Vol. 01, No. (1-2) 2019, Pg. 99-111

Journal of Business Strategy Finance and Management

Journal Website: jbsfm.org

Dynamic Panel Data Analysis of Capital Structure Determinants: Evidence from Iraqi Banks

HAMID MOHSIN JADAH[1]*, MOHAMMED FAEZ HASAN[2] and NOOR HASHIM MOHAMMED AL-HUSAINY[3]

[1,2]Department of Finance and Banking, College of Administration and Economics, University of Kerbala, Iraq.
[3]Department of Finance and Banking, Imam Al-Kadhum College (IKC) - Babylon Departments, Iraq.

Abstract

This study investigates if the choice of capital structure of Iraqi banks could be interpreting through factors which have been studiedby prior studies, which represented by determinants of capital structure choice (i.e., bank size, bank profitability, bank growth, tangibility, bank age). Using dynamic panel GMM for the period 2005 to 2019, this study maintains the explore on the determinants of capital structure of Iraq banks "developing country" that has circumstances likely to be quite different from those in developed and other major developing countries, particularly in terms of it deteriorating economic environment. The findings indicate that the bank size, bank profitability, bank age have a dominant role in explaining the variation in the long-term debt ratios of Iraqi banks. Meanwhile, only bank size, bank profitability, bank growth, bank age has a leading role in interpreting the variation of short-term debt ratios in the Iraqi banks. The current study has initiated some basis to discover the capital structure determinants of Iraqi banks upon which a more detailed evaluation could be based. Moreover, the experimental results can help Iraqi banks directors to choose the optimum structure of capital.

Article History
Received: 28 May 2021
Accepted: 12 June 2021

Keywords
Capital Structure;
Gmm;
Iraqi Banks;
Leverage.

Introduction

The capital structure considers as an essential pillar for a company in the business environment nowadays. A bank with an unsuitable structure may face difficulties in surviving in a competitive market. Recently, increasing corporate taxes, developing financial intermediation, reduction of uncertainty, and reduction of governmental borrowing, led companies' willingness to issue debt when constructing capital structure (Graham, Leary, & Roberts, 2015);

CONTACT Hamid Mohsin Jadah hamidmohsin40@gmail.com Department of Finance and Banking, College of Administration and Economics, University of Kerbala, Iraq.

© 2019 The Author(s). Published by Enviro Research Publishers.
This is an Open Access article licensed under a Creative Commons license: Attribution 4.0 International (CC-BY).
Doi: http://dx.doi.org/10.12944/JBSFM.01.0102.08

which increase the possible finance choices for the company. Thus, rising challenge of the best capital structure for the bank. The modern theorem of capital structure initiates with an irrelevancy theorem of (Modigliani & Miller, 1958) and its followed modifications. After Modigliani and Miller's contributions, theoretical arguments add more theories, the most famous being the pecking order theory, the trade-off, and the agency theorem.

More studies examined the structure of capital theory throughout capital structure determinants and its effect on debts by use mixed of selected determinants expressed by proxies (Titman & Wessels, 1988). The determinants tested in developed countries and after that in developing countries. Either domestic or in a multinational theme, the same countries show the same results instead of having different conditions and policies, while others have different results.

The current study supports the existing knowledge in capital structure determinants by examining it in Iraq as a new sample. As an economy with specific economic conditions and policies. This study aims to determine whether Iraqi listed-banks' capital structure determinants follow capital structure theory that applicate in western economies. Also, what capital structure theory identify in the finance behavior of the banking sector in Iraq; for that, the study utilizes panel data analyses for 18 banks.

The remain of this paper is being as the follows, Section 2 that illustrates the literature review of study, while Sections 3 and 4 provide development of hypothesis and methodology respectively. Section 5 discuss the empirical findings and discussion; however, the Section 6 provides conclusion of the paper.

Literature Review

The Theoretical Review

Capital structure considers somewhat a sophisticated argument because the capital structure composition affected by a multi-factor. Consequently, companies behaviors when financing their activities and projects. Discussion of capital structure has many aspects. For that, it is better to begin a review of capital structure theories.

The works in capital structure begin with Modigliani & Miller (1958) findings. What called after that Modigliani and Miller theorem (hereafter MM). Which conclude, the value of the company unrelated to its capital structure, but depend on expected future earnings, which means that, in any level of debt, the capital structure cost unchanged; therefore, company value still fixed. in brief, the capital structure of a company being irrelevant to company value. The major critics of MM irrelevance-theorem back to unrealistic assumptions like unavailability of taxes and transaction cost, alongside market in perfect conditions. Although MM works were difficult to applicate in the real world, though, it was a revolutionary approach at that time and represented the trigger for the capital structure theory. After that, Modigliani and Miller (1963) back to review their prior work with relaxing the assumption of taxes, MM stated that with taxes availability, company value increase by adding debt as a result of tax-shield benefits. Thus, the value of company being equal to that with unlevered value in addition to the present value of tax shields.

Consequently, when the company rises leverage, its value raised, but MM theorem unrevealed the optimal debt ratio or specified debt limits. Therefore, the company can be financing through debt only to reach its highest value possible. In 1977, Miller back to revise tax assumption, and alongside to corporate tax, Miller also assumes personal income taxes (stockholder and bondholder taxes). Miller claims that the three types of taxes near to offset each other, therefore, may erode leverage benefits.

