

Determinants of Capital Structure: A Theoretical Meta-Analysis

Arisi-Nwugballa, Emmanuel A.¹
emmanuel.nwugballa@ebsu.edu.ng

Agha, Nancy C.¹
nanciagha@gmail.com

Ilo, Sylvester²
sylvester.ilo@unn.edu.ng

Mamah, Augustine I.¹
mamahaik60@gmail.com

Nome, Ujebel¹
nomeujebel@gmail.com

1. Department of Business Management, Ebonyi State University, Abakaliki
2. Department of Business Administration, University of Nigeria, Enugu Campus

ABSTRACT

This paper reports a database content review on capital structure theories in the most impactful journal on finance and business in the world - The Journal of Finance. Our focus was to comparatively assess the weight of theoretical adoption amongst the five major theories of capital structure - Modigliani and Miller, Trade-off, Pecking Order, Market Timing and Stakeholders' Co-investment Theories. In so doing, we performed a systematic search of articles published between 1970 and 2018, using generic and specific query terms synonymous with these theories. Our results show that the trade-off theory is the most adopted theory, followed by the market timing theory.

Journal of Policy and Development Studies (JPDS)

*Vol. 13. Issue 4 (2023)
ISSN(p) 0189-5958
ISSN (e) 2814-1091
Home page*

<https://www.ajol.info/index.php/jpds>

ARTICLE INFO:

Keywords

Capital structure, determinants, theoretical adoption, theoretical meta-analysis.

Article History

*Received 15th July 2023
Accepted: 30th August 2023*

1. Introduction

Capital structure is the mix of debt and equity which a firm uses for its operation. Managers in big and small enterprises utilize substantial time in attempting to find the perfect capital structure in

terms of risk/reward for the shareholders. Capital structure involves different sources of long term capital through which an enterprise finances its assets (Adeneye *et al.*, 2023; Al Amosh *et al.*, 2022; Surasmi *et al.*, 2022). Capital structure influences both shareholders' return and the ability of a firm to survive economic depression (Pucheta-Martínez *et al.*, 2023). Firms can use equity or debt to finance their assets. However, where the interest was tax deductible, firms would maximize the value accruable by using more debt. Equity capital refers to shareholders contribution, such as common stock. The debt capital in a firm's capital structure refers to borrowed monies, such as bonds, loans, debenture, and commercial papers. Capital structure decision becomes relevant to any business enterprise which has the need to maximize shareholders' return and achieve competitive advantage (Deangelo, 2022; Pucheta-Martínez *et al.*, 2023; Shaik *et al.*, 2022). The mix/ratio of debt and equity in the company's mode of financing refers to capital structure. Some organizations prefer more debt while others prefer more equity in financing their assets.

Financial leverage refers to the use of debt to acquire additional assets. Financial leverage means trading on equity which occurs when a firm uses bonds, other debts and preferred stock to increase its earnings on common stock (Adeneye *et al.*, 2023; Ali *et al.*, 2022). A firm might use long term debt to purchase assets that are expected to earn more than the interest on the debt. The earnings in excess of the interest expense on the new debt will increase the earnings of the firm's common stock holders. The increase in earnings indicates that the firm was successful in trading on equity. If the newly purchased assets earn less than the interest expense on the new debt, the earnings of the common stock holders will decrease. Capital structure is the mix of various sources of long –term funds used by or an enterprise to finance its capital assets (Brusov & Filatova, 2023; Nor Khadijah *et al.*, 2022). The long-term sources of financing are mortgage bonds, debentures, preferred stocks, common stock and retained earnings (Ahmed *et al.*, 2023; Ezenwakwelu, 2017). Therefore, the objective of the study would be to determine the most impactful capital structure theory as supported by research outcomes.

