

Original Research

The Analysis of Capital Structure Theories in Emerging Markets

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Abstract

The primary purpose of this paper is to verify the basic assumptions according to the pecking order and Trade-off theory for the capital structure in listed firms on KSA, Iran, and the Iraq Stock Exchange of West Asian countries. The pooled ordinary least squares (OLS) were used to examine the relationships of the three countries for determinants of the capital structure from 2016 to 2020 for the data of non-financial companies. Finally, we obtained 116 Saudi, 82 Iranian, and 35 Iraqi companies. Our findings support capital structure theories of the pecking order theory better to describe the capital structure in KSA. This is a significant marker like these societies, yet we found some determinants of the capital structure consistent with trade-off theory in the context of Iran and Iraq. So, it can be said that the Islamic nature of these countries brings companies closer to issuing shares than using debt as a means of capital financing, as Muslims believe that the usury (Raba) comes from the interest of debt. Our results indicate that the growth opportunities have a positive relationship with LEV, but it is not significant for the three countries. This paper can give a unique picture of Islamic societies and how to get capital financing. Despite the tremendous economic challenges among the three countries, we found a remarkable similarity in the choice of pecking order theory for the capital structure; naturally, this paper is of interest to owners and managers who are trying to obtain an ideal capital structure to improve the fixed performance of the company. This is the first paper that examines the determinants of the capital structure in Islamic West Asian countries. It can be an essential reference for future studies in this field. Internationally, capital structure gives an excellent opportunity to understand the investment trends in these countries.

Keywords: The pecking order theory, The usur-Raba, Trade-off Theory, West Asian Countries.

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Introduction

Several empirical studies have attempted to test the explanatory power of capital structure models in corporate behavior in developed countries, especially in the US environment. Most of these works revolve around the determinants of the capital structure. When reviewing the three financing theories (The trade-off, pecking order theory, and the market timing theory), we find that they operate under certain conditions that may be achieved in some capital markets and differ from others. For example, religions greatly influence the choice of financing instruments as the Islamic religion argues the issue of usury differs from other religions (Faysal et al., 2020; Sheikh & Qureshi, 2017; Yildirim et al., 2018). The financing choice for companies in Islamic countries may be more complicated than in other countries (Sheikh & Qureshi, 2017). Perhaps the investor's culture affects granting his money as debt more than his desire to be a shareholder in company ownership (Yildirim et al., 2018). When reviewing previous literature on capital structure theory, Modigliani and Miller (1958) are among the foremost researchers to examine the relationship between capital structure and the value of a firm. M'ng et al. (2017) and Allini et al. (2018) say, given the complex conditions of competitive frictionless and speculative market capital, the cost of capital depends entirely on the company's risk and therefore, financing decisions cannot be relied upon by enhancing shareholder value; It can be said that there is no ideal capital (Faysal et al., 2020).

The trade-off confirms that the presence of a targeted capital structure can increase the value of the company to the maximum, which means that any divergence from the target capital structure must be adjusted (M'ng et al., 2017; Ramli et al., 2019; Vo, 2017). Opportunism may play an important role in favoring any of the three parts of financing that achieve the narrow interests of the administrative apparatus; the administrative body can choose to issue shares even though internal financing is well available (Guizani & Ajmi, 2021), or it may prefer Debt over internal funding for the same reason without looking at the cost of capital (Ahmed Sheikh & Wang, 2013; M'ng et al., 2017; Myers, 1984; Serrasqueiro & Caetano, 2015; Sheikh & Wang, 2011). Thus, the pecking order theory, where the matter of achieving a balance between costs and resources, is a matter that is subject to the administrative apparatus and the extent of its ability and experience in determining costs and benefits (Allini et al., 2018; Sheikh & Wang, 2011).

