



## **Capital Structure and Firm's Sustainability: Evidence from Malaysian Oil and Gas Companies at Bursa Malaysia**

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### **Abstract**

The purpose of this paper is to study the determinants of capital structure for companies which are listed at Bursa Malaysia Securities Berhad under the oil and gas industry. This paper has identified 39 oil and gas companies whose revenues have been detrimentally affected by the recent oil price crisis. The oil and gas industry has remained strong in Malaysia despite the economic challenges and has continued to show positive growth and signs of recovery. The selected companies have been analyzed based upon the documentary evidence and this study reveals that the financial conditions in most of the observed companies are well explained by the Trade-off Theory and the Pecking Order Theory. The literature gap in the study of capital structure determinants has also been thoroughly deliberated in this paper.

**Keywords:** Capital Structure; Trade-off Theory; Pecking Order Theory; Bursa Malaysia; Oil and Gas Industry

### **Abstrak**

Tujuan penelitian ini adalah untuk mempelajari faktor-faktor penentu struktur modal bagi perusahaan yang terdaftar di Bursa *Malaysia Securities Berhad* pada industri minyak dan gas. Penelitian ini mengidentifikasi 39 perusahaan minyak dan gas yang pendapatannya dipengaruhi oleh krisis harga minyak baru-baru ini. Industri minyak dan gas tetap kuat di Malaysia, meskipun ada tantangan ekonomi dan terus menunjukkan pertumbuhan positif dan tanda-tanda pemulihan. Perusahaan terpilih telah dianalisis berdasarkan bukti dokumenter dan studi ini mengungkapkan bahwa kondisi keuangan di sebagian besar perusahaan yang diamati dijelaskan dengan baik oleh Teori *Trade-off* dan Teori *Pecking Order*. Kesenjangan literatur dalam studi determinan struktur modal juga telah dibahas secara menyeluruh dalam penelitian ini.

**Kata Kunci:** Struktur Modal; Teori Trade-off; Teori Pecking Order; Bursa Malaysia; Industri Minyak dan Gas



## INTRODUCTION

Capital structure is defined as the combination of debts and equity used to finance an organization or an investment (Myers, 2000). Wallstreet (2022) defines capital structure as the combination of debts, preferred shares and common equity that are commonly used by companies to finance their operations and in acquiring of assets.

Numerous studies have been conducted on capital structure determinants for years and research shows that determinants of capital structure in specific industries still lacks due to under examinations (Kumar et al., 2017). Extensive research in the field of capital structure started after Modigliani and Miller set the foundations for capital structure theories. Most of the research was focused on optimal capital structure which failed to include factors which can influence optimal capital structure (Arsov & Naumoski, 2016). Optimal capital structure is defined as the right combination of debts and equity which is aimed to maximize the value of an organization and at the same time minimizes the cost of capital (Athena, 2022). Eventually, the focus on capital structure has shifted towards investigating the factors which influences capital structure and tries to proof that a single model will not be able to fit all companies (Arsov & Naumoski, 2016). The gaps for search of optimal capital structure still remains.

Financial managers play an important role in a company to ensure sustainability by making the right decisions when it comes to capital structure (Sanusi & Taha, 2015). Financial managers determine the proportion of debt and equity which are used to finance the company's operations and investments (Sanusi & Taha, 2015). Even though, there are many empirical studies on how financial managers determines the optimal capital structure, the question remains what are the capital structure determinants for companies in Malaysia? There are lack of studies done to identify the capital structure determinants in a specific industry such as the oil and gas industry. Most researches are done in general focusing on the companies which are listed on the Bursa Saham Malaysia but not to a specific industry.

Hence, in this paper we will study capital structure determinants on the oil and gas industry in Malaysia. One of the key producers of oil and gas in the Asia Pacific Region is Malaysia. The country takes pride in producing over 1.7 million barrels of oil daily (Petronas, 2022). According to U.S Energy Information Administration, Malaysia is the second largest oil and gas producer in Southeast Asia and it is the world's fifth largest exporter of liquefied natural gas (U.S. Energy Information Administration, 2021). Miri, Sarawak is where Malaysia's first oil was discovered over a century ago, which resulted in the establishment of The Petroleum Mining Act legislation in 1966 (PWC, 2016). Despite of the challenges faced by the companies in the oil and gas industry, Malaysia still continues to be one of South East Asia's best oil and gas reserve (PWC, 2016). Which brought us here, to understand what is the determinants of the capital structure in companies under the oil and gas industry, which made it to sustain for centuries.

