

St. Petersburg University
Graduate School of Management
Master in Management Program

**Shareholder activism and company's capital structure: analysis of
relationship**

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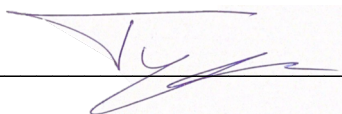
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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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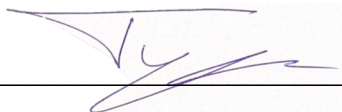
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ABSTRACT

Master Student's Name	Gurevich Evgeny
Master Thesis Title	Shareholder activism and company's capital structure: analysis of relationship
Academic Advisor's Name	Yulia B. Ilina
Description of the goal, tasks and main results of the research	<p>As practice shows, more and more investors apply such investment strategy as shareholder activism. The main goal of shareholder activism is to maximize return on investment. Activism of hedge funds is the most aggressive and effective. Practice shows that hedge funds, choosing the strategy of shareholder activism, implement it through tactics aimed at changing the capital structure of target companies.</p> <p>The purpose of this study is to establish the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the targeted company.</p> <p>To achieve this goal, the following tasks were set and solved:</p> <ol style="list-style-type: none">1. To introduce the concept of shareholder activism strategy, to highlight the peculiarities of shareholder activism by hedge funds and to present a review of modern scientific literature on the topic;2. To provide a literature review devoted to the capital structure of the company, the question of its optimality and to analyze the preferences of activist hedge funds when choosing the target based on the capital structure of the company;3. To conduct an empirical research aimed at identifying the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the targeted company;

	<p>4. To analyze the results of the econometric study, draw conclusions and provide managerial practical recommendations.</p> <p>The results of the empirical econometric study show that the targets of hedge funds' active investment strategies are more likely to be companies in which the current market leverage exceeds the target leverage. It was found that for target companies with excess leverage there is a direct relationship between the probability of shareholder activism by hedge funds and the absolute value of the deviation of the current market leverage from the target. For target companies with insufficient debt financing there is an inverse relationship between the probability of shareholder activism by hedge funds and the absolute value of the deviation of the current market leverage from the target. Based on the results of the empirical study, practical recommendations were formulated for both hedge funds and target companies. Company management will be able to act proactively if there are concerns that their company may be targeted by activist hedge funds. Hedge funds can identify the most attractive targets for a shareholder activism strategy.</p>
Keywords	Shareholder activism, Company's capital structure, Hedge funds, Target capital structure

АННОТАЦИЯ

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Описание цели, задач и основных результатов исследования	<p>Как показывает практика, все больше инвесторов применяют такую инвестиционную стратегию, как акционерный активизм. Основной целью акционерного активизма является максимизация прибыли на инвестиции. Активизм хедж-фондов является наиболее агрессивным и эффективным. Практика показывает, что хедж-фонды, выбирая стратегию акционерного активизма, реализуют её через тактику, направленную на изменение структуры капитала таргетируемых компаний.</p> <p>Цель данного исследования заключается в том, чтобы установить взаимосвязь между вероятностью выбора стратегии акционерного активизма хедж-фондами и структурой капитала таргетируемой компании.</p> <p>Для достижения данной цели были сформулированы и решены следующие задачи:</p> <ol style="list-style-type: none">1. Ввести понятие стратегии акционерного активизма, осветить особенности проявления акционерного активизма хедж-фондами и представить обзор современной научной литературы по данной теме;2. Представить обзор исследований, посвященных структуре капитала компании, вопросу ее оптимальности и предпочтений активистских хедж-фондов при выборе таргета исходя из структуры капитала компании;3. Провести эмпирическое исследование, направленное на выявление взаимосвязи между вероятностью выбора стратегии акционерного активизма хедж-фондами и структурой капитала таргетируемой компании;4. Проанализировать полученные результаты эконометрического исследования, сделать выводы и предоставить практические

	<p>рекомендации.</p> <p>Результаты эмпирического эконометрического исследования показывают, что объектами активных инвестиционных стратегий хедж фондов с большей вероятностью становятся компании, в которых текущий рыночный левередж превышает целевой. Было установлено, что для таргетируемых компаний с избыточным заёмным финансированием имеет место прямая взаимосвязь между вероятностью проявления акционерного активизма хедж-фондами и абсолютным значением отклонения текущего рыночного левереджа от целевого. Для таргетируемых компаний с недостаточным заёмным финансированием имеет место обратная взаимосвязь между вероятностью проявления акционерного активизма хедж-фондами и абсолютным значением отклонения текущего рыночного левереджа от целевого. Основываясь на полученных результатах эмпирического исследования, были сформулированы практические рекомендации как для хедж-фондов, так и для таргетируемых компаний. Менеджмент компаний сможет осуществлять проактивные действия в том случае, если имеются опасения, что их компания может стать целью хедж фондов активистов. Хедж-фонды могут определять наиболее привлекательные цели для реализации стратегии акционерного активизма.</p>
<p>Ключевые слова</p>	<p>Акционерный активизм, Структура капитала компании, Хедж-фонды, Целевая структура капитала</p>

