out that the higher the value of B/M ratio, the riskier is the firm's stock. The Figure below shows the book to market ratio performance of Malaysian agribusiness firms in the period 2006-2012.

**FIGURE 5. BOOK TO MARKET RATIO**



The B/M's trend shows that the ratio decreased by 0.16 from 1.3 in 2006 to 1.14 in 2007. The ratio however drastically increased and posted a peak 1.72 in 2008. During the period from 2009 to 2010 the downward trend is reflected and stayed at the low value of 1.06 in 2010. However the trend of B/M is gradually increased following two periods stopped in the value of 1.35 in 2012. The pattern of BM's trend is similar to both DY and EY trends, where the highest value is always recorded in 2008 and had a drastic fall in the next year before gradually recovered in a few years ahead. Basically, if the B/M ratio is above 1 then the stock is undervalued and if it is less than 1 then the stock is overvalued. In 2008 the B/M was at its peak, it can be assumed that the majority of agribusiness firms stocks were undervalued. Although B/M value resulted the lowest figures in 2010, the market price is still considered undervalued since the result showed 1.06. However, the value of B/M should also be compared with different types across all agribusiness firms. The figure below shows the value of book to market ratio based on each agribusiness firm in Malaysia.

**FIGURE 6. VALUE OF BOOK TO MARKET RATIO BASED ON EACH AGRIBUSINESS FIRM IN MALAYSIA**

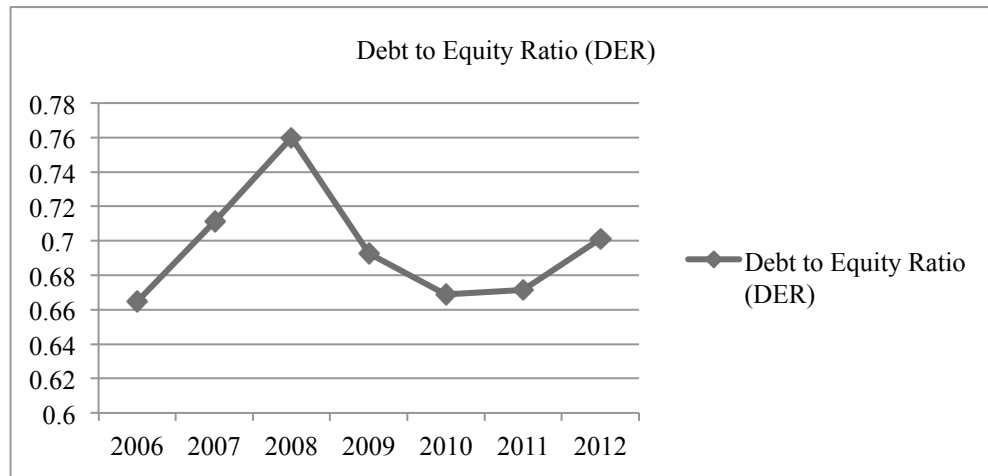


The result of B/M for each agribusiness firm showed Xian Leng Berhad contributed the highest level of BM constituting 3.68 on the average from 2006 to 2012. It can be assumed that this company's net asset per share is higher than its share price. In contrast, the lowest value of B/M is held by British American Tobacco Berhad (0.04). Thus, British American Tobacco shares took into account future growth potential than its book value. The average industry B/M is 1.3 which means the market recognises these stocks as undervalued. The result also depicted 18 firms above average while 22 remaining companies are below the industry average.