The knowledge and efficiency of these entities lead to the selection of financing that serves the interest of the company despite the lack of uniformity of information assumed by the pecking order theory and the imposition of market efficiency selection (Chen et al., 2013; Guizani & Ajmi, 2021). It seems logically clear that there are differences between theories and because of these, objective differences will lead to maximizing the agency problem, given that the approaches adopt conflicting views. Other conditions determine the capital structure; for example, three countries from West Asia with an Islamic character have been chosen, namely the Kingdom of Saudi Arabia, Iran, and Iraq. We believe that the determinants of Islamic law define the capital structure. For this idea, we believe that one of the capital structure theories will be more closely aligned with Islamic law, and we also think that Islamic religion and culture play a pivotal role in determining the optimal capital structure. Therefore, the variables of this study are Size

Sales, profitability, growth opportunities, and Liquidity, which have been proposed in many studies as a model for expressing the capital structure.

This paper uniquely bridges the gaps between East Asian countries and West Asian countries with an Islamic character. This study aims to answer the following questions: (1) what are the most common capital structure theories that further describe the capital structure in Islamic West Asian countries? (2) Are the Islamic West Asian countries similar in describing the capital structure? For answer our questions. In the next section, we will discuss the background of capital structure theories and literature review. Section 3 provides the research methodology. The section 4 presents the empirical results. Finally, the last section presents and conclusion and discussion

The background of capital structure theories and literature review

The pecking order theory

The historical basis for the pecking order theory goes back to Donaldson (1961), the theory was modified in the mid-1980s by Myers and Majluf (1984). The theory states that there are priorities in the hierarchical arrangement of sources of financing in the capital structure where they argue that the first form of funding sources comes through internal measures, the second form comes through debt, while the third form comes through the issuance of new shares (Allini et al., 2018; Martinez et al., 2019). This theory emphasizes that companies adhere to a hierarchy of funding sources and prefer internal financing when available.

The debt is preferred over issuing new shares if external financing is required (Frank et al., 2020). Thus, the form of debt that the company chooses can indicate its need for external financing (Allini et al., 2018). However, what are the reasons behind the priorities in financing the company? The pecking order theory begins with asymmetric information in which managers have more information about the future, aspirations of the company, expected risks, and actual value of the company than outside investors (Eldomiaty et al., 2017). Asymmetric information influences the choice between internal and external financing and the issue of debt or equity (Serrasqueiro & Caetano, 2015). Therefore, the pecking order theory to fund new projects will float to the surface (Ramli et al., 2019). Information asymmetry is the mainstay of click-order theory (Güner, 2016). Myers (1984) argued that the choice of debt and equity is due to an information inconsistency as creditors need to be better informed of the borrower's credit standing. Shareholders need to be better informed of the goodwill of the directors (Guizani & Ajmi, 2021; Harris & Raviv, 1991). The firms can avoid the problem of underinvestment by issuing debt, which is seen as a positive signal to strangers (Eldomiaty et al., 2017).

In the case of negative selection, companies prefer internal and external financing when external funds are necessary (Allini et al., 2018). Firms prefer debt over equity due to the low information costs associated with debt issues (Ramli et al., 2019). The company seldom resorts to issuing shares (Frank & Goyal, 2003; Guizani & Ajmi, 2021). Serrasqueiro and Caetano (2015) indicate that the pecking order theory needs to know which of the three options is in the company's interest and is closer in order of priorities.

In other words, which of those priorities will be more beneficial and at a lower cost Serrasqueiro and Caetano (2015), for example, in the case of debt over equity.

Where the issue of debt indicates the confidence of the board members that the investment is profitable and that the current share price is less than its value (if the share price was exaggerated, in this case, the issue of ownership rights will have the priority of the hierarchy in pecking order theory) and on the contrary, it is Issuing shares can indicate a lack of confidence in the board and that they feel the share price is overvalued (Ramli et al., 2019). Consequently, the issuance of shares will decrease the current share price (Guizani & Ajmi, 2021). However, this does not apply to high-tech industries where equity issuance is preferred due to the high cost of debt issuance because the assets are intangible (Brealey et al., 2008; Martinez et al., 2019; Ramli et al., 2019).

Trade-off Theory

The theoretical basis for this theory goes back to 1963 when (Modigliani and Miller) introduced the debt tax exemption, which makes Debt less than the cost of equity financing. This theory was presented again by Kraus and Litzenberger (1973).

