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The impact of taxation on the value of companies

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The study aims to analyze the factors that determine the financial structure of listed companies based on the impact of taxation on the value of companies (effective tax rate, tax savings, growth opportunities, asset tangibility, company size, Return on Assets (ROA), company seniority), and the impact of indebtedness on the profitability of enterprises measured by indebtedness rate, turnover, tangibility of assets and seniority of companies. The information collected from the annual financial statements for the period 2010 to 2019 related to the sample of companies was the basis for the analysis of the data panel using the method of multiple regressions. The results show that companies prefer equity as a means of financing and not debt because companies are sensitive to fiscal policies that are sometimes unpredictable and frequently changed. The influence that the fiscal variable has on the financial structure of the companies and its value is a constant result on the entire study. The result of the research also shows that there is an inverse proportion between the degree of indebtedness and the economic profitability of companies; very profitable companies have the ability to secure financing for most of the profits retained for this purpose.

Key words: Investments, models, factors, influences, value.

INTRODUCTION

In an attempt to explain how firms finance their assets and the factors that influence these financing decisions, a number of theoretical and practical models of capital structure have been proposed over time, with the fiscal variable being introduced in models by Graham (2003).

In this context, the research starts from the question: “Is there a direct link between the level of taxes and economic growth?” This question lies in the fact that more important than the payment of taxes (even if it affects the company's treasury) is how to use the taxes collected to stimulate economic growth. It should be borne in mind that repeated changes in legislation, misinterpretation or misapplication of legal provisions by professional accountants can lead to difficulties in the efficient management of the business. Therefore, the organization of a fiscal management at the level of the entity within the overall management becomes a necessity starting from the substantive and formal

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feature, in the economic theory and practice, which has the tax in financial, economic, social and political plan (Journard et al., 2013). The structure of capital was and remains one of the most controversial issues of finance to which researchers have given special importance following the publication of the work of Modigliani and Miller (1958).

The contribution of various researchers and financial economists has given new dimensions to theories of capital structure, in particular by taking into account taxation (Modigliani and Miller, 1963), bankruptcy costs (Stiglitz, 1972; Titman, 1984), agent costs (Jensen and Meckling, 1976; Myers, 1977; Jensen, 1986), personal taxes (Miller, 1977), and information asymmetry (Ross, 1977; Myers and Majluf, 1984; Myers, 1984). Based on research published before 2000, a number of researchers continue to pay attention to the determinants of the capital structure as well as the profitability of the company. We mention in this context, first of all, the study of the authors (Khan et al., 2020) who analyzed the structure of capital dependent on a number of explanatory variables (leverage, tangibility, profitability, firm yield) and concluded that the financial policy of an individual firm must take into account its characteristics.

Other authors such as Nguyen and Nguyen (2020a, b) considered the investigation of the determinants of financial performance measured through the indicators ROE, ROA, profitability of sales or profit per share. The empirical results obtained showed that the capital structure has a statistically significant negative effect on the company's performance. Our research analyzes how taxation acts on the value of the company and verifies whether the theories launched on the financing structure (capital or debt) are validated by companies listed on Stock Exchange, to identify fiscal policy instruments that have a negative influence on economic growth. Although in the approach of research there are some points in common with the three studies mentioned above, its content stands out by the approach and the number of explanatory variables used to explain economic growth in terms of taxation, which has not been studied in Iraqi companies. We intended to highlight the main determinants of the financial structure of the enterprise in theory and practice, with special reference to Iraqi enterprises, as well as how they can be used to maximize the value of the economic agent, considering that they can be important information for investors.

LITERATURE REVIEW

The financial structure of a company results, in principle, forms a decision that integrates a whole set of factors. The literature, especially Anglo-Saxon literature, is generous in this direction. Modigliani and Miller (1958) were the first to research the financing of companies and launched the “irrelevance theorem”, which suggests that the type of financial structure of an enterprise has no influence on its market value. In the opinion of the two authors, only the company's ability to generate cash flows determines its value. This contribution was decisive in the development of modern financial theory.

Subsequent studies (Brealey and Myers, 2003; Bannerman and Fu, 2019) have been instrumental in contributing to the theory of financial structure. Thus, from the desire to identify the optimal financing structure, it was concluded that the short-term financial structure is given by the necessary working capital. Regarding the long-term financing, no consensus was reached, the only unanimous opinion being that the choice of a certain financing structure aims to maximize the market value of the company. Given that the theory of the financial structure of an enterprise has evolved, some authors (Ogden et al., 2003) identify the factors that influence financing decisions, presenting theories regarding fiscal policy, financing difficulties, agency costs, information asymmetry and corporate control.

In a subsequent study in 1958, Modigliani and Miller (1963) improved their theory by introducing the concept of taxation and concluded that any tax-paying firm should maximize its level of indebtedness in order to maximize its value. Summarizing the concept of the two authors, it can be stated that the effective tax rate must be positively correlated with the level of debt.

