DETERMINANTS OF CAPITAL STRUCTURE OF FRENCH SBF 120 LISTED COMPANIES: A COMPARISON BETWEEN TRADE-OFF THEORY AND PECKING ORDER THEORY

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Abstract

In this paper, we attempt to identify the firm-specific determinants of the capital structure of a sample of non-financial firms listed on the SBF 120 French index between 2009 and 2019 and to test whether the determinants offered by the two principal financial theories (e.g., trade-off theory and pecking order theory) are able to provide convincing explanations for their behavior in terms of financing decisions. Capital structure determinants discussed are size, profitability, asset tangibility, growth opportunities, liquidity, effective tax rate, and risk. The empirical analysis is carried out within a panel data estimation framework. Panel estimation techniques of fixed and random effects and ordinary least squares (OLS) estimation have been to test the hypothesized relationships. Empirical results showed that the majority of determinants had been significant. The size of the firm and its previous leverage have been found positively related to present leverage. The growth opportunities and the profitability have been found negatively related and the asset tangibility, the effective tax rate, and the firm risk were not significant. Then two variables follow the trade-off theory predictions, two variables follow those of the pecking order and three others do not follow anyone. No theory alone then can best explain the behavior of the French firms in terms of capital structure. But none of them can be rejected.

Keywords: Capital Structure, Trade-Off Theory, Pecking Order Theory

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

1. INTRODUCTION

The capital structure is a framework that depicts how equity and debt are employed for financing the firm's operations to yield optimum returns for the stakeholders to maximize firms' returns given a level of risk (Dada & Ghazali, 2016).

The problem of capital structure, therefore, arises from determining the quantum of each source of finance that will yield optimum return with little risk (Akintoye, 2016; Dada & Ghazali, 2016; Gambo, Abdul-Ahmad, & Ahmad, 2016). The choice of the most suitable capital structure for firms is a very fundamental issue since financing decisions may affect the value of the firm if they made incorrect decisions (Gomez, Mena Rivas, & Lizarzaburu Bolaños, 2014). Such decisions have gained much attention in finance literature since the publication of Modigliani and Miller's (1958) paper. This paper set the basis of the capital structure theory: under

the hypothesis of perfect capital markets, no taxes, no bankruptcy, and no transaction costs, the firm value is independent of its capital structure. Then, the debt-to-equity ratio has no impact on the total value of the firm. While the Modigliani-Miller theorem does not provide a realistic description of how firms finance their operations, it provides a means of finding reasons why financing may matter. Based on this theory, two main theories of the capital structure were developed, which are the trade-off theory and the pecking order theory. Trade-off theory is the balance between the benefits and costs of debt. The firm optimal capital structure involves the trade-off among the bankruptcy costs and agency costs, the effects of corporate and personal taxes (Jensen & Meckling, 1976), bankruptcy costs, tax benefits, and agency costs related to asset substitution (Myers, 1977), and overinvestment (Jensen, 1986; Stulz, 1990). Developed by Myers and Majluf (1984), the pecking order theory states that firms adopt a strategy known as financing hierarchy to minimize the asymmetry of information between insiders and outsiders: firms issue first internal funds, debt, and then equity.

Empirical studies of the capital structure are being carried out for more than five decades. Trade-off and pecking order theories are rendered to loom large over others in terms of their alternative assumptions. However, results have not led to a consensus regarding one optimal capital structure. Then it is still a puzzle with various responses. We will contribute to the financing literature by identifying the specific determinants of French non-financial firms' capital structure between 2009 and 2019 and testing whether the determinants offered by the trade-off theory and the pecking order theory are able to provide convincing explanations for their behavior in terms of financing decisions. To do it, the next section will present a literature review and study hypotheses development and Section 3 will present the research methodology. Research results shown in Section 4 will be discussed in Section 5. Section 6 will conclude the paper.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Conceptual framework: Capital structure theories

The capital structure irrelevance theory of Modigliani and Miller (1958) is considered as a starting point of the modern theory of capital structure. Authors assumed that securities are traded in a perfect capital market. Under a number of assumptions, Modigliani-Miller theory proved that there is no optimal debt-to-equity ratio. Capital structure is then irrelevant to the shareholders' wealth. The value of a levered firm value and the value of an unlevered firm is the same. Neither capital structure choices nor dividend policy decisions matter, managers should not be concerned about the capital structure and can freely select the composition of debt to equity. However, these assumptions do not hold in reality and for that matter, the irrelevance theory has been criticized for being purely theoretical (Danso & Adomako, 2014). Then many kinds of research were conducted to

disprove the irrelevance theory of Modigliani and Miller. Such research took into consideration many elements like taxes, bankruptcy costs, transaction costs, agency costs, time to market, etc. The synthesis of all these theories is known as the trade-off theory according to it firms should consider a trade-off between the costs and benefits of debt finance which would cause an optimal capital structure and estimate the advantages and disadvantages of additional debt (Brounen, de Jong, & Koedijk, 2005).

The trade-off theory is used by different authors to describe a family of related theories. According to these theories, the optimal capital structure would be determined whenever the net tax advantages of debt financing can balance leverage-relevant costs and disadvantages. Two versions of the trade-off theories are proposed: static and dynamic trade-offs.

2.1.1. Static trade-off theory

Modigliani and Miller (1963) added corporate tax to the original irrelevance theory. A benefit for debt, the shield earnings from taxes, was observed. In the presence of corporate taxes, the firm value increase with the leverage due to the tax shield. Then that tax deductibility of interest payment indirectly induces a firm to borrow to a point whereby the present value of the interest tax shield is offset by the bankruptcy cost. Bankruptcy cost is a cost directly incurred when the perceived probability that the firm will default on financing is greater than zero. One of the bankruptcy costs is the liquidation cost, which represents the loss of value as a result of liquidating the net assets of the firm. Another bankruptcy cost is distress cost, which is the cost a firm incurs if stakeholders believe that the firm will discontinue (Chen, 2011). Moreover, Miller (1977) identified three tax rates that influenced the total market value of a firm and concluded that firms' market value depends on the relative levels of each of these tax rates.

The agency cost of Jensen and Meckling (1976) is also considered under the static trade-off theory. The optimal capital structure can be identified through the benefits of debt tax deductibility of interest, bankruptcy, and agency cost (Fama & French, 2002). Separation of ownership and control raises the agency costs which stem from conflicts of interest existing between different stakeholders of the firm and the asymmetric information (Jensen & Meckling, 1976; Jensen, 1986). Debt will reduce the agency's cost of management and discipline managers. Then besides the costs of financial bankruptcy, debt has many disadvantages. Managers acting in shareholders' interest may shift investment to riskier assets and the costs are incurred by the debt holders or they may borrow still more and payout to the shareholders, hence the debt holders suffer and excessive debt leads to the underinvestment problem or "debt overhang" problem.