Trade-off Theory states that a company determines Debt and equity, and ownership depends on balancing costs and benefits or returns (Güner, 2016); the theory assumes that the occurrence of balance means an optimal capital structure increases the company's value (Ghazouani, 2013). The capital structure can also be determined by bankruptcy costs and debt-saving tax benefits (Sheikh & Qureshi, 2017; Sheikh & Wang, 2011).

The purpose that draws attention to this theory is to explain that companies are usually partially financed by Debt and partly by equity (Sheikh & Qureshi, 2017). It is believed that there is an advantage of Debt financing and tax benefits for Debt, and there is a cost of financing with Debt and the costs of financial distress, including bankruptcy costs for Debt and non-bankruptcy costs (Eldomiaty et al., 2017; Fama & French, 2002; Güner, 2016; Sheikh & Wang, 2011). Marginal costs decrease as debt increases and decreases (Serrasqueiro & Caetano, 2015), while marginal costs increase when the company focuses on differentiation to improve its total value when choosing the amount of Debt and equity to be used in the optimal capital structure (Güner, 2016; Sheikh & Wang, 2011). We can see the basic idea of this theory through the advantages and disadvantages of Debt for the firm (Modigliani & Miller, 1963).

The benefits from Tax savings on Debts and defects come from the increased possibility of bankruptcy due to the high indebtedness of the company, so the cost of financial failure increases (De Miguel & Pindado, 2001; Güner, 2016; Ramli et al., 2019; Sheikh & Wang, 2011). Trade-off Theory can predict that the optimal capital structure exists and is determined by balancing tax benefits and Debt costs, considering other fixed variables (De Miguel & Pindado, 2001; Serrasqueiro & Caetano, 2015). Companies replace Debt with shares or equity with debts to maximize the company's value (Ghazouani, 2013).

There is a broad debate about the idea behind the Trade-off Theory. Miller (1977) argues the orientations of this theory and believes that it is impossible to strike a balance

between bankruptcy and tax, as the tax is widely realized (Güner, 2016; Serrasqueiro & Caetano, 2015). So, bankruptcy is something that only happens occasionally. Miller (1977) denies the validity of the Trade-off Theory. He says that if The Trade-off Theory is correct, As Miller believes, the Debt should be much higher than what is prevalent in the company. The Trade-off Theory differs from the pecking order theory, which is that the pecking order theory assumes the asymmetry of information.

In contrast, it does not assume that the Trade-off Theory identifies information between management and the parties dealing with the market because the managers will work to achieve the interests of the major shareholders (Faysal et al., 2020; Ghazouani, 2013). Miller (1977) is highly critical of the Trade-off Theory and proposes the pecking order theory. Despite these criticisms, the Trade-off Theory remains the dominant theory of corporate capital structure as taught in primary capital structure approaches to corporate finance.

Literature Review

This study tries to verify the trends of accounting information in determining the capital structure adopted by previous studies in financing strategy close forecasts in accounting information signals to identify capital structure theories (Serrasqueiro & Caetano, 2015).

Previous studies suggest a specific pattern in accounting information signals; this agreed design could be used in specifying capital structure theories (Chen & Chen, 2011; Güner, 2016; M'ng et al., 2017; Ross, 1977; Serrasqueiro & Caetano, 2015). On this basis, we will discuss the proven indications in previous studies to define the theories of capital structure in West Asian countries instead of discussing the results of previous studies.

Trade-off Theory proposes that the sales volume and profitability are positive with leverage. The growth opportunities are negative with financial leverage, while it does not suggest a fixed result for the importance of Liquidity (Chen & Chen, 2011; Güner, 2016; M'ng et al., 2017; Serrasqueiro & Caetano, 2015).

Otherwise, the Pecking Order Theory proposes that the volume of sales, profitability, and Liquidity have a negative relationship with leverage, and the growth opportunities have a positive relationship with financial leverage (Chen & Chen, 2011; Eldomiaty et al., 2017; Guizani & Ajmi, 2021; Güner, 2016; M'ng et al., 2017; Serrasqueiro & Caetano, 2015). Therefore, previous studies will be relied upon to determine the most consistent theory with West Asia's Islamic countries (Saudi Arabia, Iran, and Iraq).