#### Debt to equity ratio (DER) performance

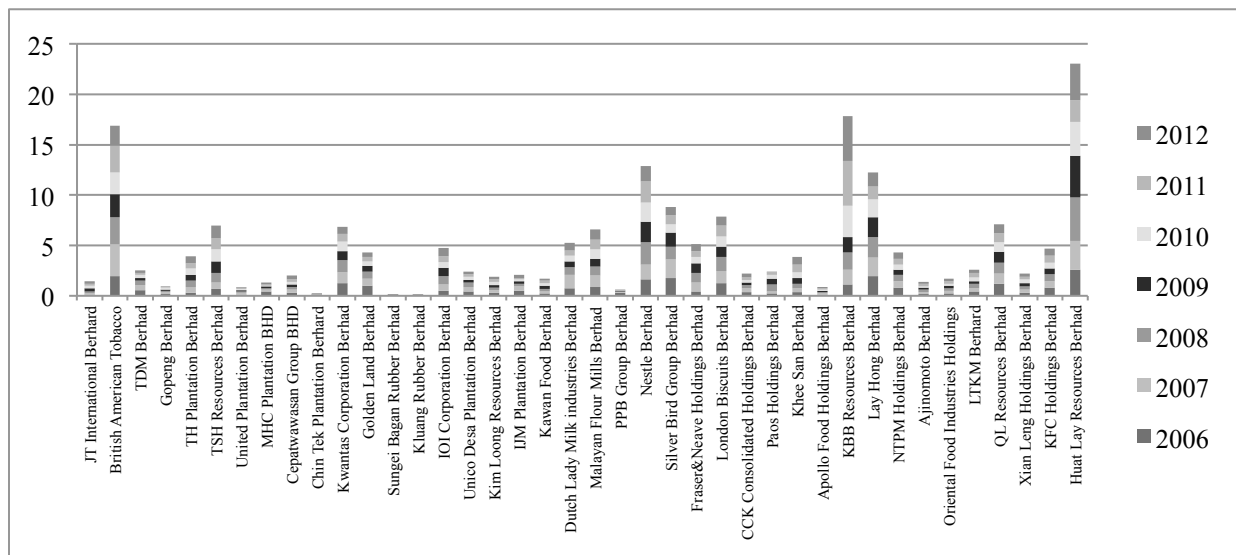
Debt to equity ratio, which is a financial leverage ratio, indicates the relative proportion of firm's equity and firm's debt used to finance firm's entire assets. The ratio may also judge a firm's financial standing and could measure firm's ability to repay obligations. To measure DER can be expressed either as a percentage or proportion. A higher value of DER may mean that a firm may not be able to generate enough cash to satisfy its debt obligations. However, a lower DER can also indicate that a firm is not taking advantage to increase profit by using debt. The figure below shows the debt equity ratio performance of Malaysian agribusiness firms in the period 2006-2012.

**FIGURE 7. DEBT TO EQUITY RATIO**



The DER trend fluctuated during 2006-2012 with upward trend from 2006 to 2008 and it reached a peak of 0.76 in 2008. However, it decreased to 0.69 in 2009. Then, the ratio registered a slight decline of 3% from 0.69 to 0.66 during 2009-2010 before gradually increasing from 0.66 to 0.67 in 2011 and 0.67 to 0.70 in 2012. In DER trend, the average values during 2006-2012 are below 1 that indicates all agribusiness firms are not highly debt driven in financing company's assets. But, they might use huge debt to cover capital budget as may be illustrated in 2008 where the value of DER is the highest. A different condition existed in 2006 where the value of DER was considerably low probably indicating the agribusiness firms focused on repayment to reduce company's debt.

**FIGURE 8. DEBT TO EQUITY RATIO**



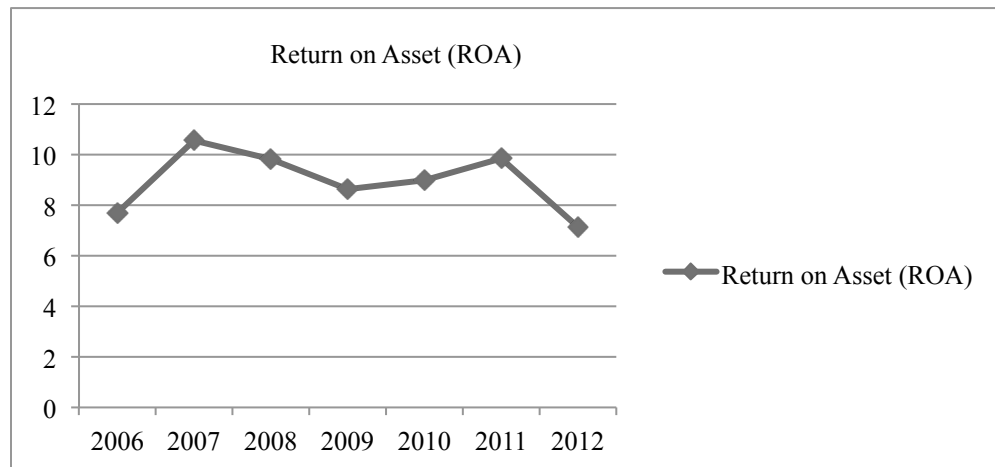
The result illustrated that Huat Lai Resource had been aggressive in financing its growth by using high debt. On the other hand, the lower DER value was recorded by Kluang Rubber (0.01) which means this company used more of its internal sources to finance the entity's asset. The average industry DER is 0.7 and 12 agribusiness firms above average industry and the rest (70% agribusiness companies) had lower value than the DER's industry average. Thus, majority agribusiness firms in Malaysia handled growth by using less debt during the global food crisis.



