



## An Overview: Oil and Gas Capital Structure

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### Abstract

*The topic of capital structure has long been studied by researchers and constitutes one of the most active areas in the field of finance. Studies typically contain empirical evidence and theoretical explanation on how capital structure decisions have been driven by different determinants. However, to date, limited efforts have been devoted to the oil and gas industry even though this industry has a significant impact on economics for most of the countries in the world. Thus, it is important to draw attention to the factors that have an influence on capital structure decisions in the context of the oil and gas industry. Therefore, this study is to reviews empirical evidence that have employed firm-specific factors that generally had been accepted by researchers to be the determinants of capital structure as a way to assess such factors in understanding what motivates oil and gas firms to select a particular source of fund and to provide a significant indication which a firm has to consider before deciding on its capital structure decisions. This information is useful for researchers' studies on oil and gas industry capital structure to underline the research direction.*

### Key words

Capital Structure, Oil and Gas Industry, Trade-Off Theory, Pecking Order Theory, Firm-Specific Factors

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### 1. Introduction

Despite the economic diversification by most of the oil and gas countries producers in the world, the oil and gas industry remains as the main industry in enhancing the economy of a nation (Chakrabarti and Chakrabarti, 2019; Maji *et al.*, 2017). It has created many numerous job opportunities and contributes to the growth of gross domestic product (GDP). In addition, the industry is one of the higher contributors to government revenue through corporate taxes and dividends (via equity holding on the oil and gas firms by government-owned companies). Therefore, the contribution of the oil and gas industry is undeniable. The oil and gas industry is known for its capital intensiveness (Sofat and Singh, 2017). It has been driven by advances in technology as one of the key elements of survival for the firms to compete in the industry (Ebneyamini and Bandarian, 2018). Therefore, the oil and gas industry requiring a huge investment in new and more expensive technology to remain competitive in the industry. On the other hand, for many years, the oil and gas industry has faced extensive threats in terms of the volatility of their earnings (Mitchell and Mitchell, 2014). The industry is sensitive toward the economic cycle. Lately, oil and gas prices have declined, which could have an impact on the oil and gas firms' earnings. The continuing collapse in the price of oil and gas signal creditors about the risk of debt. The problem can be arising when firms unable to generate sufficient earnings. This is because an excessive payment of debt coupled with the low earnings

can drain away any available cash, putting pressure on financial. It is also indicating that if prices of oil and gas remain low, the firms will have difficulties to repay their debt and it becomes challenging for the firms to pay off all debt. As a result, oil and gas firms in the world are forced to take preemptive actions such as pursue the lower-cost projects; curtail employee's benefits, staffs' retrenchment and others just to survive. In addition, continuing collapse in the price of oil and gas gives a signal to current and future investors about their investments. As such, the capital structure of the oil and gas industry is a core challenge that needs to be addressed to safeguard the industry.

Capital structure is the composition between debt and equity. Debt and equity have their own unique risk and return. Therefore, the proper composition of debt and equity not only able to reduce the cost of capital, but also increase the firm's value and shareholders' wealth. However, balancing the composition of debt and equity is quite challenging. A wrong capital structure decision has the tendency to put a firm in the financial distress situation and subsequently the risk of bankruptcy (Ahmed Sheikh and Wang, 2011). In addition, a huge number of firms file for bankruptcy due to the overburden of debt or improper composition of debt and equity (Chadha and Sharma, 2015). Therefore, the study of determinants of capital structure is to understand the reason behind the selection of a particular fund over the other.

Nevertheless, despite numerous studies that have been conducted, it remains inconclusive. This is because there is no consensus on the findings, make the capital structure decision poorly understood. Perhaps one of the reasons is the type of industry. Previous studies (Taddese Lemma and Negash, 2013; Ullah *et al.*, 2017) had identified that each industry differs tremendously with regards to the capital structure decisions. Therefore, there is a growing study specifically focuses on a certain industry. Yet, so far, very few studies on the determinant of capital structure in the context of the oil & gas industry have been carried out as compared to the other industries. Because of the uniqueness of this industry, it is suggested that the oil & gas industry may have different capital structure decisions.

In spite of the emerging studies by including external factors that also have an influence on the firm's capital structure decision, much of the work largely still focusing on the internal factors. There are factors specific to the firm's own characteristics. This study, notwithstanding, still fall within the rubric of internal factors which is firm-specific factors as the result of previous studies remains inconclusive and debatable. In addition, capital structure decisions are greatly influenced by this firm own characteristics (Huong, 2018). Therefore, this study is to reviews empirical evidence that have employed firm-specific factors that generally had been accepted by researchers to be the determinants of capital structure as a way to assess such factors in understanding what motivates oil and gas industry to select a particular source of fund and to provide a significant indication which a firm has to consider before deciding on its capital structure decisions.

The structure of this study is as follows: Section two provides an overview of the theories of capital structure. Section three discusses determinants of capital structure. Lastly, section five outlines the conclusion from the study.