Shackelford and Shevlin (2001) state that historically, prior to the 1980s, taxation research was focused on the legal assessment of the effect of the tax on exogenous transactions and political studies. In fact, the two authors refer to the research of Modigliani and Miller who introduced the income tax in 1963 in a study on the existence of an optimal capital structure. The most complex study belongs to Graham (2003) who integrated the fiscal variables in choosing the capital structure, dividend policy, choosing the form of organization at national and multinational level.

Although Scholes and Wolfson (1996) developed a conceptual framework for integrating taxation into enterprise investment and financing decisions, the conceptual framework did not bring new theories and methodologies, but the authors took a positive approach in trying to explain the role of taxation in the organization. This conceptual framework remains fundamental to tax, accounting and finance research. Some authors consider that tax research needs to present certain methodological issues regarding, in particular, the estimation of the marginal tax rate, in order to specify their models, variables and variation, as well as the availability of data (Shackelford and Shevlin, 2001).

Other authors present more substantiated research, stating that measuring the tax rate is an important step in tax research and can generate negative effects on the
results obtained (Plesko, 2003; Dammak, 2006).

However, we note that there are different approaches to estimating the tax rate. Zimmerman (1983); Porcano (1986) and Omer and Terando (1999) took into account the average effective rate of tax rate, and others (Shevlin, 1990; Graham, 1996) adopted a simulation technique to determine the marginal rate of taxation, a technique that has been widely adopted by Mackie (2002) and Feenberg and Poterba (2000).

Auerbach and Hassett (1992) and Hassett and Hubbard (1996) investigated the effect of tax incentives on investments, such as tax credits for investments, while Cummins et al. (1995) studied the impact of tax adjustments on rates set by Tobin. Other studies have highlighted the effect of income tax and personal tax on the cost of capital (Auerbach, 1983; Stiglitz, 1983; McKenzie et al., 1997) and the interaction between the deficit situation, the interest rate, the cost of using capital and their impact on investments (Gale and Orszag, 2005).

In a 1977 study, Miller stated that the decision-making process is much more complex and identified three types of taxes that influence a company's financial structure, namely: profit tax rate, dividend tax rate, and income tax rate from interest. According to Miller's view, the tax rate is not an independent variable significant enough for the level of indebtedness.

Fama and French (1988) complement Miller's theory and argue that indebtedness levels do not imply tax benefits, with a high degree of indebtedness having other negative effects. These negative effects are represented by higher agency costs because shareholders and creditors anticipate that higher leverage will have a negative impact on profitability.

On the other hand, De Angelo and Masulis (1980) argue that there are other tax savings based on factors other than interest expenses, such as: deductibility of tax depreciation, deductibility of expenses representing investments in fixed assets, deductibility of research and development expenses (R & D). Therefore, they point out that a company should focus more on obtaining tax savings based on the elements listed above and less on accessing credit, hence the assumption on which their thinking is based: tax deductions outside the interest should be negatively correlated with leverage.

Contrary to the theories regarding the maximization of the debt level, there are those that claim that the expected probability of default is positively correlated with the degree of indebtedness of a company, because it implies confidence in its ability to generate profit and honor its obligations to creditors decreases (De Angelo and Masulis, 1980; Sogorb-Mira, 2005). Therefore, it can be stated that the size of the company should be positively correlated with the level of debt. A problem identified by Myers (1977) is represented by the situation in which the level of investments within the company is insufficient. This problem occurs when the company has reached a maximum level of indebtedness, and the only possibility to attract new funds is to attract capital.

This situation occurs especially in the case of companies with significant growth opportunities. Thus, the state of underfunding in which they find themselves leads to difficulties in accessing loans. A consequence in their case would be the transition from long-term indebtedness to short-term indebtedness or even to financing only on the basis of equity. Finally, this would lead to a negative relationship between development opportunities and leverage (Sogorb-Mira, 2005; Brealey et al., 1991). The stated aspect leads us to the statement that development opportunities must be negatively correlated with the company's leverage.

Given that within the company the financing can be achieved both through long-term loans and through short-term loans, it is necessary to differentiate the total debts in this regard (Michaelas et al., 1999), their relationship with growth opportunities being inverse (negative for long-term loans and positive for short-term loans). The following statements can be made:

(i) Long-term debt must be positively correlated with the size of the company;
(ii) Short-term debt must have a negative effect on the size of the company.

Referring to the link between firm opportunities and debt levels, Myers (1977) and Sogorb-Mira (2005) argue that firms with high levels of agency costs are pressured by creditors to maintain a high level of tangible assets in total assets, as they are a guarantee for creditors. Thus, the share of tangible assets should influence the company's ability to obtain external financing. Given that firms mainly finance their tangible assets through long-term lending, a positive correlation should be identified between the tangible asset rate and the level of debt.

