# Empirical Evidence from the Insurance Industry on Product Market Competitiveness and Capital Structure

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**Abstract:** Research shows that capital structure has an important effect on the product-market competitiveness of firms. This study adds to our understanding of the nature of this relationship by developing a research model that takes into account the insured's market share (MS), the concentration ratio of the market's largest companies (CR), and Herfindahl-Hirschma Index (HHI) as independent variables, and financial leverage as dependent variables. A sample of 21 insurance companies in Saudi Arabia for a period of ten years from 2009–2019 was considered. The findings reveal that there is a significant association between product market competition and capital structure. Due to the small sample size, the generalizability of the results is limited. It is recommended that future studies deal with a longer period of time with larger sample size and addition. It is recommended that future studies include more variables, such as the effectiveness of anti-friction laws in the industry.

**Keywords:** Product market competition; Capital structure; Insurance Industry.

## INTRODUCTION

One of a company's main goals is to increase profitability, which implies increasing the wealth of the company's owners or shareholders. As we all know, profitability is influenced by a variety of factors. One of these factors is making sensible financial decisions on the optimal capital structure, which reduces the company's cost of capital. Therefore, the capital structure is critical in defining the firm's financial success and meeting the expectations of stakeholders who always seek an increase in the value of their organization (Ali and Nawab, 2016).

Furthermore, capital structure decisions are essential for every organization's capacity to optimize return to diverse stakeholders as well as to deal with its competitive environment. The capital structure is characterized as a scope of options that could be received by a company to get funding for operations that are predictable and meet its demands.

In order for companies to be able to withstand and achieve profits in light of the intense competition in some sectors, they must follow certain strategies, including increasing their product-market competitiveness by increasing their market share. This means that companies will need more financial resources. Therefore, we can understand the link between product market rivalry and the financial decisions made by executives. A company with enough resources may take market share from competitors by boosting research and development spending and expanding its network. As a result, a firm with good finance capabilities is more likely to have a competitive edge in the market.

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Most recent theories suggest that organizations may have incentives to use their capital structures to commit to specific product market strategies. In many of these studies, debt financing pushes companies into more robust production strategies. According to Brander and Lewis (1986), in order for firms to be able to increase their profits in a highly competitive situation, they follow the strategy of increasing debt to obtain adequate financial resources.

Other estimates predict that high leveraged enterprises suffer from possible competitive advantages in the product market, according to the theories and literature study. In concentrated marketplaces, leveraged enterprises are more vulnerable. Although these sets of models do not accord on the projected influence of capital structure on pricing, they agree that capital structure may be exploited as a value-increasing strategy in product market competition.

Companies' financial decisions alter in response to changing product market circumstances, since managers' financing decisions have a substantial influence on the company's competitive capacities. Competitiveness, on the other hand, influences the company's ability to continue operating. Also, the capacity to increase return on investment, maintain market share, or force away competitors. As a result, this study examines the influence of competition on capital structures in the Saudi insurance sector, a sector that is particularly well suited for our research due to the significant variation in the levels of competition that the insurance sector faces.

## LITERATURE REVIEW

Market concentration in economics is determined by the number of enterprises and their proportional shares of total production in a market. In other words, market concentration indicates the level at which the market productions belong to several a large company. Concentration is defined by Jacob-

son et al (1996) as the degree of competition or total market domination. The concentration index should contain information about the number of enterprises and their proportion to the competition. It gives a detailed picture of the structure of the market.

In recent years, researchers have begun to delve deeper and explore the impact of market structure on the company's behaviour in financing its operation, among these researchers, Harris and Raviv (1991) have indicated that competition in the product market may be one of the most important factors affecting capital structure. The decision on the optimal capital structure became not only related to reducing the company's financing costs, but rather it became related to the company's ability to withstand and compete in the product market.