Oil and gas industry is one of the most successful industries in Malaysia but now some of the companies have problem. For example, Hibiscus Petroleum Berhad. Hibiscus Petroleum Berhad is the first oil and gas production company listed in Bursa Saham Malaysia in 2011. Despite the financial situations that hit globally, Hibiscus Petroleum Berhad reported a net profit of RM 48.49 million at the end of year 2021 which is an increment from year 2020 which reported a net profit of RM 12.02 million (Hean, 2022). The company also reported a significant increase in its revenue by almost 50% in year 2021 and an increase in its earnings per share (Hean, 2022). However, in 2022 the company's UK Crown field license was terminated which had a financial and operational

impact whereby it reported USD 2.5 million of impairment loss (Adilla, 2022). Nevertheless, the company's financial performance has not been affected by it, which leads us to investigate the determinants of the capital structure of this company which has affected the growth of the company.

Another example is Petron Refining and Marketing Berhad which is the emerging oil and gas producer in Malaysia which started in 1960. In 2020, the company reported a net loss of RM 13.32 million and in 2021 the company reported a net profit of RM 238.47 million (Hean, 2022). The growth was driven by the increasing demand as well as the National Recovery Plan (Hean, 2022). However, in 2020 the company reported over RM 1.07 billion of liabilities which are due within a year (Simply WallStreet, 2021). The shareholders are keeping an eye on this company in terms of use of debts (Simply WallStreet, 2021). The company is known as one of the riskiest stocks to invest in as too much debt may have the risk of sinking the company (Simply WallStreet, 2021). Nevertheless, the company has a cash reserve amounting to RM 146.9 million and receivables of RM 232.3 million (Simply WallStreet, 2021). The company has also shown a significant increase in its net profit in year 2021 (Simply WallStreet, 2021).

Other than that, recently Sapura Energy Bhd was reported to be on a verge of bankruptcy. Sapura Energy is facing renewed financial challenges as it has reported a large after-tax loss of 1.52 billion ringgit or \$363 million US dollar, in the quarter ending 31 July 2021. Later, Sapura faces net loss and its group revenue declined about 747 million ringgit or 38.7% from last year. Besides of its losses, Sapura Energy also reported liquidity concern as it has nearly 11 billion ringgit of debt which far surpasses its market capitalisation. This brings us to investigate the determinants of the capital structure of this company which has led to the growth and sustainability.

## **LITERATURE REVIEW**

One of the key producers of oil and gas in the Asia Pacific Region is Malaysia. Prior to that, Malaysia economy was dependent on tin and rubber, until the nationalization of petroleum resources took place in the 1970s which resulted in the establishment of The Petroleum Mining Act legislation in 1966 (PWC, 2016). The history goes back to the British Colonial rule in Malaysia in which the first oil was discovered. This is supported by PWC (2016) which stated that Malaysia's first oil was discovered over a century ago in Miri, Sarawak in 1911. At that time, Malaysia was limited due to lack of advancement in technology as well as increasing crude oil prices (The Malaysian Reserve, 2018). Post 1960's as the advancement of technology happened the oil industry in Malaysia started to boom. The federal government was able to take ownership of the oil and gas assets post 17 years after independence. Post nationalization of oil and gas resources, Malaysia has achieved high-income status. The oil and gas industry plays an important to the Malaysian economy whereby it contributes over 41% of the country's revenue in 2009 (The Malaysian Reserve, 2018).

The first company which led to the nationalization of the oil and gas industry is Petroliam Nasional Bhd or known as Petronas (The Malaysian Reserve, 2018). The company has become a part of Fortune 500 company and has joined the ranks of globally recognized companies such as Royal Dutch Shell Plc and Exxon Mobil Corporation (The Malaysian Reserve, 2018). As the nation celebrates the success of the oil and gas industry, the companies were challenged by the oil crisis which happened in 2014 and affected the global oil prices. The crude oil prices decreased from USD 100 per barrel to USD 28 per barrel (The Malaysian Reserve, 2018). The companies in oil and gas industries are

burdened with debts that they unable to pay off as well investors which suffered alongside (The Malaysian Reserve, 2018). As a result, most of the oil and gas related projects which costed heavily are forced to be terminated as the investment returns will not be able to justify the cost of investment (The Malaysian Reserve, 2018).

