

## FINANCIAL RISK AND LEVERAGE RELATIONSHIP OF OIL AND GAS LOCAL COMPANIES IN MALAYSIA

Yaasmin Farzana Abdul Karim  
Sharifah Nazura Syed-Noh  
Noor Azila Mohd Zaid

### ABSTRACT

*Oil and Gas (O & G) industry is one of the industries that are known to be capital intensive. O & G companies are known to frequently file for bankruptcy and incur unexpected losses due to rising financial risk. This trend also applies to some O & G companies in Malaysia. Hence, this study aims to investigate the determinants of financial risk towards the leverage of O & G companies in Malaysia. The study used panel data that consists of seven local Malaysia companies as samples covering nine years from the period of 2008 until 2016 based on the availability of published annual reports. The data was analysed by using E-Views version 9.0. This study was analysed using OLS multiple linear regression estimation to measure the relationship between total debt ratio, the proxy for leverage, and firm-specific factors namely, asset tangibility, firm growth, liquidity risk, and firm size. According to the empirical analysis results, two factors have positive relationship towards leverage which are firm growth and asset tangibility whereby liquidity risk and firm size recorded negative relationship. In terms of significant variables, asset tangibility, liquidity and firm size are found to have significant relationship with leverage. This study is hoped that the Malaysian oil and gas companies will emphasize good management of assets to curb high leverage which can drag them to bankruptcy.*

Keywords: oil and gas industry, leverage, growth, liquidity risk, firm size

### INTRODUCTION

Oil and gas industries is one the biggest industries in the world and massively relying on oil and gas product in the form of energy, fuel, raw materials or chemical products (Hazarika, 2015). According to Observatory of Economic Complexity, in 2016, Malaysia dramatically achieved extraordinary ranking in terms of export where its ranked 20<sup>th</sup> largest exporter and 15<sup>th</sup> most complex economy whereby US\$10.9billion out of US\$184billion of total export that is about 5.9% were refined petroleum. However, there is increasing concern that reduced prices and declining profits will present a burden perspective for oil giants for instances ExxonMobil, BP, Total, Chevron and Shell which infused tens of billions of dollars in oil exploration when prices were steep but inadequate to appreciate forecasted profit margins. Bloomberg (Liau, 2017) discovered that Malaysia oil and gas industries also faced lower revenue in 2016.

In 2017, Nam Cheong Group Bhd has temporary ceased its operation after almost 50 years of continuous services because of its inability to pay debts. It has caused the supplier to lose confidence with the company. Nam Cheong's outstanding bank borrowings and notes stood at about RM1.84 billion (US\$428 million) as of Mar 31, 2017 ("Nam Cheong to Restructure in Blow to Singapore Bond Market," 2017). Neighboring country, Singapore owned company Ezra Holding Limited, recorded a bankruptcy where its debt ratio was 242.38% as of August 2016. Furthermore, Ezra's 20 largest creditors without collateral securing their claims are owed about \$607.6 million as of February 28, 2017 ("Ezra Files U.S. Bankruptcy as Offshore Services Woes Spread," 2017)

Debts play a role in causing some of the oil and gas companies to file for bankruptcy. Oil and gas industry is one of the industries that are known to be capital intensive and highly leveraged. Capital intensive industries are those industries that require large sums of money to operate effectively ("Four Reasons Why Airlines Are Always Struggling," 2010). One avenue to finance this capital intensity is through leverage, which can be defined as the extent to which the company depends on borrowing to finance its operations. Leverage is an important aspect of a financial analysis because it is reviewed closely by bankers and investors.

Oil and Gas companies that use high leverage sometimes face difficulties in meeting their debt obligations if leverage is not managed well. This may be the cause of some oil and gas companies' filing for bankruptcy. Thus, it is important to look at the factors and the relationship of these factors towards leverage. This study aims to investigate the relationship between financial risk and leverage oil and gas local companies in Malaysia, after controlling for the external and internal explanatory variables such as asset tangibility, firm growth, liquidity risk and firm size. The relationship is estimated using the pooled ordinary least square (OLS) multiple regression and covers the period of 2008 -2016. Our study focuses only on seven local oil and gas companies in Malaysia. The motivation of this study is to determine how the external and internal factors affect the local oil and gas companies.