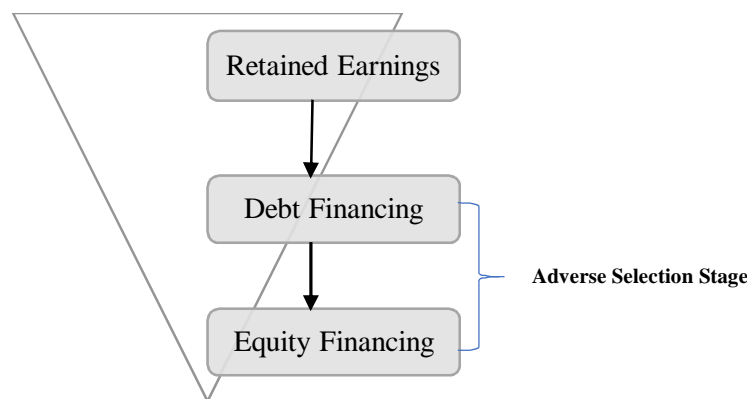
2. Theoretical Review

The theoretical framework for this study is constructed upon five basic theories of capital structure optimality (Frank & Goyal, 2009). These theories are the Modigliani and Miller Theory, the Static Trade-off Theory, the Pecking Order Theory, the Market Timing Theory and the Stakeholders Co-investment Theory. The earliest of these, upon which the theoretical discourse of capital structure have taken place is the Modigliani and Miller Theory. This theory was developed, as the name implies by Franko Modigliani and Merton Miller in the year of 1958 (Modigliani & Miller, 1958), but was further refined in 1963 (Miller & Modigliani, 1963). In two seminal papers titled “The cost of capital, Corporation Finance and the Theory of Investment”, and “Corporate Income Taxes and the Cost of Capital: A Correction”, they espoused various assumptions to the effect of stating that the value of a firm is independent of the capital structure mix within the firm. In other words, firm value is not a function of capital structure mix. It would be rife to restate that the structure of a firm's capital is the mix of the debt and equity financing tools available to the firm (Fattouh *et al.*, 2008; Frank & Goyal, 2003; Frydenberg, 2004; Khémiri & Noubbigh, 2018; Kraus & Litzenberger, 1973). The major assumptions of the Modigliani and Miller theory are that, tax subsidies do not accrue on payment of interests, individuals and corporations do not have different interest rates, bankruptcy costs do not exist, information in the firms and corporations are not asymmetric, transaction costs do not exist and markets are perfectly efficient (Miller & Modigliani, 1963; Modigliani & Miller, 1958).

After the postulations of Modigliani and Miller in 1958, the next period was in 1973, when the Static Trade-off theory was developed (Kraus & Litzenberger, 1973). On the Static Trade-off theory, developed by Alan Kraus and Robert Litzenberger in 1973 in a paper titled “A State-preference model of optimal financial leverage”, they state that firms always try to optimize the mix between debt and equity financing. The theory assumes that when the optimization of capital mix is prime, as it always is the case, in a perfect, efficient and complete market, firms would usually want to take advantage of debt and equity financing that requires a trade-off of one aspect of financing, say debt, for the other-equity (Antoniou *et al.*, 2008; Hutchinson, 2011; Köksal & Orman, 2015; Li & Islam, 2019; Mahajan & Tartaroglu, 2008; Yildirim *et al.*, 2018). The trade-off theory actually holds that optimality is sought after by firms, but can only be done by tilting the balance towards the form of financing that has more benefits, whilst also being ready to re-tilt away when perceived costs become high.

The Pecking Order theory becomes the next. The pecking order theory, developed in 1984 was postulated in two papers titled “The Capital Structure Puzzle” and “Corporate Financing and Investment Decisions when Firms have information that investors do not have” (Myers, 1984; Myers & Majluf, 1984). Stewart Myers authored the first, and was joined by Nicholas Majluf to co-author the second. The theory, therefore, is associated with the both authors. The theory was conceived at a time when Stewart Myers was the erstwhile President of the American Finance Association, and derived his hypothesis from the Fisher Black’s work on “the Dividend Puzzle”, which questioned what firms should do about their dividend policy (Black, 1976; Myers, 1984; Myers & Majluf, 1984). Here, Myers and Majluf asked “How do firms choose their capital structures?”, and although the initial response at the *a priori* was “we don’t know”, at the end of their investigation, they had come up with a conclusion, which was to the effect that, in cases of information asymmetry, firms do not try to arrive at an optimal mix of debt and equity components of the capital structure. They further explain that what firms do is to undertake a hierarchical adoption of financing techniques starting from the internal financing through retained earnings (Alti, 2006; Booth *et al.*, 2001; Harris & Raviv, 1991; Hutchinson, 2011; Leary & Roberts, 2004; Nejad & Wasiuzzaman, 2015; Proença *et al.*, 2014; Utrero-González, 2007; Yu, 2012), then to debt and equity financing. The pecking order is thus:

Figure 1: Pecking Order Theory



Source: Authors’ conceptualization

The market timing theory was postulated by Malcolm Baker and Jeffrey Wurgler in 2002, in their study titled “Market Timing and Capital Structure” (Baker & Wurgler, 2002). There are important tenets of this theory. It is presumed to be a first order determinant regarding the adoption of either the trade-off or pecking order theory (Alti, 2006; Nejad & Wasiuzzaman, 2015; Westgaard *et al.*, 2008). This implies that whether a firm decides to optimally mix debt and equity or choose to adopt the pecking order postulation all depends on the market timing. Market timing in this context refers to the level of cost or benefit attributable to either debt or equity financing. When debt financing seems beneficial at a particular time, the market tilts debt-ward, on the other hand, when equity seems beneficial, the market tilts equity-ward; these become the dynamics operational in the debt-equity dilemma.

On the Stakeholders’ Co-investment Theory, propounded by Sheridan Titman in 1984, from a thesis on “the Effect of Capital Structure on a Firm’s Liquidation Decision” (Titman, 1984; Titman & Wessels, 1988), he opined that when a firm focuses on producing unique products such as durable goods, it would invariably attract a specialized form of workforce with the firm, and if this continues, both the employees and customers would take the clear of stakeholders, helping the firm to manage financial distress understandably and even wanting to play a much more involved role in determining whether a firm incurs debt as a part of its financing or not. Here, the firms’ choice of financing depends on the readiness of its staff, suppliers, consumers and potential customers to “co-invest” in the firm while seeing the long-term prospects of the firm. It also implies that when a firm is faced with issues such as liquidation or bankruptcy, it would most likely scare “stakeholders” from them, and when these stakeholders “withdraw”, the firm would be unable to keep up with an effective means of financing (Chang *et al.*, 2009; Fattouh *et al.*, 2008; Harris & Raviv, 1991; Köksal & Orman, 2015; Li & Islam, 2019; Moosa *et al.*, 2011; Proença *et al.*, 2014).

3. Materials

This is a meta-analytic study. The study takes the form of a systematic review, combined with basic statistical scoring of theoretical research points. The study, as systematic reviews queried term related to the theories under discourse (Crossan & Apaydin, 2010; Kersten *et al.*, 2017; Mehrotra & Sahay, 2018). These queries were done in the Journal of Finance. The choice of the Journal of Finance is informed by the fact that it is the journal with the highest impact score in the business and finance category, of the Journal Citations Report (JCR) across the world. It actually ranks 1/98; that is, first amongst ninety-eight journals in the business and finance category. Also, the JCR impact score for the Journal of Finance is 5.397, while the H-index Scimago Journal Rank (SJR) score is 249. The Journal of Finance is managed by the Wiley Online Library, and is informally known as “The Journal of the American Finance Association”. The Journal of Finance focuses on all major issues on finance, and it should be stated that the American Finance Association is the foremost academic institution which primarily focuses on groundbreaking insights and findings on finance and financial economics (<https://www.scimagojr.com/journalrank.php?category=2003> & <https://onlinelibrary.wiley.com/journal/15406261>). Furthermore, we chose this journal as it best suites the research objectives posed, which is, to ascertain the comparative weight of the major capital structure theories amongst researchers. We conclude that the prime authority where which this comparison would be said to be reliable is the most cited journal of finance across the world - The Journal of Finance.

4. Analytical Method

The method of analysis here would be the weighted average score. Here, we note the query outcomes both on a generic and specific level, calculate the average (mean), and rank the group on the basis of whether the raw score (x) is greater or less than the mean score (\bar{x}). If the raw score (x) is greater or equal to the mean score (\bar{x}), a positive weight (+) is assigned, but if the raw score (x) is less than the mean score (\bar{x}), then a negative weight is assigned. This method is nearly typical to the methodology of the non-parametric Krusal-Wallis test and the one tailed t-test, where mean scores are the basis for inferential decision taking (Zhang & Zhang, 2009). Also, the number of positive weights defines the theory of choice for researchers.

