FINANCING POLICY OF LARGE LISTED FAMILY BUSINESSES: EVIDENCE FROM THE ARAB WORLD

Oumaima Quiddi *, Badr Habba **

* *Corresponding author,* ESCA Business School, Casablanca, Morocco
Contact details: ESCA Business School, 67-3 Avenue de l'Aéropostale, Casablanca Finance City (CFC), 20250 Casablanca, Morocco
** ESCA Business School, Casablanca, Morocco

OPEN ACCESS

How to cite this paper: Quiddi, O., & Habba, B. (2024). Financing policy of large listed family businesses: Evidence from the Arab world. *Corporate Governance and Organizational Behavior Review, 8*(1), 8–19. https://doi.org/10.22495/cgobrv8i1p1

ISSN Online: 2521-1889
ISSN Print: 2521-1870

Received: 09.06.2023
Accepted: 02.01.2024

JEL Classification: G32, G41
DOI: 10.22495/cgobrv8i1p1

Abstract

This paper aims to contribute to the literature on the capital structure and financing behavior of large listed family businesses by examining the differences and/or similarities in the determinants influencing the financing policy in the Arab world. The study focuses on two samples of equal size, consisting of 103 large listed family firms and 103 large listed non-family firms, covering the period from 2013 to 2019. Through a quantitative analysis of panel data, the research investigates the level of indebtedness and its determinants in these two categories of firms. The findings of this study reveal significant differences in the financing patterns between large listed family and non-family firms. These findings contribute to our understanding of the unique characteristics and preferences of large listed family firms in the Arab world, a region that has received limited attention in previous studies (Basly, 2017). By exploring this developing and relatively unexplored region, the study fills a gap in the literature and expands our knowledge of the capital structure dynamics within large listed family businesses.

Keywords: Capital Structure, Debt, Family, Large Size, Panel Data, Arab World

Authors' individual contribution: Conceptualization — O.Q. and B.H.; Methodology — B.H.; Investigation — O.Q.; Resources — O.Q.; Writing — O.Q. and B.H.; Supervision — B.H.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

In recent decades, there has been a growing interest among scholars and academia worldwide in researching the financing behavior of family businesses, leading to the development of various avenues of study. Paradoxically, the literature on the determinants of financing policy in the firm, whether family-owned or non-family-owned, is still inconclusive (Quiddi & Habba, 2021a).

Family businesses, as highlighted by Moussa and Elgiziry (2019) and Abouzaid (2014), constitute a significant portion, accounting for up to 80% of all businesses, employing 70% of the workforce, and contributing to 80% of the region's gross domestic product (GDP) (outside oil sector). This substantial presence positions family businesses to potentially serve as a driving force for regional development, as recognized by Basco et al. (2021), particularly within an environment that is gaining geopolitical and economic attention, as stated by World Economic Forum (WEF, 2018).

If the significance of context in family business research cannot be overstated (Krueger et al., 2021), few research efforts have been dedicated to the study of family businesses in the specific context of the Arab world (Basly, 2017). In addition, insufficient emphasis has been placed on large listed family businesses. The uniqueness of this category of firms is reflected in the fact that they oscillate between the pressure of the familiness and the need to professionalize management to cope with the business expansion (Berrada et al., 2021; Bañegil Palacios et al., 2013). Moreover, the distinctive

feature of listed family firms is the presence of a considerable number of small investors, who are typically passive and not involved in strategic decision-making. This dynamic gives rise to specific and significant concerns, as highlighted by Frisenna and Rizzotti (2020). In particular, minority shareholders may be exposed to the risk of wealth expropriation. In the pursuit of long-term family control, the controlling family's inclination to prioritize the maximization of their own interests over those of the firm or minority shareholders can influence corporate decision-making (Morck & Yeung, 2003).

This paper aims to examine the case of large listed family businesses and compares them with large non-family businesses. This approach allows us to explore whether there is an alignment of behavior between these two categories of companies. Family businesses often undergo significant transformations as they grow and transition towards becoming publicly listed entities. This transition often involves a professionalization of the management (Sonfield & Lussier, 2008) and the adoption of corporate governance structures and practices that are more commonly associated with non-family businesses.

By comparing the financing behavior and financial decisions of large listed family businesses with their non-family counterparts, we aim to assess whether this professionalization process leads to a convergence of behavior in terms of capital structure choices. We seek to determine if family businesses, upon their expansion and entry into the stock market, exhibit financial behavior that aligns more closely with that of non-family businesses. In other words, is there a convergence of financing behavior among large listed family firms and large listed non-family firms?

This paper has then two main contributions. Theoretically, it will contribute to the literature on the financing behavior of family firms while verifying the similarities and/or differences between large listed family firms and their non-family counterparts. From a managerial perspective, this paper highlights the peculiarities of financing choices within large listed family firms, thus enabling the various stakeholders (members of the controlling family, creditors, financial market actors, etc.) to optimize the capital structure of this category of firms and to finance their activity at the lowest cost.

To achieve our research objective, the paper is organized as follows. Section 2 provides a comprehensive review of the literature on financing and capital structure and rationalizes the hypotheses. Section 3 identifies the methodology. Section 4 presents findings while Section 5 discusses them. Then, the last Section 6 concludes the paper with future directions of research.

2. LITERATURE REVIEW AND HYPOTHESES RATIONALE

2.1. Financing policy in the classical finance

The theoretical underpinnings of the financing policy are found in the seminal work of Modigliani and Miller (1958) arguing that, in perfect markets, the capital structure of a firm does not have an impact on its value since the latter has no impact on the cash flows generated. Based on these theoretical conditions, according to Modigliani and Miller (1958), the value of a firm with leverage is equivalent to the value of the same firm without leverage. Decision-makers can thus freely select the capital structure.

However, the idea of perfect markets is a drastic simplification of reality. This led to a revision of the model by introducing taxation as an imperfection of capital markets and admitting that debt enjoys a tax advantage due to the tax deductibility of interest payments (Modigliani & Miller, 1963). Consequently, the cost of capital is no longer the same for an indebted and non-indebted firm and debt may act as a tax shield.

Nevertheless, one of the shortcomings of the adjusted Modigliani and Miller (1963) model is the failure to consider the heightened risk of bankruptcy (Baxter, 1967). It fails to recognize how the increased costs associated with financial distress can offset the potential advantages of leverage. Therefore, it becomes crucial to thoroughly evaluate both the advantages and drawbacks of debt to accurately gauge its overall influence on firm value.

This sets the stage for a discussion on the trade-off theory, which combines research on taxes (Modigliani & Miller, 1963), the costs of financial distress and bankruptcy (Warner, 1977), and agency literature (Jensen & Meckling, 1976). Accordingly, firms are expected to strive for an optimal capital structure that strikes a balance between the tax advantages of debt (i.e., tax shields on debt), the costs associated with financial distress, and agency costs. In line with this perspective, Kraus and Litzenberger (1973) argued that the capital structure should consider a trade-off between the tax advantages of debt and the increased likelihood of financial distress caused by higher debt levels.

Contrary to trade-off theory, Myers and Majluf (1984) argue that firms do not have a preference for maintaining a specific level of debt (optimal target ratio) and adhere to a hierarchy of financing sources. Considering that financing decisions are influenced by the degree of information asymmetry, as suggested by Donaldson (1961), firms opt for a capital structure that can minimize such information asymmetry. Consequently, they prioritize internal financing over external financing, with a preference for retained earnings over debt and debt over new equity.