Debt is also a valuable device for signaling by firms. It was suggested that leverage will increase a firm's value because enhancing leverage is coinciding with the market's realization of value (Ross, 1977).

The static trade-off theory supposes then that firms target their capital structures and when the actual leverage ratio deviates from the optimal

one, the firm will adapt its financing behavior in a way that brings the leverage ratio back to the optimal level.

2.1.2. Dynamic trade-off theory

Dynamic trade-off theory considers the element of time which is typically ignored in single-period models. The optimal choice can also lead to optimal choice in the future. This theory leads to the correct decision of finance because it considers financing margin and anticipation for the coming period. Thus, expectations and adjustment costs are of particular importance: the correct financing decision typically depends on the financing margin that the firm anticipates in the next period. Some firms expect to pay out funds in the next period, while others expect to raise funds. If funds are to be raised, they may take the form of debt or equity. More generally, a firm undertakes a combination of these actions.

The first dynamic models to consider the tax savings versus bankruptcy cost trade-off are Kane, Marcus, and McDonald (1984) and Brennan and Schwartz (1984). Both analyzed continuous time models with uncertainty, taxes, and bankruptcy costs, but no transaction costs. Since firms react to adverse shocks immediately by rebalancing costs lessly, firms maintain high levels of debt to take advantage of the tax savings. For Fischer, Heinkel, and Zechner (1989) and Mauer and Triantis (1994), adjustment costs imply boundaries on leverage beyond which it becomes optimal to adjust the capital structure. Both of these models hold investment policy fixed. They assume that the firm's assets are already in place. Subsequent debt issues are motivated by financial policy alone. Goldstein, Ju, and Leland (2001) stipulate that firms with low leverage currently have the option to increase their leverage tomorrow. Under this assumption, the firms having low leverage today will face the threat of high financing in the future. Strebulaev (2007) presented a model quite similar to that of Goldstein et al. (2001): if firms optimally finance only periodically because of transaction costs, then the debt ratios of most firms will deviate from the optimum most of the time. In the model, the firm's leverage responds less to short-run equity fluctuations and more to long-run value changes. Ultimately, most firms cannot adopt the optimal level of debt mostly. Firms whose leverage ratios do not coincide with their targets will only adjust their capital structure when the benefits of doing so outweigh the costs of adjustment.

2.1.3. Pecking order theory

The pecking order theory was firstly introduced by Donaldson (1961) and popularized by Myers (1984) and Myers and Majluf (1984). Donaldson (1961) suggested that managers favor internally generated funds over external funds. The theory was developed by Myers (1984) and there is a preference order of financing sources. Most firms prioritize internal financing, followed by short-term debt with low risk and long-term debt with high risk, and issuance of new equity is considered the last resort. This hierarchy is not without reasons: equity has a serious adverse selection, debt has the only minor adverse selection, and retained earnings avoid the problem. Aware that equity is strictly riskier than debt; rational investors will revalue firm's securities when it announces a security issue. Mostly for the lowest quality firms, the drop in the valuation of equity makes equity look undervalued, conditional on issuing equity. For the insiders, retained earnings are a better source of funds than outside financing. If retained earnings are inadequate, debt financing will be used. Equity is used only as a last resort. Then, the pecking order theory does not consider a target capital structure (Luigi & Sorin, 2009; Mostafa & Boregowda, 2014). Leverage ratios are realized in compliance with the difference between retained earnings and investments (Daskalakis & Psillaki, 2008). This theory also considers the signaling effect (Schoubben & Van Hulle, 2004). Any issuance of debt or equity is thought to generate a signaling effect to the investors, where the firms are presumed to be doing well when the firms are buying back their shares and vice versa.

2.2. Determinants of capital structure: Literature review and hypothesis development

2.2.1. Size

According to the trade-off theory, size is considered as an inverse proxy of bankruptcy cost (Titman & Wessels, 1988) since larger firms tend to be more diversified and fail less often. They may utilize the economies of scale and transfer the cost of short-term financing to their suppliers or clients. They usually have more assets and stable cash flows, which eases their access to external funds from banks, as they are likely to be considered less risky borrowers (Rajan & Zingales, 1995; La Rocca, La Rocca, & Cariola, 2011). Bankruptcy costs are lower for these companies, and as a result, they are more flexible in terms of managing their liabilities (Demir, 2009). They are able to operationalize more debt in their balance sheets due to more collateral on the asset side (Karacaer, Temiz, & Güleç, 2016). From another hand, larger firms are often listed on stock exchanges and are more transparent, which results in lower agency costs (Jensen & Meckling, 1976). They tend to engage in international activities, therefore they are more able to diversify their operations and raise funds in foreign capital markets. The cost of external capital is typically lower for bigger companies in comparison to smaller ones. If so, size should have a positive impact on the supply debt. According to the pecking order theory, firm size is used as the opposite measure of information attained by investors (Kouki & Ben Said, 2012). Larger firms have lower information asymmetry and are able to issue more equity compared to small firms, find it difficult to issue debt, and prefer internal financing. Also, bigger companies often accumulated retained earnings for many years, and external capital was not necessary (Kara & Erdur, 2015). They have more stable cash flows and are well diversified. Because their internally generated revenue is large, they will rely less on outside financing such as debt capital. In this context, leverage and firm size have a significant negative correlation (Titman & Wessels, 1988).

H1: Size affects positively (negatively) leverage according to the trade-off theory (pecking order theory).

2.2.2. Asset tangibility

Tangible assets can be used as collateral. If firm defaults on the payment of the debt, the assets are realized by lenders as compensation (Smith, 2010). Then "The more tangible the firm's assets, the greater its ability to issue secured debt" (Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001, p. 101) and to access debt under favorable conditions, including lower costs (Rajan & Zingales, 1995). Thus, a positive relationship between tangibility and leverage is predicted. Also, agency costs can be reduced if firms have sufficient tangible assets because they will have a higher level of debt and will be less financially constrained (Jensen & Meckling, 1976). So, larger tangible assets are proof to lenders that there are low agency costs in the firm (Huang & Song, 2006). These are assumptions of the trade-off theory.

According to the pecking order theory, firms that own more fixed assets have less asymmetrical information and employed them to generate internal funds for financing their investments (Pandey, 2001) since they prefer internal finance compared to external debts. These firms can issue equity at fair prices since they are generally larger firms that do not need to issue debt to finance new investments. According to this theory, the expected relationship between asset tangibility and debt should be negative.

H2: Tangibility affects positively (negatively) leverage according to the trade-off theory (pecking order theory).