The remainder of this paper is divided into four sections. The next section contains a brief overview of the literature. Section three discusses the methodology involved, followed by analysis of the findings in section four. The paper ends with a conclusion and recommendation in section five.

## LITERATURE REVIEWS

### Malaysia Oil and Gas Companies

Oil and gas in Malaysia started in early of 1910 discovered in Miri Sarawak by Mr. Claude Champion de Crispigny. At the time, local residents used oil to fuels lamps and boats. In 1885, the Borneo British Exploration companies are given to modify all mineral resources at Sabah while in 1909; Anglo- Saxon Petroleum Company gets the first concession to exploit petroleum resources in Sarawak. In early August 1909, the surveys were conducted a wells drilling was made on 10 August 1909 and oil was found on 15th September 1909. Therefore Miri had 642 of wells and produced 80 million barrels of oil.

At the end of 1991, the oil and gas industry has become the largest contributor to the country's main exports. The development of the petroleum industry in Malaysia is influenced by several factors such as the political situation of the country, government policies, and the rising price of petroleum.

However, in October 2016 the price of the oil is increasing which is RM 1.80 per liter for RON 95 compared to RM 1.70 per liter while the price of RON97 is RM2.15 compared to RM2.05 per liter. Then, the price of diesel is RM1.85 per liter compared to RM1.80, (Malaysia news).Therefore there have been many complaints that hear the issue of oil prices amongst the individuals and corporations about the scenario. Even though Malaysia are exposed to the rising of oil prices, but still got a bit of subsidy that the consumers are not exposed directly to the current market situation. Since the Good Services Tax is established by the government in April 2015, this makes the consumers felt more burden about the crisis of the rising oil.

### Theories Related to Leverage

Theories that are prominent in the specific research: agency theory, pecking order theory and trade-off theory, these theories acknowledge many factors shaping in leverage of the firm. Agency theory that an agent-type relationship between shareholders and managers. Pecking order theory is the order of resources prevails over the size. The cost of issuance the new securities are the preference by the firm for financing the new project mainly through self-financing, debt and finally by the share issues. According to the trade-off theory, the optimal financial structures are the cost of taking on additional debt and balancing the benefit (Onofrei, Tudose, Durdureanu, and Anton (2013)).

### Firm Performance

Vithessonthi and Tongurai (2015) are examined the relation between financial leverage and firm performance in Thailand for the nonfinancial firm during the financial crisis of 2007-2009.the discovered that higher the leverage shows that the firms are in negative performance while the lower in the leverage show that the performances of the firm are better. Meanwhile, the lowest leverage affected the firm performance show that performs well in the future. Thus, when the firm has the higher leverage it will face the lowest future growth in industries. However, study by Zhao and Wijewardana (2012) reveals that financial leverage are the most influence the independent variable such as growth and the profitability of the company.

### Asset Tangibility

As for asset tangibility, research by Onofrei, Tudose, Durdureanu, and Anton (2013), Bobinaite (2015), Hussain, Hamza and Miras (2015) found negative relationship towards debt ratio has negatively related to asset tangibility. However, positive relationship revealed in Ali (2011), Ashraf and Rasool (2013), and Sabir and Malik (2012) asset tangibility has highly positive relation with the leverage ratio.

### Liquidity Risk

With reference of liquidity risk, Bobinaite (2015), Alkhatib (2012) Sabir and Malik (2012) contend that the variable of the liquidity has the positive relationship with the dependent variable which is leverage whereas Onofrei, Tudose, Durdureanu, and Anton (2013), Ali (2011), and Hussain, Hamza and Miras (2015) found that liquidity has the highly negative significant relationship with the leverage ratio.

### Firm Growth

In terms of firm growth investigated by Onofrei, Tudose, Durdureanu, and Anton (2013) have a negative impact on the leverage, but to a lower extent. However, Ali (2011) and Sabir and Malik (2012), detected highly positive relation with the leverage ratio.

## DATA AND METHODOLOGY

In this study, a panel data analysis using Ordinary Least Square (OLS) was deployed. The data that consisted of seven local oil and gas companies as samples covering a period of 2008 to 2016 which covered a period of nine years based on the availability of published annual reports. All the data is on annual basis and the estimations were derived using E-Views version 9. The focus was on seven local oil and gas companies out of twenty-four companies as which were Petron Refining & Marketing Berhad, Petra Energy Berhad, Dayang Enterprise Holdings Berhad, Bumi Armada Berhad, SapuraKencana Berhad, Dialog Group Berhad and UMW Oil & Gas Corporation Berhad.