2.2. Financing policy in family businesses

In the specific case of family businesses, the reasons for the existence of the family and those of the business are fundamentally different. The main purpose of the family is the preservation of its members' culture, while the business is committed to the achievement of financial and economic results (Stafford et al., 1999). In addition to financial performance, family businesses strive for continuity and expansion (Brenes et al., 2011). This needs for sustainability and continuity rhymes with the long-term orientation that is favored by two characteristics in the case of family businesses. Two key factors contribute to the distinct characteristics of family businesses. Firstly, the capacity of family owners to exercise autonomous decision-making, and secondly, the connection with the succeeding

generation, as indicated by Delmas and Gergaud (2014). Expanding on this notion, Clinton et al. (2018) argue that the ability to make independent decisions is associated with the ownership and management of family firms by family members, enabling them to make unilateral choices more effectively than non-family firms, which typically have more dispersed ownership structures (Carney, 2005).

Consequently, family businesses may orient their financing choices towards the modality that ensures the survival of the family business. For example, they may tend to avoid debt financing due to the perceived increase in the risk of bankruptcy and the potential threat it poses to financial security and long-term profitability (Arregle et al. 2007). In the same vein, they may prefer to retain a high percentage of the profits made for reinvestment, thus solidifying the capital structure.

In addition, the attitude of family businesses towards risk may affect their choice of financing sources. Debt, for example, may be minimized or avoided because of its financial risks that are associated with an increased likelihood of financial distress and bankruptcy. That said, family businesses may adopt a more risk-averse approach compared to non-family businesses as a means to steer clear of financial distress. Within a family business, financial distress generates costs that affect both financial and socioemotional wealth. As a result, financial distress and bankruptcy are more damaging for a family business than for a non-family shareholder (Kempers et al., 2019).

This risk aversion is reflected in a more conservative financing policy, less debt, and more liquidity (Anderson & Reeb, 2003). According to Fama and Jensen (1983), when the family is involved in management, the decision-making process tends to become less efficient due to its risk aversion. Moreover, family members may base financial decisions are primarily driven by considerations of how they may impact family control, rather than through a comprehensive evaluation of the advantages and disadvantages of each capital structure choice (Croci et al., 2011).

In addition to dual goals, long-term orientation, and risk aversion; socioemotional wealth is also a distinguishing feature of the family business that affects its financing choices. Brenes et al (2011) argued that succession (as a dimension of socio-emotional wealth) is one of the primary concerns of family businesses. Thus, they may display a more conservative behavior, preferring to minimize external financing even at the cost of missing out on growth opportunities. This cautious approach is driven by the desire to safeguard family control and protect the wealth of future generations (López-Gracia & Sánchez-Andújar, 2007; Blanco-Mazagatos et al., 2007).

Empirically, most authors have found a more conservative financing policy among family firms (Vieira, 2014). In addition, family firms seem to be influenced by the issues typically considered in the pecking order theory (Zata Poutziouris, 2001). In the specific case of large family firms operating in the Arab world, studies conducted by Berrada et al. (2021) and Alghamdi (2016) have shown that family firms, even large ones, tend to prioritize the use of internal funds and incur less debt, compared to large non-family firms. This gives rise to the following research hypothesis:

H1: Ceteris paribus, large listed family firms are less indebted than their non-family counterparts in the Arab world.

2.3. Capital structure determinants

The study of the financing behavior peculiarities in large listed family firms calls for testing the effect of some firm-level factors, mainly profitability, liquidity, tax shields, the tangibility of assets, growth, business risk, and firm age.

According to the trade-off theory, profitable firms experience a relatively low cost of financial distress, enhancing the value of the tax shield (Frank & Goyal, 2009). In this respect, the most profitable firms are supposed to incur more debt (Fama & French, 2002). This leads to the assumption of a positive association between profitability and debt. Conversely, according to the pecking order theory, there exists an inverse association where profitable firms prioritize the use of retained earnings to finance their current or future projects, potentially resulting in lower levels of debt. In the context of family businesses operating in the Arab world, prior research has demonstrated a negative correlation between the debt ratio and profitability. This finding aligns with the pecking order theory (Berrada et al., 2021; Vieira, 2014; Al-Nsour & Jresat, 2018). Thus, the following hypothesis is formulated:

H2a: Profitability is negatively associated with the debt ratio in large listed family firms of the Arab world.

In addition, liquidity is also a factor whose effect on the capital structure has been tested by previous studies on family businesses. Some of these studies have found a negative relationship between liquidity and debt ratio (Gottardo & Moisello, 2014; Croci et al., 2011; Anderson & Reeb, 2003). Firms characterized by high liquidity possess greater internal funds, leading to a tendency to rely less on debt financing (Khémiri & Noubbigh, 2018). Öztekin and Flannery (2012) and de Jong et al. (2008) consider that in the presence of information asymmetry, accumulated cash and other liquid assets function as internal means of funding.

H2b: Liquidity is negatively associated with the debt ratio in large listed family firms of the Arab world.

The trade-off theory argued that a positive association exists between income tax and the debt ratio, as firms may opt for debt financing to capitalize on tax savings, especially in circumstances where the tax rate is high (López-Gracia & Sogorb-Mira, 2008; Fama & French, 2002; Bradley et al., 1984; DeAngelo & Masulis, 1980; Modigliani & Miller, 1963).

H2c: Income tax is positively associated with the debt ratio in large listed family firms of the Arab world.

In addition, non-debt tax shields can affect the debt ratio. This refers to the depreciation expense that provides tax savings (Khémiri & Noubbigh, 2018; Chen, 2004). An increased level of depreciation expense leads to a decrease in taxable income, which acts as a deterrent for firms to rely heavily on debt for tax shields. Accordingly,

the trade-off theory predicts a negative correlation between non-debt tax shields and the debt ratio (Bradley et al., 1984; de Jong et al., 2008).

H2d: Non-debt tax shields are negatively associated with the debt ratio in large listed family firms of the Arab world.

The financing behavior of a firm can also be affected by the type of assets it holds. Evidence on the determinants of capital structure argues that the tangibility of a firm's assets is positively related to the debt ratio due to the use of these assets as collateral (Hovakimian et al., 2001; Yang et al., 2010). Lenders feel secure with the collateral provided and facilitate access to debt (Rajan & Zingales, 1995). In this vein, tangible assets can serve as collateral, preserve the interest of creditors, and mitigate agency problems (Carbó-Valverde et al., 2011). A positive effect of tangibility on the debt ratio is therefore supposed.

H2e: Asset tangibility is positively associated with the debt ratio in large listed family firms of the Arab world.

Another determinant of the capital structure could be related to growth. Broadly, firms with high growth have high financing needs. According to the pecking order theory, when internal financing is exhausted, firms prefer debt to finance growth. Consequently, when firms experience significant growth and find their internal funds insufficient to support their expansion, they tend to increase their debt levels. As a result, a positive relationship is predicted between growth and debt in such situations. In the particular case of family businesses, the purpose of preserving family control reduces its range of financial resources and affects the firm behavior toward growth prospects (Romano et al., 2001). The owner-manager of a family business may prefer to forego growth in order to preserve control of the business and not cause management issues for the subsequent generation (Le Breton-Miller & Miller, 2006).