After Ross (1977) used singling theory term to describe information asymmetry between management and investors. Myers (1984) presented a theory called pecking order theory, Stated that capital structure has another choice to control beside debt cost and benefit as happen in Trade-off theorem. Pecking order theorem asserted that company finance with internal to external funds, and from safest to riskier funds. Which means that the company finances its projects by retained profit at first, then safe debt, risk debt, and with equity as the last choice. Myers and Majluf (1984) reveal that the pecking order Theorem arises from information asymmetry between corporate managers and

prospect investors. Directors have Superior information about company future, whereas, rational investors anticipate and analyzes management decisions. Hence, when company Issuing equity, the investors think that company stocks overvalued, and that led to a decrease in its stock's prices. Also, when finances through debt, investors thinking that the company has a valuable opportunity and it can serve its debt. Krasker (1986) found that in addition to stock issuing a signal, the issuing size also has a critical signal to current investors, specifically when big size equity announcement. Pecking order theorem differ from the trade-off in a term of targeting debt-to-equity mix. Peking order unrelated to particular debt rate, whereas Trade-off model, specifies a certain mix (Myers, 1984). However, Trade-off theory fails to explain reflects of leverage moves on stock price, mean while pecking order interpret this reflection partially (Myers and Majluf, 1984).

Jensen (1986) suggested Free Cash Flow theory, which asserts that debt is underlying capital structure components. With a large amount of debt, management increasing their efficiency, thus, increase firm performance. Managers became more cautious with using cash flow to make debt payments in order to prevent the firm from goes bankrupt. In contrast, substantial free cash flow may use to finance projects with gains are less than the cost of capital. Baker and Wurgler (2002)present the market-timing theorem of capital structure. Where optimal capital structure imposable because a company's capital structure findings from cumulative historical attempts to timing equity and debt market. The theory claimed that traditional capital structure theories ignored the persistent influence of fluctuation in market valuation on capital structure. Companies issue equity when it has substantial market value and repurchase stocks when the market value decreases.

From preceding theories, each theory deal with a specific approach and condition, for that Myers (2001) suggested that implausible to expect a universal theory of equity-debt mixture. Nevertheless, Frank and Goyal (2008) found that trade-off and pecking order theories together cover a range of factors. So, better to consider the two theories together to potentially explain a broad capital structure factors, for that, the current study relies on these main theories.

Empirical Review

Although theories of the capital structure suggest many approaches to determine leverage under the optimal capital structure and that gives companies some alternatives to target a desired capital structure mixture. From another hand, other factors or determinants influence debt utilization decisions. Therefore, that push companies to use debt under specific limits. For that, in most, small and private companies use short-term finance (Stohs & Mauer, 1996). That due to dependent on banks' loans as a short-term source for finance.

In contrast, large firms leverage dependent on long-term debt, which is mainly public issuing debt (Barclay & Smith, 1995). In the same way, Lemmon, Roberts, and Zender (2008) found that capital structure was still relatively stable over 20 years, according to the study sample, which was between 1965 and 2003. Due to the stability of factors or determinants that effecting capital structure until changes happen in macroeconomic factors. Furthermore, Graham *et al.* (2015) stated that the leverage of U.S. regulated companies remains stable over time. Also, Deloof and Van Overfelt (2008) found that before WWI, the capital structure determinants was the same as nowadays. Nonetheless, the study of Jadah *et al*. (2020) found that capital structure slows down changes throughout the liquidity crisis. Also, be become more risk averse towards the debt after the liquidity crisis, especially the most reason behind that crisis was highly dependency on leverage.

Moreover, most of the firms targeting optimal leverage over the long-run, conduct as a function of several company-specific variables which change over time and from firm to others (Ozkan, 2001). Also, that obvious in Deesomsak *et al*. (2004) research, when studied capital structure determinants in four various countries (Australia, Malaysia, Thailand, and Singapore), the findings suggest that capital structure determinants differ according to the country as well. That means capital structure determinants somewhat still country-specific. Hall *et al*. (2004) found a variation amongst countries and attributed variations due to differences in attitudes to social and cultural differences, borrowing, disclosure requirements, bank's requirements, taxation, and other national economic factors. Rajan and Zingales (1995) studied the determinants of capital structure in seven different countries (G-7 industrial

Countries). They found that by applying the model that applied in U.S. studies; the results indicate similarities between them with a few non-explained differences.

Moreover, Bevan and Danbolt (2002) confirm these findings and discover that determinants strictly sensitive to the model. After decomposing the debt into a short and long term, they find inverse results and suggested for further studies. Also, Wald (1999) study Capital structure determinants of Five Countries, namely (France, Germany, Japan, the United Kingdom, and the United States). The study points out similar effects, but also, some differences in four determinants (risk, firm size, growth, and inventories), which attribute to different institutional agency and monitoring problems among countries.

Delcoure (2007) studied capital structure determinants in Central and Eastern Europe countries (Czech, Poland, Russia, and Slovakia). To discover whether the capital structure in these countries, interpreted by western economic theories and determinants. The study stated that companies in Central and Eastern Europe depended heavily on short-term debt than long-term in their capital structure against those in developed countries. Furthermore, Capital structure theories like pecking order, the trade-off, and agency cost theories, only explain capital structure decisions partially. Moreover, the companies follow what called "modified pecking order theory" that relies on retained earnings, equity, and debt, respectively as finance sources. Consequently, the firm-specific determinants of leverage give a different result than those in developed countries. Because of transition economies has various constraints of disparity in legal systems govern firms, banking systems, shareholder and bondholders' rights, the sophistication of the financial market, the corporate governance structure of list firms.

In contrast Booth *et al*. (2001) tested capital structure models in 10 developing countries (Thailand, South Korea, Turkey, Zimbabwe, India, Mexico, Jordan, Malaysia, Pakistan,and Brazil), found that capital structure models which found in U.S. and Europe countries still portable to developing countries, in spite of some differences due to institutional factors embedded through developing countries. Moreover, that models valid batter than national models in predicate financial structure of firms in developing countries. Furthermore, Rajagopal (2011) in his study for India, the transition economy which adopted financial reforms and liberalization, point out that capital structure model in developed countries applicable in developing countries. Moreover, it has significant explanatory power to interpret cross-sectional variation in the debt ratio. Chadha and Sharma (2015) found the same result in the Indian manufacturing sector. Except there are show a mix of trade-off with pecking order theorem as interpret for optimal capital structure model.

