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THE DETERMINANTS OF CAPITAL STRUCTURE: EVIDENCE FROM GCC AND UK REAL ESTATE SECTORS

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Abstract

This paper investigates the determinants of capital structure in the context of the Gulf Cooperation Council (GCC) and United Kingdom (UK) real estate sectors. The results of a bivariate analysis indicate that leverage in the UK is much higher than in GCC countries. This may be attributable to UK companies facing a lower cost of debt, which would facilitate their raising of debt capital from the market. In addition, UK real estate firms tend to be larger and have higher levels of tangibility and retained earnings compared with GCC firms, while GCC firms tend to be more profitable and have more growth opportunities. The results of panel and Tobit regression analyses support both trade-off and pecking order theories; for instance, company size was found to have a significant positive impact on different types of debt measurements (market and book debt ratios), which is consistent with the trade-off theory, while profitability and retained earnings to total assets exhibited a significant negative impact for GCC and UK real estate firms, which is consistent with the pecking order theory. Importantly, these results hold true regardless of whether the regressions are estimated using an OLS, random effects, fixed effects panel estimation or a Tobit model.

Key words: *Real Estate Sector, Capital Structure, Emerging Economies, Lifecycle Theory*.

JEL Classification: *R30, G32*.

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1. Introduction

Research by financial economists has faced a challenge for many years with regard to MODIGLIANI and MILLER'S (1958) proposition that a company's capital structure is "irrelevant" to its value. MYER'S (1984) "capital structure puzzle" has fuelled additional debate regarding whether trade-off theory or pecking order theory is more relevant to determining capital structure, and market timing theory has also been implicated in the capital structure debate (BAKER, WURGLER 2002).

The merits and drawbacks of using debt and equity to finance a company's operations, along with the distortions introduced into investment policy through the use of borrowed money, have been discussed extensively by capital structure theorists. Such distortions include the issues of underinvestment and asset substitution. "Optimal" capital structure has historically been defined as the particular mix of debt and equity claims which balance the trade-off between tax advantages associated with debt financing and the corresponding increase in the costs of potential financial distress. More recent debate has broadened to examine various alternative explanations for corporate leverage decisions, including pecking order theory and the market timing hypothesis (CHEN et al. 2013; ELSAS et al. 2014; SERRASQUEIRO, CAETANO 2015).

The majority of the empirical research on corporate capital structure thus far has been conducted in developed countries (MAZUR 2007). For example, MARGARITIS and PSILLAKI (2007) used a sample of 12,240 New Zealand firms to investigate capital structure in that country and found evidence consistent with the agency cost theory. FRANK and GOYAL (2009) found evidence supporting trade-off theory in their study on publically-traded American companies from 1950 to 2003. The trade-off model was also supported by BANCEL and MITTOO'S (2004) survey of capital structure in 16 European countries. BROUNEN et al. (2006) also studied capital structure in Europe and found evidence consistent with pecking order theory. Finally, a study by RAJAN and ZINGALES (1995) investigated the G7 countries and concluded that capital structure variables were treated similarly in all seven economies.

With regard to developing economies, however, it has been noted previously that comparatively little research had been undertaken (SHAH, KHAN 2007). Recently, however, interest in capital structure in developing countries has increased, with several studies appearing in the last ten years (CHAKRABORTY 2010; FAN et al. 2012; KÖKSAL, ORMAN 2015; SIDDIK et al. 2017). The research which does exist so far, however, seems to indicate that the main difference between financing decisions in the developed versus the developing world is that capital structure in developed countries tends to be financed more heavily through long-term debt while developing economies rely more on short-term debt (BOOTH et al. 2001). AHMED and HISHAM (2009), for example, looked at the listed firms in Malaysia between the years of 1999 and 2002. Their findings were consistent with pecking order theory. YUE (2011) evaluated the Hong Kong exchange market with respect to the trade-off and pecking order models and found that the two were not mutually exclusive in that context. HUANG and SONG (2006) likewise found evidence consistent with both the trade-off and pecking order theories with respect to Chinese companies. Evidence from another study in China, by TONG and GREEN (2005), also provided support for the pecking order theory. RAMLALL (2009) looked at the capital structure of non-listed non-financial companies in Mauritius and likewise found evidence supporting the pecking order model. Finally EL BAHSH et al. (2018) investigated the determinants of capital structure within the context of the pecking order and trade off theories using the fixed effects model for over 15 years on Jordanian firms, and found that tangibility, size, and profitability had important influences on the financing decisions of Jordanian firms.

Studies examining capital structure determinants specifically within GCC countries, however, as this study proposes, are even scarcer, and only one major study of this kind has been published. SBEITI (2010) focused on three GCC countries of Kuwait, Oman, and Saudi Arabia and found that

a) corporate capital structure in these economies is best explained by the determinants suggested in corporate finance models,
b) stock markets in these countries have evolved and are now considered an important aspect of corporate financing decisions.

With regard to the specific sectors explored in the extant research, it is interesting to note that most empirical investigations have explicitly excluded the real estate market and other types of regulated firms (BAKER, WURGLER 2002; LEMMON et al. 2014). HOVAKIMIANA et al. (2004), for instance, cite the fact that financial firms' capital structure is likely to differ substantially from that of other companies as their reason for excluding firms of this type from their sample. According to GRAHAM et al. (2015), the capital structures of such companies are largely determined by regulatory requirements. FENG, GHOSH and SIRMANS (2007) observe that capital structure literature also conventionally excludes real estate sectors based on their unique regulatory environment. In other words, such companies' operations differ from those of industrial companies in ways entailing certain exogenous factors which are likely to affect capital structure and financial policy decisions (KASHEFI-POUR et al. 2010; MUKHERJEE, MAHAKUD 2010).

The reasons for the typical exclusion of real estate companies from broader samples are understandable; however, with market capitalization topping $907 billion USD by the end of 2014, it is also clear that this sector's capital structure policies warrant a more complete understanding. Furthermore, the real estate sector offers certain unique characteristics on which to test existing capital structure models. Such companies tend to have, for example, large amounts of collateral to support high levels of debt, and are thus able to distribute a majority of their profits as dividends.