H2f: Growth is negatively associated with the debt ratio in large listed family firms of the Arab world.

Similarly, business risk can affect the financing policy. Firms facing higher levels of risk are more likely to encounter financial distress and incur greater costs associated with bankruptcy. Consequently, it is recommended that high-risk firms maintain lower levels of debt (Jensen et al., 1992). It is argued that family members struggle with risk management. Consequently, they prefer to avoid taking action (Poza & Daugherty, 2020). In this respect, high-risk family businesses are supposed to avoid additional risks that may be caused by debt (Oktavina et al., 2018).

H2g: The business risk is negatively associated with the debt ratio in large listed family firms of the Arab world.

Finally, firm age can be positively related to indebtedness (Abor, 2008). In the case of the family firm, age is a proxy of reputation (Berrada et al., 2020; Diamond, 1989), which reduces potential transaction costs in family firms and allows easy access to debt (López-Gracia & Sánchez-Andújar, 2007). We, therefore, predict a positive association.

H2h: Firm age is positively associated with the debt ratio in large listed family firms of the Arab world.

3. METHODOLOGY

3.1. Sampling and data

This study aims to investigate the determinants of the financing policy in large listed family businesses operating in the Arab world by using a comparative analysis. Secondary panel data for the period between 2013 and 2019 was retrieved from the Orbis database, provided by Bureau Van Dijk. By definition, our sample includes firms active during the study period and operating in the Arab world and excludes financial companies due to their specific regulation

In order to define family firms, Astrachan and Kolenko (1994) distinguished between listed and unlisted family firms. Thus, a listed firm is considered family-owned if the family owns more than 10% of shares, whereas in unlisted firms this percentage rises to 50%. In this vein, Charlo et al. (2016) argued that a listed family business is a firm where family members own at least 25% of shares. This is because listed companies typically have a significant number of shareholders, leading to a situation where the largest shareholder (or group of shareholders) commonly holds less than 50% of the voting rights. Despite this, their ownership stake is often sufficient to exert substantial influence over critical decisions within the firm. In this respect, we consider a firm to be family-owned if one or more members of the same family hold more than 25% of the shares, participate in the governance bodies, and are actively involved in management.

After applying the sampling criteria, the final set includes 103 large listed family firms. The control sample of large listed non-family firms is of the same size and is selected based on the sector of activity.

3.2. Variables

The selection of variables (dependent, independent) is primarily guided by the findings of prior empirical research on the determinants of capital structure in family firms, but also by the availability and relevance of data. The dependent variable is the debt ratio. The independent variables are defined in Table 1.

The model to be tested (in both categories of firms) is as follows below.

Table 1. Variables definition

	Variable		Formula	Rationalization
Dependent variable	Debt ratio	*DEBT*	Total debt total assets	Rajan and Zingales (1995)
Independent variables	Return on assets	*ROA*	Company's earnings before interest, taxes, depreciation, and amortization (EBITDA)/Total assets	Berrada et al. (2021), Rajan and Zingales (1995)
	Return on equity	*ROE*	Net income to shareholders' equity	Stickney et al. (2007)
	Liquidity ratio	*LIQ*	Liquid assets/Current liabilities	Deesomsak et al. (2004), Eriotis et al. (2007)
	Income taxes	*TAX*	Income taxes on profit	Handoo and Sharma (2014), Belkhir et al. (2016)
	Non-debt tax shields	*NDTS*	Total depreciation/Total assets	Titman and Wessels (1988), Vieira (2014), Roida (2020)
	Tangibility ratio	*TANG*	Tangible fixed assets/Total assets	de Jong et al. (2008), Antoniou et al. (2008)
	Growth	*GRO*	Sales variation	Köksal and Orman (2015)
	Business risk	*RISK*	σ EBIT/Sales	Oktavina et al. (2018), Vieira (2014)
	Firm age	*AGE*	Natural logarithm of the number of years	Quiddi and Habba (2021b), Ramalho et al. (2018)

$$DEBT_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 LIQ_{it} + \beta_4 TAX_{it} + \beta_5 NDTS_{it} + \beta_6 TANG_{it} + \beta_7 GRO_{it} + \beta_8 RISK_{it} + \beta_9 AGE_{it} + \varepsilon_{it} \quad (1)$$

where, $\beta_1 \ldots \beta_9$ — coefficient of independent variables, ε_{it} — error term for firm *i* at year *t*.

Regression tests on panel data were conducted while choosing the appropriate specification method.

3.3. Data analysis

The data analysis involved a first descriptive step that compares the debt ratio of the two categories of firms. Then, regression tests on panel data were conducted while choosing the appropriate specification method according to Hausman test results. According to Hsiao (2022), panel data regression offers several advantages, such as high reliability regardless of sample size, increased degrees of freedom, reduction of variable bias effects even with unbalanced panel data, and enabling more sophisticated analysis compared to time series analysis. Additionally, it allows for greater flexibility in modeling behavioral differences among individuals within a group.

4. FINDINGS

The purpose of this paper is to test a model to identify similarities and/or differences between large listed family firms and their non-family counterparts. Table 2 summarises the descriptive statistics for variables of the model for each sub-sample. The statistics concern the mean, standard deviation, minimum and maximum.

In summary, differences between the sub-sample of large listed family firms and their non-family counterparts concern all measures studied over the period (2013–2019). In addition, descriptive statistics show that large listed family firms are, on average, more indebted than large listed non-family firms (0.14 versus 0.06). This refutes hypothesis *H1*.

Table 2. Descriptive statistics

Variable	Sample	Obs.	Mean	Standard deviation	Min	Max
DEBT	FF	721	0.1406078	0.2457199	-0.6760409	1.340614
	NFF	721	0.0650073	0.2986171	-0.9617665	0.8733046
ROA	FF	721	3.941276	10.13184	-97.7	75.69
	NFF	721	4.938918	11.65785	-60.51	62.32
ROE	FF	707	11.44187	59.27609	-734.24	591.087
	NFF	714	19.41741	81.3448	-412.39	983.736
LIQ	FF	720	1.673889	2.97039	0.02	57.84
	NFF	720	2.898444	7.113983	0.06	92.69
TAX	FF	654	-3373.664	9746.187	-83252	22852
	NFF	600	-3726.335	10276.09	-90051	6953
NDTS	FF	708	0.2435872	0.9728058	0	18.66667
	NFF	706	0.1847863	0.3306539	0	2.866573
TANG	FF	721	0.3450157	0.2590374	0	0.9612304
	NFF	721	0.3339039	0.2447137	0	0.9773172
GRO	FF	701	0.7001407	17.01252	-0.8940321	450.359
	NFF	696	0.0441017	0.657549	-4.766129	9.971541
RISK	FF	721	349.1082	208.0958	1	709
	NFF	721	355.0291	208.2292	1	715
AGE	FF	721	1.417355	0.3102687	0	1.934498
	NFF	721	1.421761	0.2837248	0.30103	1.995635

Note: FF — family firms, NFF — non-family firms.

In a second step, we checked whether the financing policy is explained in the same way, by the same factors in large listed family firms and their non-family counterparts while introducing the temporal and individual dynamics of the variables (panel data). To ensure that the regression premises are not violated, the correlation matrix and the measure of multicollinearity known as the variance inflation factor (VIF) were checked before proceeding with the analysis. There are no

issues of multicollinearity among the variables in either the sub-sample of large listed family firms (Table 3) or the sub-sample of large listed non-family firms (Table 4).