In this study, the total debt ratio (DR) is used as the proxy of leverage which is defined as total debt divided by total asset. This ratio evaluates how the oil and gas companies manage its the leverage. Most studies in investment return used DR as the proxy. The factors are explained as below:

- Asset Tangibility is defined as fixed asset divided with total asset. Oil and Gas companies with high tangibility tend to perform better and thus positive relationship is expected.
- Growth is defined as the change of fixed asset divided with total asset. It is expected to be positively related to leverage because with high growth means that fixed asset will be increased by using funding from debt.

- Firm Size is defined as the logarithm of total assets and bigger sized firms have lesser debt and negative sign is expected because the larger scaled companies access their retained earnings for future investment.
- Liquidity Risk is defined as current ratio where the current asset is divided with current liabilities and negative sign is expected as the company with sufficient liquidity can meet their short-term obligations.

The description of the model is:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon \quad (1)$$

where, Y = Debt Ratio  
 $\alpha$  = constant value  
 X1 = tangibility  
 X2 = growth  
 X3 = firm size  
 X4 = liquidity  
 $\epsilon$  = stochastic error term

## EMPIRICAL RESULTS AND ANALYSIS

### Descriptive Statistic

This section presents the estimations results and discusses the implication of the empirical findings. The descriptive statistics of the dependent and explanatory variables over the sample period are presented in Table 1, reflecting the financial risk and leverage performance of the analysed local Malaysian Oil and Gas Companies.

| Variable          | Mean     | Max      | Min       | Std Dev  | Skewness  | Kurtosis |
|-------------------|----------|----------|-----------|----------|-----------|----------|
| Debt ratio        | 3.844915 | 4.699638 | 2.505287  | 0.363118 | -0.769731 | 4.494758 |
| Asset Tangibility | 3.873328 | 4.556944 | 2.463289  | 0.597373 | -1.082118 | 2.977236 |
| Liquidity         | 0.283432 | 1.569376 | -0.358892 | 0.483879 | 0.994777  | 3.107381 |
| Firm Size         | 17.81463 | 22.22716 | 14.70305  | 2.160559 | 0.412935  | 1.991749 |
| Firm Growth       | 5.596688 | 51.60102 | -88.32838 | 18.67058 | -1.981008 | 11.44278 |

On average, local Malaysian oil and gas companies can keep up with their leverage during the period of 2008 – 2016 at 3.84% since the mean of DR showed the value is 3.84%. The oil and gas companies seemed to have no difficulties to meet their financial obligations since the mean of asset tangibility is 3.87, which is considered high and all of them are considered of large size companies since the mean of oil and gas companies is 17.81. And during that period, on average, Malaysian oil and gas companies was growing at 5.60% annually and liquidity was at 0.28%.

### Regression Analysis

The results on the effect of explanatory variables on banks' financial performance are presented in Table 2 below.

Table 2: Regression Analysis Results

| Variable          | Coefficient | Standard Error | T-Statistic | Prob.  |
|-------------------|-------------|----------------|-------------|--------|
| Constant          | 5.391510    | 0.319857       | 16.85599    | 0.0000 |
| Asset Tangibility | 0.107091    | 0.042763       | 2.504305    | 0.0147 |
| Liquidity         | -0.148444   | 0.063857       | -2.324609   | 0.0232 |
| Firm Size         | -0.107365   | 0.014883       | -7.213829   | 0.0000 |
| Firm Growth       | 0.001210    | 0.001495       | 0.809269    | 0.4213 |

Notes: R-squared = 0.743210; Adjusted R-squared = 0.723756; F-statistic = 38.20385; Prob.(F-statistic) = 0.000000

According to the above empirical findings, there is a positive relationship between firm size and leverage. This relationship is found to be significant at 5% significant level. This is consistent with the Trade-off Theory that stated firm size and leverage have positive relationship. The oil and gas industry are categorized as capital and technology intensive industries. Therefore, it is only natural that a certain sized company can enter into the global oil and gas market, especially those who are more equipped with capital either from equity holders or debtors. Additionally, since the outcome shows negative relationship, it may explain that larger oil and gas companies require more financing assistance to purchase supplementary specialized equipment and facilities to increase productivity and efficiency to support the operations of the company by utilizing mainly on their retained earning as compare to smaller sized companies where they are hunting on external financing. Ultimately, the profit that the company achieved in previous years, its best to pump in back to the operational in terms of investment which has no additional cost of servicing interest if they opt for debt Ashraf and Rasool (2013).