Generic Query Terms:

- a. Modigliani and Miller Theory
- b. Trade-off Theory
- c. Pecking Order Theory
- d. Market Timing Theory
- e. Stakeholders' co-investment Theory

Specific Query Terms:

- a. "Modigliani and Miller Theory"
- b. "Trade-off Theory"
- c. "Pecking Order Theory"
- d. "Market Timing Theory"
- e. "Stakeholders' co-investment Theory"

Criterion: $x \geq \bar{x} = +$

$x < \bar{x} = -$

Table 1: Query Resources

Generic		Specific	
Search Term	URL	Search Term	URL
Modigliani and Miller Theory	https://onlinelibrary.wiley.com/action/doSearch?AllField=Modigliani+and+Miller+Theory&startPage=&SeriesKey=15406261	"Modigliani and Miller Theory"	https://onlinelibrary.wiley.com/action/doSearch?AllField=%22Modigliani+and+Miller+Theory%22&PubType=journal&startPage=&SeriesKey=15406261
Trade off Theory	https://onlinelibrary.wiley.com/action/doSearch?AllField=Trade+off+Theory&SeriesKey=15406261&sortBy=Earliest	"Trade off Theory"	https://onlinelibrary.wiley.com/action/doSearch?AllField=%22Trade-off%20Theory%22&SeriesKey=15406261&sortBy=Earliest&startPage=0&pageSize=20
Pecking Order Theory	https://onlinelibrary.wiley.com/action/doSearch?AllField=Pecking+order+theory&SeriesKey=15406261	"Pecking Order Theory"	https://onlinelibrary.wiley.com/action/doSearch?AllField=%22Pecking%20order%20Theory%22&SeriesKey=15406261&sortBy=Earliest&pageSize=20&startPage=1
Market Timing Theory	https://onlinelibrary.wiley.com/action/doSearch?AllField=Market+Timing+Theory&SeriesKey=15406261	"Market Timing Theory"	https://onlinelibrary.wiley.com/action/doSearch?AllField=%22Market+timing+Theory%22&SeriesKey=15406261

	eld=Market+timing+theory &SeriesKey=15406261		
Stakeholders Co-investment Theory	https://onlinelibrary.wiley.com/action/doSearch?AllField=Stakeholders%27+Co-investment+Theory&SeriesKey=15406261	“Stakeholders’ Co-investment Theory”	https://onlinelibrary.wiley.com/action/doSearch?AllField=%22Stakeholders%27+Co-investment+Theory%22&SeriesKey=15406261

URL: Uniform Resource Locator

5. Results

Table 2: Generic Search Report

	Last Week	Last Month	Last 3 months	Last 6 months	Last Year	Recency Total (x)	Query Total (x)	Recency: $x-\bar{x}$	Query: $x-\bar{x}$
M&M	0	0	0	2	3	5	447	-43.4	-976
T.O	4	5	16	31	52	108	2834	+59.6	+1411
P.O	0	0	0	1	1	2	81	-46.4	-1342
M.T	5	6	18	34	54	117	3670	+68.6	+2247
S.C	0	0	2	3	5	10	83	-38.4	-1340

Recency Total (\bar{x}) = 48.4; Query Total (\bar{x}) = 1423

Table 2 shows the search outcomes on a generic search basis. The columns show the period when a paper was published. The periods synonymous to the columns show that column 1 has papers published a week before 17th of February, 2019. Column 2 shows papers published a month before the 17th of February, 2019, column 3-“last 3 months”, column 4 – “last six months”, column 5-“last year”. The rows contain the theories. The presentation show that Modigliani and Miller Theory (M&M) had 447 outcomes, Trade-off Theory (T.O)-2834 outcomes, Pecking Order Theory (P.O)- 81 outcomes, Market Timing (M.T)-3,670 outcomes and Stakeholders’ Co-Investment Theory (S.C) having 83 outcomes. The mean outcome for this category is 1,423. For ‘within-a-year’ evaluation, the results show- Modigliani and Miller Theory (5), Trade-off Theory (108), Pecking Order Theory (2), Market Timing Theory (117) and Stakeholders’ Co-investment Theory (10), with a mean of 48.4. The evaluations are performed on columns 8 and 9.