2.2.3. Profitability

According to the trade-off theory, more profitable firms will use more debt because of its tax shield benefit and because profitable firms have decreased expected bankruptcy costs (Sbeiti, 2010). Hence, firm's profitability is expected to be positively correlated with leverage (Jensen, 1986). The free cash flow theory supports the view suggesting that more profitable firms should use more debt in order to discipline managers, to induce them to pay out cash instead of spending money on inefficient projects. The signaling theory predicts also that profitability and financial leverage are positively correlated. The higher leverage indicates the good performance of a business, thus managers and investors are more confident about the future operation. Titman and Wessels (1988) predicted that larger firms may tend to have a higher debt capacity. Opposite to this assumption, the pecking order theory suggests that firms usually follow a hierarchical path to finance their projects and they are likely to prefer equity financing instead of debt financing. Profitable firms are likely to have a large reservoir of internal funds and a lower leverage ratio because they have more retained earnings.

High profitability also minimizes the risk of bankruptcy, and for this reason, the capacity of indebtedness is increased (Ramli, Latan, & Solovida, 2019). Highly profitable companies, which finance their activity from internal sources, are not required to disclose detailed information on their operations (Li & Islam, 2019). Internal sources of finance (retained earnings) and increased indebtedness may be attractive for investors since a firm's shareholding is not diluted (Karacaer et al., 2016). Hence according to the pecking order theory, there should be an inverse relationship between

profitability with optimal debt level (Myers & Majluf, 1984).

H3: Profitability affects positively (negatively) leverage according to the trade-off theory (pecking order theory).

2.2.4. Growth opportunities

Trade-off theory argues that the cost of financial distress increases as the firm grows. This suggests that lenders will require more tangible assets as collateral for the loan. Since growth opportunities cannot be collateralized because it is intangible, firms tend to issue less debt (Chen, 2004). Then this theory predicts a negative relationship between growth and leverage because financial distress costs may be more severe for growth firms. The negative relationship between growth and leverage is expected too by agency cost theory: managers try to maximize personal utility at the expense of shareholders by avoiding the use of debt because debt acts like a disciplining tool that reduces free cash flow (Kayo & Kimura, 2011). Therefore, leverage decreases with an increase in growth opportunities. Contrary to this, the pecking order theory predicts that growth opportunities should be positively related to the debt ratio of a firm (Myers, 1984). Firms turn to debt financing when retained earnings are insufficient to finance growth opportunities. High-growing firms usually require lots of capital and in most cases, the retained earnings or the company's cash flows may not be sufficient to finance it (Ebadi, Thim, & Choong, 2011; Lim, 2012). Growing firms need more finances to meet their capital expenditure requirements (Bhaduri, 2002). According to the pecking order theory, because there is an asymmetrical information problem across outside investors and firm managers, companies with strong growth potential should avoid issuing new equity because the market undervalues their shares.

H4: Growth opportunities affect negatively (positively) leverage according to the trade-off theory (pecking order theory).

2.2.5. Liquidity

Firm liquidity is included in the regression in order to capture the role of internal resources as substitutes for external financing (Hall, Hutchinson, & Michaelas, 2004).

According to the trade-off theory, a firm with a higher ability to take on more debt will probably do so in order to maximize the tax benefit of debt financing. A firm with higher liquidity will exercise its option of debt to maximize the benefit of debt financing. High liquidity implies that a company has the potential to pay back debt or shareholders (Ozkan, 2001). Low risk of insolvency allows for acquiring debt at a lower cost (Morellec, 2001). More liquid companies are more prone to undertake riskier projects and finance them via bank loans thanks to a lower risk of solvency problems (Ramli et al., 2019).

On the contrary, the pecking order theory advocates that firms prefer internal finance over external debt. More liquid companies tend to finance their activity mainly by their funds (retained earnings). The higher the firms financing ability internally, the lesser it will depend on outside sources of finance such as debt financing. In this respect, liquidity will be expected to have a negative

relationship with leverage. Furthermore, Deesomsak, Paudyal, and Pescetto (2004) pointed out that managers are able to control the liquid assets in favor of the shareholders but against the interests of the debt holders, such as investing in unprofitable projects. This would increase the agency's costs of debt. Higher liquidity translates to financial flexibility and opens up possibilities of acquiring debt at a lower cost. Therefore, many researchers hypothesize an inverse relationship between liquidity and financial leverage (Kara & Erdur, 2015; Karacaer et al., 2016). We conjecture then the following hypothesis:

H5: Liquidity affects positively (negatively) leverage according to the trade-off theory (pecking order theory).

2.2.6. Effective tax rate

As the interest on the loan is tax-deductible, firms with higher tax liability have an incentive to use more debt. Therefore, a positive relationship between effective tax rate and leverage ratio is expected (Haugen & Senbet, 1986). This argument holds only if firms have a sufficient amount of taxable income. On the other hand, higher corporate tax rates would result in lower internal funds as well as a higher cost of capital. As a result, fixed capital formation and demand for external funds would decrease (Kremp, Stöss, & Gerdesmeier, 1999). This implies an inverse relationship between the level of debt and the effective tax rate. However, Titman and Wessels (1988), among others, failed to find any significant effect of corporate tax on financial decisions. Due to these complexities, the overall relationship between effective tax rate and leverage remains an empirical matter. We measure the effective tax rate as the ratio of total tax to the total taxable income of the firm.

The trade-off theory suggests that firms hold debt levels that are minimized by bankruptcy risk. As a result, debt levels increase as long as debt benefits outweigh the bankruptcy risk otherwise it drops. There should be a positive relationship between effective tax rates and debt ratio (Alipour, Mohammadi, & Derakhshan, 2015), and the advantage of debt financing increases along with increases in tax rates (Brigham & Houston, 2004).

The pecking order theory does not specify a certain relationship between effective tax rates and debt level.

H6: Tax rate affects positively leverage according to the trade-off theory.

2.2.7. Risk

Risk is generally a proxy for the probability of financial default (Titman & Wessels, 1988). The firm will have to pay a risk premium to outside providers of funds. To reduce the cost of capital, it will first use internally generated funds and then outsider funds. Firms with volatile earnings should then use low debt. This suggests that risk is negatively related to leverage. This is the combined prediction of the trade-off theory and the pecking order theory. In the trade-off-theory, risky firms should not be highly levered (Titman & Wessels, 1988).

For the pecking order theory, a firm with high risk or great volatility in earnings is more likely to go bankrupt and therefore has low creditworthiness for debt.

H7: Risk affects negatively leverage according to the trade-off theory and the pecking order theory.

It is clear from the discussion above that the relationship between leverage and firm-specific variables needs to be tested empirically, especially with mixed results found in previous empirical analyses on this subject among countries.

3. RESEARCH METHODOLOGY

3.1. Data

The study uses the panel data for French companies listed on SBF 120 index. Data covers the period from 2009 to 2019. Accounting data are collected from the Datastream database. Financial firms such as banks, insurance, mutual funds and other financial companies have been dropped because the financial industry is subject to many regulations including minimum equity requirements and most of them are highly leveraged. Some other firms have been dropped because of missing data. The final sample is thus limited to only 96 firms that satisfied definitional and data requirements.