## Return on assets (ROA) performance

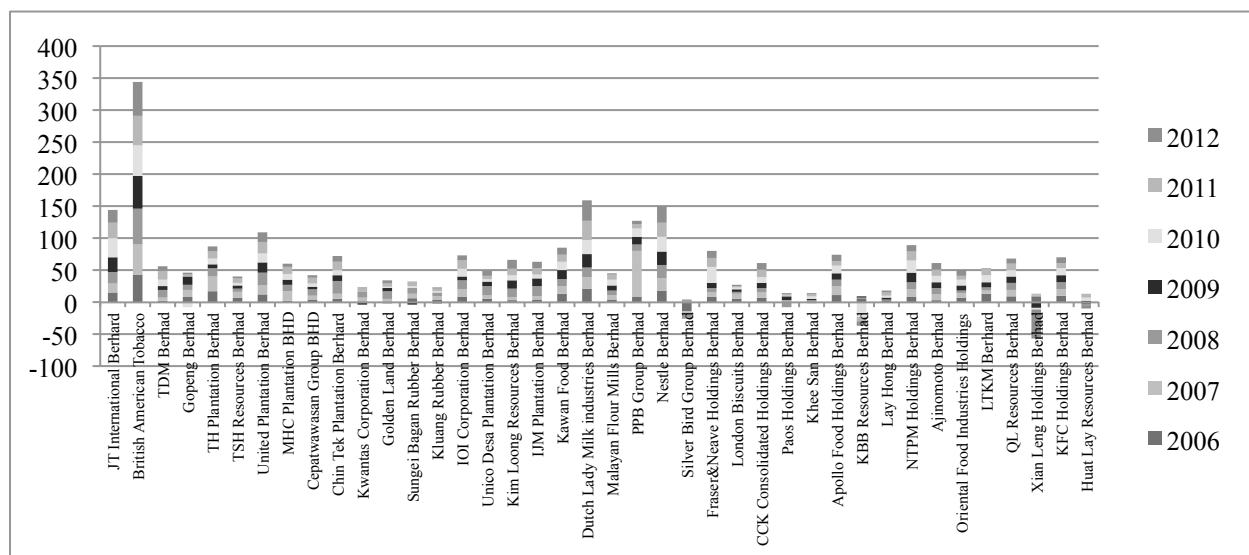
One of the financial ratios that measure how efficient the company is in generating income from its assets is the return on assets. Return on assets (ROA) illustrates the ratio of annual net income to average total assets. The net income is the profit after tax. The result of ROA tells the ringgit earned on each ringgit of assets. Thus, the higher value of the ratio indicates the firm is more profitable. Also Gitman, (2009) pointed out the higher the ROA number, the better, because the company is earning more money on less investment. Normally, assuming the ratio of ROA may be adjusted by comparing company in the similar industry. The Figure below shows the return on asset performance of Malaysian agribusiness firms in the period 2006-2012.

**FIGURE 9. RETURN ON ASSET**



The figure illustrated a fluctuating ROA trend from 2006 to 2012. Specifically, return on asset recorded a massive increase by 27% from 7.68% in 2006 to 10.56% in 2007 before gradually falling to 9.82% in 2008 and 8.64% in 2009. In the following two years, the onward trend is attributable to an increase of 8.98% in 2010 and 9.83% in 2011 before finally settling on low proportion of 7.14% for 2012. The fluctuating ROA's trend reflects unstable profit existed during the period 2006-2012. This indicates that the majority of agribusiness firms were having difficulty to utilise company's assets for income. Since higher result of ROA occurred in 2007 and 2008, it is assumed that better efficiency and good profitability performance was due to the agribusiness firm's assets growing strongly to generate more earnings during the food crisis.

**FIGURE 10. ROA FOR EACH AGRIBUSINESS FIRM IN MALAYSIA**



The Figure above shows the ROA for each agribusiness firm in Malaysia. As shown, the British American Tobacco reflected higher average percentage of 49.22% while Xian Leng Holdings recorded -6.12%, a lowest figure of ROA. The result showed the ROA's industry ratio is 8.95% with 17 agribusiness firms above the industry ratio and 23 agribusiness firms below the industry ratio. The result generally reflected that more than 55% of agribusiness firms are not highly profitable hence their assets dominated net profit as the more capital intensive firm was unable to achieve high ROA during the crisis.

### Hypothesis testing

The student's t-test was employed on the five ratios to examine the difference between the means of the two periods, whether in the period of 2006-2008 is statistically different compare to the period 2009-2012. The table below shows a summary of a student's t- test results for the two periods.