Table 3: Specific Search Report

	Last Week	Last Month	Last 3 months	Last 6 months	Last Year	Recency Total (x)	Query Total (x)	Recency: $x-\bar{x}$	Query: $x-\bar{x}$
M&M	0	0	0	0	0	0	1	-0.2	-12
T.O	0	0	0	0	1	1	23	+0.8	+10
P.O	0	0	0	0	0	0	34	-0.2	+21
M.T	0	0	0	0	0	0	7	-0.2	-6
S.C	0	0	0	0	0	0	0	-0.2	-13

Recency Total (\bar{x}) = 0.2; Query Total (\bar{x}) = 13

Table 3 shows results of the specific query terms. For the Modigliani and Miller, Trade-off, Pecking Order, Market Timing and Stakeholders' Co-investment Theories, we have 0,1,0,0,0 and 1,23,34,7,0 outcomes respectively for recency and total query outcomes. The means are also 0.2 and 13 respectively for recency and query totals, while the evaluations can be seen at the last columns.

Table 4: Weight Collation Table

	Generic		Specific	
	Recency Total	Query Total	Recency Total	Query Total
M&M	-	-	-	-
T.O	+	+	+	+
P.O	-	-	+	-
M.T	+	+	-	-
S.C	-	-	-	-

On table 4, with the objective of using the weighted average score method, we assign a “+” when the outcome (x) is not less than the mean (\bar{x}), that is “ $x \geq \bar{x} = +$ ”, and “-” when the outcome (x) is less than the mean (\bar{x}), that is “ $x < \bar{x} = -$ ”. On the whole, trade-off theory seems to weigh highest with four (4) +,+,+,+, followed by Market Timing with two (2) +,+,-, -; Pecking Order Theory with one (1) -,-,+,-; and Modigliani and Miller with Stakeholders' Co-investment Theory as having no point at all, that is -,-,-,-.

6. Conclusion and suggestion for further studies

In conclusion, we state that the trade-off theory is the most studied theory in the capital structure hypothesis. We opine that since there is an intricate link between theory and practice, we would be safe to state that the Trade-off theory is the theory of choice in deciding the manner in which capital structure be determined. From both a generic and specifically pointed usage, the Trade-off theory seemed to have gained more traction than other theories on capital structure. More, for the level of work put into the other theories, we cannot wish them away as being less useful, but we recommend that further much more elaborate systematic reviews be conducted on these theories

to focus on their assumptions, availability of financial structures in study areas, ease of applicability in real life and the currency of the assumptions irrespective of the age of the theory.

REFERENCES

- Adeneye, Y. B., Kammoun, I., & Ab Wahab, S. N. A. (2023). Capital structure and speed of adjustment: the impact of environmental, social and governance (ESG) performance. *Sustainability Accounting, Management and Policy Journal*, *14*(5), 945–977. <https://doi.org/10.1108/SAMPJ-01-2022-0060>
- Ahmed, A. M., Sharif, N. A., Ali, M. N., & Hågen, I. (2023). Effect of firm size on the association between capital structure and profitability. *Sustainability (Switzerland)*, *15*(14), 1–17. <https://doi.org/10.3390/su151411196>
- Al Amosh, H., Khatib, S. F. A., Alkurdi, A., & Bazhair, A. H. (2022). Capital structure decisions and environmental, social and governance performance: insights from Jordan. *Journal of Financial Reporting and Accounting*, *May*, 1–18. <https://doi.org/10.1108/JFRA-12-2021-0453>
- Ali, S., Rangone, A., & Farooq, M. (2022). Corporate taxation and firm-specific determinants of capital structure: Evidence from the UK and US multinational firms. *Journal of Risk and Financial Management*, *15*(2), 1–17. <https://doi.org/10.3390/jrfm15020055>
- Alti, A. (2006). How Persistent Is the Impact of Market Timing on Capital Structure ? *Journal of Finance*, *LXI*(4), 1681–1710.
- 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.
- Baker, M., & Wurgler, J. (2002). Market Timing and Capital Structure. *The Journal of Finance*, *57*(1), 1–32.
- Black, F. (1976). The Dividend Puzzle. *The Journal of Portfolio Management*, *2*(2), 1–4.
- Booth, L., Aivazian, V., & Demircug-kunt, A. (2001). Capital Structures in Developing Countries. *The Journal of Finance*, *56*(1), 87–130.
- Brusov, P., & Filatova, T. (2023). Capital structure theory: Past, present, future the Modigliani. *Mathematics*, *11*(616), 1–30.
- Chang, C., Lee, A. C., & Lee, C. F. (2009). Determinants of capital structure choice: A structural equation modeling approach. *Quarterly Review of Economics and Finance*, *49*(2), 197–213. <https://doi.org/10.1016/j.qref.2008.03.004>
- Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational

- innovation: A systematic review of the literature. *Journal of Management Studies*, 47(6), 1154–1191. <https://doi.org/10.1111/j.1467-6486.2009.00880.x>
- Deangelo, H. (2022). The capital structure puzzle: What are we missing? In *Journal of Financial and Quantitative Analysis* (Vol. 57, Issue 2). <https://doi.org/10.1017/S002210902100079X>
- Ezenwakwelu, C. (2017). *International Business Management* (2nd ed.). Immaculate Publishers.
- Fattouh, B., Harris, L., & Scaramozzino, P. (2008). Non-linearity in the determinants of capital structure: Evidence from UK firms. *Empirical Economics*, 34(3), 417–438. <https://doi.org/10.1007/s00181-007-0128-3>
- Frank, M. Z., & Goyal, V. K. (2003). Capital Structure Decisions. *Ssrn*. <https://doi.org/10.2139/ssrn.396020>
- Frank, M. Z., & Goyal, V. K. (2009). Capital structure decision: which factors important? *Financial Management*, 38(1), 1–37.
- Frydenberg, S. (2004). Theory of Capital Structure- A Review. In *Trondheim: Tapir/TØH*, (Vol. 46, Issue 1, pp. 1–41). Tapir Academic Press.
- Harris, M., & Raviv, A. (1991). The Theory of Capital Structure. *The Journal of Finance*, 1(1), 297–355.
- Hutchinson, P. (2011). How Much Does Growth Determine SMEs' Capital Structure? *Small Enterprise Research*, 12(1), 81–92. <https://doi.org/10.5172/ser.12.1.81>
- Kersten, R., Harms, J., Liket, K., & Maas, K. (2017). Small Firms, large Impact? A systematic review of the SME Finance Literature. *World Development*, 97, 330–348. <https://doi.org/10.1016/j.worlddev.2017.04.012>
- Khémiri, W., & Noubbigh, H. (2018). Determinants of capital structure: Evidence from sub-Saharan African firms. *Quarterly Review of Economics and Finance*, 70, 1–20. <https://doi.org/10.1016/j.qref.2018.04.010>
- 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>
- Kraus, A., & Litztenberger, 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.1540-6261.1974.tb00057.x>
- Leary, M., & Roberts, M. R. (2004). Do Firms Rebalance their Capital Structures ? Do Firms Rebalance their Capital Structures ? *. *The Journal of Finance*, 60(6), 2575–2619.
- Li, L., & Islam, S. Z. (2019). Firm and industry specific determinants of capital structure: Evidence from the Australian market. *International Review of Economics and Finance*, 59,