Research Methodology

Data and Research model

The study sample consists of non-financial companies in West Asian countries. These data were collected from companies' financial statements in three countries, namely the Kingdom of Saudi Arabia, Iran, and Iraq stock exchange, 116 Saudi companies with 580 Obs., 82 Iranian companies with 410 Obs., and 35 Iraqi companies with 175 Obs., between 2016-2020. This period was chosen due to the availability and regularity of the

group of companies for the three countries. The experimental analyses will be used based on Ordinary least squares (OLS), as suggested by Güner (2016) and M'ng et al. (2017). Moreover, we use the assumptions of capital structure theories (Trade-off Theory and Pecking Order Theory), which are expected to indicate the use of financing determinants as in Table1; on this basis, the estimation model was constructed as follows.

$$LEV_{it} = \beta_0 + \beta_1 \cdot SASIZE_{it} + \beta_2 \cdot GROPORT_{it} + \beta_3 \cdot PROF_{it} + \beta_4 \cdot LIQU_{it} + \varepsilon_{it}$$

We select variables based on previous studies, such as Chen and Chen (2011), Serrasqueiro and Caetano (2015), Güner (2016), M'ng et al. (2017), Ramli et al. (2019) and Guizani and Ajmi (2021). Table1 shows the measurement of the variables and assumptions of capital structure theories used in this study.

Table 1. Variables and Measurement

Variables	Model	Measurement	Trade-off Theory	Pecking Order Theory
Dependent				
Leverage	LEV	Total Liabilities/Total Assets		
Independent				
Size sales	SASIZE	Natural log of sales	+	-
Growth opportunities	GROPORT	$\Delta\%$ in sales/ $\Delta\%$ in assets	-	+
Profitability	PROF	EBIT/Total assets	+	-
Liquidity	LIQU	(S.T. Assets/S.T. Liabilities)	-/+	-

Source: Güner (2016)

Results and discussions

Descriptive Statistics

Table 2 represents the descriptive statistics of the sample for the three countries in this study as follows.

Table 2. Descriptive Statistics

State	VAR	Obs.	Mean	Stand. dev.	Min	Max
KSA	LEV	580	0.385	0.211	0.05	0.960
	Size Sales	580	8.930	0.943	1	11.276
	Growth opportunities	580	0.772	8.926	-6.783	11.510
	Profitability	580	0.005	0.006	-0.003	0.089
	Liquidity	580	1.873	2.075	0.04	6.754
IRAN	LEV	410	0.562	0.279	0.0127	4.002
	Size Sales	410	6.154	0.637	3.693	8.064
	Growth opportunities	410	-1.815	4.725	-2.2881	3.951
	Profitability	410	0.152	0.155	-0.7809	0.639

State	VAR	Obs.	Mean	Stand. dev.	Min	Max
	Liquidity	410	1.905	3.249	0.1643	5.811
IRAQ	LEV	175	0.411	0.539	0.036	4.069
	Size Sales	175	8.373	2.553	1	11.560
	Growth opportunities	175	0.727	9.123	-3.511	0.106
	Profitability	175	-0.009	0.218	-0.990	0.469
	Liquidity	175	3.824	6.969	0.05	7.295

Table 3 indicates that the average corporate debt in Saudi Arabia is (0.385). A minimum value of (0.05) and a maximum of (0.960). In the Iranian context, the average corporate debt is (0.562). The minimum value is (0.0127), and the maximum value is (4.002) times. These figures indicate that Iranian companies have higher incentives to use debt, which is much greater compared to the Saudi context. In Iraq, the average Iraqi corporate debt is (0.411). A minimum value of (0.036) and a maximum of (4.69). These figures indicate that Iraqi companies are close to KSA companies.

There are remarkable similarities between the Iranian and Iraqi contexts. These two countries are witnessing international isolation and a decrease in the size of investors due to the current economic conditions.