In terms of tangibility, the results revealed a positive relationship between tangibility and leverage which is significant at 5% significant level. The result is consistent with Trade-Off Theory that stated that tangibility and leverage have positive relationship. As oil and gas companies' tangibility have positive relationship with leverage, it may indicate that oil and gas companies have more fixed assets such as oil rig, land, ground equipment support, vehicles and so forth that require the usage of leverage. Having own large amount of fixed assets, would enable the companies to use these assets as collateral. Therefore, this will enhance the ability to receive financing from the relevant creditors. Moreover, these fixed assets will give greater value to

the creditors in terms of liquidation if the borrowers default their payment to meet the debt obligation as revealed by Afza and Hussain (2011) and Ashraf (2013).

In this study the results show positive relationship between growth and leverage. However, the relationship is found to be insignificant. In Pecking Order Theory that companies with high growth opportunities will use more debt to finance new projects provided their internal funds is not sufficient. However, the oil and gas companies in this study are not being able to penetrate most of the destinations around the globe because most of the countries has its own companies which focuses on domestic. The growth data also indicates that these companies have not experienced major growth that may be due to post-economic recession. The findings are similar to studies done Awan, Rashid, and Rehman (2011) and Bobinaite (2015).

In this study the results show negative relationship between liquidity and leverage which is significant at 5% significant level. Liquid assets are a guarantee that in times of lower earnings, or when it is difficult for a company to get financed on the capital market, or when the cost of capital is extremely high, can survive such situations current liabilities increases, debt ratio decreases. By way of explanation, the more liquid the oil and gas companies are, it is the less leveraged. The higher proportion of liquid assets in the firm, the firm is less leveraged. The findings are similar to studies done Alkhatib (2012) and Onofrei (2015).

## CONCLUSION AND RECOMMENDATION

This study used OLS multiple linear regression estimation to measure the relationship between debt ratio, the proxy for leverage, and firm-specific factors namely, tangibility, firm growth, liquidity and firm size. The study only focused on seven local oil and gas companies during the period of 2008 to 2016. According to the empirical analysis results, two factors have positive relationship towards leverage which are firm growth and asset tangibility whereby liquidity risk and firm size recorded negative relationship. In terms of significant variables, the empirical findings showed that asset tangibility, liquidity and firm size are found to have significant relationship with leverage.

In conclusion, this paper provided great significant where four variable that been examined, three variables shows great significant towards leverage. Therefore, oil and gas industry particularly Malaysian local companies must focus on their asset tangibility, liquidity and firm size as centre of attraction to deal in their future leverage not only to create positive ambience for potential investors but also to convince prospect creditors in forthcoming expansion or massive projects. In addition, this study highlighted the evidence suggests that the Malaysian oil and gas companies have emphasize good management of assets to curb high leverage which can drag them to bankruptcy. Since the companies are in an asset-intensive industry, using debt to finance purchase is inevitable. Therefore, prudent financing decisions is important to control the level of debt at the same time satisfy the needs of shareholders. In relation the fixed assets, oil and gas companies have been practicing more economical for the companies to lease the assets out their underutilized assets so that they could still earn some income out of it. This is due some foreign oil and gas companies have been found to dispose of them especially during economic recession, which is not cost effective.

In future, researcher who wishes to take up on this study can investigate long term debt-to-assets or short-term debt-to-assets as the proxy of leverage. Besides that, it is learnt that fuel price cost comprises about 22% up to 31% of operating cost of oil and gas companies from 2005 to 2014 ("Economic Performance of the Airline Industry," 2015). This shows that oil and gas industry is very sensitive towards fuel price, as such future researcher can include price of fuel since the high fuel cost will affect the leverage and may increase the risk of the company to insolvency.