Poitevin (1989), following an empirical analysis, found that in profitable companies the leverage is higher. In studying the link between the level of debt and the company's profitability, the author starts from the idea that profitable companies have a lower risk and therefore have the advantage of obtaining credit at a lower cost. Contrary to this statement, Myers and Majluf (1984), through the "theory of ranking sources of financing", argue that profitable companies prefer to finance their investments from the profit carried forward. Thus, according to this theory, profitable companies will resort to bank loans and the issuance of new shares to a lesser extent than non-profit companies. Recourse to financing through capital increase is seen as a last resort in prioritizing funding sources. This situation is caused precisely by the lack of information from those outside the company and it can be stated that the leverage should be negatively correlated with the company's profitability.
At the same time, another implication of the “theory of hierarchies of financing sources” refers to the period from the establishment of the company to the present. According to Hall et al. (2000), firms that have been active in the market for a long time have a greater capacity to use domestic sources (profit carried forward), as they have had time to accumulate resources, hence the statement that leverage should negatively correlated with the period of time since the company was established.

On the other hand, the following conclusion can be deduced from the same “theory of ranking of financing sources”: any company that presents debt in the balance sheet has exhausted its internal resources, indicating that the company’s seniority on the market has nothing to do with debt. Consequently, correlated with the previously stated, it is even beneficial for companies to use external lending in order to support the current activity and make investments.

In addition to the briefly presented studies, other currents of thought, which emerged in the 1970s, such as signal theory and agent theory, can be discussed, which allows the analysis of business financing practices and the establishment of the financial structure. Taking into account the concerns found in the literature, our research considers the presentation of the financial structure of companies listed on the Stock Exchange and the analysis of the factors that influence it. Through the models created and their extension, we also proceeded to analyze the impact of indebtedness on the profitability of the company. Our research is in line with this approach, integrating taxation into companies’ decisions.

MATERIALS AND METHODS

Description of the financial structure

The analyzed sample consists of 34 companies listed on the Stock Exchange on the main segment, from various branches of activity. Panel data refer to the period 2010-2019. Viewed from the perspective of the financial structure, the evolution of the variables considered are characteristic, respectively the share of capital, total debt, long-term debt and short-term debt in the balance sheet liabilities, as shown in Table 1. The data in the table reveal that 60.65% of the companies included in the analyzed sample are financed by equity and 39.35% of the companies are financed by debts.

In general, companies prefer equity as a means of financing and not debt, because equity is more affordable for companies. However, the most important aspect is the lower cost of equity. On the other hand, referring to the theory presented above, debt should have represented a much more significant share in the balance sheet liability, as double taxation of dividends would discourage financing by issuing shares. It can also be pointed out that the inflation rate and interest rates are declining, which suggests that purchasing power is increasing, with an increasing benefit / cost ratio.

Although the inflation rate and the interest rate decrease, the long-term debts show a reduced trend, the average of the analyzed period being 29.05%. The downward trend in long-term debt interest rates reflects a decline in the market’s perception of financial risk. Thus, there is an increase in the trend of financing through equity, providing greater security, as the funds will not be withdrawn in case of deterioration of the financial situation, as in the case of a bank loan, ensuring flexibility and independence. A counter-argument against this trend would be that, in the event of bankruptcy, the shareholders will be the last to be remunerated.

Rising inflation and creating a tax shield by deducting interest expense would have been expected to make long-term debt a more attractive source of funding. The taxation practiced in Iraq does not allow the deduction from the payment of the profit tax of the interest only within the limit of a maximum ceiling of 30%. The financing structure of enterprises remains in favor of equity under a limited debt tax advantage.

The designed model

In the analysis we undertake we will rely on the general debt ratio - TDR (also known as leverage or degree of indebtedness) determined as the ratio between the total debts of the company and its total assets. This variable will be the basis for constructing the regression equation as a dependent variable.

The explanatory variables were determined based on numerous studies on the structure of capital. The present study involves the use of 7 explanatory variables, most of which are consistent with the studies that formed the basis of Sogorb-Mira’s research (2005), namely:

1) Effective tax rate (ETR) represents the ratio between the effective measure of the profit tax and EBIT (Earnings before interests and taxes). The concept belongs to Gupta and Newberry (Gupta and Newberry, 1997);
2) TSI represents the ratio between fiscal savings (TS) generated by other items in the balance sheet, other than those related to bank loans and total assets (TA) (Sogorb-Mira, 2005);
3) Growth opportunities (GO) are determined as the ratio between intangible assets (IA) and total assets (TA). It is also considered that the value of intangible assets reflects the ability of a company to make investments in the future in order to grow. According to equilibrium theory, firms with high development opportunities borrow less than firms with a large share of tangible assets in total assets, as development opportunities cannot be used as collateral for loans (Myers, 2003);
4) TANG - tangibility of assets was used in Nivorozhkin (2005)’s study, according to which companies with high growth rates should rely more on equity financing, as a high degree of indebtedness leads to a decrease in the company’s capacity to finance future growth. It is determined as the ratio between the physical assets (tangible) - PA and the total asset (TA);
5) The size of the company (CS) - the size of the firm, as a factor influencing the financial structure of the firm has been mentioned in most studies in the field of capital structure (Rajan and Zingales, 1995; Mazur, 2007). Some authors use the number of employees, but the economic crisis that has passed has led to the restructuring of the labor force for which reason it is not a representative influencing factor. Other authors (Marcu et al., 2015) use the logarithmic expression of turnover, which we consider to be less representative due to price fluctuations. Embracing Sgorb-Mira’s opinion (Sogorb-Mira, 2005), in the present research we will use the logarithmic expression of the total asset;
6) Profitability (PROF) is mentioned by the theory of static balance, as well as by the theory of hierarchy of funding sources. Some authors (Myers, 2003; Nivorozhkin, 2005) determine profitability as the ratio between operating income and total assets. For a greater accuracy of the results we used Return on Assets (ROA) determined as a ratio between EBIT and total assets; 7) YO is the natural logarithm of the years of operation.
established at the reporting date. In 1991, the active companies in Iraq were registered in the Trade Register, which is why we ignored this moment and took into account the year in which a company was founded or established, provided that it operates continuously. Therefore, YO represents the logarithmic expression of the years that elapsed from the moment of establishment until 31.12.2019.