Chen (2004) studied the capital structure for Chinese firms and stated that even though it is a little different from companies in developed economies. Pecking order theory partially interpret capital structure composition. Moreover, the study found that Chinese firms' capital structure comprises short-term debt with a minimal rate of long-term finance.

In emerging markets countries, most of the firms seem to follow the pecking order theory because these countries are suffering from information asymmetry and a substantial agency cost problem. Which makes firms avoid external sources of finance; add to that, its long-term bonds markets less developing than in developed countries. Thus, companies concentrated on short-term and profitability (Rajagopal, 2011). However, Sheikh and Wang (2011) found in their study in Pakistan, it is in line with the trade-off, pecking order, and agency theory. Although, pecking order theorem commonly use among firms. Frank and Goyal (2003) refer to a decline in a pecking order throughout the 1990s compare with periods in the 1970s and 1980s. That attributed to most small firms depended on equity issuing in 1980 and 1990s and that led overall average to be far of pecking order theory. Moreover, by time, equity becomes more critical for large firms. Moreover, we can give another reason that equity financing dominant debt finance in magnitude in common over time. Huang and Ritter (2009) gave another reason for that when public-traded firms finance its deficit by equity when the equity risk premium is low according to market timing theory.

Development of Hypothesis

Bank Size

Large companies use debt more than the small one. Because of debt became less cost for large companies, as well as it required less monitoring cost and less moral hazards (Chittenden *et al*., 1996). Moreover, large companies are less likely to suffer from bankruptcy (Alipour *et al*., 2015). Which meaning that company size correlate with leveraging positively.Chen,Migliaro,& Silva, (2021); Jadah *et al.* (2020); Jadah *et al*. (2016); Fama and French (2002) claim that size positively related to debt ratio in tested Companies. While, Johnson (1998) conclude a negative correlation according to his findings. Interpreted that large firm tends to finance its expenditure by issuing equity when their stock prices tend to be high (Dittmar & Thakor, 2007). Therefore, that match with market timing theory.

Meanwhile, Rajan and Zingales (1995) have another reason stated that large companies have less informational asymmetry with prospective investors in the capital market. Then it could be able to issue equity more than debt. Bevan and Danbolt (2002) stated that a contradictory result found in the relation between company size and debt; the relation in short-term debt was negative but positive in the long-term. From another hand, Karadeniz *et al*. (2009) never found a significant association between debt rate and firm size.

H1: The size of bank has a positive relation with leverage.

Profitability

Theoretically, the pecking order theoremsuggest that a high profit firm tends to use self-generated funds before debt. Whereas, trade-off theory suggests that company which generates high profit have the incentives to benefit from tax-shields on debt interests for that it increase its leverage. More studieslike (Chen *et al.* 2021; Gharaibeh & Saqer, 2020; Thippayana, 2014; Ozkan, 2001) posit that profitability adversely related to a debt ratio in capital structure. Myers and Majluf (1984) attributed that companies with high profits prefer to use costless internal funds instead of external funds. Unlike Zhang (2010) study in manufacturing companies in the U.K., noticed a positive association between profitability and debt ratio. That interpreted due to industry category, where profitable manufacturing companies has low default risk, and that makes debtors willing to lend them. Also, the study of Hall *et al*. (2000) supported Zhang (2010) findings of industry effect. Their study asserted a positive influencefor profitability on leverage in manufacturing companies other than other industries.

H2: Profitability has anadverseassociation with leverage.

Growth

Myers (1977)posit that high debt ratio passes up valuable investments opportunities. Kim *et al.* (2006) noticed negative relationship between leverage andgrowth opportunities variables. After his study to Korean listed companies in the period 1985 to 2002. Güner (2016) also discover a reverseassociation between growth opportunities determinant and leverage in non-financial listed Turkish companies. Another finding from Chen *et al*.(2021); Stohs and Mauer (1996) when positing reverse relation between growth opportunities and leverage. Wald (1999) notes that the high growth firms in the U.S. are less debt compared to high growth firms in other countries. Due to conflict between debtors and creditors or the venture capital much cheap in the U.S., whereas Fama and French (2002) claimed a conflict results found after using different proxies. Consequently, Viviani (2008) found a positive impact on growth opportunities on short-term debt. In contrast, Cevheroglu-Acar (2018) stated an insignificant relationship between growth and debt ratio.

H3: Growth has a negative relationship with leverage.

Tangibility

Assets composition also affects the Capital structure. Significant friction of Tangible assets in balance sheet serves as collateral for the lender when funding through debt and makes it less costly. Moreover, it has high value when liquidated; thus, tangible assets associated positive relation with the debt ratio (Rajan & Zingales, 1995). Several studies conclude the same relationship (Chen *et al*. 2021;Chen, 2004; El-Habashy, 2018; Viviani, 2008; Wald, 1999). Booth *et al*. (2001) stated that in developing countries, tangible assets lower total debt. Despite increases the long-term debts but at the same time lower short-term debt. Therefore,

rise assets tangibility, meaning leverage decrease. The reason behind that, in developing countries, the firms depending on short-term debt. For that, the change in short-term debt is more extensive than changes in long-term debt. In short, the tangibility of assets has anadverseconnotation with leverage in developing nations. These findings were in line with Gharaibeh and Saqer (2020) study, which revealed that companies with less tangible assets in their asset structure use much debt, therefore increased leverage. Also, Bauer (2004) found the same results when tested Czech firms.

H4: Tangibility has a positive relationship with leverage.