The current study is unique insofar as no empirical research to date has analyzed and compared capital structure determinants between the GCC region and the United Kingdom. It is important to

consider capital structure decisions within the GCC region as a whole since this region comprises a unique tax and regulatory environment which differs considerably from that of developed countries like the UK, and comparisons between capital structure determinants within the two contexts could thus prove insightful. Additional differences exist between the macroeconomic conditions within these two environments (SBEITI 2010; AL-YAHYAEE et al. 2011; ZEITUN 2014; YOUSEF et al. 2016; YOUSEF et al. 2019). For example, the GCC is characterized by slower economic growth and reduced bankruptcy costs. Furthermore, there is a higher level of dependency within the region as compared to other developing economies, along with a strong monopoly within the oil industry. This means that these nations rely heavily on the value of the U.S. dollar and the strength of the global economy. As illustrated by SBEITI (2010), capital structure determinants may also differ in the GCC due to this region's lack of corporate taxation, which according to trade-off and pecking order theory could have an indirect impact on capital structure.

With increasing globalization in the realm of investments, international real estate investors may begin to consider more seriously emerging markets beyond those currently popular in East Asia, Latin America, and Eastern Europe to focus more on investments in Middle Eastern, and more specifically, GCC economies. Although small, the region can be considered a key player on the world economic stage. It has a nominal GDP of 2.1% of the global total in 2014, which is comparable to that of Southeast Asia. The GCC nations rely heavily on oil for their continued economic development, using revenue from this resource to finance activities in the industrial, commercial, and real estate sectors (VOHRA 2017). The real estate sector, however, warrants special attention given its close connection to both economic and population growth. GCC markets have exhibited a tripling and even quadrupling in investment volume in recent years, and their real estate sectors have been estimated as the fastest-growing in the world (CHEIKH et al. 2018).

In contrast, the UK boasts Europe's largest real estate and real estate finance markets (AALBERS 2016). The country's investment environment is both extremely liquid and extremely transparent, exhibiting the region's highest level of market and transaction data. In 2016, the total value of commercial real estate was £883 billion, which represents around 10% of the UK's net wealth, and contributed 3.7% to the total UK economy (Property Industry Alliance, 2017). The nation also provides one of Europe's most effective, transparent, and creditor-friendly legal frameworks, which is crucial in situations of economic downturn when investments are more likely to underperform and loans to default, and where security enforcement may be necessary, a process which takes a matter of days in the United Kingdom as compared, for example, to Germany (3-18 months), Spain (2-3 years), or Italy (even longer, despite recently-established regulatory changes). Although certain processes may exist to make the enforcement somewhat smoother in these countries in certain situations, the success of such methods is not guaranteed and may entail additional costs and risks.

A problem with the real estate industry in the GCC region compared with developed economies such as the UK, however, is the lack of proper regulation. Consequently, such funds in this part of the world experience comparatively limited growth. While Bahrain and Dubai can be said to have meaningful regulations for real estate entities, the rest of the region lags behind. In fact, the Dubai International Financial Centre in UAE is the only entity which sets regulations for the real estate sector in this region, and it is believed that such regulations have a substantial impact on both the capital structure and overall performance of such companies. One of the primary regulatory considerations is that these funds are generally treated as a subset of property funds more generally. They tend to be public funds traded on listed stock exchanges, and in order to manage risk, they are only allowed to invest 30% of their funding in properties not yet built. Furthermore, the leverage level is mitigated by preventing them from borrowing more than 70% of their net asset value.

The purpose of the current study is thus to address this gap in literature by focusing explicitly on the determinants of capital structure within a sample of real estate companies located in the GCC region. It will thus contribute to the existing capital structure literature in several ways. First, the lack of any published study examining and comparing leverage decisions by real estate firms listed in GCC markets creates a unique opportunity to illuminate the validity and applicability of various existing capital structure models within this sector. GCC countries differ from other emerging markets in important ways. The level of these economies' development, for example, is particularly low. In addition, companies based in this region typically face lower bankruptcy costs since the control of equity is largely dominated by a particularly wealthy and influential private sector. Furthermore, these countries are especially vulnerable, compared to most other emerging economies, to the global

price of and demand for oil, the value of the US dollar, and the overall state of the world economy (SBEITI 2010).

Second, this study presents a potential determinant of capital structure which has previously been largely ignored: retained earnings. This factor can be used as a proxy for a company's financial life cycle stage. The concept of life cycle has thus far been applied only rarely to issues of corporate finance. An important exception here is a pioneering study by FAMA and FRENCH (2001), DEANGELO, DEANGELO and STULZ (2006), which concluded that decisions regarding dividend payments are positively affected by a company's level of retained earnings.

The current study utilizes firm-level data from the real estate sectors in both the GCC and the UK between the years of 2000 and 2014. The sample is divided by these two regions, and the specific element under evaluation is whether the debt-to-assets (and debt-to-market value) ratio is influenced by a company's level of retained earnings. The findings indicate a general negative correlation between leverage and retained earnings. In both samples, debt ratio was found to be low for higher-RE firms. Multiple regressions analyses (pooled, fixed, and Tobit) also demonstrate a significant negative impact of accumulated retained earnings on firm leverage, even after controlling for the effects of previously identified capital structure determinants.

The rest of this paper is organized as follows: Section 2 discusses theories of capital structure with relation to the real estate sector, Section 3 elaborates the research method used, Section 4 discusses the specific hypotheses tested, Section 5 discusses the empirical findings, and Section 6 summariszs and concludes the paper.

2. Capital Structure Theories and Real Estate Sectors

With the 1958 publication of Modigliani and Miller's (MM) "irrelevance theory of capital structure", the topic of leverage began to fascinate finance economists. Since then, three major competing capital structure theories have emerged which challenge the MM assumption that capital markets operate in "perfect" conditions. The first of these is known as the trade-off theory. It asserts that, after taking into consideration market imperfections such as tax, bankruptcy costs, and agency costs, companies must balance the costs and benefits of debt and equity financing in order to arrive at their "optimal" capital structure.

The second is known as pecking order theory (MYERS 1984; MYERS, MAJLUF 1984). It asserts that there is a "hierarchy" which companies follow in capital structure decisions in order to minimize the problem of information asymmetry between insider managers and outsider shareholders.