3.2. Model

The empirical analysis is carried out within a panel data estimation framework. Panel estimation techniques of fixed and random effects are adopted in addition to the traditional pooled regression estimation (OLS). Panel data estimation allows us to control individual-specific effects usually unobservable which may be correlated with other explanatory variables included in the specification of the relationship between dependent and explanatory variables (Hausman & Taylor, 1981). A random effect is used if the individual-specific component is assumed to be random with respect to explanatory variables. The fixed effect is used if the individual-specific component is not independent with respect to explanatory variables (Dada & Ghazali, 2016). Decisions between pooled and random effect models will be made using the Hausman test (Hausman, 1978).

3.2.1. Dependent variable: Leverage rate

Following Sarıoğlu, Kurun, and Güzeldere (2013) and others, *leverage* rate is measured as the net debt to total equity ratio.

3.2.2. Independent variables

In this study, the independent variables are:
- *Size* is the natural logarithm of total assets.
- *Asset tangibility* is measured by dividing tangible fixed assets by total assets.
- *Growth opportunities* are measured by the growth rate in revenue.
- *Profitability* is measured by ROA and market to book (MTB), respectively.
- *Liquidity* is calculated by dividing the total current assets by the total current liabilities.
- *Effective tax rate* is measured by tax divided by earnings before taxes.
- *Risk* is measured by the standard deviation of earnings before interest and tax. So, the two regression models we use in this paper can be specified as:

$$Leverage_{i,t} = \alpha_0 + \alpha_1 Leverage_{t-1} + \alpha_2 Size_{i,t} + \alpha_3 Asset\ tangibility_{i,t} + \alpha_4 Growth\ opportunities_{i,t} + \\ + \alpha_5 Profitability_{i,t} + \alpha_6 Liquidity_{i,t} + \alpha_7 Effective\ tax\ rate_{i,t} + \alpha_8 Risk_{i,t} + \varepsilon_{i,t}$$

(1)

where, α is a constant term and $\varepsilon_{i,t}$ is an error term for firm i in period t.

Table 1 presents all variables, their symbols, and methods of calculation as well as different relationships between leverage rate and internal determinants following the two most famous capital structure theories, e.g., the trade-off theory (TOT) and the pecking order theory (POT).

Table 1. Variables, proxies, and hypothetical relationships

Variable	Variable type	Symbol	Proxy	Hypotheticalrelationship
Leverage	Dependent	LEV	Net debt/equity	
Size	Independent	SIZE	log (assets)	TOT: positive POT: negative
Asset tangibility	Independent	TANG	Fixed assets/total assets	TOT: positive POT: negative
Growth opportunities	Independent	GROWTH	Growth rate in total gross assets	TOT: negative POT: positive
Profitability	Independent	MTB ROA	Market capitalization/total equity Net interest income/total assets	TOT: positive POT: negative
Liquidity	Independent	LIQ	Current assets/current liabilities	TOT: positive POT: negative
Effective tax rate	Independent	ETR	Tax/EBIT	TOT: positive POT: not specified
Risk	Independent	RISK	The standard deviation of net interest income	TOT: negative POT: negative

4. RESEARCH RESULTS

4.1. Descriptive statistics

Table 2 shows the descriptive statistics of the dependent and independent variables of two models where mean, median, minimum, maximum, and standard deviation values are reported. The average value of the leverage rate is about 13%. The minimum *leverage* rate is 49.3% and the maximum *leverage* rate is 61.0%. The standard deviation shows that the *leverage* of the firm in the panel deviates from its mean of around 18%. For two *profitability* measures, *ROA* has an average value of 3.3% with a standard deviation of 5.8% and *MTB* has an average value of 2.111 with a standard deviation of 167.8%. French firms have fixed assets with an average proportion of 63.2% and poor average *growth opportunities* (5.5%).

Table 2. Descriptive statistics of model variables

Variable	Mean	Median	Minimum	Maximum	Standard deviation
LEV	0.128	0.117	-0.493	0.610	0.176
MTB	2.111	1.685	-16.250	11.710	1.678
ROA	0.033	0.036	-0.673	0.458	0.058
SIZE	16.07	16.02	10.26	20.62	1.615
TANG	0.632	0.414	-16.965	15.496	1.253
GROWTH	0.055	0.048	-0.713	0.864	0.143
LIQ	1.386	1.28	0.36	4.07	0.586
ETR	0.241	0.245	-13.444	39.500	1.500
RISK	-0.542	0.115	-223.696	149.580	11.619

4.2. Matrix correlation

Correlations among the variables are depicted in Table 3.

The existence of a high correlation between variables included in the regression model causes a correlation problem.

Observing various correlations, we can observe, as expected, a high correlation among profitability proxies (*ROA* and *MTB*). Because we never use them in the same model, this high correlation gives no cause for concern about correlation. As shown, the correlation matrixes present weak degrees of the interrelationship between variables, and thus, the correlation should not be a potential problem.

Table 3. Correlation matrix

	ROA	MTB	SIZE	TANG	GROWTH	LIQ	ETR	RISK
ROA	1.000							
MTB	0.458	1.000						
SIZE	-0.042	-0.202	1.000					
TANG	0.088	0.211	0.105	1.000				
GROWTH	0.121	0.191	-0.153	-0.032	1.000			
LIQ	0.191	0.138	-0.365	-0.065	-0.003	1.000		
ETR	0.010	-0.004	-0.022	-0.000	-0.035	-0.007	1.000	
RISK	0.029	0.010	-0.003	-0.008	0.004	-0.018	0.007	1.000

4.3. Hausman specification test

To decide whether a fixed effect model or random effect model is appropriate for panel data, the Hausman test was used. If the null hypothesis is rejected, then fixed effect regression should be selected, otherwise, random effect regression would be suitable.

Test results show that the fixed effect model is the appropriate one for the two models (Tables 4 and 5) since the Hausman test is significant (p-value < 5%) and fixed effects model estimators are unbiased.

Table 4. Haussman test: ROA (Model 1)

Test summary	Chi² statistic	Chi² d.f.	Prob.
Cross-section random	474,5984	8	0

Table 5. Hausman test: MTB (Model 2)

Test summary	Chi² statistic	Chi² d.f.	Prob.
Cross-section random	440,8158	8	0

4.4. Regression results

This section aims to analyze the result of the regression model. Each hypothesis will be analyzed based on the result of the regressions, and they could be then confirmed or infirmed.

Results show that regression has a great explicative power by adjusted R^2 of 91.6% and 91% when measuring profitability by *ROA* and when measuring profitability by *MTB*, respectively.

According to regression results, previous leverage has the highest significant coefficient with a positive sign. The higher the leverage of the previous year, the higher the leverage of the present year.