## REFERENCES

- "Economic Performance of the Airline Industry "; <http://www.iata.org/whatwedo/Documents/economics/IATA-Economic-Performance-of-the-Industry-end-year-2015-report.pdf>.
- Afza, T. & Hussain, A. (2011). "Determinants of Capital Structure across selected Manufacturing sectors of Pakistan," *International Journal of Humanities and Social Science*, vol. 1, no. 12, pp. 254-262.
- Ali, L. (2011). The Determinants of Leverage of the Listed-Textile Companies in India. *European Journal of Business and Management*, 3 (12), 54 - 59.
- Alkhatib, K. (2012). The Determinants of Leverage of Listed Companies. *International Journal of Business and Social Science*, 3, 78 - 83.
- Ashraf, T. & Rasool, S. (2013) "Determinants of Leverage of Automobile Sector Firms Listed in Karachi Stock Exchange by Testing Pecking Order Theory," *Journal of Business Studies Quarterly*, vol. 4, no. 3, pp. 73.
- Awan, T. N., Rashid, M. & Rehman, M. Z. U. R. (2011). "Analysis of the determinants of Capital Structure in sugar and allied industry," *International Journal of Business and Social Science*, vol. 2, no. 1.
- Bei, Z. & Wijewardana, W. P. (2012). Financial leverage, firm growth and financial strength in the listed companies in Sri Lanka. *Procedia - Social and Behavioral Sciences* 40 (2012) 709 – 715
- Bobinaite, V. (2015). Financial Leverage and its Determinants in Companies Producing Electricity from Wind Resources in Latvia. *Economics and Business*, 29 - 40.
- Ezra files U.S. bankruptcy as offshore services woes spread (2017, March 19), *Bloomberg*. Retrieved from <https://www.bloomberg.com/news/articles/2017-03-19/ezra-files-for-u-s-bankruptcy-amid-hostile-creditors-faceoff>
- Four Reasons Why Airlines Are Always Struggling (2010, June 3), *Forbes*. Retrieved from <http://www.forbes.com/2010/06/03/airlines-struggling-bankrupt-personal-finance-carriers.html>

- Hazarika, I. (2015). Performance Analysis of Top Oil and Gas Companies Worldwide with reference to Oil Prices. *Journal of Energy and Economic Development*, 1(1), 62–78. Retrieved from <http://www.gsmi-ijgb.com/Documents/JEnergyED V1 N1 P04 Indrani Hazarika -Top Oil and Gas Companies.pdf>
- Hussain, S., Hamza, S. and Miras, H. (2015). The Determinants of Capital Structure for Malaysian Food Producing Companies. *International journal of accounting and business management*. 1 (1), 1-25.
- Liau, Y. S. (2017). Why Malaysia's Ready for a Lower-Energy Future: QuickTake Q&A - Bloomberg. Retrieved 23 October 2017, from <https://www.bloomberg.com/news/articles/2017-08-08/why-malaysia-s-readying-for-a-lower-energy-future-quicktake-q-a>
- Nam Cheong to restructure in blow to Singapore bond market (2017, July 20), *Bloomberg*. Retrieved from <https://www.bloomberg.com/news/articles/2017-07-20/nam-cheong-stops-servicing-428-million-debt-as-it-restructures>
- Onofrei, M., Tudose, M. B., Durdureanu, C., & Antona, S. G. (2015). Determinant factors of firm leverage: An empirical analysis at Iasi country level. *Procedia Economics and Finance*, 20, 460 - 466.
- Sabir, M. & Malik, Q. A. (2012). Determinant of Capital Structure - A study of Oil and Gas Sector of Pakistan. *Interdisciplinary Journal of Contemporary, Research in Business*. 20, 395 - 400.
- Vithessonthi, C., & Tongurai, J. (2016). Financial markets development, business cycles, and bank risk in South America. *Research in International Business and Finance*, 36, 472-484.

Yaasmin Farzana Abdul Karim  
Faculty of Business and Management  
Universiti Teknologi MARA, Cawangan Negeri Sembilan, Kampus Rembau,  
71300 Rembau, Negeri Sembilan, Malaysia  
Email: yaasmin@uitm.edu.my

Sharifah Nazura Syed-Noh  
Faculty of Business and Management  
Universiti Teknologi MARA, Cawangan Negeri Sembilan, Kampus Rembau,  
71300 Rembau, Negeri Sembilan, Malaysia  
Email: nazura@uitm.edu.my

Noor Azila Mohd Zaid  
Faculty of Business and Management  
Universiti Teknologi MARA, Cawangan Negeri Sembilan, Kampus Rembau,  
71300 Rembau, Negeri Sembilan, Malaysia  
Email: azila37@uitm.edu.my