To describe the determinants of the financial structure of the enterprise, the econometric model is based on the theoretical foundation provided by the theories of capital structure and has the following form:

\[
LEV = c_1 + c_2 ETR + c_3 TSI + c_4 GO + c_5 TANG + c_6 \log(CS) + c_7 PROF + c_8 \log(YO) + \epsilon_t
\]

where, \(Y = \) the lever; \(\epsilon_t =\) the specific error.

The model is based on panel data and consists in estimating the regression equations in which time series as well as cross-sectional data are used. Subsequently, to highlight the impact of the financial structure on profitability, we analyzed the econometric model applied by Smith et al. (2012), which measured performance through ROA and which is significantly negatively correlated with the amount of debt used by the firm.

The regression equation to be tested has the following form:

\[
Prof = c + c_1 TDR + c_2 \log(TVR) + c_3 TANG + c_4 \log(YO) + \epsilon_t
\]

(2)

where: \(\log(TVR) = \) logarithm of turnover

Description and analysis of data

In order to form a general image on the tendency of the considered variables, in Table 2 is presented the descriptive statistics of the sample that will be analyzed. We notice that the highest values are recorded by the size of the company (CS) and the total debts recorded due to the heterogeneity of the sample in terms of the specifics of the activity and the way capital is managed. On the other hand, the lowest values are recorded by tax savings, other specifics of the activity and the way capital is managed. On the other hand, the lowest values are recorded by tax savings, other specifics of the activity and the way capital is managed. On the other hand, the lowest values are recorded by tax savings, other specifics of the activity and the way capital is managed.

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First, it is noted that there is a positive link between leverage (measured by total debt) and the effective tax rate, thus confirming

<table>
<thead>
<tr>
<th>Year</th>
<th>EQ/TL</th>
<th>TD/TL</th>
<th>STD/TL</th>
<th>LTD/TL</th>
<th>Average interest rate</th>
<th>Inflation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>0.64169</td>
<td>0.35831</td>
<td>0.1064</td>
<td>0.25191</td>
<td>6.66</td>
<td>10.81</td>
</tr>
<tr>
<td>2011</td>
<td>0.64432</td>
<td>0.35568</td>
<td>0.10704</td>
<td>0.24864</td>
<td>6.25</td>
<td>10.00</td>
</tr>
<tr>
<td>2012</td>
<td>0.63084</td>
<td>0.36916</td>
<td>0.11503</td>
<td>0.25413</td>
<td>5.25</td>
<td>9.50</td>
</tr>
<tr>
<td>2013</td>
<td>0.62266</td>
<td>0.37734</td>
<td>0.11353</td>
<td>0.26381</td>
<td>4.87</td>
<td>7.60</td>
</tr>
<tr>
<td>2014</td>
<td>0.57045</td>
<td>0.42955</td>
<td>0.0821</td>
<td>0.34745</td>
<td>3.35</td>
<td>6.10</td>
</tr>
<tr>
<td>2015</td>
<td>0.58100</td>
<td>0.41901</td>
<td>0.09061</td>
<td>0.32840</td>
<td>2.00</td>
<td>4.00</td>
</tr>
<tr>
<td>2016</td>
<td>0.61666</td>
<td>0.38334</td>
<td>0.08739</td>
<td>0.29595</td>
<td>1.75</td>
<td>2.88</td>
</tr>
<tr>
<td>2017</td>
<td>0.55468</td>
<td>0.44532</td>
<td>0.09364</td>
<td>0.35167</td>
<td>1.75</td>
<td>2.88</td>
</tr>
<tr>
<td>2018</td>
<td>0.60444</td>
<td>0.39556</td>
<td>0.10671</td>
<td>0.28885</td>
<td>2.33</td>
<td>3.00</td>
</tr>
<tr>
<td>2019</td>
<td>0.59836</td>
<td>0.40164</td>
<td>0.12750</td>
<td>0.27414</td>
<td>2.50</td>
<td>3.50</td>
</tr>
<tr>
<td>Average</td>
<td>0.60651</td>
<td>0.39349</td>
<td>0.10299</td>
<td>0.29050</td>
<td>3.67</td>
<td>6.03</td>
</tr>
</tbody>
</table>

Source: authors’ processing based on data collected from the financial statements of listed companies.