Therefore, the company has sufficient capital, it will enable the company to expand its market share and thus will enable the company to increase its competitiveness in the product market and increasing sales channels. For businesses, cash holdings are intimately tied to the competitiveness of the product market. This is because cash is one of the most liquid assets, and a firm with enough cash may take market share from its competitors by extending its sales network and boosting R&D investment. Benoit's (1984).

However, due to opportunity cost, the company usually has limited cash holdings and, consequently, it is not always possible to satisfy the capital demand even though the company's financing capacity is essential. A company with a high finance capability is more likely to have a competitive advantage in the market Kinsman & Newman (1999). stated that the company must carefully choose its capital structure to be able to develop in the long run and this will help the company to build expansion plans and better face its competitors. In order to explain the link between the capital structure and the company's ability to compete in the product market, we will discuss two hypotheses from opposite perspectives

The first theory is called the theory of strategic commitment, and it assumes that the greater the leverage, the more the company's ability to compete will increase. According to this theory, because the corporation has limited liability, it tends to increase debt financing in order to get the money needed to boost output. Therefore, a higher debt ratio means that the company is moving towards more competitive behavior in the market. That is, the company expands its manufacturing volume, which in the end will lead to achieving a greater market share and thus obtaining a strategic competitive advantage Brander and Lewis (1986). Hence, in a low-concentration industry with few technological impediments, and where competitors usually have modest debt levels, an increase in the company's leverage ratio is beneficial to greater output and product-market performance, this hypothesis is also endorsed (Maksimovic, 1988: Bolton, Scharfstein, 1990).

From another point of view, the second theory is called the deep pocket, or the long portfolio theory proposed by Telser (1966). The assumptions of deep pocket theory about the effect of financial leverage on a firm's ability to compete are contrary to the theory's propositions of strategic commitment

theory. Where the theory of deep pocket suggests that high financial leverage will negatively affect the company's share in the product market, or in other words the company's ability to compete.

According to this theory, using external finance exacerbates the company's financial instability. A high level of debt restricts a company's prospective borrowing power, preventing it from expanding its market share and reducing market competitiveness. Furthermore, rivals with little financial limitations may use aggressive rivalry techniques against competing organizations, such as decreasing prices, seizing the profits of companies with high debt levels, and even removing them from the market, to get a larger market share. Telser, (1966). Supports deep pocket theory (Opler, Titman, 1994). When we look at the issue of capital structure and market concentration, we should review a study of Brander and Lewis (1986), as it is considered one of the first theoretical study that examine the relationship between capital structure decisions and market concentration. The conclusion of the study is that in concentrated markets, due to the influence of limited liability, financial leverage will lead to tighter competition. moreover, the results were reached by Maksimovic (1988). it was consistent with the previous study, where the researcher emphasized that at high levels of concentration the company uses higher debt levels to increase production when opportunities arise to earn higher profits. From the above, we can conclude that there is a positive relationship between financial leverage (debt financing) and market concentration.

From another point of view, both agency cost theory and tax shield theory advanced by Modigliani and Miller (1963). assume a positive correlation between capital structure and market structure. Because interest expenses are tax-free, the tax shield hypothesis implies that prosperous corporations borrow more to save taxes. The agency cost hypothesis posits that firms would borrow more in order to pursue a more aggressive production strategy that will benefit shareholders.

On the other hand, some studies revealed conflicting results. According to the suggestion of Bolton and Shaf stein (1990) that companies with a high debt ratio will face restrictions in competing with companies that have a lower debt ratio. Moreover, Opler and Titman (1994) asserted that the highly leveraged companies would earn less profits than their competitors and this would result in the company losing market share, especially when there is an economic crisis. In other words, we can say that the way the company finances itself, whether by relying on debt or equity, has a crucial role in the company to competition in the product market, and this in turn will directly affect the profitability of the company.

Chevalier (1995a), in her study of the retail industry in the United States, revealed the negative relationship between financial leverage and market competition, concluding that an increase in the company's financial leverage accompanies an increase in the market share of competitors. This is because debt limits the company's ability to adopt strategies to control the market, allowing the entry of new companies into the market.