Bank Age

Diamond (1991) refers to age as reputation, by time; companies acquire the trust of creditors and thus grant access to a cheap source of debt. Older companies differ from younger in a term of information asymmetry. Because older firms have a reputation for a meeting with an obligation in time, thus that affect its ability to issue debt or equity. From another hand, Petersen and Rajan (1994) posit that firm age negatively associated with debt use. According to Michaelas, Chittenden, and Poutziouris (1999) that due to growing companies diversified over time and accumulate earnings, contrariwise to small firms which rely on debt heavily, specifically in private firms. These findings supported by Hall *et al*. (2000) study, when analysis (3500) small and medium firms in the U.K., and concluded that age-related to debt inversely. Either in short-term or in long-term debt. Ezeoha (2008) by using a sample of 71 companies thatlisted in the Nigerian stock markets found that, the firm-age positively significantlyrelatedto financial leverage.

H5: Bank age has a positive association with leverage.

Methods

Data Collection

Our study inspects the capital structure argument in emerging markets using Iraqi banks, were taken for the period from 2005 to 2019. The choice of the study period is limited by data publishing since the year 2005. The data of this analysis is picked up from the annual reports of under-study Iraqi banks. The study ignored the data of banks that show missing observations for all variables throughout the sample's period. This study focuses on the banking sector due to the non-financial sector balance sheets have a diverse structure from those of banks. As a whole, we have 250 observations as a sample, where investigated throughout a fifteen-year period. The data considers as unbalanced panel as a result for missing observations.

Model Specification

Although the majority of prevailing studies depend on the ordinary least squares (OLS) method of regressions.This study applies modern techniques of the panel data analysis with econometrics to estimate the parameters of capital structure models. Panel data approaches are suitable approach with such research, which incorporate the influences of cross-sectional data. As well, thiscould help to anticipate the suitable model. We utilized the general models for panel data which make it possible to estimate of the association between leverage (dependent) and bank-specific (independent) variables. Following to Hall *et al*. (2004) two dependent variables have been used to measures financial leverage as proxy for capital structure and determine its determinants, i.e. short-term debt ratio (STD) and long-term debt ratio (LTD) as presented by equations 1-4 below:

Financial Leverage (LEVS) = Short -term Debt / Total Assets ...(1)

Financial Leverage (LEVL) = Long-term Debt / Total Assets ...(2)

As mentioned earlier, the relation between explanatory variables, and the financial-leverage measures could be as following:

$$LEVS_{it} = \alpha + \beta 1 LEVS_{i(t-1)} + \beta_2 LogTA_{it} + \beta_3 PROFTAB_{it} + \beta_4 GRWTH_{it} + \beta_5 ASTANG_{it} + \beta_6 BNKAG_{it} + \varepsilon_{it} \quad ...(3)$$

$$LEVL_{it} = \alpha + \beta_1 LEVS_{i(t-1)} + \beta_2 LogTA_{it} + \beta_3 PROFTAB_{it} + \beta_4 GRWTH_{it} + \beta_5 ASTANG_{it} + \beta_6 BNKAG_{it} + \varepsilon_{it} \quad ...(4)$$

Where:

- $LEVS_{it}$ is long-term debts divided by total assets for bank i in time t.
- $LEVL_{it}$ is short-term debts divided by total assets for firm i in time t.

- $LogTA_{it}$ is a proxy for bank size which equal natural logarithm of total assets for bank i in time t.
- $PROFTAB_{it}$ is total return after tax to total assets for bank i in time t.
- $GRWTH_{it}$ is total assets current year- previous year / previous year) * 100 for bank i in time t.
- $ASTANG_{it}$ is asset tangibility which equal fixed assets to total assets for bank i in time t.

$BNKAG_{it}$ is a bank-age which equal natural logarithm of number of years bank existed before incorporation for bank i in time t.

It is recommended to use the random or fixed effects panel data because that could be control for unnoticed firm with or without year results (Greene, 2003). In order to identify the better set of results statistically, we posted the outcomes of the Lagrange multiplier, then Hausman tests results hereafter. When Lagrange multiplier test gets a significant result, then the panel mapproch are being favorable against the pooled results. Nevertheless, when the Hausman test mentions a statistically significant outcomes, then the fixed effect results being statistically favorable than random effects method results. The major aspect from using the panel regarded to enhance the efficiency of economic estimations, for the several data points, degrees of freedom are statistically improved and then reducing collinearity among the interpretive variables. As stated by Hsiao (1986), pooledOLSmay suffer from bias in extremely manner. Then we viewed the statistical barometric that regarded with the regression model by utilizing pooled and panel models.

Empirical Findings and Discussion

Descriptive Statistics

Table (1) exhibit the summary statistics of standard deviation, mean, minimum, and maximum for all variables that used in the analysis. The table exhibit the values of mean, standard deviation, minimum and maximum for long-term debt ratio (LEVT) which is 0.654, 0.790, 0, and 3.123 respectively. Mean, standard deviation, minimum and maximum for short-term debt ratio (LEVS) is 1.936, 7.385, 0, and 49.98 respectively.

Furthermore, the standard deviation, mean, minimum, and maximum for bank size is 8.372, 0.588, 6.833, and 11.11 respectively. Standard deviation, mean, minimum, and maximum for profitability is 0.046, 0.026, -0.123, and 0.087 respectively. Moreover, standard deviation, mean, minimum, and maximum for bank growth is 32.47, 91.42, -39.18, and 604.911 respectively. As for the standard deviation, mean, minimum, and maximum for bank age is 1.018, 0.223, 0, and 1.36111 respectively. Meanwhile, 0.915, 1.858, 0.008, and 9.45611 respectively.