It should be noted that delving into debt broadly threatens the future of companies in these countries. However, this significant debt increase may be anomalous because the mid-sized firms are somewhat similar even in the Saudi context. We also conclude that the debt standard deviation variance is insignificant. This data is somewhat unique. As for the independent variants, there are significant differences in the Iranian and Iraqi contexts. One of the reasons for these countries' economies could be the result of international investment isolation and political restrictions.

Heteroscedasticity and Multicollinearity

Before we start interpreting the results, the first problem; We're going to test Heteroscedasticity: The Heteroscedasticity test shows that all variables have a significance value $p > 0.05$ (Indarti & Widiatmoko, 2021). Therefore, the regression model has no Heteroscedasticity problems (Table 3, 4, 5).

The second problem; the Multicollinearity, leads to the close association between two or more independent variables to the regression model failure failure (Daoud, 2017; Sathyamoorthi et al., 2019); this problem was investigated by testing The Variance Inflation Factors (VIF) that have been suggested in many studies, like (Faysal et al., 2020; Indarti & Widiatmoko, 2021; Khan, 2016). Were calculated for all independent variables, VIFs < 10 (see Table 3, 4, 5). Therefore, the model has no Multicollinearity problem (Belsley, 1991; Faysal et al., 2020; Gujarati, 2003; Khan, 2016; Sathyamoorthi et al., 2019).

Regression Results

This section will present the regression model results for third countries (the Kingdom of Saudi Arabia, Iran, and Iraq).

The KSA context is in Table 3. Our results show that the *F-statistic* (59.37) *p-value* (0.000) is less than 1%. This means the estimated model is correct in the KSA context with **Adjusted R²** (28%). So, we document a negative relationship between size sales profitability, liquidity, and LEV, and a positive relationship between the Growth opportunities and the LEV; it is similar to many of the studies mentioned previously. According to the above results, Table 6 summarizes which theories describe the capital structure of companies in Saudi Arabia.

The Iranian context is in table 4. Our results show that the *F-statistic* (65.077) and *p-value* (0.000) are less than 1%. This means the estimated model is correct in the Iranian context with **Adjusted R²** (39%). So, we document a positive relationship between size sales and LEV while there is a negative relationship between profitability, liquidity, and LEV, while there is no relationship between the Growth opportunities and the LEV. We document that coefficient growth opportunities are positive, but it is not significant, which is similar to many of the studies mentioned previously.

The Iraqi context is in table 5. Our results show that the *F-statistic* (40.07) and *p-value* (0.000) is less than 1%. This means the estimated model is correct in the Iraqi context with an **Adjusted R²** of 44%. So, we document a positive relationship between size sales and LEV. In contrast, there is a negative relationship between profitability, liquidity, and LEV, and no relationship between the Growth opportunities and the LEV. We document that coefficient growth opportunities have a positive, but it is not significant.

Our results indicate a remarkable similarity of congruence between these three Islamic countries, which is a significant result for the managers and investors. So this result was supported by as well as in size sales by Antoniou et al. (2008), Silva Serrasqueiro and Rêgo Rogão (2009), Frank and Goyal (2009), Sbeiti (2010), Güner (2016) and M'ng et al. (2017). Liquidity like Ozkan (2001) and Güner (2016).

This paper examines the possibility of applying the capital structure theories to a group of West Asian countries of an Islamic character. Therefore, Our question: (1) what are the most capital structure theories that further describe the capital structure in Islamic West Asian countries? (2) Are the Islamic West Asian countries similar in describing the capital structure? To answer our questions, Table 6 briefly illustrates capital structure theories based on the signals proposed in previous studies in the section of 2.3 Literature Review.

Table 3. The regression results (KSA)

Var/ KSA	OLS				Heteroscedasticity		Multicollinearity
	Coef.	St.Error	t Stat.	P-value	Ch ² (1)	P-value	VIF
size sales	-0.2565	0.1022	-2.509	0.012	1.124	0.289	1.031
Groth oppr.	0.0185	0.0085	2.176	0.029	1.481	0.223	1.002
Porofit.	-0.3834	0.1123	-3.413	0.000	2.643	0.104	1.072
Liquidty.	-0.0464	0.0035	-13.22	0.000	3.418	0.066	1.101
Cons.	0.4794	0.0138	34.670	0.000	-	-	-
Obs.	580						