After 61 years of independence, Malaysia under the new ruling coalition led by Prime Minister Tun Dr Mahathir Mohamad made an initiative to focus on the energy companies in order to boost the country's economy (The Malaysian Reserve, 2018). However, the initiative includes higher royalties oil producing states which affected the profitability of oil and gas companies and upstream petroleum resources are under the regulatory control of Sarawak which might have a negative impact on the oil and gas industry outlook on investments (The Malaysian Reserve, 2018). Another controversy which affected the oil and gas industry was the RM 1 trillion debt hole which has led to cancellation of big projects, renegotiations of previous contracts and reductions of costs (The Malaysian Reserve, 2018).

### **Reasons for listing at Bursa Malaysia**

All the 39 companies were listed under Bursa Malaysia for several reasons. Firstly, majority of Malaysians know the market share of the energy sector and the revenue that it contributes to the Malaysian economy, hence public listing will attract more investors into the local stock market (Mansur, 2019). This fulfils the quantitative admission criteria in Bursa Malaysia, which is the market capitalization test of at least RM 500 million which is fulfilled by all the companies (Bursa Malaysia, 2022). Secondly, energy index in Bursa Malaysia has seen a continuous increase, hence listing energy companies will be Malaysia's best strategy (The Star, 2022). This fulfils the quantitative criteria set by Bursa Malaysia, whereby the profits should be uninterrupted for three to five consecutive financial years of at least RM 20 million (Bursa Malaysia, 2022). All listed the companies must maintain at least RM 20 million annual profits. Thirdly, the energy stocks listed in Bursa Malaysia have a huge spread of public shares in them (Bursa Malaysia, 2022). Last but not least, all the listed energy companies must ensure at least 50% allocation of Bumiputera equity during the initial public offering (Bursa Malaysia, 2022).

### **The Performance of Oil and Gas industry in Malaysia**

The country takes pride in producing over 1.7 million barrels of oil daily (Petronas, 2022). According to U.S Energy Information Administration, Malaysia is the second largest oil and gas producer in Southeast Asia and it is the world's fifth largest exporter of liquefied natural gas (U.S. Energy Information Administration, 2021). Despite of the challenges faced by the companies in the oil and gas industry, Malaysia still continues to be one of South East Asia's best oil and gas reserve (PWC, 2016).

### **Sapura Energy's Financial Turmoil**

Sapura Energy Berhad was one of the companies in the energy section which was severely affected by the sharp decline in the global crude oil price which happened five years ago (The Edge Markets, 2021). Even though the oil price has improved by more than 60% since 2021, there are still many companies which are struggling to recover from huge losses when Brent Crude Oil fell below USD 85 per barrel in late October 2021 (The Edge Markets, 2021). The classic case in Malaysia is Sapura Energy Berhad. This company reported a net loss of RM 1.52 billion in 2021 and for a record it was the world's second largest oil and gas service provider in 2014. However, this reputable company has lost 94% of its market capitalization in 7 and a half years (The Edge Markets, 2021). The

reason behind its poor performance is mainly due to poor risk management which was highlighted by the CEO of Sapura Energy, Datuk Anuar Taib (The Edge Markets, 2021). Another possible reason which was stressed by the CEO is poor corporate governance in Sapura Energy itself (The Edge Markets, 2021).

### **Capital Structure Theories**

There are some good capital structure theories that can be associated with Malaysian oil and gas companies. Specifically, this study will put its emphasis on explaining the nature of capital structure in this industry together with identifying the literature gap. It is important to note that theories are important in academic research because they provide plausible evidence of facts that explain what we see. There are six capital structure theories to be presented and thoroughly deliberated in this study.