Once again, Chevalier (1995b) explains that increasing the financial leverage of companies in a particular market will

lead to higher market prices. therefore, that high-leveraged company is forced to higher prices than their competitors who have less leverage. When rivals are less leveraged and markets are concentrated, the converse is true, allowing them to decrease prices in order to grow sales or enter new markets. Their results also suggest that in highly concentrated markets, highly indebted enterprises are more likely to be predetermined.

Phillips (1995). provided evidence that the product market industry is affected by the capital structure. According to his findings, changes in the company's capital structure have a direct effect on the market share of the company, as it was found that financial leverage can affect the company's ability to produce and affect the company's ability to compete in the concentrated market. Increased product market competitiveness encourages a company to invest more in innovation. Furthermore, when a company is positioned in an industry with a high level of competition, it tends to function more effectively.

In keeping with prior findings, Kovenock and Phillips (1997) discovered evidence to support previous findings when they expanded the current business by considering the market structure as a determinant of investment and efficiency at the plant level was a determining factor for decisions to shut down the plant. as they discovered that debt has a negative relationship with the company's investment. As a result, some research identified a negative association between financial leverage and debt concentration, whilst others discovered a favorable relationship.

As well as the theoretical literature, empirical research on the relationship between market concentration and capital structures has generated conflicting results when compared to the theoretical literature. Moeinaddin and Ghasemi (2013) conducted a study to discover how competition in the product market affects the capital structure of 89 companies listed on the Tehran Stock Exchange during the period from 2007 to 2011. The findings demonstrated a substantial relationship between the capital structures of the chosen industry and the Tobin Q and Herfindahl-Hirschman indexes. When a firm's concentration ratio rises, it becomes more dominant in the industry. Because the dominated business experiences less intense market rivalry, it is less likely to fail. Creditors are less concerned about the repayment of their loans. As a result, a dominating company might have greater access to the financial market. As a result, when the concentration ratio is high, the financial leverage increases. Another study, done by Xu (2013), discovered a positive association between the concentration ratio and the book value of the debt ratio. The study implies that product market competitiveness has a negative impact on the capital structure.

Li and Wang (2019) discovered, on the other hand, that rising leverage level inhibits businesses' product-market competitiveness more severely in a high concentration sector than in a low concentration industry. Similarly, a lower leverage level boosts businesses' competitiveness more dramatically in a high concentration industry than in a low concentration industry. In another study, Nuradzanni (2016) examined the impact of capital structure and product market in EU countries from 2005 to 2015, and their findings implied that

higher debt taken by a company during recession periods may significantly harm its sales and market share when the firm is competing in a competitive or low concentrated industry. However, the effect is insignificant if firms compete in a highly concentrated industry, one in which just a few prominent enterprises compete.

Although previous research reports somewhat mixed findings, we develop the second hypothesis between market concentration and capital structure with the perspective of the strategic commitment theory as follows:

H1: market concentration is positively associated with a capital structure (According to strategic commitment theory).

## DATA AND METHODOLOGY

The data utilized in this study was collected from the income statements and balance sheets of 21 insurance companies listed on the Saudi Arabian Stock Exchange between 2009 and 2016. The relation between product market competition and the insurance company's capital structure was investigated using regression analysis. The study model included two primary sets of variables: The first set incorporates three proxies for the capital structure: (TD: total debt, LTD: long term debt, and STD: short term debt). Although one of the most prominent measurements used to illustrate the capital structure is the debt ratio. However, utilizing a single valuation approach to assess the capital structure is insufficient, as it may lead to incorrect conclusions regarding the company's capital structure (Zeitun & Tian, 2014). In addition, to measure the competition in the product market, we use three measures: the insured's market share (MS), the Herfindahl-Hirschman index (HHI) and the concentration ratio of the largest firms in the market (CR).