Table 3. Correlation matrix and VIF (sample of large listed family firms)

	ROA	*ROE*	*LIQ*	*TAX*	*NDTS*	*TANG*	*GRO*	*RISK*	*AGE*	*VIF*
ROA	1									1.14
ROE	0.326***	1								1.17
LIQ	0.0321	-0.0154	1							1.07
TAX	-0.101*	-0.0129	0.0884*	1						1.09
NDTS	0.0146	0.0320	-0.00403	0.0479	1					1.09
TANG	-0.00398	0.0651	-0.0409	-0.0134	-0.19***	1				1.08
GRO	0.00852	0.00622	-0.0225	0.0127	-0.00875	0.0197	1			1.01
RISK	-0.0703	-0.16***	0.198***	0.255***	0.131**	0.0912*	0.0532	1		1.20
AGE	0.0159	-0.0692	-0.127**	0.0499	-0.16***	0.0794*	0.0197	-0.083*	1	1.07
Mean of VIF										**1.10**

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001.*

Table 4. Correlation matrix and VIF (sample of large listed non-family firms)

	ROA	*ROE*	*LIQ*	*TAX*	*NDTS*	*TANG*	*GRO*	*RISK*	*AGE*	*VIF*
ROA	1									1.09
ROE	0.113**	1								1.06
LIQ	0.0381	0.0168	1							1.06
TAX	-0.19***	-0.0311	0.0773	1						1.17
NDTS	0.0385	-0.0569	0.0326	0.0788	1					1.17
TANG	-0.0703	0.0726	-0.16***	-0.14***	-0.35***	1				1.22
GRO	0.130**	0.0446	-0.0727	-0.00421	0.0882*	-0.0796	1			1.04
RISK	-0.00234	-0.14***	0.146***	0.240***	0.135**	-0.099*	0.0123	1		1.12
AGE	0.0535	-0.114**	-0.0168	-0.17***	-0.00030	-0.0694	-0.046	-0.012	1	1.06
Mean of VIF										**1.10**

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001.*

The regression results are summarized in Table 5. The F-statistics show that the model is highly significant for both sub-samples (p-value = 0.0000). However, further analysis is needed to test the individual effects of the observations in order to have a better specification. For this purpose, the Hausman test (Hausman, 1978) was conducted to choose between the fixed and random effects models. For both sub-samples, the fixed effects model is better suited for the analysis.

When analyzing the regression results, only one similarity can be identified between the two groups. This variable is the tangibility of assets (*TANG*) and shows a significant positive association with the debt ratio. On the other hand, a proxy for profitability (*ROA*) is negatively related to the debt ratio with more significance in the case of large listed family firms. The liquidity (*LIQ*) variable shows a negative effect on debt ratio, but only in the case of large listed non-family firms.

Another major differences between the two categories of firms are the positive effect of non-debt tax shields (*NDTS*), the positive effect of growth (*GRO*), the negative effect of business risk (*RISK*), and the inverse effect of firm age (*AGE*) in the sub-sample of large listed family firms.

Table 5. Regression tests results

Variable	***Large listed family firms***	***Large listed non-family firms***
	Debt ratio	
ROA	-0.00368***	-0.00142*
	(-3.97)	(-2.12)
ROE	-0.000128	-0.0000545
	(-1.49)	(-0.95)
LIQ	-0.00170	-0.0136***
	(-0.85)	(-6.03)
TAX	0.00000102	-0.000000468
	(1.10)	(-0.31)
NDTS	0.0241***	-0.0366
	(3.38)	(-1.61)
TANG	0.438***	0.314***
	(5.50)	(5.02)
GRO	0.000550*	-0.00942
	(2.00)	(-1.06)
RISK	-0.000231**	0.00000699
	(-2.92)	(0.08)
AGE	-0.0856**	-0.0518
	(-2.83)	(-0.53)
_cons	0.201***	0.0694
	(3.31)	(0.46)
N	619	581
R^2	0.1300	0.1638
Hausman test	0.000	0.000
F-statistic	8.45***	10.34***

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001.*

To ensure the robustness of our findings, we conducted additional tests by replacing independent variables of the initial Model 1 with other measures and proxies. Model 2 was thus tested by replacing the liquidity ratio (*LIQ*) with the current ratio, which is determined by dividing current assets by current liabilities. Model 3 concerns changing the variable (*GRO*) by opting for the ratio of intangible assets as a proxy for measuring growth prospects. The results of the three models are almost similar (Table 6) arguing for the robustness of the initial model.

Table 6. Robustness checks

Variable	*Sub-sample: Large listed family businesses*		
	Model 1	*Model 2*	*Model 3*
	Debt ratio		
ROA	**-0.00368*** **	**-0.00368*** **	**-0.00371*** **
	(-3.97)	**(-3.96)**	**(-4.03)**
ROE	-0.000128	-0.000128	-0.000141
	(-1.49)	(-1.49)	(-1.64)
LIQ	-0.00170	-0.000841	-0.00165
	(-0.85)	(-0.67)	(-0.83)
TAX	0.00000102	0.00000102	0.000000737
	(1.10)	(1.10)	(0.91)
NDTS	**0.0241*** **	**0.0241*** **	**0.0276*** **
	(3.38)	**(3.39)**	**(3.76)**
TANG	**0.438*** **	**0.441*** **	**0.426*** **
	(5.50)	**(5.55)**	**(5.49)**
GRO	**0.000550***	**0.000552***	0.212
	(2.00)	**(2.01)**	(1.87)
RISK	**-0.000231** **	**-0.000228** **	**-0.000217** **
	(-2.92)	**(-2.89)**	**(-2.77)**
AGE	**-0.0856** **	**-0.0857** **	**-0.0967** **
	(-2.83)	**(-2.83)**	**(-3.22)**
_cons	0.201***	0.198**	0.206***
	(3.31)	(3.28)	(3.46)
N	619	619	631
R^2	0.1300	0.1295	0.1288

*Note: * p < 0.05, ** p < 0.01, *** p < 0.001.*

5. DISCUSSION

Descriptive findings show that large listed family businesses are more indebted than large listed non-family counterparts. This can be explained by the desire of family firms to maintain family control. The latter is an integral part of socio-emotional wealth (Berrone et al., 2012; Gómez-Mejía et al., 2007) and may condition the firm's capital structure. This result has been corroborated by previous studies on capital structure in large family firms (Croci et al., 2011; Thiele & Wendt, 2017; Gottardo & Moisello, 2014) arguing that family businesses have a strong preference for debt, a source of financing non-dilutive for control.

By reference to regression results, the financing behavior of large listed firms in the Arab world reveals both similarities and differences in the two sub-samples (family firms and non-family counterparts).

First, profitability (*ROA*) shows a highly significant and negative correlation with debt ratio in the case of large listed family firms. This result aligns with prior research findings on the debt of large family firms, including some works in the Arab world (Berrada et al., 2020, 2021; Agustini & Budiyanto, 2015; Rajan & Zingales, 1995; Booth et al., 2001).

Concerning large listed non-family firms, profitability (*ROA*) shows a negative association with debt ratio but at a low level of significance. This implies that profitable firms use less debt. This is explained by the fact that these firms use their profits to finance their activities instead of incurring debt, which is in line with the pecking order theory of Myers (1977) and Myers and Majluf (1984).