#### ***Modigliani and Miller Theory***

The foundations to capital structure were first set by Modigliani and Miller in 1958. It was concluded that firm's value is not dependent on the combination of debt and equity with the assumptions of perfect markets. In other words, capital structure is irrelevant in perfect market which ignores the corporate tax and transaction cost (Arsov & Naumoski, 2016). This resulted in research by Jensen and Meckling (1976) whereby they established the Agency Cost Theory. Agency Cost Theory suggested that managers are least interested in maximizing the wealth of the shareholders and more interested in maximizing their own wealth (Surana & Bankar, 2020). Therefore, the main focus of Agency Cost Theory is on control and monitoring costs (Surana & Bankar, 2020). In 1977, Miller revised their assumption and added the personal income taxes and corporate taxes, whereby they concluded that optimal capital structure is when the company is full financed by debts (Arsov & Naumoski, 2016) as the company benefits from interest tax shields. The foundations set by Modigliani and Miller has risen many other researches to find the solution for the optimal capital structure. However, the results vary and there has been no consistent outcomes (Myers, 1984).

#### ***Trade-off Theory***

This theory is also known as the Static Trade-off Theory and is based upon the predictions of firm's value from the capital mix that involves both of debt and equity financing (Myers, 1984). According to the Static Trade-off Theory, the optimal debt ratio is determined by a tradeoff between costs and benefits of the debts, company's assets and investment plans (Myers, 1984). The value of interest tax shields will be balanced by the firms against cost of bankruptcy (Myers, 1984). Despite the existence of controversy on the value of the tax shields, it only provides variations (Myers, 1984). Based on his research, it has been recognized that firms will not be able to continuously minimize the cost of capital. Therefore, as the theory implies, the firm needs to make a tradeoff between equity and debt. This theory is justified if there are no costs of adjustments, hence the debt-to-value of the firm will be optimal (Myers, 1984). However, cost will definitely exist hence firms try to adjust the actual debt ratio and the target debt ratio to account for these costs (Myers, 1984). In most cases, managers are either unaware of the adjustment costs or just ignore it. Thus, the optimal debt ratio remains unknown (Myers, 1984). For example, a firm might reach a point beyond which its debts become more expensive due to increased risk of bankruptcy (Adesola, 2009). Theory suggests that when such cases happen, creditors will demand higher level of interest rate or might choose not to grant additional debts for the firms (Adesola, 2009). Subsequently, the firms will be made to

increase the equity financing to trade off the debt financing as the high level of debts put the shareholder's position in a very risky state (Adesola, 2009). Too high debts increase the cost of capital; therefore, the combination of debt and equity helps to minimize the entire company's cost of capital as suggested by this theory (Adesola, 2009). Moreover, the theory also suggests that the optimal mix between debt and equity could maximize shareholder's value (Adesola, 2009). One major drawback of the static trade off theory is that, the firm is able to minimize its cost of capital but it also loses on its tax advantages (Adesola, 2009). Equity financing is very costly as the firm will have to pay dividends and this is costlier for the firm (Adesola, 2009). Even though the firm has gained from reduced bankruptcy risk, it has also lost its tax advantage. Hence increasing the tax payable results in lower net profit reported (Adesola, 2009). Secondly, the theory suggests that managers need to find the right balance between equity and debt financing. However, the theory does not explain the details.

### ***Dynamic Trade Off Theory***

The Dynamic Trade-off Theory resolves the issue of time dimension, expectations and adjustment costs (Luigi & Sorin, 2009). In this theory, the financing decision of the firm is highly dependent on the financing margin which are anticipated in the next period (Luigi & Sorin, 2009). In general, firms expect to pay out its funds in the next period, whereas other firms will have an expectation to raise funds (Luigi & Sorin, 2009). If firms were to raise funds, they will either take debt or equity or a combination of these two. The dynamic theories were mainly contributed by Stiglitz (1973), whereby the effects of taxation have been examined. However, Stiglitz (1973) removes uncertainty so it cannot be considered as dynamic theory. Kane et al (1984) create the first dynamic model which considers the trade-off between tax savings and bankruptcy cost. The study by Kane et al (1984) consider the elements of uncertainties such as taxes and bankruptcy cost using a continuous time model.