The regression model used is as follows:

**Model 1**

$$TD = \alpha + \beta_1 MS + \beta_2 \text{ Growth} + CR + e$$
$$TD = \alpha + \beta_1 HHI + \beta_2 \text{ Growth} + CR + e$$
$$TD = \alpha + \beta_1 IR + \beta_2 \text{ Growth} + CR + e$$

**Model 2**

$$LTD = \alpha + \beta_1 MS + \beta_2 \text{ Growth} + CR + e$$
$$LTD = \alpha + \beta_1 HHI + \beta_2 \text{ Growth} + CR + e$$
$$LTD = \alpha + \beta_1 IR + \beta_2 \text{ Growth} + CR + e$$

**Model 3**

$$STD = \alpha + \beta_1 MS + \beta_2 \text{ Growth} + CR + e$$
$$STD = \alpha + \beta_1 HHI + \beta_2 \text{ Growth} + CR + e$$
$$STD = \alpha + \beta_1 IR + \beta_2 \text{ Growth} + CR + e$$

Where: (TD: total debt), (STD: short term debt), (LTD: long term debt), (HHI: Herfindahl Hirschma Index), (MS: Market share of the insurer), (CR: The concentration ratio of the largest companies in the market), (IR: inflation rate), (growth: Sales growth).

Table 1. The Summary of Variable and Measurements.

| Variable | Sign | Variable Measurements | References |
|---|---|---|---|
| Long term debt | (LTD) | $\dfrac{\text{book value of long\_term debt}}{\text{book value of total assets}}$ | (Matemilola and Wan, 2019). |
| Short term debt | (STD) | $\dfrac{\text{book value of shor\_term debt}}{\text{book value of total assets}}$ | (Saif-Alyousfi et al., 2020) |
| Total debt | (TD) | $\dfrac{\text{book value of total\_debt}}{\text{book value of total assets}}$ | (Matemilola and Wan, 2019). |
| Market share of the insurer | (MS) | $\dfrac{\text{written premium for company x}}{\text{total written premium in the market}}$ | Jaloudi and Bakir (2019). |
| Herfindahl- Hirschma Index | (HHI) | $HHi = Si^2$ $\quad s_i = \dfrac{x_j}{\sum_{i=1}^{n} x_{js}}$ | (Moeinaddin et al., 2013) |
| The concentration ratio of the largest companies in the market | (CR) | $CR = \sum_{K=1}^{5} MS$ | (Jaloudi and Bakir (2019). |
| inflation rate | (IR) | $IR = \dfrac{p0 - pi}{pi} * 10\%$ | Bajaj and Singh (2020) |
| Sales growth | (growth) | $\dfrac{\text{sales of current year} - \text{sales of previous year}}{\text{sales of current year}}$ | Dang and Hoang (2019) |

The independent variable market concentration is constructed using (the market share of the insurer (MS), the Herfindahl- Hirschma Index (HHI), and the Concentration ratio of the largest companies in the market (CR) to test the primary hypothesis. Limer and Hausman tests are also used to identify how to test the subsidiary hypotheses and whether they are suitable for regression using the (OLS, FEM, and REM) regression technique. The test results are shown in Tables **2** and **3** below. According to Limber's test, H0 advises employing the pooling normal least squares. To put it another way, rejecting H0 denotes the use of mixed data (random or fixed effects). Table **3** shows the results of the Limer test for each of the sub-hypotheses. As can be seen, H0 of the Limer test is refused, and mixed data should be used instead.

**Table 2. (Bp-Lm) Breusch and Pagan Lagrangian Multiplier Test.**

| Variable | TD | LTD | STD |
|---|---|---|---|
|  | (1) | (2) | (3) |
| P-value | 0.0000 | 0.0000 | 0.0000 |

The Hausman test confirms that rejection of H0 is indicative of the use of fixed effects. The findings of the tests on each of the subsidiary hypotheses were presented in Table **4**. As a result, , the probability level of this statistic is less than 5%, suggesting that the fixed effect approach should be used to estimate all models except specifications (3).