In addition, the liquidity ratio is negatively related to debt in the case of non-family firms. This implies that these firms need less debt when they have sufficient liquid resources (Comino-Jurado et al., 2021). The more liquid and profitable the firm is, the less it relies on debt. It can therefore opt for other financial resources such as internal funds. This argument is in line with the pecking order theory and shows that both categories of firms (family and non-family firms) prefer to finance their activity by using available resources and retained earnings.

The preference for internal funds in both categories of firms (manifested in the profitability and liquidity results in the two samples, respectively) may reveal contextual specificities of the field of investigation. Generally, capital markets in developing countries, which is the case for the majority of the Arab world countries, have a limited range of financial instruments, as well as many constraints on financing decisions (Ismail, 2017; Hamid & Singh, 1992; Tong & Green, 2005). This being the case, firms operating in these countries, whether family or non-family-owned, prefer internal financing, which affects the debt ratio.

Growth is another determinant of indebtedness, but only among large listed family businesses. As a matter o fact, family firms with high growth opportunities are more likely to deplete their internal funds and seek additional funds notably debt in order to safeguard family control, a key dimension of socio-emotional wealth. This result supports the pecking order theory argument and is aligned with the findings of some empirical works in developing markets (Firnanti, 2011; Naur & Nafi, 2017). In contrast, this result is not consistent with the arguments of the trade-off theory supporting a negative association between growth opportunities and the debt ratio. According to this theory, firms with high growth opportunities find it difficult to incur debt because of the potential costs of financial distress that are deemed higher for firms with growth prospects (Myers, 1977).

Indeed, the exhaustion of internal financing will force the family business to resort to external financing. Concerned about maintaining family control, the family business prefers not to resort to issuing shares since it will engage external shareholders (Habbershon & Williams, 1999). As a result, the family will have to take on the risk associated with using debt to meet its growth needs (Matthews et al., 1994) instead of incurring the risk of losing family control.

In addition, findings show that the tangibility ratio is another common determinant of financing policy for both types of firms. It is positively associated with the debt ratio in large listed family firms and their non-family counterparts. Firms with tangible assets may have more accessibility to debt, as it is easier for the lender to assess the value of this type of asset, especially in the presence of asymmetric information (Ramalho & da Silva, 2009). In this vein, previous works such as Rajan and Zingales (1995), Chen (2004), and Hovakimian et al. (2004) have pointed out that the level of

tangible assets held by a firm is inversely related to its bankruptcy costs. One explanation for this is that firms with tangible assets can use them as collateral (Cortez & Susanto, 2012). A higher level of tangible assets should consequently result in an increased debt capacity.

Many studies support the positive relationship between tangibility and debt ratio, such as Baker and Wurgler (2002) and Sharma and Paul (2015). Moreover, ElBannan (2017) argues that large firms that have good collateral and tangible assets, are efficient in the use and management of these assets, and thus can easily access debt financing.

For large family firms, the results show three other variables that have a significant effect on their capital structure. First, non-debt tax shields are positively associated with the debt ratio of this category of firms. This positive effect concludes that non-debt tax shields are not considered substitutes for the tax shields of debt. However, as Ozkan (2001) argued, non-debt tax shields can be a proxy for the tangibility of the firm's assets. Higher levels of depreciation may reveal that the firm has more tangible assets (Barclay & Smith, 1995), which extends collaterals, inspires confidence and trust, and facilitates access to debt. This argument supports the result of the variable (*TANG*).

As for business risk, it is negatively associated with debt ratio only in the case of large listed family firms, while it has no significant effect on the large listed non-family firm. This aligns with the findings of Oktavina et al. (2018) showing that risk has a significant and negative effect on capital structure. This reveals that high-risk firms tend to avoid debt financing, compared to firms with a low level of risk. This argument is relevant for the case of the family firm which, having priority for the preservation of family control and inheritance, may be more risk-averse and tend to engage less in high-risk activities (Vaknin, 2010; Ntoung, 2020). Mobilizing a signal theory argument, this negative effect of the risk level on debt ratio may also be due to the credit monitoring of lenders (notably banks) (Schmid 2013). A high-risk family business sends negative signals to the banking market. This hinders access to debt and thus explains the negative correlation.

Surprisingly, the age of the firm is negatively related to the debt ratio in the specific case of the large listed family firm. This result is not consistent with the family firm reputation hypothesis according to which a family firm, over the years, builds up a reputation among creditors, which allows it to easily access the financial market and incur more debt (Diamond, 1989).

Alternatively, the negative effect of age supports the idea of family firms' preference for hierarchical financing. Older firms may use less debt because they may have accumulated internal funds over time (Comino-Jurado et al., 2021). Second, this result can be explained by the change in family generations. After the succession process takes place in a family business, the behavior of family members from subsequent generations can vary due to the dispersal of ownership and management (García-Ramos et al., 2017). Moreover, over time, the level of family members' involvement in the family firm may decrease. Several researchers have highlighted that family businesses tend to exhibit a higher degree of risk aversion following succession and that subsequent generations are more concerned with preserving the family legacy and socio-emotional wealth, resulting in less reliance on debt (Molly et al., 2012).

6. CONCLUSION

The aim of this study was to compare the debt levels and the financing policy determinants between large listed family firms and large listed non-family counterparts operating in the Arab world for the period (2013–2019). Ultimately, the financing policy of large listed family firms is different from that of their non-family counterparts in the region. The high level of indebtedness of large listed family firms is explained by the preference of this category of firms to preserve family control by preferring to use debt if internal financing has been exhausted. Given that the sample covers large family firms, it should be noted that financing needs become more important following a size effect. Thus, internal financing alone will not be sufficient to finance the growth of large listed family firms.

A second key result is the validity of the pecking order theory for both types of firms. While the determinants of financing policy differ between family and non-family firms, the findings showed that the conclusions of the pecking order theory are broadly consistent even if the firms are large and even if they are listed on the stock exchange. This highlights the specificity of the field of investigation and the countries of the Arab world. Well, the inclination of firms towards internal financing in this region is due to the asymmetry of information on corporate diligence (Ismail, 2017) and the lack of laws protecting creditors (for debt) and investors (for equity issuance) (Amico, 2014).

A third result worth highlighting is related to the "family firm bias" that is still present even if the family firm grows in size and takes the step toward listing. The result related to age highlights the inter-generational heterogeneity and the cautious attitude that prevails within the family business that, when it accumulates many years of existence, tries to perpetuate a whole system of values and a socio-emotional heritage. The result relating to the level of risk is also revealing as it not only corroborates the prudential attitude of family businesses but also appeals to the notion of perceived risk and the mistrust of creditors towards this category of business when it signals an increased level of risk.

Financing policy is one of the crucial decisions to be made as it affects shareholder wealth and firm value. Studying its determinants is therefore of great interest to all stakeholders. This paper provides insights to be taken into account in future research on the financial decisions of large listed family firms in a developing, specific, and little-explored region such as the Arab world.

However, some limitations should be noted. We have examined a restricted set of variables in our analysis. Other measures can be included in future research, especially macroeconomic variables. Also, we acknowledge the importance of considering some control variables related to governance, firm size, and cash holdings in future research to gain a more comprehensive understanding of the factors

influencing capital structure decisions. In addition, our study neglected the effect of the sector of activity. It might be interesting to focus on each sector separately over a long study period and to analyze the financing policy of firms in different economic conditions. It will also be interesting to explore the financing policy of large listed family businesses by comparing it to a sample of large unlisted family businesses to further identify the peculiarities of this category of business.

