

COMPANY CAPITAL STRUCTURE'S THEORETICAL FRAMEWORK: HISTORICAL ASSESSMENT AND TRENDS IN THE 21ST CENTURY

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Abstract

Company capital is essential in running business and creating value added for the stakeholders, including economy. How the view on company's capital structure has evolved from theoretical perspective in the 20th century is needed to be assessed, in order to determine what concepts and theories, if any are relevant in the 21st century. Many theories have competed their way and transformed during the 20th century, while some, i.e. trade-off, signalling and stakeholder theories are still relevant in the 21st century. There are also new trends in the 21st century, new terms and quests shifting from determining and analysing optimal company's capital structure to sustainable finance, taxonomy and also sustainability in capital structure. Therefore, the aim of this research: to establish existing main theories impacting and analysing company's capital structure and to examine the theoretical shift of the theories based on the needs in the 21st century. Authors defined company's capital structure and determined that during the years 1989–2020, number of research publications has grown significantly, thus validating the need to reassess theoretical background of capital structure theories in the 20th century, as well as to help to determine the trends still relative and emerging from the theoretical and practical aspects to company's capital structure in the 21st century.

Key words: company capital structure, literature review, financial ratios, taxonomy, sustainability.

Introduction

In the 20th century, there has been a search to find an optimal company capital structure, as it is noted by S.C. Myers (1993). Capital is a tool, which is used in company to finance its assets and fund projects, which are beneficial and adding value to the company and also through the enterprise to the general economy. In other terms: capital is used in the company's business to generate income and profit. There is not much controversy in this statement, however, when looking at details, i.e. what composition of capital structure to have and what the capital structure is, if there is an ultimate optimal capital structure (Myers, 1993; Kraus & Litzenberger, 1973) for any firm, as well as whether taxes matter (Durand, 1952; Modigliani & Miller, 1958, 1959, 1963; Friedman, 1962, 1970), or whether agency/bankruptcy issues impact the way company chooses capital structure (Kraus & Litzenberger, 1973; Jensen & Meckling, 1976; Jensen, 1986) and when to attract funding (Demirguc-Kunt & Maksimovic, 1995; Baker & Wurgler, 2002), who the decision makers are (Friedman, 1962, 1970; Freeman, 1984, 2004; Donaldson & Preston, 1995) and what influences their decision to go with one or another type of capital (Donaldson, 1961; Myers & Majluf, 1984; Fama, 1970; Spence, 1973, 2002; Ross, 1977; Connelly *et al.*, 2011; Higgins, 1977), a variety of issues should be addressed. These are only some aspects of aforementioned topic, which researchers have already been discussing since the 20th century. How the view has changed is crucial in understanding what is still relevant and why in the 21st century in terms of company capital structure? Without capital no projects and company can exist and create added value for the economy. Theoretical development on how company capital structure has been viewed has

evolved significantly and more broadly during the 20th century and nowadays in the 21st century, there has been a shift to persistent view. In attempt to fully evaluate the subject, authors defined *the aim of this research*: to establish existing main theories impacting and analysing company's capital structure and to examine the theoretical shift of the theories based on the needs in the 21st century. Therefore, the following *tasks* were set: 1) to explain definition of the term company's 'capital structure' and assess its research topicality in 1989–2020; 2) to determine main capital structure historical theories and their developers in the 20th century; 3) to examine and define capital structure trends in the 21st century.

Materials and Methods

Authors have used scientific literature analysis and synthesis methods to perform the research and assessment of prevailing historical concepts of company capital structure theoretical framework and to establish trends in the 21st century. Capital structure in enterprises addresses the issues surrounding the choice of funding source, either it is debt or equity, the influencing parties in decision making and reasoning of the choice to use more debt or equity, as well as what conditions and assumptions impact that choice.

The research is organized as historical trend and theory review in first part, which follows with evaluation of most recent shifts in a company's capital structure analysis nowadays, which is creating a framework for further research topics in the future. Authors reviewed international scientific publications indexed in Scopus, Web of Science and other databases, performed a keyword search and analysis in the Web of Science database to establish the basis for this work and concept of company 'capital structure', focusing

on two main fields 'economics' and 'business finance' during years 1989–2020.