The third is a relatively recent model proposed by BAKER and WURGLER (2002) which is known as "the market timing theory" of capital structure. It states that a given firm's capital structure results from cumulative past attempts to "time" the equity market, i.e. companies tend to issue new shares when they perceive themselves to be overvalued and repurchase their own shares when they believe themselves to be undervalued. The observation regarding the timing of issuing behavior was well-established, but BAKER and WURGLER (2002) were the first to demonstrate the extent of its potential influence on capital structure.

Discussions of capital structure in corporate finance literature tend to begin with an analysis of trade-off theory with respect to the marginal debt tax shield versus marginal bankruptcy costs. In our case, however, the tax benefit argument is not particularly relevant since real estate entities in the UK are statutorily exempt from paying income tax as long as a minimum of 90% of their taxable income is distributed to shareholders in the form of dividends (FENG et al. 2007; ERTUGRUL, GIAMBONA 2011). More specifically, if a UK REIT distributes 90% of its taxable income to shareholders using a Property Income Distribution (PID) each accounting period, no corporate income tax is owed. Furthermore, the GCC operates as a free tax system, so real estate companies in this region likewise pay no income tax. The effective absence of corporate tax in both our samples thus eliminates the tax shield benefit of debt financing and renders this trade-off moot in this study.

Another important point related specifically to real estate firms is that regulatory mandates which restrict the diversification opportunities of such companies, requiring them to focus their income-generating activities entirely on assets directly related to real estate are in place. This lack of diversification enhances the risk of bankruptcy and other forms of financial distress. The fact that real estate firms tend to have large illiquid assets that are vulnerable to cyclicality and the vagaries of local property markets further magnifies the risk of acute financial distress. This begs the question: if debt

financing offers no tax benefits to the organization or its shareholders and instead entails increased risk of bankruptcy, why would real estate firms include any amount of debt in their capital structures?.

One possible reason is provided by the pecking order theory. MYERS (1984) and MYERS and MAJLUF (1984) indicate that the market participants who are aware of their own information deficit along with the incentives of debt issuing firms will assume that only overvalued companies choose to issue equity, and this argument is particularly compelling with regard to the real estate sector of the market since such assets are notoriously difficult to value (HAN 2006). The commercial properties which form the bulk of REIT assets are heterogeneous, complex and illiquid and therefore require both careful monitoring and specialized knowledge about local market conditions and the unique financing arrangements involved. While ensuring diffuse ownership of the trust, this requirement reduces the number of blockholders large enough to have sufficient incentive to undertake the kind of monitoring efforts needed to overcome the informational opacity typical of this market sector. Real estate assets, in other words, are uniquely opaque in terms of information flow.

The pecking order theory assumes that there is no target capital structure and that firms select capital structures based on three preferences: (1) internal finance, (2) debt, and (3) equity. However, the application of this theory in the analysis of the real estate industry has been challenging. For instance, managers within the real estate sector do not enjoy similar privileges in terms of access to a large range of financing options as managers in other corporate financing institutions do. This is due to the aforementioned regulatory restrictions that preside over real estate management. This argument has been confirmed through two studies, which demonstrated that long-term investments in real estate industries tend to be financed through debt and equity rather than through retained earnings (e.g. OTT et al. 2005; BROWN, RIDDIOUGH 2003).

While BAKER and WURGLER (2002) argued that market timing is the first order determinant of firms' capital structure use of debt and equity, thereby giving a voice to the the market timing theory of capital structure. Therefore, this proposes that firms choose their financing option at a point in time in which such form of financing is considered as valuable by financial markets. This theory hypothesizes that information on the intrinsic value of company securities lies with the managers of the firm. Hence, managers with this information tend to use it to make financing and investment decisions they consider strategic so as to bring the maximum benefit to shareholders and investors. However, this theory is always contrasted with the pecking order and trade-off theories as it is believed that the market timing theory advocates the power of information, which often presents a barrier in that this allows certain firms to take actions that would profit them more than others. This theory has been supported by findings from other studies (e.g. GRAHAM, HARVEY 2001). Moreover, a significant negative correlation between firm leverage and market-to-book ratios has been revealed in some studies, such as those carried out by BAKER and WURGLER (2002). This theory is therefore considered to offer an accurate depiction of how culture affects economic decisions as it is classified as part of the behavioral finance literature. It emphasizes that mispricing in markets exists and the behavior of companies helps to detect mispricing within financial markets even better than the markets can.

While several attempts have been made to explain capital structure in the real estate sector, a consensus has yet to be reached. MORRI and BERETTA (2008) assert that pecking order theory explains real estate capital structure, while the findings of MORRI and CRISTANZIANI (2009) point toward trade-off theory as a better explanation. BOUDRY et al. (2010) found market timing theory to be the primary indicator with trade-off theory having a secondary influence. OOI, ONG and LI (2010) also support market timing theory with respect to the capital structure decisions of real estate firms.

From the perspective of Miller and Modigliani, the value of collateral is irrelevant, i.e. the value of pledgeable assets may impact credit rating but should not increase value. In the presence of financial frictions such as asymmetric information, however, these assets can be pledged to lenders as a means to mitigate the costs of inefficiency. This, in turn, increases a firm's debt capacity. Therefore, fluctuations in real estate asset values can impact the debt capacity of companies through a collateral channel. More specifically, the prediction is as follows: in the presence of financing frictions which prevent firms from financing investments solely through debt, any increase in the value of the collateral a company can use to secure debt financing will lead to an increase in leverage ratio. Within an imperfect credit market, the agency problem is mitigated in external financing relationships by the ability of lenders to seize pledged collateral in exchange for an increase in the debt capacity of

borrowers (FOUGÈRE et al. 2017). The degree to which borrowing can increase based on collateral pledging depends on the liquidation value of the collateral in question. For this reason, real estate assets typically comprise the lion's share of a company's pledgeable assets since they are highly liquid and have a long lifespan (BECK et al. 2008).

3. Research Method

In order to analyze the determinants of capital structure in this study, financial and market data were gathered for real estate firms listed on the GCC and London Stock Exchanges during the years 2000-2014. The study sample includes all listed real estate firms with GICS Industry Group Code 4040 (or GICS Industry Codes 404030 and 404020). This yielded a final sample of 51 Diversified Real Estate Activities, 15 Real Estate Development firms, 33 Real Estate Operating Companies, and 32 REITs. Secondary data for the sample was collected from Thomson DataStream, and Stata software was used to analyze the data and run the panel and Tobit regressions.