Furthermore, it may be relevant to address the influence of wealthy individuals or royal families on family-owned businesses in the Arab world and their impact on debt levels as an additional source of financing. By including these perspectives as future research directions, we aim to address the gaps identified in our study and contribute to a more comprehensive understanding of the capital structure of large listed family firms in the Arab world.

REFERENCES

1. Abor, J. (2008). *Determinants of the capital structure of Ghanaian firms* (AERC Research Paper No. 176). African Economic Research Consortium. https://www.researchgate.net/publication/4981930_Determinants_of_the_Capital_Structure_of_Ghanaian_Firms
2. Abouzaid, S. (2014). Good governance holds the key for family business. *Ethical Boardroom*. https://ethicalboardroom.com/good-governance-holds-the-key-for-family-businesses/
3. Agustini, T., & Budiyanto. (2015). Pengaruh struktur aktiva, profitabilitas dan ukuran perusahaan terhadap struktur modal [The effect of asset structure, profitability and firm size on capital structure]. *Jurnal Ilmu dan Riset Manajemen (JIRM), 4*(8). http://jurnalmahasiswa.stiesia.ac.id/index.php/jirm/article/view/3463
4. Alghamdi, M. S. M. (2016). *Family business corporate performance and capital structure: Evidence from Saudi Arabia* [Doctoral dissertation, University of Hull]. Repository of the University of Hull. https://hull-repository.worktribe.com/preview/4218259/content-hull_13601a.pdf
5. Al-Nsour, O. J., & Jresat, S. S. (2018). Capital structure and performance: Applied study on Jordanian industrial public shareholding companies listed in Amman Stock Exchange (ASE). *Journal of Economic and Financial Research, 5*(2), 601–621. https://doi.org/10.37164/2056-005-002-025
6. Amico, A. (2014). *Corporate governance enforcement in the Middle East and North Africa: Evidence and priorities* (OECD Corporate Governance Working Papers No. 15). Organisation for Economic Co-operation and Development (OECD). https://doi.org/10.2139/ssrn.2502016
7. Anderson, R. C., & Reeb, D. M. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *The Journal of Finance, 58*(3), 1301–1328. https://doi.org/10.1111/1540-6261.00567
8. Antoniou, A., Guney, Y., & Paudyal, K. (2008). The determinants of capital structure: Capital market-oriented versus bank-oriented institutions. *Journal of Financial and Quantitative Analysis, 43*(1), 59–92. https://doi.org/10.1017/s0022109000002751
9. Arregle, J.-L., Hitt, M. A., Sirmon, D. G., & Very, P. (2007). The development of organizational social capital: Attributes of family firms. *Journal of Management Studies, 44*(1), 73–95. https://doi.org/10.1111/j.1467-6486.2007.00665.x
10. Astrachan, J. H., & Kolenko, T. A. (1994). A neglected factor explaining family business success: Human resource practices. *Family Business Review, 7*(3), 251–262. https://doi.org/10.1111/j.1741-6248.1994.00251.x
11. Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance, 57*(1), 1–32. https://doi.org/10.1111/1540-6261.00414
12. Bañegil Palacios, T. M., Barroso Martínez, A., & Jiménez, J. L. T. (2013). Family growth versus family firm growth: Professional management and succession process. *Management Research, 11*(1), 58–76. https://doi.org/10.1108/1536-541311318071
13. Barclay, M. J., & Smith, C. W., Jr. (1995). The maturity structure of corporate debt. *The Journal of Finance, 50*(2), 609–631. https://doi.org/10.1111/j.1540-6261.1995.tb04797.x
14. Basco, R., Stough, R., & Suwala, L. (Eds.). (2021). *Family business and regional development*. Routledge. https://doi.org/10.4324/9780429058097
15. Basly, S. (Ed.). (2017). *Family businesses in the Arab world*. Springer. https://doi.org/10.1007/978-3-319-57630-5
16. Baxter, N. D. (1967). Leverage, risk of ruin and the cost of capital. *The Journal of Finance*, *22*(3), 395–403. https://doi.org/10.1111/j.1540-6261.1967.tb02975.x
17. Belkhir, M., Maghyereh, A., & Awartani, B. (2016). Institutions and corporate capital structure in the MENA region. *Emerging Markets Review, 26*, 99–129. https://doi.org/10.1016/j.ememar.2016.01.001
18. Berrada, T. A. A., Habba, B., & Quiddi, O. (2020). Determinants of debt level: Empirical evidence on large listed family businesses in the Arab world. In *Proceedings of International Conference of Bentley University, USA, and ESCA Ecole de Management, Morocco, 1*(1), 58–73.
19. Berrada, T. A. A., Habba, B., & Quiddi, O. (2021). La politique de financement par endettement des grandes entreprises familiales dans les pays arabes [The policy of debt financing of large family businesses in Arab countries]. *Entreprise & Société, 2*(8), 141–163. https://doi.org/10.15122/isbn.978-2-406-11416-1.p.0141
20. Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family Business Review, 25*(3), 258–279. https://doi.org/10.1177/0894486511435355
21. Blanco-Mazagatos, V., de Quevedo-Puente, E., & Castrillo, L. A. (2007). The trade-off between financial resources and agency costs in the family business: An exploratory study. *Family Business Review, 20*(3), 199–213. https://doi.org/10.1111/j.1741-6248.2007.00095.x
22. Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance, 56*(1), 87–130. https://doi.org/10.1111/0022-1082.00320
23. Bradley, M., Jarrell, G. A., & Kim, E. H. (1984). On the existence of an optimal capital structure: Theory and evidence. *The Journal of Finance, 39*(3), 857–878. https://doi.org/10.1111/j.1540-6261.1984.tb03680.x
24. Brenes, E. R., Madrigal, K., & Requena, B. (2011). Corporate governance and family business performance. *Journal of Business Research, 64*(3), 280–285. https://doi.org/10.1016/j.jbusres.2009.11.013