Limitations in this article is to evaluate capital structure from an enterprise perspective and its impacting components through the theory and previous researchers' publications to create a wide-ranging theoretical framework for company capital structure analysis further.

Authors chose to focus on available publication on historical company capital structure theories mainly from mid-20th century due to their availability up to the year 2020.

Results and Discussion

Company Capital Structure Composition: An Overview

When looking at the company capital structure, it is vital first to establish the definition of capital and its structure. Authors evaluated the capital structure from a company's perspective. Capital structure is found in each company's financial statements, namely the balance sheet: equity and liabilities part, and is presented in Figure 1.

Company's capital structure is formed based on 3 pillars: 1) first is equity, which is composed mainly of

shareholders' invested capital, representing book value of their shares and any premium if there is, reserves if any and retained earnings, that is known also as book value of the firm; 2) second pillar is borrowed sources or debt, which can come in various forms, most popular is either bank loans or issued bonds, for which interest is paid to the lender(s); 3) third source, which is less commonly discussed in classical capital structure literature is other liabilities, since the firm can be short-term financed based on the non-payment to accounts payables or on the extension of payment terms to the suppliers. According to authors: capital is a source for funding company's business to generate revenue in a sustainable way, it can be in a form either own (equity) or borrowed sources (debt), which have costs attached and may provide tax advantages.

For the scope of this research, authors mainly focus on evaluating first two sources of capital: equity and debt capital from theoretical perspective. There has already been for more than a century dilemma and also S.C. Myers (1993), emphasized that 'the optimal balance between debt and equity financing has been the central issue in corporate finance ever since Modigliani and Miller... Yet in practice it seems that financial leverage matters more than ever'.

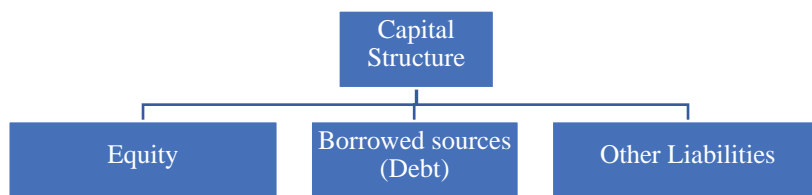


Figure 1. Company capital structure's main components.

Source: Author's designed.

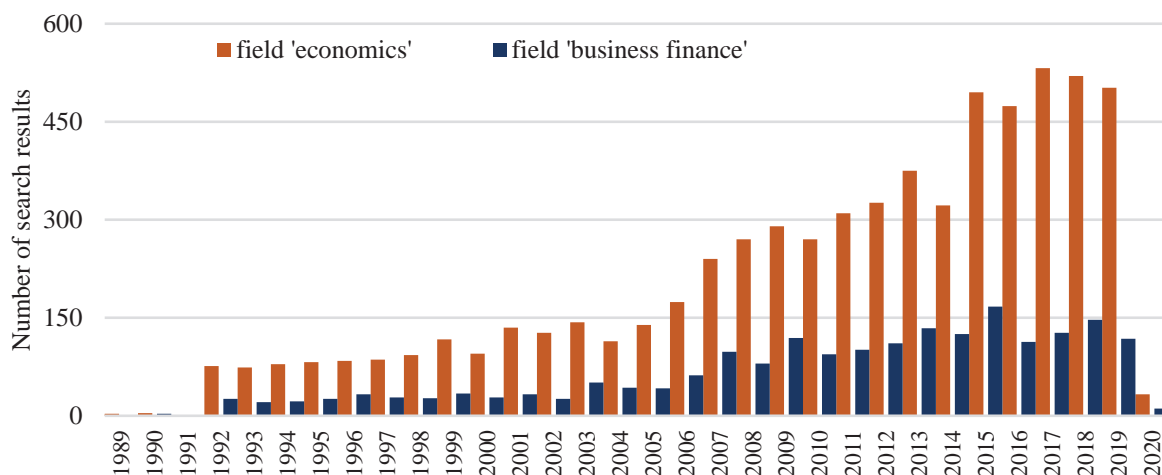


Figure 2. Keyword 'capital structure' in Web of Science database breakdown by main publication field in 1989–2020.