Table 1: Descriptive statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
Long-term debt ration	0.654	0.790	0	3.123
Short-term debt ration	1.936	7.385	0	49.98
Bank size	8.372	0.588	6.833	11.11
Profitability	0.064	0.026	-0.123	0.087
Bank Growth	32.47	91.42	-39.18	604.9
Bank Age	1.018	0.223	0	1.361
Asset tangibility	0.915	1.858	0.008	9.456

Correlation

This section explains the correlation analysis results, the correlation analysis is suitable tod efining the sign and the strength of the linear relationship amongst two variables. More specifically, the Pearson correlation analysis is utilizing to evaluate and interpret the strengths of the direct association among the study variables as showed in Table 2. As expected, the results indicate that the results illustrate that all correlations between the independent variables are less than 0.80. Therefore, it seems there are suspicious cases of

multicollinearity could be facing the study variables. Gujarati (2004) stated that the independent variables correlation should not be exceed 0.80 to confirm that there is no multicollinearity problem.

Table 2: study variables correlation matrix

Probability	LEVL	LEVS	BANKZ	ROA	BANKAGE	GROWTH	ASSETANG
LEVL	1						
LEVS	0.457	1					
BANKZ	0.463	0.515	1				
PROFITAB	0.506	0.413	0.007	1			
BNKAG	-0.383	-0.477	0.137	0.104	1		
GRWTH	0.342	0.213	0.154	-0.294	-0.321	1	
ASSETANG	0.413	0.120	0.070	0.110	0.146	0.413	1

Regression Analysis

The dynamic model estimation with predetermined variables has been implemented by utilizing a 1-step system GMM. Within this strategy, first decision to be considered is to identify what is the suitable instruments are for period t equations. Frankly to say, the estimated model may suffer from endogeneity problems in the regressors because, first, it is possibily that under-use variables to determined simultaneously with the debt ratio of which investment is a clear example. second, which can occur as far as the impact of the remainder of the explanatory variables is concerned between the decision to alter the capitals' structure and its actual execution. Thus, the instruments collection should include all the lagged values of the variables on the right-hand side, so that potential mistakes can also be regarded when calculating the variables. These lagged amounts are legitimate instruments because we have transformed orthogonal variables proposed by Arellano and Bover in 1995 in order to remove the company-specific effects.

Table 3: Regression Models of GMM

Model 1: LEVL					Model 2: LEVS				
Variable	**B**	**Std. Error**	**t.**	**Sig.**	**Variable**	**B**	**Std. Error**	**t.**	**Sig.**
LEVL(-1)	0.299	0.079	3.741***	0	LEVS(-1)	0.107	0.19	5.588***	0
ASSETANG	-1.827	0.93	-1.964*	0.051	ASSETANG	-0.002	0.001	-2.430**	0.017
BANKZ	0.086	0.047	1.814*	0.071	BANKZ	0.014	0.007	1.922*	0.058
GROWTH	-3.453	0.863	-3.998	0	GROWTH	-0.068	0.028	-2.395*	0.019
PROFITAB	-3.453	0.863	-3.998***	0	PROFITAB	-0.12	0.022	-5.232***	0
BNKAG	0.01	0.121	0.083	0.933	BANKAGE	0	0.002	0.193	0.847
C	0.035	0.406	0.087	0.93	C	0.006	0.082	0.081	0.935
R-squared	0.935				R-squared	0.946			
Adjusted R^2	0.933				Adjusted R^2	0.423			
F-statistic	451.86***				F-statistic	11.42***			
Durbin-Watson	1.67				Durbin-Watson	1.99			
AR (1) test	0.001***				AR (1) test	0.020***			
AR (2) test	0.645				AR (2) test	0.635			

Note: ***, ** and *. Refere to significant Correlation for the 0.1 level, 0.05 level, 0.10 level in by respective.

As seen in Table 3, the Hansen test over-identification test cannot deny a null hypothesis for the study models which still apply to instruments of this study. In comparison, Table 3 with null hypotheses with no auto correlation also indicates autocorrelation measures of the Arellano-Band, AR (1) and AR (2). In this arrange, the AR(1) referes to serial correlation from the first-order in the differented residuals and the existence of the first-order serial correlation wouldn't have affect the reliability of the GMM approach. On the other hand, the test for AR(2) is relevant because it detects the second-order auto correlation at levels and does not dismiss the zero hypothesis. As shown in Table 3, the p-value for AR(2) fail to refuse the null hypothesis of the absence of second-order serial autocorrelation.This means that the GMM approach utilized to analyse the long debt and short debt ratio in this study.

Tables 3 exhibit the study empirical findings regarded to the models. Firstly, the exciting observe is that the modified R^2 for all types of regressions are more than 90%, that meaning the used model gains a main part from the differentiation in the bank-specific variables, that supports what weclaim about that bank-specific factors could interpret determination of Iraqi banks capital structure. Besides, the F-statistic probability is less than 0.05, refering the the both models are significant. Moreover, the Durbin-Watson numberin the models are close to two, which mean there is no serial correlation problems.

The regression results from models 1 and 2 of Table 3 show that several bank-specific factors to show statistically significant and stable results throughout regressions, such as assets tangibility, bank size, profitability, and bank growth are significantly related to long-term debt ratio (LEVL) in in Iraqi banks. In the same line, bank size, profitability, assets tangibility, and bank growth are significantly related to short-term debt ratio (LEVS) in in Iraqi banks.

The coefficients of asset tangibility in long-term debt and short-term debt were negative and significant, which approve that increasing in assets' tangibility is related to lower leverage. The negative effect of tangibility advises that the collateral aspect of fixed assets is a vital leverage driver for the countries in the sample. This verdict is matching the pecking order theorem that companies with minimum collateral face large information costs and, hence, debt to equity will be preferable. Practically, the study result is compliant with earlier empirical evidence (e.g. Baltacı & Ayaydın 2014; Chakraborty, 2013; Oztekin & Flannery, 2012). Nevertheless, this finding inconsistent with Rajan and Zingales (1995).