25. Carbó-Valverde, S., Degryse, H., & Rodriguez-Fernandez, F. (2011). *Lending relationships and credit rationing: The impact of securitization* (Discussion Paper No. 2011-034). European Banking Center. https://doi.org/10.2139/ssrn.1966471
26. Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice, 29*(3), 249–265. https://doi.org/10.1111/j.1540-6520.2005.00081.x
27. Charlo, M. J., Núñez, M., & Sánchez-Apellániz, M. (2016). Delimitation, description and success factors of family businesses in Spain: A European comparison. *Applied Econometrics and International Development, 16*(2), 33–54. https://www.researchgate.net/publication/312060790_Delimitation_description_and_success_factors_of_family_businesses_in_Spain_A_European_comparison
28. 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
29. Clinton, E., McAdam, M., & Gamble, J. R. (2018). Transgenerational entrepreneurial family firms: An examination of the business model construct. *Journal of Business Research, 90*, 269–285. https://doi.org/10.1016/j.jbusres.2018.04.032
30. Comino-Jurado, M., Sánchez-Andújar, S., & Parrado-Martínez, P. (2021). Reassessing debt-financing decisions in family firms: Family involvement on the board of directors and generational stage. *Journal of Business Research, 135*, 426–435. https://doi.org/10.1016/j.jbusres.2021.06.060
31. Cortez, M. A., & Susanto, S. (2012). The determinants of corporate capital structure: Evidence from Japanese manufacturing companies [Special issue]. *Journal of International Business Research, 11*(3), 121–134. http://faculty.cbpa.drake.edu/suh/fin282/articles/capitalstructure2.pdf
32. Croci, E., Doukas, J. A., & Gonenc, H. (2011). Family control and financing decisions. *European Financial Management, 17*(5), 860–897. https://doi.org/10.1111/j.1468-036x.2011.00631.x
33. de Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm-and country-specific determinants. *Journal of Banking & Finance, 32*(9), 1954–1969. https://doi.org/10.1016/j.jbankfin.2007.12.034
34. DeAngelo, H., & Masulis, R. W. (1980). Leverage and dividend irrelevancy under corporate and personal taxation. *The Journal of Finance, 35*(2), 453–464. https://doi.org/10.1111/j.1540-6261.1980.tb02176.x
35. 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
36. Delmas, M. A., & Gergaud, O. (2014). Sustainable certification for future generations: The case of family business. *Family Business Review, 27*(3), 228–243. https://doi.org/10.1177/0894486514538651
37. Diamond, D. W. (1989). Reputation acquisition in debt markets. *Journal of Political Economy, 97*(4), 828–862. https://doi.org/10.1086/261630
38. Donaldson, G. (1961). *Corporate debt policy*. Harvard University Press.
39. ElBannan, M. A. (2017). Stock market liquidity, family ownership, and capital structure choices in an emerging country. *Emerging Markets Review, 33*, 201–231. https://doi.org/10.1016/j.ememar.2017.11.001
40. Eriotis, N., Vasiliou, D., & Ventoura-Neokosmidi, Z. (2007). How firm characteristics affect capital structure: An empirical study. *Managerial Finance, 33*(5), 321–331. https://doi.org/10.1108/03074350710739605
41. Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The Review of Financial Studies, 15*(1), 1–33. https://doi.org/10.1093/rfs/15.1.1
42. Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics, 26*(2), 301–325. https://doi.org/10.1086/467037
43. Firnanti, F. (2011). Faktor-faktor yang mempengaruhi struktur modal perusahaan manufaktur di Bursa Efek Indonesia. *Jurnal Bisnis dan Akuntansi, 13*(2), 119–128. https://doi.org/10.34208/jba.v13i2.153
44. Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management, 38*(1), 1–37. https://doi.org/10.1111/j.1755-053x.2009.01026.x
45. Frisenna, C., & Rizzotti, D. (2020). Investment decisions in listed family firms: Risk aversion and emotional attachment. In A. Leotta (Ed.), *Management controlling and governance of family businesses* (pp. 97–108). Springer. https://doi.org/10.1007/978-3-030-47741-7_6
46. García-Ramos, R., Díaz-Díaz, B., & García-Olalla, M. (2017). Independent directors, large shareholders and firm performance: The generational stage of family businesses and the socioemotional wealth approach. *Review of Managerial Science, 11*(1), 119–156. https://doi.org/10.1007/s11846-015-0182-8
47. Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative Science Quarterly, 52*(1), 106–137. https://doi.org/10.2189/asqu.52.1.106
48. Gottardo, P., & Moisello, A. M. (2014). The capital structure choices of family firms: Evidence from Italian medium-large unlisted firms. *Managerial Finance, 40*(3), 254–275. https://doi.org/10.1108/mf-03-2013-0065
49. Habbershon, T. G., & Williams, M. L. (1999). A resource-based framework for assessing the strategic advantages of family firms. *Family Business Review, 12*(1), 1–25. https://doi.org/10.1111/j.1741-6248.1999.00001.x
50. Hamid, J., & Singh, A. (1992). *Corporate financial structures in developing countries* (IFC Technical Paper No. IBRD/IFC(05)/T3/no.1). International Finance Corporation.
51. Handoo, A., & Sharma, K. (2014). A study on determinants of capital structure in India. *IIMB Management Review, 26*(3), 170–182. https://doi.org/10.1016/j.iimb.2014.07.009
52. Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society, 46*(6), 1251–1271. https://doi.org/10.2307/1913827
53. Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics, 71*(3), 517–540. https://doi.org/10.1016/s0304-405x(03)00181-8
54. Hovakimian, A., Opler, T., & Titman, S. (2001). The debt-equity choice. *The Journal of Financial and Quantitative Analysis, 36*(1), 1–24. https://doi.org/10.2307/2676195
55. Hsiao, C. (2022). *Analysis of panel data*. Cambridge University Press.
56. Ismail, W. (2017). *Capital structure determinants for family business in MENA region* [Master's thesis, American University of Cairo]. AUC Knowledge Fountain. https://fount.aucegypt.edu/etds/613/