425–437. <https://doi.org/10.1016/j.iref.2018.10.007>

- Mahajan, A., & Tartaroglu, S. (2008). Equity market timing and capital structure: International evidence. *Journal of Banking and Finance*, 32(5), 754–766.
<https://doi.org/10.1016/j.jbankfin.2007.05.007>
- Mehrotra, A., & Sahay, A. (2018). Systematic Review on Financial Performance of Mergers and Acquisitions in India. *Vision*, 22(2), 211–221. <https://doi.org/10.1177/0972262918766137>
- Miller, M. H., & Modigliani, F. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, 53(3), 433–443.
<https://doi.org/10.2307/1809167>
- Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment Franco. *The American Economic Review*, 48(3), 261–297.
- Moosa, I., Li, L., & Naughton, T. (2011). Robust and fragile firm-specific determinants of the capital structure of Chinese firms. *Applied Financial Economics*, 21(18), 1331–1343.
<https://doi.org/10.1080/09603107.2011.570714>
- Myers, S. C. (1984). The Capital Structure Puzzle. *The Journal of Finance*, 39(3), 575–592.
- 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, 187–221.
- Nejad, N. R., & Wasiuzzaman, S. (2015). Multilevel Determinants of Capital Structure: Evidence from Malaysia. *Global Business Review*, 16(2), 199–212.
<https://doi.org/10.1177/0972150914564274>
- Nor Khadijah, M. A., Radziah, M., & Sara Naquia Hanim, S. (2022). Capital structure of Malaysian companies: Are they different during the COVID-19 pandemic? *Journal of Asian Finance, Economics and Business*, 9(4), 239–250.
<https://doi.org/10.13106/jafeb.2022.vol9.no4.0239>
- Proença, P., Laureano, R. M. S., & Laureano, L. M. S. (2014). Determinants of Capital Structure and the 2008 Financial Crisis: Evidence from Portuguese SMEs. *Procedia - Social and Behavioral Sciences*, 150, 182–191. <https://doi.org/10.1016/j.sbspro.2014.09.027>
- Pucheta-Martínez, M. C., Bel-Oms, I., & Gallego-Álvarez, I. (2023). Corporate social responsibility reporting and capital structure: Does board gender diversity mind in such association? *Corporate Social Responsibility and Environmental Management*, 30(4), 1588–1600. <https://doi.org/10.1002/csr.2437>
- Shaik, M. B., Kethan, M., Rani, I., Mahesh, U., Harsha, C. S., Navya, M. K., & Sravani, D. (2022). Which determinants matter for capital structure? An empirical study on NBFC'S in India. *International Journal of Entrepreneurship*, 26(1), 1–9.
<https://search.proquest.com/openview/12a9b971ea02dba841724fde0f7e0989/1?pq-origsite=gscholar&cbl=29727>

- Surasmi, I. A., Putra, I. B. U., & Yasa, I. M. J. (2022). Moderating effect of capital structure on the effect of sales growth on the value of manufacturing companies listed on the Indonesia Stock Exchange. *Jurnal Ekonomi & Bisnis Jagaditha*, 9(1), 1–6.
<https://doi.org/10.22225/jj.9.1.2022.1-6>
- Titman, S. (1984). The effect of capital structure on a firm's liquidation decision. *Journal of Financial Economics*, 13(1), 137–151. [https://doi.org/10.1016/0304-405X\(84\)90035-7](https://doi.org/10.1016/0304-405X(84)90035-7)
- Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *The Journal of Finance*, 43(1), 1–19.
- Utrero-González, N. (2007). Banking regulation, institutional framework and capital structure: International evidence from industry data. *Quarterly Review of Economics and Finance*, 47(4), 481–506. <https://doi.org/10.1016/j.qref.2006.02.006>
- Westgaard, S., Eidet, A., Frydenberg, S., & Grosås, T. C. (2008). Investigating the capital structure of UK real estate companies. *Journal of Property Research*, 25(1), 61–87.
<https://doi.org/10.1080/09599910802397107>
- Yildirim, R., Masih, M., & Bacha, O. I. (2018). Determinants of capital structure: evidence from Shari'ah compliant and non-compliant firms. *Pacific Basin Finance Journal*, 51, 198–219.
<https://doi.org/10.1016/j.pacfin.2018.06.008>
- Yu, B. (2012). Agency costs of stakeholders and capital structure: international evidence. *Managerial Finance*, 38(3), 303–324. <https://doi.org/10.1108/03074351211201433>
- Zhang, B., & Zhang, Y. (2009). Mann-Whitney U test and Kruskal-Wallis test should be used for comparisons of differences in medians, not means: Comment on the article by van der Helm-van Mil *et al. Arthritis and Rheumatism*, 60(5), 1565.
<https://doi.org/10.1002/art.24497>