The bank profitability coefficient on the long-term debt and short-term debt is statistically adverse and significant, that imply the companies with high profits are possible to operate with less debt. This outcome conclusion is the most compatible with the pecking order theorem's estimate, that companies with high profits and acceptable retained earnings are less to depend on debt. Experimentally, the study findings are in concord with the documented international demonstration on the association between bank profitability and leverage (e.g. Baltacı & Ayaydın 2014; Chakraborty, 2013; Oztekin & Flannery, 2012). Nenertheless, this finding inconsistent with Zhang (2010) and Hall *et al.* (2000).

The results for Iraqi banks show that either long-term debt or short-term debt has a significant positive relation with bank size. This verdict is steady with the trade-off theorem, which implies that larger firms have minor agency costs and financial distress, therefore, it still able to borrow better than smaller firms in this task. Experimentally, this conclusion is in accord with the earlier experimental evidence (e.g. Baltacı & Ayaydın 2014; Oztekin & Flannery, 2012). Nevertheless, this finding inconsistent with the finding of Johnson (1998) who concluded a negative association according to his findings.

Bank growth showed a significant adverse effect on debt ratio in the long-run and leverage in short-term, across banks in the current sample which is accord with the trade-off theory principle. Precisely, within agency cost conditions, companies with rapid growth choices are probably to rely on less leverage to moderate the under investment problem. This result is highly accord with the earlier scientific suggestions (e.g., Dang, 2013; Antoniou *et al*., 2008; Rajan and Zingales, 1995). Nevertheless, this finding inconsistent with the finding of Viviani (2008) who found a positive impact on growth opportunities on short-term debt.

In short, the outcomes of regression for debt ratio are both experimentally and theoretically plausible

for Iraqi private banks. Furthermore, tangibility and profitability are in line with the estimates of the pecking order theorem, while bank size, bank growth have effect on capital structure are matching the trade-off theorem.

Conclusion

The theories capital structure produces several capital structure determinants. Where the agency theorem, the pecking order theorem, the market timing theorem, and the trade-off theoremare mentioned above. Many precede studies attempted to experimentally investigate forto how far that bank-specific factors effect capital structure of banks that operate within a one country.Lately, studies from different countries have been conducted, with researchers engaging country-specific factors to interpret capital structure choice of thebanks in the sample. Within current study, we have inspected if that industry-specific factors have a significant influence on the determination ofbank capital structure in an Iraqi context.

This study empirically contributes the following ways to the literature on capital systems. First of all, we help to determine the role of a corporate factor in the decision making of capital structures and assess the relative value of the bank-specific factors in evaluating the bank leverage in the short-term, in contrast with long banking levers in Iraq. Secondly, we take an innovative and appropriated approach to the use of complex panel data to approximate determinants of the capital structure using the simplified methods of current estimators.

The study notices that the influence of most bank-specific variables, such as bank size, bank growth, tangibility and profitability, on sample bank' capital structure is statistically significant, which is compatible with the field literature. Whereas,we notice that the relationship between sample bank's leverage ratio and bank-specific variables does vary across industries. Such finding is inconsistent with the field literature and what precedes studies proof. Meanwhile, other bank-specific variables abandon to provide compliant significant results. Furthermore, the findings suggest that banks tend to be more rely on debtwhen they operate in economically stable industries. Hence forth, we affirm the impertinence of industry-specific factors within bank capital structure formation.

Generally, this study is limited to the sample of banks in Iraqi private banking sector, the study could be developed in two main ways. First, extend data set that includes non-financial companies and both company-level and macro-level determinants in regression analyses will be better description of capital structures of Iraqi private banks and provideswell detailed information. Second, future research can study the role of country and macro economic factors in addition to bank-specific to determine the capital structure of banks. This study could beassisting the academicians and policy makers who grants for the identifying the role of bank specific factors in the shaping the financial policy of banks in an economy.

Acknowledgement

All Praise to ALLAH S.W.T the Almighty, for giving us the blessing, the strength, the health, the chance and endurance to complete this research article. Furthermore, the authors received no financial support for the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Conflicts of Interest

The authors whose names are listed above certify that they do not have any affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter or materials discussed in this manuscript.

References

1. Antoniou, A., Guney, Y., &Paudyal, K. (2008). The Determinants of Capital Structure: Capital Market-oriented Versus Bank-oriented Institutions. *Journal of Financial and Quantitative Analysis*, 43(1), 59-92.Retrieved from https://www.jstor.org/stable/27647340