Table 2. Descriptive statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std.Dev.</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG(TD)</td>
<td>11.9909</td>
<td>11.39321</td>
<td>17.32709</td>
<td>3.95124</td>
<td>2.22824</td>
<td>340</td>
</tr>
<tr>
<td>ETR</td>
<td>0.16600</td>
<td>0.14058</td>
<td>3.96462</td>
<td>-1.26430</td>
<td>0.31135</td>
<td>340</td>
</tr>
<tr>
<td>TSI</td>
<td>-0.00167</td>
<td>-0.00095</td>
<td>0.09237</td>
<td>-0.04333</td>
<td>0.01156</td>
<td>340</td>
</tr>
<tr>
<td>GO</td>
<td>0.03257</td>
<td>0.00276</td>
<td>0.66539</td>
<td>0.00000</td>
<td>0.10819</td>
<td>340</td>
</tr>
<tr>
<td>TANG</td>
<td>0.51048</td>
<td>0.50577</td>
<td>0.98367</td>
<td>0.00309</td>
<td>0.22749</td>
<td>340</td>
</tr>
<tr>
<td>CS</td>
<td>13.21941</td>
<td>12.62182</td>
<td>17.67614</td>
<td>10.00767</td>
<td>1.96992</td>
<td>340</td>
</tr>
<tr>
<td>PROF</td>
<td>0.04323</td>
<td>0.04503</td>
<td>0.44237</td>
<td>-0.89505</td>
<td>0.09270</td>
<td>340</td>
</tr>
<tr>
<td>YO</td>
<td>3.61597</td>
<td>3.59722</td>
<td>4.81218</td>
<td>2.30259</td>
<td>0.68983</td>
<td>340</td>
</tr>
</tbody>
</table>

Source: authors’ processing.
the theory put forward by Modigliani and Miller, according to which the effective tax rate should be positively correlated with the level of debt, on account of fiscal savings related to interest expenses. Referring to the TSI variable, the results confirm the theory of De Angelo and Masulis (1980) that it is negatively correlated with leverage, but has a very low value. The low growth opportunity, measured by the share of intangible assets in total assets (3.25%) refutes Sogorb-Mira’s theory that there should be a negative correlation with leverage (Sogorb-Mira, 2005). If the variables that refer to the tangibility of assets, the size of the company and the period from the establishment to the present confirm the theories described above, the same cannot be said about profitability. Myers and Majluf (1984) refer to the financing of investments from carried forward profit. The Iraqi tax legislation puts its mark on the company’s profitability through the way of regulating the profit, which leads to dismissing the hypothesis according to which the leverage should be negatively correlated with the company’s profitability. An analysis on the two groups of companies, respectively those with majority state capital and those with majority private capital, validates those found on the whole sample and presented above.

RESULTS AND DISCUSSION

Determinants of the financial structure of the enterprise

The results of the basic model related to the total debt

The econometric model established according to relation (1) has the form of multiple linear regression, the serial correlation of errors in the case of cross-sectional data being irrelevant, and the dependent variable LEV is nuanced by the total debt ratio (TDR) calculated as ratio between total debt and total assets. According to the variable correlation matrix (Table 5) no factor should be eliminated, but by estimating the equation we find that some variables are not statistically significant having p-value >0.05, value initially stipulated by Fisher and accepted by the scientific community.

Starting from relation (1) and determining the lever by TDR (total debt ratio), the linear regression becomes:

\[ TDR = c_1 + c_2ETR + c_3TSI + c_4GO + c_5TANG + c_6\log(CS) + c_7PROF + c_8\log(YO) \]  

The modeling result obtained based on the processing of the data related to the analyzed sample of companies, is presented in Table 4. The data from the processing suggest that the variation of the series is largely explained by the regression factors. Both R2 and R2 adjusted show very high values (0.839058, respectively 0.835665), which suggests that in a proportion of 84%, the independent variables considered explain the dependent variable (TDR). From the resulting estimates, we notice that the only variable that has a positive influence on the lever is the size of the company, the rest of the variables having a negative effect. The ETR coefficient is negative and statistically significant (p-value = 0.0003). The lack of predictability of the fiscal policy, the frequent changes in the fiscal field regarding the deductibility of the elements of calculation of the profit tax, the application of the IFRS regulations regarding the calculation of the deferred profit tax only at the level of groups of companies, are only some of the causes (1963). According to the results obtained, a 1% increase in the tax rate is followed by a decrease of 0.25 percentage points in the borrowing rate.

Referring to the TSI indicator, the results confirm the hypothesis of Sogorb-Mira (2005), according to which it is negatively correlated with leverage. Also, considering the probability associated with the t-Student test, it is found that it is statistically relevant, p-value = 0.0011. The results indicate that Iraqi companies are sensitive to the applied fiscal policies and that an increase of 1 percentage point of fiscal savings (other than those arising from interest) is a decrease of 6.24% points of total debt.