Source: Authors' compiled based on Web of Science database 1989–2020, created as of 22.02.2020.

While some authors, as R.G. King and R. Levine (1993) discussed, that capital impact has already been significant ‘in 1911 Joseph Schumpeter argued that the services provided by financial intermediaries—mobilizing savings, evaluating projects, managing risk, monitoring managers, and facilitating transactions are essential for technological innovation and economic development.’

The next question and task that authors put forward is an assessment of the topicality of the term ‘capital structure’ in scientific publications.

Thus, authors performed keyword ‘capital structure’ search in Web of Science database, and it can be observed that the number of publications in the field of economics are significantly more, almost 5 times exceeding number of scientific publications in the field ‘business finance’ (Figure 2). The prominent high number of research publications are to be found from the year 2015 up to 2019 in the field ‘economics’ on average 504 publications per year, and in the field ‘business finance’ 134, while high growth period was in the period 2005–2013, respectively where compound annual growth rate (CAGR) in the field of ‘economics’ was 12% and ‘business finance’ even more rapid 14% growth per annum was observed. In the last 5 years, the growth is smaller, while stable number of significantly almost four (field ‘economics’) or three (field ‘business finance’) times more scientific articles published per year when compared to the year 2005; thus, authors conclude that this topic has become more

researched and debated recently. This also corresponds to the authors’ view that capital structure is becoming more and more influential in the way companies run, and generate added value, while controversy as well exists, otherwise would not be so many publications in Web of Science in two most popular fields of more than 600 articles per year during each of last five years.

As authors mentioned earlier in this publication, this topic has already been reviewed from the beginning of the previous century, when online tools and access to the articles were mainly in the libraries. During more than 30 recent years (1989–2019), research publications are more indexed and available via web and accessible online from anywhere in the World. It also serves as one of the reasons of increasing popularity of the research in any topic, as well as international cooperation among scientists is becoming borderless. Several authors have tried to look from various perspectives and put forward multiple theories; how well these theories hold to the needs and necessities of the 21st century is yet to be determined. However, it is essential to understand various existing and developed company capital structure theories by historical scientific publications and research.

Historical Company Capital Structure Theories and Concepts

Authors attempted to compile main or most predominant capital structure theories from the previous century in Table 1.

Table 1

Capital Structure Theories and Concepts in the 20th Century

Theory name	Author(s), year, follow-up author(s)	Theory and concept overview
Net operating Income (NOI) and Net income (NI) theory	D. Durand (1952, 1959)	NOI: multiplying NOI with capitalization rate to obtain the value of the company, when subtract value of bonds. NOI includes interest. NI – same approach only NI is multiplied with determined capitalization rate. Income tax increases discrepancies between NOI and NI method, tax implication matters.
Modigliani and Miller (MM) theory	F. Modigliani, M.H. Miller (1958, 1963)	Initial publication (1958) is that taxes do not matter and capital structure itself is irrelevant to establish firm’s market value, later they publish (1963) correction that taxes do impact capital structure. Initial statement that cost of equity is not much higher than cost of debt financing, and that tax implications to the company’s market value are insignificant. In correction they acknowledge that tax advantages to debt financing are larger than they originally suggested. Their theory suggests to evaluate company’s value based on the assets they own or can be bought rather how they are financed, thus implying irrelevance of capital structure to determining enterprise’s value.
Pecking order theory	G. Donaldson (1961), S.C. Myers, N.S. Majluf (1984)	Theory is based on new project financing based on the cash flows and their timing, admitting that there is a risk associated with the debt. S.C. Myers and N.S. Majluf brought this topic further proving: if new projects are taken onboard that firms first prefer internal funds to debt.
Stockholder theory	M. Friedman (1962, 1970)	Stockholders select a businessman, who then decides how to use obtained capital of the company and taxes. Businessman is an agent for stockholders and has to improve their wealth and interests by any means. ‘Social responsibility’ is left to civil servants.