2. Baker, M., & Wurgler, J. (2002). Market Timing and Capital Structure. *The Journal of Finance,* 57(1), 1-32.https://doi.org/10.1111/1540-6261.00414
3. Baltacı, N., & Ayaydın, H. (2014). Firm, Country and Macroeconomic Determinants of Capital Structure: Evidence from Turkish Banking Sector. EMAJ: *Emerging Markets Journal*, 3(3), 47-58.Retrieved from http://emaj.pitt.edu/ojs/index.php/emaj/article/view/46
4. Diamond, D. W. (1991). Monitoring and Reputation: The Choice between Bank Loans and Directly Placed Debt. *Journal of political Economy,* 99(4), 689-721.https://doi.org/10.1086/261775
5. Barclay, M. J., & Smith Jr, C. W. (1995). The Maturity Structure of Corporate Debt. *The Journal of Finance,* 50(2), 609-631. Retrieved from.https://doi.org/10.1111/j.1540-6261.1995.tb04797.x
6. Bauer, P. (2004). Determinants of Capital Structure: Empirical Evidence from the Czech Republic. *Czech Journal of Economics and Finance* (Finance a uver), 54(1-2), 2-21.http://journal.fsv.cuni.cz/storage/958_s_2-21.pdf
7. Booth, L., Aivazian, V., Demirguc-Kunt, A., &Maksimovic, V. (2001). Capital Structures in Developing Countries. *The Journal of Finance,* 56(1), 87-130.https://doi.org/10.1111/0022-1082.00320
8. Cevheroglu-Acar, M. G. (2018). Determinants of Capital Structure: Empirical Evidence from Turkey. *Journal of Management and Sustainability*, 8(1), 31-45.Retrieved fromhttps://pdfs.semanticscholar.org/bd46/2d3eb94f1f068590fa8cec9ff1c9e8480894.pdf
9. Chadha, S., & Sharma, A. K. (2015). Determinants of Capital Structure: An Empirical Evaluation from India. *Journal of Advances in Management Research*, 12(1), 3-14.https://doi.org/10.1108/JAMR-08-2014-0051
10. Chakraborty, I. (2013). Does Capital Structure Depend on Group Affiliation? An Analysis of Indian Firms. *Journal of Policy Modeling,* 35(1), 110-120.https://doi.org/10.1016/j.jpolmod.2012.02.006
11. Chen, J. J. (2004). Determinants of Capital Structure of Chinese-Listed Companies. *Journal of Business Research,* 57(12), 1341-1351.https://doi.org/10.1016/S0148-2963(03)00070-5
12. Chen, Y. Migliaro, D. & Silva, J. (2021). Capital Structure Determinants of SMEs: Empirical Evidence. *IAR Journal of Business Management*, 2(1): 180-186.
13. Chittenden, F., Hall, G., & Hutchinson, P. (1996). Small Firm Growth, Access to Capital Markets and Financial Structure: Review of Issues and an Empirical Investigation. *Small Business Economics,* 8(1), 59-67.https://doi.org/10.1007/BF00391976
14. Dang, V. A. (2013). Testing Capital Structure Theories Using Error Correction Models: Evidence from the UK, France and Germany. *Applied Economics*, 45(2), 171-190.https://doi.org/10.1080/00036846.2011.597724
15. Deesomsak, R., Paudyal, K., &Pescetto, G. (2004). The Determinants of Capital Structure: Evidence from the Asia Pacific Region. *Journal of Multinational Financial Management,* 14(4-5), 387-405.https://doi.org/10.1016/j.mulfin.2004.03.001
16. Deloof, M., & Van Overfelt, W. (2008). Were Modern Capital Structure Theories Valid in Belgium before World War I? *Journal of Business Finance & Accounting*, 35(3-4), 491-515.https://doi.org/10.1111/j.1468-5957.2008.02080.x
17. El-Habashy, H. A. (2018). Determinants of Capital Structure within the Context of Corporate Governance in Egypt. *International Journal of Business and Management*, 13(8), 26-39.https://doi.org/10.5539/ijbm.v13n8p26
18. Ezeoha, A. E. (2008). Firm Size and Corporate Financial-Leverage Choice in a Developing Economy. *The Journal of Risk Finance*, 9(4), 351 – 364.https://doi.org/10.1108/15265940810895016
19. Fama, E. F., & French, K. R. (2002). Testing Trade-Off and Pecking Order Predictions About Dividends and Debt. The review of financial studies, 15(1), 1-33.https://doi.org/10.1093/rfs/15.1.1
20. Frank, M. Z., &Goyal, V. K. (2003). Testing the Pecking Order Theory of Capital Structure. *Journal of Financial Economics*, 67(2), 217-248.https://doi.org/10.1016/S0304-405X(02)00252-0
21. Frank, M. Z., & Goyal, V. K. (2008). Trade-off and Pecking Order Theories of Debt. In Handbook of Empirical Corporate Finance (pp. 135-202). Elsevier.https://doi.org/10.1016/B978-0-444-53265-7.50004-4