It is common in literature to use estimation methods involving panel data to examine the determinants of capital structure. The panel data used in the current paper include cross-sectional time-series data involving observations of the same units at several different consecutive points in time (KENNEDY 2008). Our data control for individual heterogeneity caused by hidden factors which could lead to biased results in time-series or cross-sectional estimations if neglected (BALTAGI 2008). The general form of the model used here can be stated as follows:

$$Y_{it} = \alpha + \beta X_{it} + e_{it} \quad (1)$$

where:

i - the subscript denotes the cross-sectional dimension and t represents the time-series dimension,

Y_{it} - represents the model's dependent variable, i.e. a firm's debt ratios,

X_{it} - contains the model's set of explanatory variables,

α - is the constant,

β - represents the coefficients.

It should also be noted that we used Tobit models to test the robustness of our model. Table 1 below presents the dependent and independent variables examined in this study for their potential involvement in capital structure.

Table 1

Variables of Study

Variables	Variable Type	Computation	Expected Sign
Market Total Debt Ratio	Dependent	Total Debt/(Total Debt + Market Cap)	N/A
Market Long-Term Debt Ratio	Dependent	Long-Term Debt/(Total Debt + Market Cap)	N/A
Market Short-Term Debt Ratio	Dependent	Short-Term Debt/(Total Debt + Market Cap)	N/A
Total Debt Ratio	Dependent	Total Debt/Total Assets	N/A
Long-Term Debt Ratio	Dependent	Long-Term Debt/Total Assets	N/A
Short-Term Debt Ratio	Dependent	Short-Term Debt /Total Assets	N/A
Size	Independent	Natural Logarithm of Total Assets	Trade-off (+), Pecking order (-)
Profitability	Independent	Return on Assets (ROA)	Trade-off (+), Pecking order (-)
Tangibility	Independent	Fixed Assets/Total Assets	Trade-off (+), Pecking order (-)

Growth opportunities	Independent	Market-to-Book Ratio	Trade-off (-), Pecking order (+)
Life Cycle (Firm Maturity)	Independent	Accumulated Retained Earnings / Total Assets	Pecking order (-)

Source: own study.

4. Hypotheses and Variables of Study

4.1. Leverage

The dependent variable in our search for the determinants of capital structure is leverage. In calculating leverage, we take in account both book value and market value of total assets. It is the book value of assets which is considered when a company is either providing collateral for a loan or facing bankruptcy, and book leverage has been preferred in previous research due to the financial market's constant state of fluctuation; managers are therefore said to depend on book value when considering financial policy. FAMA and FRENCH (2002) indicate that book debt is a more reliable figure insofar as it avoids certain issues which are beyond the control of a company. While capital structure theories use long-term debt as a proxy for leverage, three proxies are used in this study: long, short and total debt ratios. For each variable, both market and book value of assets are taken into account.

4.2. Profitability

The prediction of trade-off theory is that more profitable companies will have higher levels of debt. Furthermore, profitable companies have lower expected bankruptcy costs. If a firm generates higher profits relative to its investments, it will also benefit from the discipline that debt provides in managing the problem of free cash flow (JENSEN 1986). In other words, profitable companies are perceived as entailing less risk, with the free cash flow from business decreasing the cost of potential financial distress or bankruptcy. This means that trade-off theory predicts a positive correlation between leverage and profitability.

Pecking order theory, on the other hand, asserts that companies will prefer to use internal finance before seeking external funding. If a firm's investments and dividends are fixed, its levels of leverage should decrease as its profitability increases.

This study thus tests the following two hypotheses with respect to leverage:

Hypothesis 1a: Trade-off theory predicts a positive correlation between leverage and profitability.

Hypothesis 1b: Pecking order theory predicts a negative correlation between leverage and profitability.

4.3. Firm Size

It is generally assumed that trade-off theory predicts that larger companies will have higher levels of debt since such firms boast greater diversification and lower default risk. Such companies are also typically more mature in terms of their life cycle. Because large companies tend to have an established reputation in debt markets, they face reduced agency costs associated with debt. Trade-off theory therefore predicts that leverage and firm size should correlate positively.

Pecking order theory, on the other hand, is thought to predict an inverse correlation between these two factors based on the argument that large companies have established reputations within the market, are therefore less subject to adverse selection, and can more easily issue equity than their smaller counterparts, who often face severe adverse selection issues.

This study thus tests the following two hypotheses with regard to firm size:

Hypothesis 2a: Trade-off theory predicts a positive correlation between firm size and leverage.

Hypothesis 2b: Pecking order theory predicts a negative correlation between firm size and leverage.

4.4. Tangibility of assets

The important thing to note about tangible assets is that they are easier to collateralize and are thus less subject to loss if a firm experiences financial distress. From a trade-off theory perspective, tangibility therefore has an important effect on the costs of financial distress and makes it difficult for shareholders to substitute high-risk assets for low-risk ones. This means that the agency costs

associated with debt are lower for companies with more tangible assets. Trade-off theory thus predicts a positive correlation between leverage and the tangibility of assets.

With respect to pecking order theory, HARRIS and RAVIV (1991) assert that the low levels of information asymmetry associated with high levels of tangible assets reduce the cost of equity and result in a negative correlation between these two factors.

This study thus tests the following two hypotheses with respect to the tangibility of assets:

Hypothesis 3a: Trade-off theory predicts a positive correlation between tangibility and leverage.

Hypothesis 3b: Pecking order theory predicts a negative correlation between tangibility and leverage if firms have more tangible assets and issue more equity.

4.5. Growth Opportunities

Trade-off theory predicts a negative correlation between leverage and growth opportunities. Growth firms are more likely than stable firms to lose more of their value if they experience financial distress. Agency theory also predicts such a correlation. For example, the problem of underinvestment arises because companies with risky debt experience the incentive to underinvest in positive net present value projects because shareholders end up bearing the entire cost of such projects while receiving only a fraction of the firm's increase in value because a large portion must go to debtholders. This problem is exacerbated for growth firms, leading them to prefer lower levels of debt (Myers, 1977).

In contrast, pecking order theory argues that companies with higher levels of investment (i.e. whose profitability is relatively stable), should accumulate more debt over time. This means that growth opportunities and leverage ought to be positively correlated.