**Table 3. Hausman Test.**

| Variable | TD | LTD | DTS |
|---|---|---|---|
|  | (1) | (2) | (3) |
| P-value | 0.0000 | 0.0052 | 0.4217 |

The table above provides descriptive statistics of the research variables. Total observations for the Saudi Arabia insurance companies come to 231. The maximum market share of the insurer (MS) of Saudi Arabia insurance companies is 39% while the minimum shows 10%. It also displays the lowest and maximum values for each of the Herfindahl- Hirschma Index and concentration ratio of the largest companies in the market, indicating that there would be substantial agency conflict in Saudi Arabia insurance firms. It also suggests that insurance business is very volatile, resulting in low returns or losses.

**Table 4. Descriptive Statistics for Saudi Arabia Insurance Companies.**

| Variable | Obs | Mean | Std. Dev | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| TD | 231 | 49.87833 | 8.830752 | 30.056 | 67.907 | -.0626358 | 2.357212 |
| LD | 231 | 17.98952 | 8.069825 | 4.262 | 39.271 | .4068354 | 2.690906 |
| SD | 231 | 29.44193 | 9.731002 | 10.009 | 49.567 | -.0743468 | 2.293357 |
| MS | 231 | .2439784 | .0879225 | .1 | .39 | -.5010035 | 1.731937 |
| HHI | 231 | .2589351 | .0889823 | .116 | .447 | .5791602 | 1.833076 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CR | 231 | .361 | .1017048 | .246 | .504 | .3142456 | 1.46691 |
| growth | 231 | .2852944 | .1178509 | .101 | .498 | .0078621 | 1.774137 |
| inflation | 231 | 3.2 | 1.251712 | 1.7 | 5.5 | .3754053 | 1.768245 |

**Table 5. The Correlation Analysis.**

| | TD | LD | SD | MS | HHI | CR | Growth | Inflation |
|---|---|---|---|---|---|---|---|---|
| TD | 1.0000 | | | | | | | |
| LD | 0.5775 | 1.0000 | | | | | | |
| SD | 0.5840 | 0.4677 | 1.0000 | | | | | |
| MS | 0.3162 | 0.2270 | 0.1268 | 1.0000 | | | | |
| HHI | -0.2586 | -0.0837 | -0.1103 | -0.2820 | 1.0000 | | | |
| CR | -0.2495 | -0.2045 | -0.1526 | -0.1692 | 0.2652 | 1.0000 | | |
| growth | 0.4875 | 0.2492 | 0.1272 | 0.3570 | -0.4847 | -0.1912 | 1.0000 | |
| inflation | -0.1677 | -0.1531 | -0.1429 | -0.2660 | 0.1105 | 0.1003 | -0.0846 | 1.0000 |

**Table 6. Panel Regression Results of Three Empirical Models.**

| | TD | LTD | STD |
|---|---|---|---|
| **VARIABLES** | **(1)** | **(2)** | **(3)** |
| | (FE) | (FE) | (RE) |
| MS | 38.23*** | 29.08*** | 39.93*** |
| | (0.000) | (0.000) | (0.000) |
| HHI | -36.42*** | -37.10*** | -28.82*** |
| | (0.000) | (0.000) | (0.000) |
| CR | -5.988 | -0.649 | -0.270 |
| | (0.089) | (0.827) | (0.945) |
| Growth | 6.906 | 11.96*** | 7.712 |
| | (0.100) | (0.001) | (0.093) |
| Inflation | -0.0785 | -0.0516 | -0.0750 |
| | (0.785) | (0.832) | (0.815) |
| Cons | 50.42*** | 17.49*** | 25.30*** |
| | (0.000) | (0.000) | (0.000) |
| Observations | 231 | 231 | 231 |
| R-squared | 0.4980 | 0.4702 | 0.5447 |

t statistics in parentheses.