### ***The Pecking Order Theory***

Pecking Order Theory is based on internal financing method and only seeks for equity financing as its last resort (Caselli & Negri, 2021). According to this theory, firms will be utilizing its internal and existing funds from issuance of debts, and once it is depleted, the firms will be financing with equity financing (Caselli & Negri, 2021). Myers (1984) argued that internal funds such as retained earnings are a better choice than debts and debts are better than equity. The hierarchy on the choices of financing according to this theory is internal financing first, then debt financing and finally the equity financing (Caselli & Negri, 2021). The hierarchy in which the firm chooses depends highly on its financial growth cycle (Caselli & Negri, 2021). In some cases, the theory suggested that equity financing comes first such as for venture capitalist whereby equity financing is better due to uncertainty of startup companies (Caselli & Negri, 2021). The issue that has been identified with the theory is that the theory made assumption managers are acting in the best interest of shareholders (Constantinides et al., 2003). The theory does not include on the reasons on why managers will be concerned over the value of the issuance of stocks. Hence, the decisions on the optimal capital structure are not assured (Constantinides et al., 2003). Moreover, the theory fails to provide explanation on the choice of financing are not developed to avoid manager's superior information (Constantinides et al., 2003). Managers are more aware of the information available today and this information will only be available to shareholders in future date, hence the pecking order theory fail to address this issue (Constantinides et al., 2003). Last but not

least, the pecking order theory was developed for simple financial setting and not the complicated setting, therefore firms are only given a choice between equity and debt financing (Constantinides et al., 2003).

### ***The Market Timing Theory***

The argument made by the market timing theory is that firms tend to issue new stocks if they perceive the stock prices to be overvalued. In the event when the stock prices are believed to be undervalued, then firms will buy back their own shares (Luigi & Sorin, 2009). As a result, the capital structure of the firm is affected due to the fluctuations in the stock prices (Luigi & Sorin, 2009). There are two assumptions which lead to this market timing theory. Firstly, the theory makes an assumption that there is a rationale behind the economic agents (Luigi & Sorin, 2009). When there is a positive information release that reduces the asymmetry issues between the stockholders and management of the firm, the firms are assumed to issue equity. On the other hand, if there is a lack of information asymmetry between the stockholders and the management of the firm, there will be an increase in the stock price (Luigi & Sorin, 2009). In this situation, firms will be creating their own timing opportunities. Secondly, the theory makes an assumption that the economic agents are irrational (Baker & Wurgler, 2002). When economic agents are irrational, there will be a time for these stocks to be mispriced. In such a situation, the financial managers will be issuing equity as they believe that the cost is low and vice versa (Luigi & Sorin, 2009). Baker & Wurgler (2002) states that their study has presented evidence that there is a persistent effect on the capital structure due to equity market timing. The market timing pressure is defined as weighted average of external capital needs and these weights are considered as market to book values (Baker & Wurgler, 2002). It has been concluded that the capital structure of a firm is a combination of results produced from past attempts to time the equity market (Baker & Wurgler, 2002).

### ***Agency Theory***

Agency theory is another celebrated capital structure theory and it is based on the fact that financial managers make decision for their own best interests and are reluctant to maximize shareholders' wealth (Mostafa & Boregowda, 2014). This theory is based on the conflict between financial managers and shareholders. As the financial managers are inclined to maximize their own wealth, the shareholders are limited with the monitoring and controlling costs (Mostafa & Boregowda, 2014). As a result, the pecking order theory was established, whereby shareholders are paid dividends in order to decrease the resources in which the managers are controlling so that it will reduce their power (Mostafa & Boregowda, 2014). A firm's growth is strongly associated with managerial incentives, therefore as the firm grows the management control by the financial managers will also grow and eventually increases their power (Mostafa & Boregowda, 2014). This has led to another conflict between the financial managers and shareholders over the pay-out policy especially when the firm has a lot of cash (Jensen, 1999). According to Grossman & Hart (1982), debt will help the managers make better investment decision as they will also bear the bankruptcy cost. On the other hand, having debts has its consequences too, whereby the managers might choose to invest in safer stocks and they might miss on investing in some good projects. Agency theory stated that the value of the firm has a direct relationship with debts (Mostafa & Boregowda, 2014). Debts also has direct relationship with free cash flow, liquidity and managerial reputation (Mostafa & Boregowda, 2014). The theory also suggests that having debts will affect the growth of

the firm, opportunities, interest coverage and cost of investigation negatively (Mostafa & Boregowda, 2014). A study conducted by Bradley et al (1984) stated that their findings are consistent with the agency theory. Their study also stated the increase in liquidation will increase the debts (Bradley et al., 1984). Moreover, debts have been found to be related to the managerial equity ownership but this has been disputed by Friend & Lang (1988). They found that there is no significant relationship between debts and managerial equity ownership.