This study thus tests the following two hypotheses with respect to growth:

Hypothesis 4a: Trade-off theory predicts a negative correlation between growth and leverage.

Hypothesis 4b: Pecking order theory predicts a positive correlation between growth and leverage.

4.6. Firm Maturity and Life Cycle Theory

Life cycle theory is another model which originates in economics literature (PENROSE 1952). It describes the typical development of a company through a series of growth phases based on its consumption and savings activities, and is useful in describing the development of a company's financing needs and capital structure (Timmons, 2004). Life cycle theory assumes that young companies in an early stage of development will rely heavily on internal finance with access to external modes of finance increasing as the firm develops, and its level of information asymmetry decreases as outsider shareholders gain the ability to assess its creditworthiness. On the other hand, mature companies will also use lower levels of debt thanks to their higher levels of retained profits.

According to pecking order theory, companies will prefer to finance their investments through retained earnings first and only then turn to external funds, regardless of their size or stage of development. Debt is repaid when retained earnings exceed investment needs, and if external funds are required, external equity would be considered a last resort after the less risky options of security and debt. External equity has the added downside of placing constraints on the management of the business. This hierarchy in the use of funding sources was developed by Myers (1977, 1984).

This study uses the ratio of retained earnings to total assets (RE/TA) as a proxy for firm maturity. According to DeAngelo, DeAngelo and Stulz (2005), the earned/contributed capital mix is a logical representation of life cycle stage insofar as it depicts the extent to which a company relies on each type of capital. For example, firms with a low RE/TA tend to be in a growth stage while companies with a high RE/TA tend to be more mature and largely self-financing thanks to ample cumulative profits.

This study uses the following hypothesis with regard to firm maturity:

Hypothesis 5: Pecking order theory predicts a negative correlation between RE/TA *and leverage.*

5. Empirical Results and Analysis

5.1. Bivariate Analysis

Results of the independent samples t-test are presented in Table 2. The mean figures for the independent and dependent variables used in the correlation and regression analyses is Sections 5.2

and 5.3 are also compared. Finally, Table 2 also presents the statistical significance of all differences in the data between the two contexts (UK and GCC).

Table 2

Bivariate Analysis

	UK	GCC	Total	Difference in Mean	t	Sig.
BTDR	50.4%	35.8%	44.0%	-14.6%***	-7.175	0.000***
BLDR	32.2%	22.0%	27.7%	-10.2%***	-8.064	0.000***
BSDR	18.2%	18.3%	18.2%	0.1%	0.032	0.975
MTDR	48.0%	38.9%	44.4%	-9.1%***	-6.123	0.000***
MLDR	33.3%	24.9%	30%	-8.4%***	-5.971	0.000***
MSDR	14.7%	14%	14.4%	-0.7%	-0.678	0.498
ROA	4.1%	5.3%	4.6%	1.3%	1.399	0.162
Tangibility	70.3%	65.3%	68.3%	-5%***	-2.842	0.005***
M-B-Ratio	1.283	1.325	1.299	0.042	0.225	0.822
Ret Earnings/Tot Assets	20.271%	14.940%	17.949%	-5.331%	-1.491	0.136
Total Assets ($M)	$22,715	$15,511	$19,584	-$7,204 ***	-3.314	0.001***

*BTDR is book total debt ratio and has been calculated as total debt divided by total assets. BLDR is book long-term debt ratio and has been calculated as total long-term debt divided by total assets. BSDR is book total short-term debt ratio and has been calculated as total short-term debt divided by total assets. MTDR is market total debt ratio and has been calculated as total debt divided by total debt plus market capitalization (share price × number of shares). MLDR is market long-term debt ratio and has been calculated as total long-term debt divided by total debt plus market capitalization. MSDR is market total short-term debt ratio and has been calculated as total short-term debt divided by total debt plus market capitalization. Return on assets (ROA) is earnings before interest divided by the book value of assets. Tangibility has been calculated as total assets minus current (i.e. fixed) assets divided by total assets. M-B-Ratio is market-to-book ratio used as a proxy for growth opportunities. Ret Earnings/Tot Assets is accumulated retained earnings divided by total assets, and this ratio has been used to proxy firm maturity (lifecycle measurement). The symbols ****, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.*

Source: own study.

It is clear from the data above that real estate firms in the UK exhibit both higher market and higher book leverage as compared to real estate firms in the GCC region. For example, the total book and market debt ratios for the UK were found to be 50% and 48% respectively, while these values for GCC companies were 36% and 39%, respectively. On the other hand, the indicator for growth opportunities (as measured by market-to-book ratio) was higher for the sampled GCC companies. This is crucial with respect to pecking order theory, which predicts a strong correlation between capital structure and growth, i.e. companies with greater opportunities for growth are expected to invest the internal cash flow than to attempt to raise capital through the external market.

Another notable finding is that GCC firms appear to be more profitable than UK companies, meaning that real estate firms in the GCC are using their relatively scarce resources more efficiently. This could also be related to the higher growth opportunities noted in this region; companies with higher market-to-book ratios are, generally, more profitable than those with reduced opportunities for growth. They also tend to face lower borrowing costs than their counterparts.

The findings presented in Table 2 also indicate that UK real estate firms tend to be larger than those in the GCC, with UK companies reporting average total assets of $22,715 million compared to $15,511 million for the GCC sample. This difference is significant at the 1% level. This finding can be attributed largely to the relatively early lifecycle stage of the GCC real estate sector while the UK real estate market is more mature and thus attracts greater numbers of investors. Another factor which points to the more developed state of the UK market compared with the GCC market is the ratio of retained earnings to total assets (our proxy for firm maturity). It can be seen that this value is higher for our UK sample.

The indicator of tangibility is also shown to be higher for the UK than for the GCC market, indicating a lower level of opacity in the UK. This means that outside investors have greater access to

information allowing them to predict companies' future earning capacity and financial prospects in the UK. This idea is covered in previous empirical studies that discuss the effect of information asymmetry and agency theory in the field of corporate finance. Generally, a greater level of transparency indicates the likelihood of fewer such issues, though additional research on the effects of regulation with regard to this topic would be beneficial.