As hypothesized by the trade-off theory, leverage seems to be positively related to the size of the firm in France. This seems to be consistent with the theoretical predictions that large firms are more diversified, less prone to bankruptcy, face lesser asymmetric information problems, and thus easier to finance debt. Our results are consistent with several studies on international markets (Umer, 2014; Bayrakdaroglu, Ege, & Yazici, 2013; Chaklader & Chawla, 2016). Seo and Choi (2016) obtained an inverse relationship, concluding that small companies have no option but to resort to bank loans. Viviani (2008) found an insignificant relationship between size and debt ratio.

Our first hypothesis (*H1*) is thus confirmed in favor of the trade-off theory.

No significant relationship between asset tangibility and leverage exists. This result is in line with those of Zerriaa and Noubbigh (2015) in Tunisian firms. This result does not confirm the trade-off theory hypothesis suggesting a positive relationship and confirmed by some authors such as Cortez and Susanto (2012) and Chaklader and Chawla (2016), or those of the pecking order theory suggesting a negative relationship and confirmed by Bayrakdaroglu et al. (2013). The third hypothesis (*H3*) is thus infirmed.

Table 6. Regression results (Model 1 and Model 2)

Variable	Model 1	Model 2
LEV(-1)	0.423*** (0.027)	0.464*** (0.026)
SIZE	0.041*** (0.006)	0.049*** (0.006)
TANG	1.68E-06 (1.24E-05)	1.03E-05 (1.45E-05)
GROWTH	-0.038*** (0.014)	-0.039*** (0.015)
PROF	-0.284*** (0.049)	-0.005*** (0.002)
LIQ	-0.085*** (0.006)	-0.094*** (0.006)
ETR	0.0003 (0.001)	0.0005 (0.001)
RISK	-0.0001 (0.0001)	-0.0001 (0.0001)
Adjusted R²	0.916	0.91

*Note: * $p < 0.1$, ** $p < 0.5$, *** $p < 0.01$.*

Growth opportunities were negatively significant. Firms with high growth opportunities use less debt. This relationship is predicted by the trade-off theory and concluded by Cortez and Susanto (2012) and Alipour et al. (2015). Zerriaa and Noubbigh (2015) showed that the growth variable is statistically insignificant.

Our fourth hypothesis (*H4*) is confirmed in favor of the trade-off theory.

In line with the pecking order theory perspective, a negative relationship between leverage and profitability (*ROA* and *MTB*) was deduced from our estimation: French firms use retained earnings as funding instead of external debt. The same relationship was found by Khaki and Akin (2020) in the Gulf Cooperation Council (GCC) context and explained by the fact that where there are no or very low taxes, the financial distress as well as a tax shield, seem to provide less incentive for higher leverage and that GCC countries have bank-oriented financial markets in which access to financing, specifically with less developed capital markets, is considered to be difficult by corporate executives (Santos, 2015). Chen (2004) found similar results: Chinese firms have been found to be financed mainly by equity, and the long-term book debt comprises only 7% because of mispricing of projects, centrally planned economy, and government ownership of firms. Our result is also in the line with the findings of Alipour et al. (2015), Chaklader and Chawla (2016), and Nenu, Vintilă, and Gherghina (2018). In contrast, Rafiq, Iqbal, and Atiq (2008) and Zerriaa and Noubbigh (2015) found a positive relationship: profitable firms will shield their profits from tax, hence borrowing more than less profitable firms.

The fifth hypothesis (*H5*) is confirmed in favor of the pecking order theory.

In line with the pecking order theory perspective too, a significant negative relationship between leverage and liquidity was deduced from our estimation: an optimal level of liquidity presumes fewer requirements for borrowing and external funds. The result, therefore, is in line with the works of Kajanantha and Achchuthan (2013) and Alipour et al. (2015). Chadha and Sharma (2015) found that liquidity is statistically insignificant. The sixth hypothesis (*H6*) is confirmed.

Contrary to the conventional wisdom but in line with Avarmaa, Hazak, and Männasoo's (2011)

result, a statistically insignificant relationship between corporate tax and debt level is found. Thus, French firms decide on their leverage ratios regardless of effective tax rate and potential tax savings. This can be explained by the fact that tax benefits of debt financing in this market do not cover debt financing-related costs such as agency and bankruptcy costs. This can be also explained by the fact that the tax rate in France is low and constantly falling to reach 28 % in 2020 after being 33.33% in 2018. This rate will reduce to reach 25% by 2020. This reduction may lead to a constant reduction in taxes owed by companies. This situation leads the OECD Center for Tax Policy and Administration to consider urgent action to ensure that businesses bear their fair share of the burden.

A positive relationship between corporate tax and debt level was concluded by Brigham and Houston (2004), Qian, Tian, and Wirjanto (2007) and Kędzior (2012), and Alipour et al. (2015). On contrary, a negative relationship was found by Upneja and Dalbor (1999) and Booth et al. (2001). The sixth hypothesis (*H6*) is infirmed.

Despite the general theoretical consensus about the inverse relationship between firm risk and leverage degree, our result shows that risk has no impact on the debt level. French firms decide their leverage degree regardless of their risk level. This insignificance was also found by Sakatan (2010) in Saudi Arabia. The seventh hypothesis (*H7*) is thus infirmed.

5. DISCUSSION OF THE RESULTS

In sum, the results indicate that the corporate financing behavior in France follows a mix of the trade-off approach and the pecking order theory: following the trade-off theory, French firms operating on a large scale have the ability to borrow in higher amounts. Tangibility did not follow any theory assumptions. Following the trade-off theory, the relationship between leverage and asset tangibility is negative: firms with high growth opportunities have a floating cash flow trend, relatively low level of tangible fixed assets, and a high level of information asymmetry. The negative relationship between profitability and leverage can be explained consistently with the pecking order theory by increased information asymmetries which could lead to higher external financing premiums, under which firms prefer internal financing to external financing. Consistent with the pecking order theory too, firms tend to use their internal financing resources (profit and liquidity) primarily when meeting their funding needs. Therefore, a negative relationship exists between the liquidity ratio and the debt level of the firms. Contrary to the negative relationship expected between company risks and borrowing level, our regression results concluded an insignificant relationship between these two variables. Table 7 summarizes the results of this study and the alignment of our results with theory.

Table 7. Comparison of the test results with the expectations of theories

Determinants	Hypothetical relationships	Empirical relationships	Theory supported
Size	TOT: positive POT: negative	Positive	Trade-off theory
Asset tangibility	TOT: positive POT: negative	Not significant	None
Growth opportunities	TOT: negative POT: positive	Negative	Trade-off theory
Profitability	TOT: positive POT: negative	Negative	Pecking order theory
Liquidity	TOT: positive POT: negative	Negative	Pecking order theory
Effective tax rate	TOT: positive POT: not specified	Not significant	None
Risk	TOT: negative POT: negative	Not significant	None

6. CONCLUSION

The purpose of this research paper was to discuss the determinants of capital structure for French firms listed on SBF 120 between 2009 and 2019. Capital structure was measured by leverage rate (net debt to total equity) and chosen capital structure determinants were firm size, asset tangibility, growth opportunities, profitability, liquidity, corporate tax, and risk.