Theory name	Author(s), year, follow-up author(s)	Theory and concept overview
Market efficiency theory	E.F. Fama (1970)	Determined the definition: efficient market is one in which stock prices always reflect complete, available information. This is contrary to asymmetric information theory.
Signalling theory	M. Spence (1973, 2002), S.A. Ross (1977), B. Connelly et al. (2011)	Defines signalling: 'investors investment decision under uncertainty, as that of interpreting signals.' It is based on the available historical information in the market. The aim is to reduce existing information asymmetry between a signalling party and recipient or an interpreter of signal.
Trade-off theory	A. Kraus, R.H. Litzenberger (1973)	To optimize capital structure taking into account trade-off between debt tax advantage and bankruptcy penalties.
Agency and free cash flow theory	M.C. Jensen, W.H. Meckling (1976), M.C. Jensen (1986)	Agency problem: when there is a need to choose between paying out free cash flow to the shareholders as dividends or leaving it to the company and managers, who are paid to increase and grow the enterprise. This is particularly significant problem for a company with large free cash flows.
Debt capacity theory	R. Higgins (1977)	Determine the notion on how much debt a company can take on, search and define sustainable growth rate of an enterprise.
Stock market development and choice of financing theory	A. Demircuc-Kunt, V. Maksimovic (1995)	Determined that stock market development is negatively correlated with leverage in developed market, while positively correlated in developing markets. Stock market development in developing market results in higher debt to equity ratio for the firms.
Stakeholder theory	R.E. Freeman (1984, 2004), T. Donaldson, L.E Preston (1995)	Redefined stakeholder as 'any group or individual that can affect or is affected by the achievement of corporation purpose' – company's success depends on relationship between stakeholders and management. Further developed by T. Donaldson (1995).
Market timing of stock issuance theory	M. Baker, J. Wurgler (2002)	They summarized managers and company's decision, when to issue and repurchase stock: issue when managers believe it is overvalued and repurchase when it is undervalued by the market based on historical book values. This implies and focuses of market-to-book values impact on capital structure and correlates with historical market value of the firm.

Source: Authors created.

One of the first authors to look into company's capital structure and how it impacts enterprise's value in mid-20th century was D. Durand (1952), who looked at net operating income and net income, to establish company's value, using capitalization rate. Initially, D. Durand (1952) capital structure proposition based on NOI and NI was developed and published in 1952, where D. Durand focuses on maximizing income rather than investment value. At almost the same time only a few years later – in 1958 also prominent initial MM theory was announced. This created a controversy, which is also noted by S.C. Myers (1977), who was one of the first to refer to D. Durand as being one of the early critiques to MM theory. D. Durand (1959) commented on MM theory and via the same issue of the American Economic Review (AER) Vol. 49 (4) in 1959 also F. Modigliani and M.H. Miller (1959) issued a reply to his comment, as well as other authors debated on the issue there. Controversial issue was that initially MM theory put forward a notion that cost of capital, capital structure and tax implications are insignificant determining company's value, that is that enterprise value is not

affected by leverage, that the main emphasis on company's value is net assets that a company holds. Five years later F. Modigliani and M.H. Miller (1963), published a correction, where they acknowledged that tax implication has a larger effect on the leverage and debt than they thought before. Other proposition was that leverage enlarges the risk and impacts return to shareholders, which is also in line with D. Durand (1952), G. Donaldson (1961), S.C. Myers, N.S. Majluf (1984) findings. Following theory, established initially by G. Donaldson (1961) was the pecking order theory, which states that the company prefers its own funds over debt, acknowledging that there is a risk associated with the debt to the enterprise, and that new project financing is based on the availability of cash flows and their timing. This theory was later updated to the aforementioned definition by S.C. Myers, N.S. Majluf (1984), stating that when new projects are brought on board the company would prefer its own funds to debt. This theory actually hints also to another aspect, not mentioned before: information asymmetry theory, that some parties, in particular company managers have more information

about the enterprise, when compared to the investors or public in general. This notion is also underlying factor for other later developed theories, in particular developed by M. Baker and J. Wrugler (2002), who defined market timing of stock issuance theory, based on the existence of information asymmetry concept. In the meantime, other controversial aspect was popular in mid /late 20th century among researchers, was the notion that there is perfect information available and presented about company and is fully reflected in the stock market prices.