The size of the firm (CS) is positively correlated with the lever. The coefficient is statistically significant (p-value is 0.0000). This indicates that the larger the company, the more loans it will use. The results obtained indicate that at a 1% increase in the size of the company there is an increase of 1.04% points of leverage. The

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### Table 3. The matrix of correlations between the dependent variable and the independent variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>TD</th>
<th>ETR</th>
<th>TSI</th>
<th>GO</th>
<th>TANG</th>
<th>CS</th>
<th>PROF</th>
<th>YO</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETR</td>
<td>0.02480</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSI</td>
<td>-0.16756</td>
<td>0.01098</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GO</td>
<td>0.24707</td>
<td>-0.00194</td>
<td>-0.01611</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TANG</td>
<td>0.22953</td>
<td>0.05838</td>
<td>-0.13146</td>
<td>-0.36535</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS</td>
<td>0.90667</td>
<td>0.11877</td>
<td>-0.10070</td>
<td>0.25782</td>
<td>0.26225</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROF</td>
<td>0.11605</td>
<td>0.04658</td>
<td>0.09833</td>
<td>0.09798</td>
<td>-0.14260</td>
<td>0.19748</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>YO</td>
<td>-0.00802</td>
<td>0.02993</td>
<td>0.08279</td>
<td>-0.23638</td>
<td>-0.11614</td>
<td>0.00186</td>
<td>0.18268</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: authors’ processing.
evidence supports the hypothesis that the size of the firm has a positive impact on lending. The evidence is consistent with the tradeoff theory of capital structure and the studies of Ang et al. (1982) and Sogorb-Mira (2005). The profitability (PROF) expressed by the ROA coefficient is negative and statistically significant (p-value = 0.0111). The coefficient obtained for the variable profitability suggests that an increase by one percentage point of the profitability of Iraqi enterprises listed on the BSE is associated with a decrease of approximately 0.65% points of the total degree of indebtedness. It has been hypothesized that when firms are profitable, they prefer to borrow because the expected cost of bankruptcy decreases as profitability increases, to which are added the tax advantages that will lead to higher profitability, but the evidence does not support this theory. The negative sign of profitability is in line with the theory of hierarchy that predicts a preference for internal financing, rather than external financing (Myers and Majluf, 1984; Myers, 1984). The finding is also consistent with the early studies of Rajan and Zingales (1995), Booth et al., 2001 and Ozkan (2001) and Gaud et al. (2005).

The two variables GO and YO are statistically insignificant because the p-value is greater than 0.05. Although the GO variable is negatively correlated with leverage (Sogorb-Mira, 2005; Brealey et al., 2020), it is insignificant with p-value = 0.9299. The main dependent variable used in the analysis was the general debt rate. However, the use of this rate alone as a dependent variable does not allow a debt structure analysis. Starting from relation (1) and considering that the total debts consist of long-term debts and short-term debts, the multiple linear regression takes the following forms:

\[
LTD = c_1 + c_2ETR + c_3TSI + c_4GO + c_5TANG + c_6\log(CS) + c_7PROF + c_8\log(YO) \tag{4}
\]

\[
STD = c_1 + c_2ETR + c_3TSI + c_4GO + c_5TANG + c_6\log(CS) + c_7PROF + c_8\log(YO) \tag{5}
\]

Where: LTD - long-term debt ratio; STD - short-term debt ratio

The results of the long-term debt regression model

Following the estimation of the regression model (4) for the dependent variable LTD, we notice that in proportion of 73% the decisions regarding the financial structure of the enterprise are determined by the above variables. It is observed that in the case of long-term debt, the resulting coefficient has the positive sign according to the theory of Myers (1977) and Sogorb-Mira (2005), but p-value = 0.6446 makes this variable not statistically significant. Instead, the theory of Ang et al. (1982) and Hall et al. (2000) confirms that long-term debt must be positively correlated with firm size. A 1% increase in the company's size leads to a 1.16% point increase in indebtedness.

On the other hand, the hypothesis is validated according to the hypothesis considering that the age of the company should be negatively correlated with the leverage (Sogorb-Mira, 2005). Its value shows that an increase of 1 percentage point determines a decrease of
0.57\% points of indebtedness.

**The results of the short-term debt regression model**

The analysis performed at the level of the entire sample in relation to short-term debts (Equation 5), both R and R2 - adjusted records significant values of 0.767802 and 0.762906 respectively, which suggests that in proportion of 76\%, the independent variables considered explain the dependent variable RDS. The link is less strong than in the case of LTD and, therefore, it can be stated that 76\% of this model explains the decisions on the financial structure of the company. As can be seen, the strongest link is ensured by the company's profitability (p-value = 0.0138) and a percentage increase of 1\% determines a reduction of indebtedness by 0.7 percentage points. The negative correlation between profitability and total indebtedness supports the hypothesis of the theory of the ranking of financing sources according to which profitable enterprises use less borrowed capital for financing, as they have more internal resources that they can use as financing sources (Myers and Majluf, 1984). In the same sense, it is noted that the hypothesis of Sogorb-Mira (2005) is confirmed, according to which it is negatively correlated with the lever. From a statistical point of view the variable AEF is significant (p-value = 0.0003). As we have already pointed out, the results indicate that Iraqi companies are sensitive to the applied fiscal policies and that an increase of 1 percentage point of fiscal savings (other than those derived from interest) determines a decrease of 7.93\% points of debts on short term.