Cited among the considerable determinants of the capital structure, size seems to be positively related to the size of the firm that seems to be consistent with the theoretical predictions that large firms are more diversified, less prone to bankruptcy, face lesser asymmetric information problems, and thus easier to finance debt (Khaki & Akin, 2020). Asset tangibility has no significant impact on leverage level. Our result did not follow the trade-off theory predictions that the fact that tangible assets can create value even after bankruptcy and be provided as a guarantee when borrowing enables

the firms to obtain external funds on more favorable terms and at lower costs. It did not follow the pecking order theory predictions that firms with a high level of tangible assets have a lower level of information asymmetry, investors would prefer being a shareholder instead of making the loan and therefore the issue of shares will be less costly. In this case, the firms will concentrate on financing by equity and prefer less borrowing.

Growth opportunities had a significant negative impact on the leverage level. This result follows the trade-off theory according to which firms with high growth opportunities tend to have lower debt in their capital structure, as growth opportunities are just intangible assets, and thus cannot be collateralized, and also because growth opportunities can lead to sub-optimal investments (Myers, 1977; Jensen, 1986).

Our results imply a negative relationship between profitability and leverage consistent with the pecking order theory. This relationship can be explained by increased information asymmetries which could lead to higher external financing

premiums, under which firms prefer internal financing to external financing (Bevan & Danbolt, 2004).

The liquidity ratio has a negative effect on the French firm's leverage level. This finding is consistent with the pecking order theory as firms tend to use their internal financing resources primarily when meeting their funding needs and liquidity is considered an internal financing resource.

Although the theoretical linkages are strongly straightforward, the empirical evidence did not provide concluding results concerning the relationships between leverage level from one side and effective tax rate and risk from another side.

Empirical results provide evidence that some determinants follow the trade-off theory predictions while others follow those of the pecking order theory. Then, no theory alone (trade-off theory or pecking order theory) can best explain the behavior

of the French firms in terms of capital structure. But none of them can be rejected. In fact, "there is no universal theory of the debt-equity choice, and no reason to expect one" (Myers, 2001, p. 81).

The study would not run, however, out of limits. Firms having missing data on any variable in the years between 2009 and 2019 had been excluded from the studied sample. Our sample, therefore, does not count 120 firms. And this may prevent us from presenting an overall capital structure portrayal for French firms listed on SBF 120. More, our analysis includes only the firms in France. Therefore, we may not make a proper comparison with other markets. The comparison of our results with the previous studies on the different markets may be ineffective since the studies differ in the time frame. Therefore, further research may include several markets in order to examine any differences in the capital structure of the countries.

REFERENCES

1. Ab Wahab, S. N. A., & Ramli, N. A. (2014). The determinants of capital structure: An empirical investigation of Malaysian listed government linked companies. *International Journal of Economics and Financial Issues, 4*(4), 930–945. Retrieved from https://www.econjournals.com/index.php/ijefi/article/view/933
2. Acedo-Ramirez, M. A., & Ruiz-Cabestre, F. J. (2014). Determinants of capital structure: United Kingdom versus continental European countries. *Journal of International Financial Management and Accounting, 25*(3), 237–270. https://doi.org/10.1111/jifm.12020
3. Akintoye, I. R. (2016). *Investment decisions in the 21st century*. Lagos, Nigeria: Unique Educational Publishers.
4. Al Ani, M., & Al Amri, M. (2015). The determinants of capital structure: An empirical study of Omani listed industrial companies. *Business: Theory and Practice, 16*(2), 159–167. https://doi.org/10.3846/btp.2015.471
5. Alipour, M., Mohammadi, M. F. S., & Derakhshan, H. (2015). Determinants of capital structure: An empirical study of firms in Iran. *International Journal of Law and Management, 57*(1), 53–83. https://doi.org/10.1108/IJLMA-01-2013-0004
6. Avarmaa, M., Hazak, A., & Männasoo, K. (2011). Capital structure formation in multinational and local companies in the Baltic States. *Baltic Journal of Economics, 11*(1), 125–145. https://doi.org/10.1080/1406099X.2011.10840494
7. Bayrakdaroglu, A., Ege, I., & Yazici, N. (2013). A panel data analysis of capital structure determinants: empirical results from Turkish capital market. *International Journal of Economics and Finance, 5*(4). https://doi.org/10.5539/ijef.v5n4p131
8. Bevan, A. A., & Danbolt, J. (2004). Testing for inconsistencies in the estimation of UK capital structure determinants. *Applied Financial Economics, 14*(1), 55–66. https://doi.org/10.1080/0960310042000164220
9. Bhaduri, S. N. (2002). Determinants of capital structure choice: A study of the Indian corporate sector. *Applied Financial Economics, 12*(9), 655–665. https://doi.org/10.1080/09603100010017705
10. Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance, 56*(1), 87–130. https://doi.org/10.1111/0022-1082.00320
11. Brennan, M. J., & Schwartz, E. S. (1984). Optimal financial policy and firm valuation. *The Journal of Finance, 39*(3), 593–607. https://doi.org/10.1111/j.1540-6261.1984.tb03647.x
12. Brighman, E. F., & Houston, J. F. (2004). *Fundamentals of financial management* (10th ed.). Mason, OH: Thomson South-Western.
13. Brounen, D., de Jong, A., & Koedijk, K. (2006). Capital structure policies in Europe: Survey evidence. *Journal of Banking and Finance, 30*(5), 1409–1442. https://doi.org/10.1016/j.jbankfin.2005.02.010
14. 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
15. Chaklader, B., & Chawla, D. (2016). A study of determinants of capital structure through panel data analysis of firms listed in NSE CNX 500. *Vision: The Journal of Business Perspective, 20*(4), 267–277. https://doi.org/10.1177/0972262916668700
16. 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
17. Chen, J. J. (2011). *The relationship of ownership structure, capital structure and corporate performance-evidences from TAIEX-listed companies* (Master thesis, Chaoyang University of Technology). Retrieved from https://hdl.handle.net/11296/m4qm29
18. Cortez, M. A., & Susanto, S. (2012). The determinants of corporate capital structure: Evidence from Japanese manufacturing companies. *Journal of International Business Research, 11*(3), 121–134. Retrieved from http://faculty.cbpa.drake.edu/suh/fin282/articles/capitalstructure2.pdf
19. Dada, A. O., & Ghazali, Z. B. (2016). The impact of capital structure on firm performance: Empirical evidence from Nigeria. *IOSR Journal of Economics and Finance, 7*(4), 23–30. https://doi.org/10.9790/5933-0704032330
20. Dalbor, M., & Upneja, A. (2002). Factors affecting the long-term debt decision of restaurant firms. *Journal of Hospitality & Tourism Research, 26*(4), 422–432. https://doi.org/10.1177/109634802237487
21. Danso, A., & Adomako, S. (2014). The financing behavior of firms and financial crisis. *Managerial Finance, 40*(12), 1159–1174. https://doi.org/10.1108/MF-04-2014-0098
22. Daskalakis, N., & Psillaki, M. (2008). Do country of firm factors explain capital structure? Evidence from SMEs in France and Greece. *Applied Financial Economics, 18*(2), 87–97. https://doi.org/10.1080/09603100601018864