22. Gharaibeh, O. K., &Saqer, A. T. (2020). Determinants of Capital Structure: Evidence from Jordanian Service Companies. *Investment Management & Financial Innovations,* 17(2), 364- 376.http://dx.doi.org/10.21511/imfi.17(2).2020.28
23. Graham, J. R., Leary, M. T., & Roberts, M. R. (2015). A Century of Capital Structure: The Leveraging of Corporate America. *Journal of Financial Economics*, 118(3), 658-683.https://doi.org/10.1016/j.jfineco.2014.08.005
24. Greene, W. H. (2003). Econometric Analysis (5th ed.). Prentice Hall.
25. Gujarati, D. (2004). Basic Econometrics (4th ed). New York: McGraw-Hill.
26. Hall, G. C., Hutchinson, P. J., &Michaelas, N. (2004). Determinants of the Capital Structures of European SMEs. *Journal of Business Finance & Accounting,* 31(5-6), 711-728.https://doi.org/10.1111/j.0306-686X.2004.00554.x
27. Hall, G., Hutchinson, P., &Michaelas, N. (2000). Industry Effects on the Determinants of Unquoted SMEs' Capital Structure. *International Journal of the Economics of Business*, 7(3), 297-312.https://doi.org/10.1080/13571510050197203
28. Hsiao, C. (2014). Analysis of Panel Data (No. 54). Cambridge University Press.
29. Jadah, H. M., Alghanimi, M. H. A., Al-Dahaan, N. S. H., & Al-Husainy, N. H. M. (2020). Internal and External Determinants of Iraqi Bank Profitability. *Banks and Bank Systems*, 15(2), 79-93.http://dx.doi.org/10.21511/bbs.15(2).2020.08
30. Jadah, H. M., Hassan, A. A., Hameed, T. M., & Al-Husainy, N. H. (2020). The Impact of the Capital Structure on Iraqi Banks' Performance. *Investment Management and Financial Innovations,* 17(3), 122-132.http://dx.doi.org/10.21511/imfi.17(3).2020.10
31. Jadah, H. M.,&Adzis, A. B. A. (2016). The Effect of Board Characteristics on Iraqi Banks Performance. International Journal of Academic Research in Accounting, *Finance and Management Sciences,* 6(4), 205-214.Retrieved from https://www.researchgate.net/publication/309615349_The_Effect_of_Board_Characteristics_on_Iraqi_Banks_Performance
32. Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. The American economic review, 76(2), 323-329. Retrieved from https://www.jstor.org/stable/1818789
33. Kim, H., Heshmati, A., &Aoun, D. (2006). Dynamics of Capital Structure: The Case of Korean listed manufacturing companies. *Asian Economic Journal,* 20(3), 275-302.https://doi.org/10.1111/j.1467-8381.2006.00236.x
34. Krasker, W. S. (1986). Stock Price Movements in Response to Stock Issues Under Asymmetric Information. *The journal of Finance*, 41(1), 93-105.https://doi.org/10.1111/j.1540-6261.1986.tb04493.x
35. Lemmon, M. L., Roberts, M. R., &Zender, J. F. (2008). Back to the Beginning: Persistence and the Cross-Section of Corporate Capital Structure. *The Journal of Finance,* 63(4), 1575-1608.https://doi.org/10.1111/j.1540-6261.2008.01369.x
36. Miller, M. H. (1977). Debt and Taxes. *The Journal of Finance,* 32(2), 261-275. Retrieved from https://www.jstor.org/stable/2326758
37. Modigliani, F., & Miller, M. H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review,* 433-443. Retrieved from https://www.jstor.org/stable/1809167
38. Modigliani, F., and Miller M. H. (1958). The Cost of Capital, Corporate Finance and the Theory of Investment. *The American Economic Review,* 48(3), 261-297. Retrieved from https://www.jstor.org/stable/1809766
39. Myers S., C. (2001). Capital Structure, *Journal of Economics Perspective,* 15 (2): 81-102. https://pubs.aeaweb.org/doi/pdf/10.1257/jep.15.2.81
40. Myers S., C. and Majluf, N. (1984). Corporate Financing and Investment Decisions when Firms have Information Investors Do not Have, *Journal of Financial Economics,* 13(2), 187-221. Retrieved from https://www.nber.org/system/files/working_papers/w1396/w1396.pdf
41. Myers, S. C. (1977). Determinants of Corporate Borrowing. *Journal of Financial Economics,* 5(2), 147-175.https://doi.org/10.1016/0304-405X(77)90015-0
42. Myers, S. C. (1984). The Capital Structure Puzzle. *The Journal of Finance*, 39(3), 574-592.Retrieved from https://www.nber.org/system/files/working_papers/w1393/w1393.pdf
43. Ozkan, A. (2001). Determinants of Capital Structure and Adjustment to Long Run Target: Evidence from UK Company Panel Data. *Journal of Business Finance & Accounting,*

28(1-2), 175-198.https://doi.org/10.1111/1468-5957.00370

44. Öztekin, Ö.,& Flannery, M. J. (2012). Institutional Determinants of Capital Structure Adjustment Speeds. *Journal of financial economics,* 103(1), 88-112.https://doi.org/10.1016/j.jfineco.2011.08.014
45. Petersen, M. A., &Rajan, R. G. (1994). The Benefits of Lending Relationships: Evidence from Small Business Data. *The Journal of Finance*, 49(1), 3-37.https://doi.org/10.1111/j.1540-6261.1994.tb04418.x
46. Psillaki, M., & Daskalakis, N. (2009). Are the Determinants of Capital Structure Country or Firm Specific?.Small Business Economics, 33(3), 319-333.https://doi.org/10.1007/s11187-008-9103-4
47. Rajagopal, S. (2011). The Portability of Capital Structure Theory: Do Traditional Models Fit in An Emerging Economy?. *Journal of Finance and Accountancy,* 5, 1-17.Retrieved from https://aabri.com/manuscripts/10654.pdf
48. Rajan, R. G., &Zingales, L. (1995). What Do We Know about Capital Structure? *Some Evidence from International Data*. i, 50(5), 1421-1460.https://doi.org/10.1111/j.1540-6261.1995.tb05184.x
49. Ross, S. A. (1977). The Determination of Financial Structure: the Incentive-Signalling Approach. *The Bell Journal of Economics*, 8(1), 23-40. Retrieved from https://www.jstor.org/stable/3003485
50. Sheikh, N. A., & Wang, Z. (2011). Determinants of Capital Structure: An Empirical Study of Firms in Manufacturing Industry of Pakistan. Managerial Finance, 37(2), 117 – 133.https://doi.org/10.1108/03074351111103668
51. Stohs, M. H., &Mauer, D. C. (1996). The Determinants of Corporate Debt Maturity Structure. *Journal of Business*, 69(3), 279-312. Retrieved fromhttps://www.jstor.org/stable/2353370
52. Thippayana, P. (2014). Determinants of Capital Structure in Thailand. *Procedia-Social and Behavioral Sciences,* 143, 1074-1077.https://doi.org/10.1016/j.sbspro.2014.07.558
53. Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance*, 43(1), 1-19.https://doi.org/10.1111/j.1540-6261.1988.tb02585.x
54. Viviani, J. L. (2008). Capital Structure Determinants: An Empirical Study of French Companies in the Wine Industry. *International Journal of Wine Business Research,* 20(2), 171-194.https://doi.org/10.1108/17511060810883786
55. Wald, J. K. (1999). How Firm Characteristics Affect Capital Structure: An International Comparison. *Journal of Financial research*, 22(2), 161-187. https://doi.org/10.1111/j.1475-6803.1999.tb00721.x
56. Zhang, Y. (2010). The Product Category Effects on Capital Structure: Evidence from the SMEs of British Manufacturing Industry. *International Journal of Business and Management*, 5(8), 86-112.https://doi.org/10.5539/ijbm.v5n8p86.