As in the case of the regression model for the total debt, the negative relationship between the effective tax rate and the debt level is observed here, the coefficient being statistically significant (p-value = 0.0013). A 1\% increase in the tax rate produces a decrease in short-term debt by 0.26\% points and confirms the theory of Modigliani and Miller (1963).

On the other hand, the positive sign of the coefficient related to the variable DF, leads to the rejection of the theory of Ang et al. (1982) and Hall et al. (2000) according to which short-term debt should be negatively correlated with the size of the company. This theory is explained by the fact that some companies included in the sample were in a period of insolvency in which there was a decrease in liquidity. The statement is in line with the idea that companies’ “liquidity has a negative impact on companies” decisions to lend. This negative effect could be due to potential conflicts between creditors and companies’ shareholders (Ozkan, 2001). In other words, companies with a high level of liquidity hold more liquid assets and have lower short-term debt, thus reducing the share of short-term debt and total debt at the same time.

Summarizing what has been described so far, it can be stated that indebtedness can increase the value of the company, as the existence of taxes creates advantages in the case of using a larger volume of borrowed capital. The interest related to them is tax deductible expenses, which reduce the taxable profit and, as a result, generate a tax saving. But an indebted firm has a higher degree of risk: the non-indebted enterprise has only an economic risk, while the indebted enterprise registers an increase in the risk of its own capital in relation to the degree of indebtedness.

**Factors that influence the value of the company**

As previously stated, the study of financial structure determinants that influence firm profitability is based on studies by Smith et al. (2012) that measured performance through ROA significantly negatively correlated with the amount of debt used by the firm (calculation relation (6)). In the view of the three authors, high-performing companies tend to have more undistributed profit and thus do not need to borrow to finance their business. On the other hand, low profitability can put pressure on the company to use more debt in the next period.

\[
Prof = c + c1*TDR + c2*log(TVR) + c3*TANG + c4*log(YO) + ft
\]  

We chose profitability testing as a dependent variable, measured using the ROA indicator calculated as the

\[
\text{Table 5. Descriptive statistics.}
\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std.Dev.</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.030679</td>
<td>0.033707</td>
<td>0.439297</td>
<td>-0.905847</td>
<td>0.090615</td>
<td>340</td>
</tr>
<tr>
<td>TDR</td>
<td>0.400476</td>
<td>0.320842</td>
<td>2.098278</td>
<td>0.001797</td>
<td>0.344457</td>
<td>340</td>
</tr>
<tr>
<td>LOG(TVR)</td>
<td>5.336034</td>
<td>5.202494</td>
<td>7.419262</td>
<td>3.113284</td>
<td>1.01014</td>
<td>340</td>
</tr>
<tr>
<td>TANG</td>
<td>0.510484</td>
<td>0.50577</td>
<td>0.983671</td>
<td>0.003088</td>
<td>0.227488</td>
<td>340</td>
</tr>
<tr>
<td>LOG(YO)</td>
<td>1.570397</td>
<td>1.562252</td>
<td>2.089905</td>
<td>1</td>
<td>0.29959</td>
<td>340</td>
</tr>
</tbody>
</table>

Source: authors' processing.
ratio between net profit and total assets. The independent variables, as an expression of the determinants, refer to:

1. The degree of indebtedness or the leverage established as a ratio between the total debts and the total assets, hence the expression of the total debt rate;
2. The size of the company quantified by the logarithm of the turnover related to company i at time t;
3. Tangibility of assets, as previously described;
4. The logarithm of the number of years of operation of companies i, at time t.

The research of the factors that influence the value of the company is a continuation of the previous research, which is why it uses the same database related to the 34 companies listed on Baghdad Stock Exchange in the period 2010-2019. Table 5 presents the descriptive statistics of the variables used in the analysis. As can be seen, the leverage comprises on average 40.05% of the accounting assets, and the ROA is 3.06%.

Table 6 shows the correlation between the model variables and as can be seen the closest correlation is between TANG and LOG (CA).

As the regression results show, when the ROA is a dependent variable (Table A4, the degree of indebtedness is significant (p-value = 0.0000) and has a negative sign. This result means that an increase in a firm's debt results in a decrease in economic profitability, ROA. Analyzing the p-value of the other factors, we notice the existence of insignificant factors, such as the case of the company's age (logYO), which we will eliminate from the calculation. Modeling the regression equation in the absence of the enterprise age factor shows us that the highest value of the coefficient is the lever. In this context, in order to determine the optimal capital structure, we will perform an econometric analysis between profitability and the degree of indebtedness, eliminating from the model the other insignificant elements and we will have:

\[ ROA = C(1) + C(2) \cdot TDR \]  \hspace{1cm} (7)

Following the chart below, we notice that at a leverage value equal to 0%, the profitability is maximum specific to the Iraqi market of 6%. But, the maximum degree of indebtedness, above which the profitability becomes negative, is found at the level of 79.5% (Figure 1). From what is presented, it can be determined that, when the companies are listed on the BSE, they have a high degree of indebtedness, which determines the decrease of the economic profitability. Firms that record very high rates of economic profitability record low debts instead. Although there is no theoretical justification for this, a practical explanation is that very profitable companies simply do not need large debts for financing. Their high rates of return allow them to secure financing for most of the profits retained for this purpose (self-financing).