5.2. Correlation

Table 3

Correlation Analysis

	Debt Ratios	Size	ROA	Tangibility	M-B-Ratio	Ret Earnings/Tot Assets
GCC	MTDR	0.303***	-0.218***	-0.039	-0.417***	-0.323***
	MLDR	0.324***	-0.087*	-0.256***	-0.332***	-0.078*
	MSDR	0.014	-0.214***	0.263***	-0.180***	-0.391***
	BTDR	0.396***	-0.102**	0.058	-0.016	-0.331***
	BLDR	0.413***	-0.004	-0.128***	-0.092*	-0.103**
	BSDR	0.213***	-0.164***	0.026	0.087	-0.455***
UK	MTDR	0.238***	-0.256***	0.097**	-0.167***	-0.166***
	MLDR	0.337***	-0.155***	0.502***	-0.147***	-0.090**
	MSDR	-0.167***	-0.112***	-0.584***	-0.011	-0.088**
	BTDR	-0.177***	-0.365***	-0.115***	0.122***	-0.698***
	BLDR	0.276***	-0.160***	0.427***	-0.092**	-0.226***
	BSDR	-0.329***	-0.284***	-0.347***	0.240***	-0.589***

*BTDR is book total debt ratio and has been calculated as total debt divided by total assets. BLDR is book long-term debt ratio and has been calculated as total long-term debt divided by total assets. BSDR is book total short-term debt ratio and has been calculated as total short-term debt divided by total assets. MTDR is market total debt ratio and has been calculated as total debt divided by total debt plus market capitalization (share price × number of shares). MLDR is market long-term debt ratio and has been calculated as total long-term debt divided by total debt plus market capitalization. MSDR is market total short-term debt ratio and has been calculated as total short-term debt divided by total debt plus market capitalization. Size is the natural logarithm of total assets. Return on assets (ROA) is earnings before interest divided by the book value of assets. Tangibility has been calculated as total assets minus current (fixed) assets divided by total assets. M-B-Ratio is market-to-book ratio used as a proxy for growth opportunities. Ret Earnings/Tot Assets is accumulated retained earnings divided by total assets, and this ratio has been used to proxy firm maturity (lifecycle measurement). The symbols ****, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.*

Source: own study.

Correlation analysis is an integral component of any regression model insofar as it allows observation of the significance of any discovered correlations based on which the regression model was used. The data above reveal that ROA yielded a significant negative correlation to both market and book debt ratios, a finding which supports the pecking order model in which profitability correlates negatively with leverage. As discussed above, pecking order theory asserts that companies should first rely on internal resources for funding, followed by secured debt, unsecured debt, and equity capital, in that order. Since profitable companies experience greater free cash flow, they can be expected to have fewer debt issues (BAUER 2004). The results of our analysis thus support the pecking order model for both samples (UK and GCC).

Firm size, represented as the natural logarithm of total assets, consistently correlates positively and significantly to both the book and market debt ratios for our GCC sample. This means that larger companies may have the capacity to raise their long-term leverage ratios and is consistent with trade-off theory, where firm size could act as an inverse proxy for the probability of bankruptcy costs. Large companies are likely to boast greater levels of diversification and experience reduced risk of failure. The results for the UK sample, however, are mixed. A significant positive correlation can be seen between size and market total debt ratio, market long-term debt ratio, and book long-term ratio, and

these results are consistent with trade-off theory. Size was shown to have a significant negative influence, however, on short-term debt ratio.

The variable of tangibility can be used as a direct measure of information asymmetry between insider managers and outsider shareholders. This study's results for the correlation between debt ratios and tangibility are mixed. For example, the findings for the GCC sample regarding MSDR and for the UK sample regarding MLDR, MTDR, and BLDR are positive and significant, indicating that the greater a firm's transparency is, the more easily and cheaply it will be able to raise capital through debt.

Agency cost theory suggests that there will be a positive correlation between a firm's leverage and tangibility. According to JENSEN'S (1986) seminal work on agency theory, companies can typically begin participating in riskier investments after they issue debt, transferring wealth between creditors and shareholders in order to take advantage of the optional nature of equity.

The pecking order perspective argues that companies with fewer tangible assets will be more sensitive to information asymmetry issues and will thus issue debt instead of equity if external financing is needed (HARRIS, RAVIV 1991). This leads to the expectation of a negative correlation between tangibility and leverage.

M/B ratio is an indicator of investment opportunities, and it can be seen that this variable correlates negatively with the various debt ratios. One way to think of growth opportunities is as capital assets that cannot be pledged against debt and generate no taxable income at present. Both trade-off theory and agency cost theory imply a negative correlation between leverage and growth opportunities, given that firms with higher growth opportunities tend to experience greater bankruptcy costs. One implication of agency cost theory is that equity-controlled companies are not able to invest in an optimal manner due to their tendency to shift wealth between creditors and shareholders in a riskier fashion.

Finally, some theoretical models assert a negative correlation between growth opportunities and levels of long-term debt. MYERS (1977) suggests that companies should issue short-term rather than long-term debt if they wish to reduce the costs associated with bankruptcy.

The final variable under examination, that of a lifecycle (or the ratio of retained earnings to total assets), demonstrated a consistent negative correlation with all types of debt ratio. This use of retained earnings as a proxy for financial lifecycle stage follows in the footsteps of the seminal work by DEANGELO, DEANGELO and STULZ (2006). The negative correlation revealed here is consistent with pecking order theory, which as discussed above, suggests that companies generally follow a certain hierarchy when choosing how to finance their business activities (MYERS 1984; MYERS, MAJLUF 1984). First choice will generally be that of retained earnings since it entails no related flotation costs and does not require external supervision by a provider of capital. Companies generally resort to debt financing only when they find their internal accruals to be inadequate. Therefore, firms with higher retained earnings tend to have lower debt ratios.

The next section discusses the results of the panel regression analysis and the Tobit model.