Aforementioned authors evaluated taxes, and importance or relevance of capital structure, while other researchers evaluated the topic from the view point who involved decision makers are and possible conflicts between them: some of most prominent were M. Friedman (1962, 1970) with stockholder theory, and R.E. Freeman (1984, 2004), where he expanded shareholder (stockholder) explanation to stakeholder's theory. This in turn, was further analysed also by T. Donaldson, L.E. Preston (1995).

R. Higgins (1977) attempted to assess on how much of one component 'debt' firm can take on, additionally trying to link the term to 'optimal growth', as explaining 'the optimal growth, therefore, it is not simply the outgrowth of accepting all average risk investment opportunities yielding a return above firm's cost of capital as conventionally calculated. Instead, management must explicitly consider the tradeoffs between more growth and some combination of leverage and less dividends'. His theory links to the trade-off theory developed by A. Kraus, R.H. Litzenberger (1973).

Other widely known researcher in the field of finance is E.F. Fama (1970), his efficient market theory, defined in 1970, states that stock market is in the way transparent and that stock prices reflect completely available information. This statement contradicts with other theory that is information asymmetry theory, where researchers M. Baker and J. Wrugler (2002) in their market timing of stock issuance theory claim that new stock will be issued when managers believe it is overvalued and repurchased when stock is undervalued. This implies that managers have more information than stock market has reflected. A. Demirguc-Kunt and V. Maksimovic (1995), took a step further to determine if the stock market development, which is company's choice going for equity or bond capital to the stock market, does impact whether the stock market analysed is in developed country or developing country. Since in the developing countries, where stock markets are less developed and banks have almost monopolized financing market, banking industry is fearful of stock market development and losing their monopoly status. A. Demirguc-Kunt and V. Maksimovic (1995), discovered two parallel,

though opposite trends: being that in the developed markets there is negative correlation between stock market development and leverage, if there is a positive correlation in developing markets, where more significant stock market development leads to enterprises' higher debt to equity ratios. They note that analysis of capital structure is done using companies' financial ratios, that is, for instance, debt to equity ratio. Their theory and analysis correspond to the previously developed signalling theory by M. Spence (1973). Signalling theory implies that investors interpret signals from available historical information, which is available in market, i.e. job market. Authors believe that financial ratios are perfect example of signalling theory, since calculated financial ratios is based for listed companies on their historical performance, while in the times of uncertainty, they are used as proxy for future results or trends. M. Spence (2002) evolved the theory further, that signalling theory is helping to reduce information asymmetry, which exists, 'the issue, of course, was that signals are not terribly complicated things in games where the parties have the same incentives, i.e., where there is a commonly understood desire to communicate accurate information to each other'. As B. Connelly et al. (2011) state in respect to information asymmetry 'some information is private, information asymmetries arise between those who hold that information and those who could potentially make better decisions if they had it'. Another historical theory which looks at financial ratios, is trade-off theory: according to G. Campbell and M. Rogers (2018) 'according to the static trade-off theory, companies should have a target leverage ratio which balances the benefits and costs of debt.' H. DeAngelo and R. Roll (2015) opened a new type of discussion in capital structure analysis focusing on ratios that 'capital structure stability is the exception, not the rule, occurs primarily at low leverage, and is virtually always temporary, with many firms abandoning low leverage during the post-war boom.'