57. Jensen, G. R., Solberg, D. P., & Zorn, T. S. (1992). Simultaneous determination of insider ownership, debt, and dividend policies. *The Journal of Financial and Quantitative Analysis, 27*(2), 247–263. https://doi.org/10.2307/2331370
58. 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
59. Kempers, M., Leitterstorf, M. P., & Kammerlander, N. (2019). Risk behavior of family firms: A literature review, framework, and research agenda. In E. Memili & C. Dibrell (Eds.), *The Palgrave handbook of heterogeneity among family firms* (pp. 431–460). Palgrave Macmillan. https://doi.org/10.1007/978-3-319-77676-7_16
60. Khémiri, W., & Noubbigh, H. (2018). Determinants of capital structure: Evidence from sub-Saharan African firms. *The Quarterly Review of Economics and Finance, 70*, 150–159. https://doi.org/10.1016/j.qref.2018.04.010
61. Köksal, B., & Orman, C. (2015). Determinants of capital structure: Evidence from a major developing economy. *Small Business Economics, 44*(2), 255–282. https://doi.org/10.1007/s11187-014-9597-x
62. Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance, 28*(4), 911–922. https://doi.org/10.1111/j.1540-6261.1973.tb01415.x
63. Krueger, N., Bogers, M. L. A. M., Labaki, R., & Basco, R. (2021). Advancing family business science through context theorizing: The case of the Arab world. *Journal of Family Business Strategy, 12*(1), Article 100377. https://doi.org/10.1016/j.jfbs.2020.100377
64. Le Breton-Miller, I., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice, 30*(6), 731–746. https://doi.org/10.1111/j.1540-6520.2006.00147.x
65. López-Gracia, J., & Sánchez-Andújar, S. (2007). Financial structure of the family business: Evidence from a group of small Spanish firms. *Family Business Review, 20*(4), 269–287. https://doi.org/10.1111/j.1741-6248.2007.00094.x
66. López-Gracia, J., & Sogorb-Mira, F. (2008). Testing trade-off and pecking order theories financing SMEs. *Small Business Economics, 31*(2), 117–136. https://doi.org/10.1007/s11187-007-9088-4
67. Matthews, C. H., Vasudevan, D. P., Barton, S. L., & Apana, R. (1994). Capital structure decision making in privately held firms: Beyond the finance paradigm. *Family Business Review, 7*(4), 349–367. https://doi.org/10.1111/j.1741-6248.1994.00349.x
68. 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. https://www.jstor.org/stable/1809766
69. Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review, 53*(3), 433–443. https://www.jstor.org/stable/1809167
70. Molly, V., Laveren, E., & Jorissen, A. (2012). Intergenerational differences in family firms: Impact on capital structure and growth behavior. *Entrepreneurship Theory and Practice, 36*(4), 703–725. https://doi.org/10.1111/j.1540-6520.2010.00429.x
71. Morck, R., & Yeung, B. (2003). Agency problems in large family business groups. *Entrepreneurship Theory and Practice, 27*(4), 367–382. https://doi.org/10.1111/1540-8520.t01-1-00015
72. Moussa, A. A., & Elgiziry, K. (2019). The impact of family involvement in business on capital structure decisions: A literature review. *Investment Management and Financial Innovations, 16*(1), 258–266. https://www.researchgate.net/publication/331880801_The_impact_of_family_involvement_in_business_on_capital_structure_decisions_A_literature_review
73. 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
74. Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187–221. https://doi.org/10.1016/0304-405x(84)90023-0
75. Naur, M., & Nafi, M. (2017). Analisis pengaruh pertumbuhan aset, ukuran perusahaan, profitabilitas dan risiko bisnis terhadap struktur modal sub sektor kosmetik dan keperluan rumah tangga. *Jurnal Akuntansi dan Perpajakan, 3*(1), 1–15. https://doi.org/10.26905/ap.v3i1.1327
76. Ntoung, L. A. T., Santos de Oliveira, H. M., de Sousa, B. M. F., Pimentel, L. M., & Bastos, S. A. M. C. (2020). Are family firms financially healthier than non-family firm? *Journal of Risk and Financial Management, 13*(1), Article 5. https://doi.org/10.3390/jrfm13010005
77. Oktavina, M., Manalu, S., & Yuniarti, S. (2018). Pecking order and trade-off theory in capital structure analysis of family firms in Indonesia. *Jurnal Keuangan dan Perbankan/Journal of Finance and Banking, 22*(1), 73–82. https://doi.org/10.26905/jkdp.v22i1.1793
78. Ozkan, A. (2001). Determinants of capital structure and adjustment to long run target: Evidence from UK company panel data. *Journal of Business Finance & Accounting, 28*(1–2), 175–198. https://doi.org/10.1111/1468-5957.00370
79. Öztekin, Ö., & Flannery, M. J. (2012). Institutional determinants of capital structure adjustment speeds. *Journal of Financial Economics, 103*(1), 88–112. https://doi.org/10.1016/j.jfineco.2011.08.014
80. Poza, E. J., & Daugherty, M. S. (2020). *Family business.* Cengage Learning.
81. Quiddi, O., & Habba, B. (2021a). Financial behavior of family businesses: A bibliometric and systematic literature review. *International Journal of Financial Research, 12*(2), 75–92. https://doi.org/10.5430/ijfr.v12n2p75.
82. Quiddi, O., & Habba, B. (2021b). Indebtedness of North African firms: Do family ownership and board attributes matter? In M. H. Bilgin, H. Danis, E. Demir, & G. Karabulut (Eds.), *Eurasian Business and Economics Perspectives: Proceedings of the 33rd Eurasia Business and Economics Society Conference* (pp. 215–231). Springer. https://doi.org/10.1007/978-3-030-85304-4_13.
83. Rajan, R. G., & 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
84. Ramalho, J. J. S., & da Silva, J. V. (2009). A two-part fractional regression model for the financial leverage decisions of micro, small, medium and large firms. *Quantitative Finance, 9*(5), 621–636. https://doi.org/10.1080/14697680802448777

85. Ramalho, J. J., Rita, R. M., & da Silva, J. V. (2018). The impact of family ownership on capital structure of firms: Exploring the role of zero-leverage, size, location and the global financial crisis. *International Small Business Journal*, *36*(5), 574–604. https://doi.org/10.1177/0266242617753050
86. Roida, H. Y. (2020). *Family firms and capital structure decisions: Empirical evidence from Indonesian listed firms* [Doctoral dissertation, University of Central Lancashire]. https://clok.uclan.ac.uk/34492/2/34492%20Roida%2C%20Herlina%2C%20PhD%20Thesis.pdf
87. Romano, C. A., Tanewski, G. A., & Smyrnios, K. X. (2001). Capital structure decision making: A model for family business. *Journal of Business Venturing, 16*(3), 285–310. https://doi.org/10.1016/s0883-9026(99)00053-1
88. Schmid, T. (2013). Control considerations, creditor monitoring, and the capital structure of family firms. *Journal of Banking & Finance, 37*(2), 257–272. https://doi.org/10.1016/j.jbankfin.2012.08.026
89. Sharma, P., & Paul, S. (2015). Does liquidity determine capital structure? Evidence from India. *Global Business Review, 16*(1), 84–95. https://doi.org/10.1177/0972150914553510
90. Sonfield, M. C., & Lussier, R. N. (2008). The influence of family business size on management activities, styles and characteristics. *New England Journal of Entrepreneurship, 11*(2), 47–56. https://doi.org/10.1108/NEJE-11-02-2008-B004
91. Stafford, K., Duncan, K. A., Dane, S., & Winter, M. (1999). A research model of sustainable family businesses. *Family Business Review, 12*(3), 197–208. https://doi.org/10.1111/j.1741-6248.1999.00197.x
92. Stickney, C. P., Brown, P. R., & Wahlen, J. M. (2007). *Financial reporting, financial statement analysis, and valuation: A strategic perspective*. Thomson/South-Western.
93. Thiele, F. K., & Wendt, M. (2017). Family firm identity and capital structure decisions. *Journal of Family Business Management, 7*(2), 221–239. https://doi.org/10.1108/jfbm-05-2017-0012
94. 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
95. Tong, G., & Green, C. J. (2005). Pecking order or trade-off hypothesis? Evidence on the capital structure of Chinese companies. *Applied Economics, 37*(19), 2179–2189. https://doi.org/10.1080/00036840500319873
96. Vaknin, O. (2010). *The family business risk profile*. Glucksman Institute for Research in Securities Markets. https://www.stern.nyu.edu/sites/default/files/assets/documents/uat_024305.pdf
97. Vieira, E. S. (2014). Capital structure determinants in the context of listed family firms. *Journal of Economy, Business and Financing, 2*(1), 12–25. https://www.researchgate.net/publication/260436750_Capital_Structure_Determinants_in_the_Context_of_Listed_Family_Firms
98. Warner, J. B. (1977). Bankruptcy, absolute priority, and the pricing of risky debt claims. *Journal of Financial Economics, 4*(3), 239–276. https://doi.org/10.1016/0304-405x(77)90002-2
99. World Economic Forum (WEF). (2018). *The Arab world competitiveness report*. World Bank. https://www3.weforum.org/docs/Arab-World-Competitiveness-Report-2018/AWCR%202018.0724_1342.pdf
100. Yang, C.-C., Lee, C.-F., Gu, Y.-X., & Lee, Y.-W. (2010). Co-determination of capital structure and stock returns — A LISREL approach: An empirical test of Taiwan stock markets. *The Quarterly Review of Economics and Finance, 50*(2), 222–233. https://doi.org/10.1016/j.qref.2009.12.001
101. Zata Poutziouris, P. (2001). The views of family companies on venture capital: Empirical evidence from the UK small to medium-size enterprising economy. *Family Business Review, 14*(3), 277–291. https://doi.org/10.1111/j.1741-6248.2001.00277.x