5.3. Regression Analysis

Table 4

Regression Analysis (Market Debt Ratios)

MTDR	GCC			UK		
	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.37	0.80		0.34	0.79	
Adj R^2	0.36	0.54		0.33	0.39	
F-test	30.67***	26.01***		48.22***	38.6***	
Size	13.66***	31.15***	13.66***	7.27***	18.03***	7.27***
ROA	-0.21*	-0.11	-0.21*	-0.7***	-0.53***	-0.7***
Tangibility	0.03	0.19***	0.03	-0.04**	0.06	-0.04**
M-B-Ratio	-7.9***	-3.35***	-7.9***	-1.79***	-1.8***	-1.79***
RE/TA	-0.23***	-0.36***	-0.23***	-0.11***	-0.13***	-0.11***
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes
MLDR	GCC			UK		

	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.25	0.77		0.45	0.8	
Adj R^2	0.24	0.31		0.45	0.31	
F-test	17.24***	21.65***		77.48***	40.15***	
Size	8.11***	22.8***	8.11***	8.65***	10.92***	9.09***
ROA	-0.29***	-0.13*	-0.29***	-0.48***	-0.35***	-0.35***
Tangibility	-0.17***	-0.01	-0.17***	0.25***	0.16***	0.25***
M-B-Ratio	-5.26***	-1.47**	-5.26***	-1.24***	-1.36***	-3.81***
RE/TA	0.07	-0.11**	0.07	-0.09***	-0.16***	-0.11***
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes
MSDR	GCC			UK		
	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.33	0.74		0.43	0.72	489.42
Adj R^2	0.31	0.33		0.42	0.09	0
F-test	24.85***	17.78***		69.07***	26.62***	
Size	5.54***	8.34***	5.27***	1.38**	7.11***	1.38**
ROA	0.08	0.02	0.09	0.01	-0.19***	0.01
Tangibility	0.21***	0.2***	0.34***	-0.29***	-0.1***	-0.29***
M-B-Ratio	-2.64***	-1.87***	-2.56***	-0.55***	-0.43***	-0.55***
RE/TA	-0.29***	-0.25***	-0.32***	-0.01*	-0.03***	-0.01*
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes

*This table shows the results of panel regression analysis (pooled and fixed models) and Tobit regression. The results of the Hausman test were significant at the 5% level, and the results of the random effects model are thus not reported. Three dependent variables have been used (MTDR, MLDR and MSDR) along with five explanatory variables: firm size as measured by the natural logarithm of total assets, return on assets (ROA), tangibility as calculated by total assets minus current (fixed) assets divided by total assets, market-to-book ratio, and accumulated retained earnings divided by total assets. The symbols ****, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.*

Source: own study.

Table 4 demonstrates the findings of regressions analyses based on three leverage measurements (MTDR, MLDR, MSDR). The random effects model was also run but is not reported here due to the fact that the results of the Hausman test were significant, indicating that the fixed effects model is most suitable in this case. It is also worth noting that in order to check the robustness of the models, a Tobit regression was utilized. Where the predicted value of the leverage ratio is censored to fall between zero and 1, and where, by definition, leverage ratio varies within a range of 0% to 100%, the Tobit regression was used to correct for the censoring of the dependent variable (AL-NAJJAR, HUSSAINEY 2011; ANWAR, SUN 2015; ELSAS, FLORYSIAK 2015). It can be seen that the results presented in Table 4 are similar to those reported for the OLS and Tobit regressions, and this can be attributed to the fact that most of the observations for the dependent variables in our sample were not zero. As indicated by STEWART (2013), in the case of a large number of zero values, the Tobit approach would seem the most natural. Although the results obtained using the fixed effects, OLS, and Tobit regressions were similar, caution should be exercised in selecting the most appropriate method. OLS is inefficient insofar as it fails to exploit the autocorrelation in the composite error term over time (WOOLDRIDGE 2015). Given the significance of time-invariant characteristics of the unobservable firm-specific factors thought to explain the majority of cross-sectional variations in capital structure, the estimates provided by the OLS model could be subject to bias. For this reason, the three models (OLS, fixed effects, and Tobit) were used to ensure the robustness of our estimations.

The findings presented in the table indicate that the size of company had a positive and significant influence on various types of debt measurement for both the GCC and UK samples. This finding is relatively common and can be explained from several angles. For instance, due to their ability to pledge collateral, mature and large real estate companies tend to be more inclined to raise capital through leverage than smaller, developing firms. Trade-off theory predicts an inverse correlation between probability of bankruptcy and firm size, i.e. a positive relationship between leverage and

size. Our results are thus consistent with trade-off theory and have been shown to hold regardless of the type of panel estimation used (i.e. OLS, random effects, fixed effects, or Tobit).

The findings of Table 4 also indicate that profitability had a negative and significant effect on market debt ratios for our UK sample, with results significant at the level of 1%. Higher profitability means higher dividend payments. However, there are several arguments for the implication of the dividend pay-out and market share price. This finding therefore corroborates the assumptions of the "Bird in hand theory", which recognizes the existence of a relationship between firm value and dividend pay-out. AMIDU (2007) supports this view by claiming that dividends are generally preferred by investors over capital gains since dividends are less risky. In this sense, stock prices are higher for companies that have high dividend pay-out ratios as they offer higher dividend yields. Therefore, higher profitability firms will have a higher dividend payment, which results in an increase in market capitalization, leading to lower market debt ratios.

Regarding the GCC real estate firms, a negative impact of profitability on market debt can be seen, but these results were largely insignificant (e.g. MSTD). This finding is consistent with pecking order theory and the asymmetric information hypothesis of MYERS (1984) and MYERS and MAJLUF (1984) insofar as internal financing is apparently preferable over debt and equity to the firms in our sample. More profitable companies have increased retained earnings and therefore less debt. It should be noted again that the interest tax shield hypothesis does not apply, as mentioned previously, due to the tax exempt nature of the real estate companies sampled (DEANGELO, MASULIS 1980).

For both the GCC and UK samples, growth opportunities (i.e. Market-to-Book ratio) were significantly negative for all debt ratios, and these results were unaffected by the type of panel estimation model used. Investment opportunities are viewed as a form of intangible value which lacks collateral value and is likely to be lost in cases of financial distress. For firms with high intangible value, the risk of undervaluation and resource division is usually quite high (MYERS 1977). Such arguments imply a negative correlation between investment opportunities and debt ratio.