Capital Structure Trends in the 21st Century

In section 2, authors discussed theories, which were developed mainly during the 20th century, leaping into the beginning of the 21st century. One of the recent trends in the 21st century is the usage of the term "sustainability" although this term was already mentioned by R. Higgins (1997) who was debating and attempted to calculate sustainable growth rate of the company. However, only at the beginning of the 21st century the term and topic on sustainability was getting voiced more and more. United Nations Environment Programme's (UNEP) role was increased at the United Nations (UN) Conference on Environment and Development, in 1992, where the emphasis was placed on promoting sustainable

development: 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Only last year the European Commission (EC) (2019) 'has welcomed today's political agreement between the European Parliament and the Council on the creation of the world's first-ever 'green list' – a classification system for sustainable economic activities, or taxonomy.' This also serves as a definition of term 'taxonomy' which is closely linked to 'sustainable finance'. Here, talks are about investment activities, while the question about sustainable company capital structure – has it yet embarked on the financial statements in the Nordic countries, which are considered more 'green thinking' when compared to the Baltic States? That's yet the question to resolve, but it is beyond the scope of this publication. There have already been authors in the 21st century taking into consideration sustainability and finance, while very limited research has been on empirical evidence of what that means for the companies and how and if there has been a shift towards sustainable company capital structure and what this term means. V.Cantino et al. (2017) were trying to link Environmental, Social, Governance (ESG) and financial capital structure, while looking at ESG impact on cost of equity and cost of debt and 'literature is unanimous on the positive effect that ESG factors have on the cost equity decline, so an increase of ESG activities affects a lowering cost of equity. Results show that the main reasons of its reduction can be ascribed to the asymmetric information decreasing'. They are not looking at the capital structure composition change or dynamics and interlinking drivers of capital structure formation besides cost of either equity or debt. Researchers M.P. Sharfama and C.S. Fernando (2008) state that 'if the firm makes 'greener' (i.e. more efficient) use of its resources, generating less pollution and waste from the resources employed, it will be more economically effective'. They analysed a sample of 267 U.S. companies in terms of leverage, cost of debt et al. they are one of the first ones trying to search and explain sustainability and link with capital structure and financials on empirical level. R.E. Freeman (1984) developed stakeholder theory is still topical, and according to R.E. Freeman et al. (2010), "stakeholder theory" or 'stakeholder thinking' has emerged as a new narrative to understand and remedy three interconnected business problems – the problem of understanding how value is created and traded, the problem of connecting ethics and capitalism, and the problem of helping managers think about management such that the first two problems are addressed'. They emphasized that has to be done from ethical and sustainable way of creating value.

Conclusions

Capital structure theoretical framework has been a dynamic concept with focus on searching for optimal company capital structure in the 20th century, while intending to cover, what it does or doesn't impact, with some famous researchers going head to head with each other, bringing out even better definitions and concepts, like F. Modigliani and M.H. Miller, S.C. Myers and T. Donaldson. Other scientists are looking at who the ones making decisions on capital structure are and who the ones impacted by it are, i.e. stockholder and stakeholder theories, while in the 21st century focus has remained on stakeholders.

In the meantime, there has emerged a new trend in company's capital structure and economy in general: the term taxonomy, which attempts to define and classify sustainable economic activities. Authors evaluate that this topic and trend is needed to be researched further on empirical level in the 21st century. The analysis is needed how it extends to the companies and their capital structure, if the company uses its finance and capital structure in a sustainable way while creating added value and how and whether it has already impacted its profits and returns. The other theory, which has remained topical during both centuries is signalling theory, where the ratios and indicators, which can signal of the state, where the company is in the investment and finance universe and to be comparable over historical period. This theory can highlight changes based on the signals interpreted on what to expect in terms of taxonomy and what direction company's capital structure is changing. Further research needs to be done in terms of extended empirical analysis to evaluate how signals and stakeholders within companies and regions are moving towards sustainability in terms of capital structure and finances in creating value.

This topic is crucial for global institutions setting the rules for sustainability, as well as local policy makers, who then need to implement it and companies who are directly impacted by those decisions. Nevertheless, researchers and academia could benefit from the future analysis and theoretical evaluation how empirical results correspond to existing theories and how these theories are evolving, and what trends are emerging.

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