After going through all the six theories, we find that there is an important gap in the literature. The study on firm's capital structure in Malaysian oil and gas industry is still under-explored. Most of the empirical findings are derived from European and American studies and there is a need to look into the Malaysia's context.

## **Methodology**

The key determinants to capital structure that are used in this case study are firm's cash flows and its cost of capital. These determinants can provide us with an important insight on the companies' past performance. As for debt to equity ratio, it gives us an indication as to whether the company is strongly financed by either equity or a debt. It is important to see whether the company has sufficient amount of cash to support its business operations during difficult times.

This study has utilized the statements of accounts of 39 energy and oil companies at Bursa Malaysia. Below are the parameters used to establish capital structure determinants in the energy sector in Malaysia.

### **Debt to equity ratio**

It provides an insight of company use of debt. Debt to equity ratio is also known as leverage ratio because it measures the degree to which the company is finance with debt or equity. Generally, company with a high debt to equity ratio is considered a higher risk to lenders and investors because it suggests that the company is financing a significant amount of its potential growth through borrowing. If the assets financed by debt yield a return greater than the cost of the debt, the earnings per share will increase without an increase in the owners' investment. Similarly, the earnings per share will also increase if preference share capital is used to acquire assets. But the leverage impact is felt more in case of debt because (i) the cost of debt is usually lower than the cost of preference share capital, and (ii) the interest paid on debt is a deductible charge from profits for calculating the taxable income while dividend on preference shares is not. Because of its effect on the earnings per share, financial leverage is one of the important considerations in planning the capital structure of a company

### **Cash Flow**

Conservation is one of the characteristics of a sound capital structure. Conservation does not imply that no debt or only a minimal amount of debt is used. Conservatism is concerned with assessing the firm's ability to earn cash to fulfil fixed charges created by the use of debt or preference capital in the capital structure. A company's fixed charges include interest, preferential dividends, and principal. If the company uses a lot of debt or preferred capital, the fixed charges will be quite expensive. When a corporation considers taking on more debt, it should consider how it will meet the fixed charges in the future. It is mandatory to pay interest and repay the debt's principle. In comparison to a firm with an unstable and lower ability to create cash inflows, one that can generate greater and



more stable cash inflows might use more debt in its capital structure. Financial debt entails a fixed charge burden due to the fixed payment of interest and principal. When a company needs to raise money, it must predict and project future cash inflows to ensure that fixed costs are covered.

### **Cost of capital**

Every dollar that is invested in a company has a cost. The cost of capital refers to the minimum return expected by its suppliers. The expected return depends on the degree of risk taken by investors. Shareholders are assumed to be at a higher risk than debt-holders when it comes to investing in a company. Capital structure should provide enough capital to cover the costs of investing. There is a lot of complexity involved in assessing the costs of various funding sources. It would need a separate treatment to be fully understood. Needless to say, it is desirable to minimize the cost of capital. Cheaper sources are preferable, other things being equal. The main sources of finance for a business are equity share capital, preference share capital, and debt capital. The return that a company expects from investing in capital depends on the risk it is taking. For shareholders, the rate of dividend is not fixed, and the Board of Directors has no legal obligation to pay dividends even if the profits have been made by the company. The loan of debt-holders is repaid within a prescribed period, while shareholders can get their capital back only when the company is wound up. This suggests that debt is cheaper than equity sources of funding. The tax deduction of interest charges reduces the cost of debt. The preference share capital is cheaper than equity capital, but is not as cheap as debt is. In order to keep the overall cost of capital down, a company should use a lot of debt.

### **CONCLUSION**

The main motivation of this study is to investigate the key determinants of capital structure for oil and gas companies which are listed in Bursa Malaysia. This paper has identified 39 oil and gas companies whose revenues have been detrimentally affected by the oil price crisis. The oil and gas industry has remained strong in Malaysia despite the economic challenges and has continued to show positive growth and signs of recovery. The selected companies have been analyzed based on their historical performance and this study has revealed that the financial conditions in most of these companies are very much explained by the Trade-off Theory and Pecking Order Theory. All the six capital structure theories have been deliberated thoroughly in the earlier section.

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