**TABLE 1: STUDENT'S T-TEST RESULT**

<b>Financial ratios</b>	<b>Mean 2006-2008</b>	<b>Mean 2009-2012</b>	<b>P value</b>	<b>Decision</b>
Dividend Yield (DY)	4.68	3.44	0.001	Reject
Earning Yield (EY)	11.62	7.66	0.005	Reject
Book to Market (B/M)	1.39	1.23	0.24	Accept
Debt to Equity (DER)	0.71	0.68	0.76	Accept
Return on Asset (ROA)	9.36	8.65	0.58	Accept

*Source: author calculation*

Table 1 shows the DY value of agribusiness firms. The DY performed better in the period 2006-2008 compared to 2009-2012 that constituted the mean of 4.68 and 3.44, respectively. This indicates that the agribusiness firms provided more cash as dividend to investors during 2006-2008. The P-value for DY is 0.001, therefore the differences between the performances for the two periods is statistically significant. Thus, the null hypothesis was rejected concluding that the ratio of DY deteriorated during 2009-2012. The similar result is also reflected on the EY value that the mean of the period 2006-2008 is higher (3.96) than in the period 2009-2012. The difference of the EY means is statistically significant at 95% confidence level as the P-value of 0.005 is less than 0.05. Hence, the null hypothesis is rejected.

Next, the mean of B/M declined from 1.39 in 2006-2008 periods to 1.23 in 2009-2012 periods. This indicated that the price of agribusiness firms' stock was a bit higher in the period 2009-2012 than in the period 2006-2008. However, the null hypothesis of B/M's mean for the two different time periods cannot be rejected as the P-value is 0.24. This implies that statistically, there is no significant difference between the books to market ratio of agribusiness firms in the two periods. Similarly, the mean for the DER shows a different trend with the mean for 2006-2008 being 0.71 while the mean for 2009- 2012 is 0.68. This is assumed that the agribusiness firms used more debt in 2006-2008 compared to 2009-2012 where the agribusiness firms tried to reduce company's debt. However, with the P-value of 0.76, the differences between the periods 2006-2008 and 2009-2012 are not statistically significant since the P-value is greater than 0.05.

Lastly, with respect to one of profitability ratios, the means of ROA are 9.36 for 2006-2008 and 8.65 for 2009-2012 indicating the return on asset deteriorated in 2009-2012 and in the period 2006-2008, the agribusiness firms were more profitable. However, the difference is not statistically significant as the P-value is 0.58. Therefore, the null hypothesis cannot be rejected. In summary, from the result of student t-test, it can be argued that in spite of financial turmoil and global food crisis that affected global economy, all the financial ratios variables in the study achieved higher result during the period of 2006-2008 and differences are statistically significant for dividend yield (DY) and earnings yield (EY). Eventhough the book to market ratio (B/M), debt equity ratio (DER) and return on asset (ROA) are not statistically significant, the ratios performed better in 2006-2008, that is, during the global food crisis period. Moreover, the findings also show that in order to ensure food security during global food crisis, majority of the agribusiness firms increased their debts and attracted investors who supplied capitals and materials in producing s food products to meet the rising demand for food.

## CONCLUSIONS

The results indicated that the overall agribusiness performance in terms of profitability, leverage, and market ratios has been fluctuating from 2006 to 2012. Essentially, the agribusiness firms aggressively increased the size of their debt during the period of 2008 as they tried to survive and maintain operations during the global food crisis, expand the business scales and pay the shareholders' income by borrowing a huge capital from outside. . This was reflected in the market trend that the agribusiness firms distributed a high dividend yield to investors and the stock of agribusiness firms offered at a cheaper price in 2008 by looking at the result of DY, EY and B/M. At the beginning of 2007, the impact of the global food crisis on efficiency and profitability of agribusiness firms are apparently boosted since the result of ROA proceed at a high level, before gradually decreased in 2008. Furthermore, the turmoil experienced in the global food crisis and international financial markets during 2007-2008 dragged agribusiness firms into unstable cash flow position. Nevertheless, the condition gradually improved since the agribusiness firms were adequately capitalized making them profitable during the global financial storm. Furthermore, the study found that there are significant differences in performance of agribusiness firms before (2006-2008) and after (2009-2012) the global food crisis. The result indicated that they performed better during the period of 2006-2008 and the crisis had a significant impact on variables of dividend yield (DY) and earning yield (EY).. In conclusion, Malaysia, as one of the main exporters in agricultural products, benefitted well from the higher food prices as reflected in the higher income of agribusiness firms

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