23. 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

24. Demir, F. (2009). Financialization and manufacturing firm profitability under uncertainty and macroeconomic volatility: Evidence from an emerging market. *Review of Development Economics, 13*(4), 592–609. https://doi.org/10.1111/j.1467-9361.2009.00522.x

25. Donaldson, G. (1961). *Corporate debt capacity: A study of corporate debt policy and the determination of corporate debt capacity.* Boston, MA: Harvard University Press.

26. Ebaidi, M., Thim, C. K., & Choong, Y. V. (2011). Impact of firm characteristics on capital structure of Iranian listed firms. *European Journal of Economics, Finance and Administrative Sciences, 42*, 160.

27. Enakirerhi, L. I., & Chijuka, M. I. (2016). The determinants of capital structure of FTSE 100 firms in the UK: A fixed effect panel data approach. *Research Journal of Finance and Accounting, 7*(13). Retrieved from https://www.iiste.org/Journals/index.php/RJFA/article/view/31815

28. Fama, E., & French, R. K. (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

29. Fischer, E. O., Heinkel, R., & Zechner, J. (1989). Dynamic capital structure choice: Theory and tests. *The Journal of Finance, 44*(1), 19–40. https://doi.org/10.1111/j.1540-6261.1989.tb02402.x

30. Gambo, E.-M. J., & Abdul-Ahmad, A., Ahmad, M. M. (2016). Capital structure and firm performance in the Nigerian cement industry. *Archives of Business Research, 4*(6), 430–444. https://doi.org/10.14738/abr.46.2367

31. Goldstein, R, Ju, N., & Leland, H. (2001). An EBIT-based model of dynamic capital structure. *Journal of Business, 74*(4), 483–512. https://doi.org/10.1086/322893

32. Gomez, G., Mena Rivas, A., & Lizarzaburu Bolaños, E. R. (2014). The determinants of capital structure in Peru. *Academia Revista Latinoamericana de Administración, 27*(3), 341–354. https://doi.org/10.1108/ARLA-01-2014-0007

33. 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

34. Haugen, R. A., & Senbet, L. W. (1986). Corporate finance and taxes: A review. *Financial Management, 15*(3), 5–21. https://doi.org/10.2307/3664840

35. Hausman, J. A., & Taylor, W. E. (1981). Panel data and unobservable individual effects. *Journal of Econometrics, 16*(1). https://doi.org/10.1016/0304-4076(81)90085-3

36. Hergli, S., & Teulon, F. (2014). *Capital structure's explanatory factors: The Maghreb case* (Working Paper 2014-098). Retrieved from https://ideas.repec.org/p/ipg/wpaper/2014-98.html

37. Huang, S., & Song, F. M. (2006). The determinants of capital structure: Evidence from China. *China Economic Review, 17*(1), 14–36. https://doi.org/10.1016/j.chieco.2005.02.007

38. 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

39. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

40. Kajananthan, R., & Achchuthan, S. (2013). Liquidity and capital structure: Special reference to Sri Lanka Telecom Plc. *Advances in Management & Applied Economics, 3*(5), 89–99. Retrieved from https://cutt.ly/BZa167L

41. Kane, A., Marcus, A. J., & McDonald, R. L. (1984). How big is the tax advantage to debt? *The Journal of Finance, 39*(3), 841–853. https://doi.org/10.2307/2327948

42. Kara, E., & Erdur, D. A. (2015). Determinants of capital structure: A research on sectors that contribute to exports in Turkey. *Istanbul Business Research, 44*(2), 27–38. Retrieved from https://dergipark.org.tr/en/pub/iuisletme/issue/9259/115849

43. Karacaer, S., Temiz, H., & Güleç, Ö. F. (2016). Determinants of capital structure: An application on manufacturing firms in Borsa Istanbul. *International Academic Journal of Accounting and Financial Management, 3*(2), 47–59. Retrieved from https://cutt.ly/OZa0Hdl

44. Kayo, K. E., & Kimura, H. (2011). Hierarchical determinants of capital structure. *Journal of Banking & Finance, 35*(2), 358–371. https://doi.org/10.1016/j.jbankfin.2010.08.015

45. Kędzior, M. (2012). Capital structure in EU selected countries — Micro and macro determinants". *Argumenta Oeconomica, 28*, 69–117. Retrieved from https://cutt.ly/DZa2gYE

46. Khaki, A. R., & Akin, A. (2020). Factors affecting the capital structure: New evidence from GCC countries. *Journal of International Studies, 13*(1), 9–27. https://doi.org/10.14254/2071-8330.2020/13-1/1

47. Köksal, B., & Orman, C. (2014). *Determinants of capital structure: Evidence from a major developing economy* (Central Bank of the Republic of Turkey Working Paper No.˚14/26). Retrieved from https://cutt.ly/cZa2TWW

48. Kouki, M., & Ben Said, H. (2012). Capital structure determinants: New evidence from French panel data. *International Journal of Business and Management, 7*(1). https://doi.org/10.5539/ijbm.v7n1p214

49. Kremp, E., Stöss, E., & Gerdesmeier, D. (1999). Estimation of a debt function: Evidence from French and German firm panel data. In A. Sauvé, & M. Scheuer (Eds.), *Corporate finance in Germany and France: A joint research of the Deutsche Bundesbank and the Banque de France* (pp. 139–194). Retrieved from https://cutt.ly/PZn6jtR

50. La Rocca, M., La Rocca, T., & Cariola, A. (2011). Capital structure decisions during a firm's life cycle. *Small Business Economics, 37*(1), 107–130. https://doi.org/10.1007/s11187-009-9229-z

51. Li, L., & Islam, S. Z. (2019). Firm and industry specific determinants of capital structure: Evidence from the Australian market. *International Review of Economics & Finance, 59*, 425–437. https://doi.org/10.1016/j.iref.2018.10.007

52. Lim, T. C. (2012). Determinants of capital structure: Empirical evidence from financial services listed firms in China. *International Journal of Economics and Finance, 4*(3). https://doi.org/10.5539/ijef.v4n3p191