## **2. Literature review**

### **2.1. Theories of Capital Structure**

The study on the capital structure has begun with the introduction of irrelevance theory by Modigliani and Miller (1958). The theory is known as Modigliani Miller (MM) theory and it works under the perfect market where there are no taxes, bankruptcy cost, transaction cost, and asymmetric information (the same information is accessible by insiders and outsiders of the firm). Therefore, how the firms are financed is an irrelevance to the firm value and shareholders' wealth. Meaning that the firm value does not affect by the way's capital structure is constructed. Therefore, firms should not concern about the capital structure decision and they are free to change the composition of debt and equity as it has no impact on the firm value.

However, the perfect market portrayed in the MM theory does not exist in the real world. Deemed as a drawback of the theory had led to the existence of numerous theories of capital structure such as Agency cost theory (Jensen and Meckling, 1976), Trade-off Theory (Myers, 1984), Pecking Order Theory (Myers and Majluf, 1984), and Market Timing Theory (Baker and Wurgler, 2002).

As the development of capital structure theories has helped researchers to understand the reason for a selection of a particular source of financing decision, yet, each of the theories has a contradict prediction on the factors that have an influence on the firm's capital structure decision. Among these theories, Trade-off theory and the Pecking Order theory was identified as the most prominent theory in explaining capital structure decisions (Sakr and Bedeir, 2019). Nevertheless, none of these two theories able to fully explain the capital structure decision made by the firms but it is the mix of these theories that able to explain firm capital structure decisions (Allini *et al.*, 2018; Zafar *et al.*, 2019). As mention by Myers (1984), "there is no universal theory of debt-equity choice, and no reason to expect one". Therefore, it is undeniable that both theories are important in explaining the firm's capital structure decision. Furthermore, the mixture of these theories enables researchers to understand in terms of why firms make these capital structure decisions and therefore, understand how it may affect the firm's value shareholders' wealth.

## **2.2. Trade-off Theory**

Trade-off theory comes into existence when Modigliani and Miller restated the original MM proposition (Modigliani and Miller, 1963). The restatement published in 1963 restated the old irrelevance capital structure theory by adding tax into the theorem. Interest on debt is tax-deductible. Thereby, reducing the amount of tax that a firm needs to pay and directly increase the firm value. In this theory, firms are portrayed to seek the debt level that balances the benefits and the costs of debt because of the existence of the optimal capital structure which not only able to minimize the cost of capital and maximize the firm's value but also able to maximize shareholders' wealth. Moreover, this theory suggests that firms in the need of financing should issue debt when leverage levels are below the optimal and seek for equity when the leverage levels are more than optimal.

## **2.3. Pecking Order Theory**

Pecking Order theory explains that firms make capital structure decision by considering the information asymmetric that exist between various parties of firms such as managers, creditors, and external investors (Myers and Majluf, 1984). Therefore, firms follow a financial hierarchy with retained earnings as the first option. In the absence of it, the firm will finance with debt and equity as the last option they will look for. The order of the source of funds interpreted that firms with high profit will have less leverage in their capital structure. In addition, by issuing debt and equity give a different message to investors. Debt signals to investors that the firms are confident that they can service the debt, while equity shows that the firms are overvalued and this will lead to a fall in the share price.

## **2.4. Determinants of Capital Structure**

Profitability, asset tangibility, growth opportunities, liquidity, non-debt tax shield, business risk, and firm size are the main variables that can be found in most of the literature. These variables are used to understand the influenced on the capital structure decisions made by the firms. In addition, these variables that used to study in developed countries also applicable in understanding the capital structure decisions for developing countries (Booth *et al.*, 2001; Zafar *et al.*, 2019). However, the empirical evidence on the influence of these variables on capital structure decisions is heterogeneous. Some empirical evidence show that these variables have positive and some show negative influence on capital structure decisions, depending on the country and the industry of the studies. These results imply that the determinants of capital structure not only have different effects in terms of the countries under the studies but also to which industry that they are looking at (Ullah *et al.*, 2017). The implication is that these types of patterns should become clearer when we test the relation not only on the specific country but also on the specific industry such as the oil and gas industry.

## **3. Conclusions**

The introduction of irrelevance capital structure theory by Modigliani and Miller (1958) has led to the emergence of the new capital structure theories. These theories have taken into consideration of

imperfection of the market. Despite that, Trade-Off theory and Pecking Order theory was identified as the prominent competing theories. However, none of these two theories able to fully explain the firm's capital structure decision. In addition, both theories have contrast prediction on the factors that have an influence on the firm's capital structure decision. Again, the better papers in the literature have identified how each industry can have a differed result, and this will be a key issue as the literature moves forward. Yet, studies on determinants of capital structure tend to incorporate all industries as an indicator to study capital structure decisions and neglect specific industries. Moreover, inconsistent results by previous studies paved the way for future studies specifically on the oil & gas industry as the theory of capital structure from the oil & gas industry's perspective has not been reached. Hence, further studies should be carried out to establish consensus from all available empirical evidence including from the oil and gas industry perspective.

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