Var/ KSA	OLS				Heteroscedasticity		Multicollinearity
	Coef.	St.Error	t Stat.	P-value	Ch ² (1)	P-value	VIF
F-statistic	59.371***						
R Square	29%						
Adjusted R ²	28%						

Table 4. the Regression results (IRAN)

Var/ IRAN	OLS				Heteroscedasticity		Multicollinearity
	Coef.	St.Error	t Stat.	P-value	Ch ² (1)	P-value	VIF
size sales	0.072	0.018	4.066	0.000	1.154	0.283	1.097
Groth oppr.	0.003	0.003	1.269	0.205	0.571	0.450	1.071
Porofit.	-0.994	0.076	-13.095	0.000	2.166	0.141	1.193
Liquidty.	-0.016	0.004	-4.361	0.000	0.192	0.661	1.141
Cons.	0.299	0.109	2.745	0.006	-	-	-
Obs.	410						
F-statistic	65***						
R Square	40%						
Adjusted R ²	39%						

Table 5. the Regression results (IRAQ)

Var/ IRAQ	OLS				Heteroscedasticity		Multicollinearity
	Coef.	St.Error	t Stat.	P-value	Ch ² (1)	P-value	VIF
size sales	0.041	0.012	3.305	0.001	1.261	0.262	1.031
Groth oppr.	0.003	0.005	0.569	0.569	0.259	0.611	1.002
Porofit.	-1.767	0.155	-11.405	0.000	1.079	0.299	1.072
Liquidty.	-0.007	0.002	-3.61	0.000	0.633	0.426	1.101
Cons.	0.129	0.111	1.173	0.242	-	-	-
Obs.	175						
F-statistic	40.07***						
R Square	47%						
Adjusted R ²	44%						

Table 6. Summary of regression results for West Asian countries

Firm-level Determinants	Trade-off Theory	Pecking Order Theory	KSA	IRAN	IRAQ
Size sales	+	-	-	+	+
Growth opportunities	-	+	+	+	+
Profitability	+	-	-	-	-
Liquidity	-/+	-	-	-	-

* (0) represents insignificance.					
Obs.			580	410	175
Adjusted R ²			29%	40%	47%
Adjusted R Square			28%	39%	44%
F-statistic			59.37	65.00	40.07
p-value			0.0000	0.0000	0.0000

Conclusions and Discussion

This study examines the capital structure theories in the emerging markets of an Islamic character in West Asia. This study is unique because it uses a group of three West Asian countries to bridge the gap with East Asian countries. Data for non-financial companies were collected in Saudi Arabia, Iran, and Iraq. The preliminary results indicate a distinct relationship between these three countries. We document a positive relationship between size sales and LEV, while a negative relationship between Profitability, liquidity, and LEV (Antoniou et al., 2008; Chen & Chen, 2011; Frank & Goyal, 2009; Güner, 2016; M'ng et al., 2017; Ozkan, 2001; Sbeiti, 2010; Serrasqueiro & Caetano, 2015).

In the second stage, our study reveals that these countries, despite the difference in the level of the economy and foreign investments, for example, Saudi Arabia has a large capital compared to Iran and Iraq due to the absence of security or political restrictions. However, our results indicate a remarkable similarity in the determinants of the capital structure proposed in this study. The study results showed that the pecking order theory better describes the capital structure in KSA (Guizani & Ajmi, 2021). It can be said that the Islamic nature of these countries brings companies closer to issuing shares than using debt as a means of capital financing, as Muslims believe that debt's interest equals usury.

This is a significant marker like these societies, yet we found some determinants of the capital structure consistent with trade-off theory in the context of Iran and Iraq. These results are similar to the study conducted in Turkey (Güner, 2016) and Malaysia and Singapore in East Asia (M'ng et al., 2017). This study should be developed in two different directions. First, it examines the determinants of the capital structure in other Islamic countries. Second, other criteria are added to explore the relationship in West Asian countries. The results of this study are difficult to generalize due to the volume of data. Therefore, we suggest increasing the number of data to obtain more accurate statistical predictions.

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