The results presented for tangibility are clearly inconsistent, with UK firms seeing a negative impact on MSDR (significant at 1%) but a positive impact on MLDR (also significant at 1%). Trade-off theory argues that tangible assets are effectively collateral for any given company and thus provide security in the event of financial distress. Having such collateral also helps preclude moral hazard issues caused by a conflict of interest between lenders and shareholders (JENSEN, MEKLING 1976). Therefore, companies with greater amounts of tangible assets can be expected to have higher levels of debt. The same tends to be true for companies which require high levels of fixed assets and thus also have greater financing needs (RAJAN, ZINGALES 1995; HARRIS, RAVIV 1991). According to the maturity principle, fixed assets tend to entail long-term rather than short-term debt while non-fixed inventory usually entails short and long-term debt rather than equity (THIES, KLOCK 1992).

In terms of pecking order theory, firms with higher levels of fixed assets tend to issue less debt based on a preference for internal capital as a means of finance. In addition, companies with higher levels of tangible assets are thought to be more resilient to problems of information asymmetry and are thus less likely to have high levels of debt. Therefore, in this scenario, tangibility is inversely correlated to capital structure.

With respect to agency cost theory, debt can have a disciplinary role for managers by reducing the available cash flow (HARRIS, RAVIV 1991; GROSSMAN, HART 1982), and tangible assets act to reduce agency costs by allowing an increase in debt level supported by collateral (CORTEZ, SUSANTO 2012).

The findings regarding the ratio of retained earnings to total assets (i.e. our lifecycle proxy) demonstrate a significant negative impact on the market debt ratios. This means that mature firms with large amounts of retained earnings tend to have lower levels of debt. This clearly supports pecking order theory as the primary approach to understanding capital structure decisions from the point of view of asymmetric information (MYERS 1984). MYERS (1984) and MYERS and MAJLUF (1984) highlight the role managerial preferences can play in financing decisions. Such decisions are made by considering the relative costs and benefits of the various funding possibilities given information asymmetry and transaction costs. As discussed, pecking order theory cites internal capital as the typical first choice for funding, meaning that the preference is for less information-sensitive types of securities. This suggests that as a firm becomes more profitable, it will retain some of its earnings and reduce its leverage, creating an inverse relationship between the two variables.

Table 5

Regression Analysis (Book Debt Ratios)

BTDR	GCC			UK		
	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.27	0.84		0.25	0.79	
Adj R^2	0.26	0.51		0.24	0.18	
F-test	19.18***	34.51***		31.59***	38.63***	
Size	15.25***	32.81***	15.25***	8.29***	15.91***	8.29***
ROA	-0.05	0.01	-0.05	-0.27***	-0.21***	-0.27***
Tangibility	0.02	0.15***	0.02	-0.09***	-0.03	-0.09***
M-B-Ratio	-0.43	2.38***	-0.43	0.35*	-0.21	0.35*
RE/TA	-0.26***	-0.34***	-0.26***	-0.12***	-0.09***	-0.12***
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes
BLDR	GCC			UK		
	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.21	0.81		0.45	0.8	
Adj R^2	0.19	0.32		0.44	0.26	
F-test	13.59***	27.73***		75.66***	39.74***	
Size	10.18***	24.89***	10.18***	9.12***	9.02***	9.7***
ROA	-0.13	-0.03	-0.13	-0.26***	-0.14***	-0.25***
Tangibility	-0.16***	0.01	-0.16***	0.22***	0.1***	0.23***
M-B-Ratio	-1.6**	1.21**	-1.6**	-0.55***	-0.96***	-0.65***
RE/TA	0.03	-0.1***	0.03	-0.1***	-0.15***	-0.1***
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes
BSDR	GCC			UK		
	Pooled	Fixed	Tobit	Pooled	Fixed	Tobit
R^2	0.32	0.72		0.45	0.82	
Adj R^2	0.3	0.26		0.44	0.21	
F-test	20.47***	16.52***		76.58***	47.47***	
Size	5.21***	10.35***	5.21***	-0.83	6.89***	-0.83
ROA	0.06	0.06	0.06	0.01	-0.07**	0.01
Tangibility	-0.06	0.15***	-0.06	-0.31***	-0.14***	-0.31***
M-B-Ratio	1.18*	1.31**	1.18*	0.89***	0.75***	0.89***
RE/TA	-0.32***	-0.31***	-0.32***	-0.02**	0.06***	-0.02**
Year	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Effect	Yes	No	Yes	Yes	No	Yes

*This table shows the results of the panel regression analysis (pooled and fixed models) and Tobit regression. The results of the Hausman test were significant at the 5% level, and the results of the random effects model are thus not reported. Three dependent variables were used (BTDR, BLDR and BSDR), along with five explanatory variables, i.e. firm size as measured by the natural logarithm of total assets, return on assets (ROA), tangibility as calculated by total assets minus current (fixed) assets divided by total assets, market-to-book ratio, and accumulated retained earnings divided by total assets. The symbols ****, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.*

Source: own study.

As in the previous regression analysis, Table 5 presents the results of our pooled, fixed, and Tobit models, but here, the book value of assets was used to calculate the three dependent variables (BTDR, BLDR, and BSDR). As before, the random effects model was also run, but given the significant results of the Hausman test, which signal the fixed effects model as most appropriate, those results are not reported here.

It can first be noted that the results regarding firm size, profitability, and retained earnings are similar to the findings presented in the previous section. One main difference, however, is that the previously significant level of impact for the M/B ratio has decreased. This can be explained by the

fact that this ratio is related to the book value of a firm, since the balance sheet is unable to capture future investment opportunities while share prices are able to reflect these to a certain extent. Market-to-book ratio thus has a greater impact on market value than it does on book value.

6. Conclusions

The findings of this study reveal that debt is higher in the UK than in the GCC sample. GCC real estate companies, in other words, rely less on debt capital than their counterparts in the UK, a finding which might be attributed to the fact that UK companies typically face a lower cost of debt and thus have increased access to debt capital in the market.

Moreover, the findings of this study support both trade-off and pecking order theory in different ways. It was found, for example, that firm size was positively correlated to a significant level with various debt measurements (market and book debt ratios) for both the GCC and the UK sample. This is consistent with trade-off theory. Profitability and the retained earnings to total assets ratio, on the other hand, correlated negatively to a significant level for both samples, and this is consistent with pecking order theory. Both of these findings were shown to hold regardless of the method used to estimate regressions.

Finally, the main differences between the GCC and UK samples of real estate firms appear with respect to tangibility and growth. A significant positive impact of tangibility on book and market short-term debt was observed, for example, in the GCC sample, while this result was significant and negative for the UK sample of real estate firms.

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