* $p<0.05$ ** $p<0.01$ *** $p<0.001$.

The aim of this correlation analysis is to see whether there is any multicollinearity Hair et al (2017). stated that a correlation coefficient of 0.8 and above signifies that there is a presence of multicollinearity problem between two or more sections. According to what is shown in the table above, the largest correlation coefficient was 58.4% for short-term debt and total debt, indicating that there is no multicollinearity between the studied variables. According to the table above, debt financing (total debt, long-term debt, and short-term debt) has a positive association with the insurer's market

share and sales growth. However, debt financing is associated negatively with the Herfindahl-Hirschma Index and the concentration ratio of the largest companies in the market. This indicates that the company's dependence on debt increases as its market share increases because the company needs large financial resources to keep pace with the growth of its work. On the other hand, when the firm is exposed to competition in the market, it depends less on debt to avoid financial distress.

The tables above show the regression results between (short term debt: STD, long term debt: LTD and total debt: TD) as the dependent variable and market share of the insurance (MS), the concentration ratio of the market's largest firms (CR).and the Herfindahl- Hirschma Index (HHI) as the independent variable, inflation rate (IR), sales growth (growth), as the control variables. Based on the (FE), and (RE) models and to rectify the heteroscedasticity problem in specifications (3), this study uses the option robust.

The main hypothesis is recorded and examined in light of the significant association between product market rivalry and insurance firm capital structure. According to the test results, there is a considerable relationship between product market competitiveness and the capital structure of enterprises operating in the Saudi Arabia Stock Exchange's Insurance industry. This result is in line with previous research (Moeinaddin et al,2013: Xu, 2013: Brander, Lewis :1986) With regard to the rivalry on the product market the capital structure of a company has a big impact on its efficiency and capacity to compete in the market. The agency theory implies that corporations will borrow more in order to pursue a more aggressive production policy that would benefit stockholders. Therefore, the company uses higher levels of debt to produce more when opportunities to earn higher profits arise. On the other hand, competitive ability defines the primary position in the company. Firms start competing with one another to improve their return on investment, boost their market position, achieve market dominance, and become major industry players.

On the other hand, using the two indices (HHI) and (CR) to measure product market concentration and competition, The primary hypothesis discovered a substantial negative link between product market competitiveness and capital structure. The findings are consistent with the findings of (Bolton et al, 1990; Phillips, 1995; Chevalier, 1995; Kovenock et al, 1997: and Li and Wang 2019). When entry barriers are high, it will not only affect firms' ability to compete within their industry but also compete with other firms outside their industry. Higher entry barriers and more differentiation in the product market make the industry show less competition in the product market. As a result, corporations are anticipated to reinvest less or pay fewer dividends, increasing their growth potential. As a result, debts are employed less frequently in the capital structure.

## CONCLUSION

It is assumed that competition in the product market is one of the determinants of the capital structure. As the firms that are subject to different degrees of competition in the product market have different capital structures. on the other hand, the majority of research on the drivers of capital structure

studies characteristics on firm-level variables, such as firm size, profitability, growth opportunity, tangibility, etc. Therefore, internal and external market conditions must be given more consideration as key determinants of a company's capital structure. According to the strong association between product market competitiveness and capital structure established in this investigation, companies are advised to develop intelligent finance strategies and consider market circumstances and rivals when making financial decisions. Designing such strategies assists enterprises in influencing the product market, reinforcing their market position, and ultimately expanding their market share. Furthermore, when a corporation dominates an industry with a high level of industrial concentration, it will have stronger market power and pricing power. Based on the dynamic correlation between the capital structure and the product market discussed in this study, it is suggested that when making a major investment decision, investors consider the company's competitive position in the market and its current position in the product market, rather than relying solely on profitability

## REFERENCES

Ali, A., Ullah, A., Shah, P. Q., Shehzad, N., & Nawab, W. (2016). Impact of capital structure on profitability: a comparative study of cement &automobile sector of Pakistan. *Journal of Managerial Sciences Volume X Number*, 1, 120.