**Conclusions**

The aim of the research is to analyze how taxation affects the value of the companies and verify whether the theories launched on the financing structure (capital or debt) are validated by Iraqi companies listed on the BSE, and to identify fiscal policy instruments that have negative influence on economic growth. For listed Iraqi companies, it is important to know the determinants of the company's financial structure, as well as the factors that influence the value of the company because economic growth cannot be achieved without identifying the occurring influences. The research provides useful information to managers, investors and decision makers in Iraq.

Researching the financing structure of Iraqi companies listed on Baghdad Stock Exchange we found that they generally prefer equity as a means of financing, and not debt, because equity is more accessible. The most important aspect is the lower cost of equity. On the other hand, referring to the theory of the hierarchy of sources of financing, debt should have represented a much more significant share in the balance sheet liability, as double taxation of dividends would discourage financing by issuing shares. Following the factors that influence the financing structure of the Iraqi companies listed on Baghdad Stock Exchange, the followings were identified:

The effective tax rate, both in the case of total debt and
in the case of long-term and short-term debt, is in a negative relationship with leverage. The main cause would be that companies are not profitable enough to make the most of the tax savings resulting from the level of indebtedness (there was a period when some large companies were in a state of insolvency);

*Tax savings*, other than those resulting from interest, prove to be beneficial, but they are short-term and related to government fiscal policy, as has been shown in the case of measures on social security contributions; *Growth opportunities* are in a positive relationship with long-term debt and total debt and in a negative relationship with short-term debt, thus rejecting the theory that development opportunities must be negatively correlated with the company's leverage. This situation can also be explained by the slightly higher share of long-term debts in the balance sheet liabilities of companies, thus reflecting their inclination to achieve a balance between long-term and short-term debts;

*The tangibility of the assets* does not seem to have a negative effect on the leverage even if in the case of short-term debts the sign is negative, thus accepting the hypothesis of the existence of a positive correlation with the leverage. Consequently, it is important for the analyzed companies to invest in tangible assets in order to be able to obtain long-term financing;

*The size of the company* proved to be in a negative relationship with both the level of total debt and the level of long-term debt, but in a positive relationship with short-term debts. This aspect can be explained by the fact that Iraqi companies have a higher probability of bankruptcy, which demotivates them when the issue of indebtedness arises (Miciula et al., 2020);

Profitability is positively correlated with all three dependent variables leading to the rejection of the theory that supports this relationship. Therefore, in the case of the analyzed Iraqi companies, the carried forward profit is insignificant for financing investments from internal resources;

The years of operation of a company is negatively correlated with the leverage, which leads to the acceptance of the theory that the longer a company operates in the market, the less it borrows because it has had time to accumulate internal financing resources.

Summarizing what has been described, it can be stated that indebtedness can increase the value of the company, as the existence of taxes creates advantages in case of using a larger volume of borrowed capital (Noja et al., 2020). The interest related to them is tax deductible expenses, which reduce the taxable profit and, as a result, generate a tax saving. But an indebted firm has a higher degree of risk: the indebted enterprise has only an economic risk, while the indebted enterprise registers an increase in the risk of its own capital in relation to the degree of indebtedness.

Regarding the second aspect, the analysis of the determinants of the financial structure that influence the firm's profitability was based on the studies of Smith et al. (2012) who measured performance through ROA significantly negatively correlated with the amount of debt used by the firm. The research shows that, when companies are listed on the BSE, they have a high degree of indebtedness, which leads to a decrease in economic profitability. Firms that record very high rates of economic profitability record low debts instead. Although there is no theoretical justification for this, a practical explanation would be that very profitable companies simply do not need large debts for financing. Their high rates of return allow them to secure financing for most of the profits retained for this purpose (self-
financing).

In response to the title of the research, we note that there is a kind of dialectical link between taxation and the power of the company on the market, the former consolidating the latter which will therefore have the means to reduce the same taxation. This follows from the fact that, if taxation encourages, in particular, expenditure whose profitability increases with market power, it contributes to the increase of that power which entails the partial translation of the corporate tax on customers.

Limitations of the study and future perspectives

Although the study is based on a relatively long period of time (2010-2019), it should be emphasized that Iraq's economy is not a stable economy; the data collected contain sufficient risks that may lead to dilution of research results. In other words, the empirical data are extracted from the financial statements of companies published on www.isx-iq-net, which may be suspected of low accuracy. Additionally, there are concerns regarding taxation, which diminishes the informative power of built models.

The lack of specialized support in the direction of researching the influence of factors on the value of the company makes it impossible to compare with other similar studies at the level of Iraqi companies. The limits stated regarding the study lead to the pioneering aspect of this research, through which we highlight only the evaluation and explanation of the factors influencing the value of the company. We plan to extend this research in the future by comparing and tracking the trend of the factors described.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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REFERENCES