53. Luigi, P., & Sorin, V. (2009). A review of the capital structure theories. *Annals of Faculty of Economics, 3*(1), 315–320. Retrieved from https://cutt.ly/oZa9nFl

54. Mauer, D. C., & Triantis, A. J. (1994). Interactions of corporate financing and investment decisions: A dynamic framework. *The Journal of Finance, 49*(4), 1253–1277. https://doi.org/10.1111/j.1540-6261.1994.tb02453.x

55. Miller, M. H. (1977). Debt and taxes. *The Journal of Finance, 32*(2), 261–275. https://doi.org/10.2307/2326758

56. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review, 48*(3), 261–297. Retrieved from https://www.jstor.org/stable/1809766

57. Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review, 53*(3), 433–443. Retrieved from https://www.jstor.org/stable/1809167
58. Morellec, E. (2001). Asset liquidity, capacity choice and the pricing of corporate securities. *Journal of Financial Economics, 61,* 173–206. Retrieved from https://cutt.ly/6Za3f4G
59. Mostafa, H. T., & Boregowda, S. (2014). A brief review of capital structure theories. *Research Journal of Recent Sciences, 3*(10), 113–118. Retrieved from http://www.isca.in/rjrs/archive/v3/i10/19.ISCA-RJRS-2013-772.pdf
60. 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
61. Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance, 39*(3), 575–592. https://doi.org/10.2307/2327916
62. Myers, S. C. (2001). Capital structure. *Journal of Economic Perspectives, 15*(2), 81–102. https://doi.org/10.1257/jep.15.2.81
63. Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics, 13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0
64. Nenu, E. A., Vintilă, G., & Gherghina, Ş. C. (2018). The impact of capital structure on risk and firm performance: Empirical Evidence for the Bucharest Stock Exchange listed companies. *International Journal of Financial Studies, 6*(2), 41. https://doi.org/10.3390/ijfs6020041
65. Ozkan, A. (2001). Determinants of capital structure and adjustment to long run target: Evidence from UK company panel data. *Journal of Business Finance and Accounting, 28*(1–2), 175–198. https://doi.org/10.1111/1468-5957.00370
66. Pandey, I. M. (2001). *Capital structure and the firm characteristics: Evidence from an emerging market* (IIMA Working Paper WP2001-10-04). Retrieved from https://ideas.repec.org/p/iim/iimawp/wp01757.html
67. Qian, Y., Tian, Y., & Wirjanto, T. S. (2007). *An empirical investigation into the capital structure determinants of publicly listed Chinese companies: A static analysis.* Retrieved from https://www.arts.uwaterloo.ca/~twirjant/sccs_0307.pdf
68. Rafiq, M., Iqbal, A., & Atiq, M. (2008). The determinants of capital structure of the chemical industry in Pakistan. *The Lahore Journal of Economics, 13*(1), 139–158. https://doi.org/10.35536/lje.2008.v13.i1.a6
69. Rajan, R., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance, 50*(5), 1421–1460. https://doi.org/10.1111/j.1540-6261.1995.tb05184.x
70. Ramli, N. A., Latan, H., & Solovida, G. T. (2019). Determinants of capital structure and firm financial performance — A PLS-SEM approach: Evidence from Malaysia and Indonesia. *The Quarterly Review of Economics and Finance, 71,* 148–160. https://doi.org/10.1016/j.qref.2018.07.001
71. Ross, S. A. (1977). The determination of capital structure: The incentive-signalling approach. *The Bell Journal of Economics, 8*(1), 23–40. https://doi.org/10.2307/3003485
72. Sakatan, R. (2010). *The capital structure in developing countries: Saudi Arabia* (Doctoral dissertation). Retrieved from https://ssrn.com/abstract=2144187
73. Santos, A. O. (2015). *Integrated ownership and control in the GCC corporate sector* (IMF Working Paper No. 15-184). https://doi.org/10.5089/9781513589459.001
74. Sarioğlu, S. E., Kurun, E., & Güzeldere, E. (2013). Determinants of capital structure: A study of the ISE firms operating in cement, automotive and information technology industries. *Ege Academic Review, 13*(4), 481–496. Retrieved from https://dergipark.org.tr/en/pub/eab/issue/39921/474198
75. Sayılgan, G., Karabacak, H., & Küçükkocaoğlu, G. (2006). The firm-specific determinants of corporate capital structure: Evidence from Turkish panel data. *Investment Management and Financial Innovations, 3*(3), 125–139. Retrieved from https://cutt.ly/OZszhLU
76. Sbeiti, W. (2010). The determinants of capital structure: Evidence from the GCC countries. *International Research Journal of Finance and Economics, 47.*
77. Schoubben, F., & Van Hulle, C. (2004). The determinants of leverage. Differences between quoted and non quoted firms. *Review of Business and Economic Literature, 49*(4), 589–621. Retrieved from https://econpapers.repec.org/article/eterevbec/20040403.htm
78. Seo, J., & Choi, W. (2016). What determinants affect the capital structure of consumer co-operatives? The case of iCOOP Korea. *Annals of Public and Cooperative Economics, 87*(1), 117–135. https://doi.org/10.1111/apce.12088
79. Shah, S. Q., Shah, S. I., Raja, U. M., & Naseem, I. (2012). Determinants of capital structure: Empirical analysis of fuel and energy sector of Pakistan. *Science Series Data Report, 4*(9), 95–111. Retrieved from https://cutt.ly/yZsmXpU
80. Smith, G. P. (2010). What are the capital structure determinants for tax-exempt organizations? *Financial Review, 45*(3), 845–872. https://doi.org/10.1111/j.1540-6288.2010.00274.x
81. Stiglitz, J. E. (1973). Taxation, corporate financial policy and the cost of capital. *Journal of Public Economics, 2*(1), 1–34. https://doi.org/10.1016/0047-2727(73)90008-X
82. Strebulaev, I. A. (2007). Do tests of capital structure theory mean what they say? *The Journal of Finance, 62*(4), 1747–1787. https://doi.org/10.1111/j.1540-6261.2007.01256.x
83. Stulz, R. M. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics, 26*(1), 3–27. https://doi.org/10.1016/0304-405X(90)90011-N
84. 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
85. Umer, U. (2014). Determinants of capital structure: Empirical evidence from large taxpayer share companies in Ethiopia. *International Journal of Economics and Finance, 6*(1), 53–65. https://doi.org/10.5539/ijef.v6n1p53
86. Upneja, A., & Dalbor, M. C. (1999). An examination of leasing policy, tax rates and financial stability in the restaurant industry. *Journal of Hospitality & Tourism Research, 23*(1), 85–99. https://doi.org/10.1177/109634809902300107
87. 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
88. Zerriaa, M., & Noubbigh, H. (2015). Determinants of capital structure: Evidence from Tunisian listed firms. *International Journal of Business and Management, 10*(9), 121–135. https://doi.org/10.5539/ijbm.v10n9p121