Bajaj, y., Kashiramka, s., & Singh, s. (2020). capital structure dynamics: china and India (Chindia) perspective. European business review.

Benoit, J. P. (1984). Financially constrained entry in a game with incomplete information. The RAND Journal of Economics, 490-499.

Bolton, P., & Scharfstein, D. S. (1990). A theory of predation based on agency problems in financial contracting. The American economic review, 93-106.

Brander, J. A., & Lewis, T. R. (1986). Oligopoly and financial structure: The limited liability effect. The American Economic Review, 956-970.

Chevalier, J. A. (1995). Capital structure and product-market competition: Empirical evidence from the supermarket industry. The American Economic Review, 415-435.

Dang, H. N., Vu, V. T. T., Ngo, X. T., & Hoang, H. T. V. (2019). Study the impact of growth, firm size, capital structure, and profitability on enterprise value: Evidence of enterprises in Vietnam. Journal of Corporate Accounting & Finance, 30(1), 144-160.

Harris, M., & Raviv, A. (1991). The theory of capital structure. the Journal of Finance, 46(1), 297-355.

Jacobson, R. (1992). The "Austrian" school of strategy. Academy of management review, 17(4), 782-807.

Jaloudi, M., & Bakir, A. (2019). Market structure, efficiency, and performance of Jordan insurance market. International Journal of Business and Economic Research, 8(1), 6-13.

Kinsman, M., & Newman, J. (1999). Debt level and firm performance: an empirical evaluation. In 28th Annual Meeting of the Western Decision Science Institute.

Kovenock, D., & Phillips, G. M. (1997). Capital structure and product market behavior: An examination of plant exit and investment decisions. The review of financial studies, 10(3), 767-803.

Li, L., & Wang, Z. (2019). How does capital structure change product-market competitiveness? Evidence from Chinese firms. *Plos one*, *14*(2), e0210618.

Maksimovic, V. (1988). Capital structure in repeated oligopolies. The RAND Journal of Economics, 389-407.

Matemilola, B. T., Bany-Ariffin, A. N., & Wan, A. S. W. N. (2019). DOES TOP MANAGERS'SKILLS MODERATE THE DEBT-STOCK RETURNS RELATIONSHIP IN MALAYSIA?. International Journal of Business & Society, 20(3).

Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: a correction. The American economic review, 53(3), 433-443.

Moeinaddin, M., Nayebzadeh, S., & Ghasemi, M. (2013). The relationship between product market competition and capital structure of the selected industries of the Tehran Stock Exchange. International journal of academic research in accounting, finance and management sciences, 3(3), 221-233.

Nuradzanni, S. Z (2016). The Effect of Capital Structure on Company Performance in Product Market Competition Across Business Cycles.

Opler, T. C., & Titman, S. (1994). Financial distress and corporate performance. The Journal of finance, 49(3), 1015-1040.

Phillips, G. M. (1995). Increased debt and industry product markets an empirical analysis. Journal of financial Economics, 37(2), 189-238.

Saif-Alyousfi, A. Y., Md-Rus, R., Taufil-Mohd, K. N., Taib, H. M., & Shahar, H. K. (2020). Determinants of capital structure: evidence from Malaysian firms. Asia-Pacific Journal of Business Administration.

Telser, L. G. (1966). Cutthroat competition and the long purse. The Journal of Law and Economics, 9, 259-277.

Xu, X. (2013). The relationship between capital structure and product market competition (Master's thesis, University of Twente).

Zeitun, R., & Tian, G. G. (2014). Capital structure and corporate performance: evidence from Jordan. Australasian Accounting Business & Finance Journal, Forthcoming.