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INTRODUCTION

Shareholder activism is one of the most effective investment strategies. The main goal of shareholder activism is to maximize return on investment (The Economist, February 15, 2018). This strategy involves investors acquiring a stake in a company and then taking various actions to change the company's tendencies of development. The most common tactics taken by activist shareholders in targeted companies are: promoting their candidate to the company's board of directors, changing top management, private negotiations with company executives, pressure on companies through the media, "proxy fighting" (the right to vote at general meetings on behalf of other shareholders), maximizing company performance, in particular by changing the capital structure. Exactly, the sub-optimal capital structure of the target firm is the reason for the ineffective performance of the company, according to many activist shareholders (Ganguly, Ge, 2018).

There are many publications that examine both the shareholder activism strategy itself and its implementation by various institutional investors. Large institutional investors, such as hedge funds, pension funds, mutual funds, and private equity funds, have much more potential to exploit shareholder activism than do individual investors. This trend is mainly due to the enormous financial resources held by these types of funds and their significant impact on global economic growth. As practice shows, hedge fund activism is the most aggressive type of activism, as well as the most powerful and effective due to the special regulatory conditions provided at the legislative level (deHaan et al., 2019; Togan Eđrican, 2022). For example, in the U.S.: hedge funds can afford to hold more than 10% of any company's equity and can invest more than 5% of their total capital in any stock market asset, also they are permitted to invest in illiquid assets. Therefore, the primary focus of this study is the manifestation of shareholder activism by hedge funds in relation to U.S. public companies.

A number of relevant studies (Brav et al., 2008; Brav et al., 2015; Coffee et al., 2016; Denes et al., 2017) argue that activist hedge funds have used tactics aimed at changing the capital structure in a fairly large number of target companies. A legitimate question arises: What kind of public companies do activist hedge funds target, in particular what share of borrowed funds in total company capital and how different it is from the target market capital structure?

In order to answer this question in this master thesis a study was conducted, the purpose of which was to establish the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the targeted company.

To achieve this goal, the following tasks were set and solved:

1. To introduce the concept of shareholder activism strategy, to highlight the peculiarities of shareholder activism by hedge funds and to present a review of modern scientific literature on the topic;
2. To provide a literature review devoted to the capital structure of the company, the question of its optimality and to analyze the preferences of activist hedge funds when choosing the target based on the capital structure of the company;
3. To conduct an empirical research aimed at identifying the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the targeted company;
4. To analyze the results of the econometric study, draw conclusions and provide managerial practical recommendations.

The object of this study is hedge fund and the subject of the paper is shareholder activism.

This master's thesis consists of an introduction, three chapters, a conclusion, a list of used sources and appendices. The first chapter is devoted to the study of the main approaches to the definition of shareholder activism strategy, as well as the analysis of the specifics of hedge fund activity as an institutional investor. This chapter introduces the concept and definition of hedge fund and considers its main characteristics and features: typical structure and legal form, peculiarities of depositors' investments management, specifics of top management's motivation policy. In addition, the first chapter of the paper considers the peculiarities of the manifestation of shareholder activism strategy by hedge funds. The second chapter of the research is devoted to the study of theoretical foundations of company's capital structure. It presents the analysis of classical and new theories of company's capital structure, considers different views concerning the existence of optimal capital structure. The concept of target capital structure was also introduced. The third chapter is devoted to the description of the empirical research aimed at revealing the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the company, which became the object of investment of this type of funds. It describes all the stages of the empirical research: formulation of hypotheses, research methodology, description of the sample and descriptive statistics of the variables, analysis of the results and formulation of managerial practical implications.

The empirical study is based on collected data on 135 deals in which hedge funds acquired equity stakes in U.S. public companies between 2008 and 2016. All necessary data on

the financial performance of target companies and data to confirm shareholder activism cases were obtained from the following sources:

- ZEPHYR Bureau van Dijk database;
- SEC EDGAR (Electronic Data Gathering Analysis, and Retrieval system) database;
- Thomson Reuters Eikon database;
- Annual reports and official websites of the companies.

In addition, academic publications included in the databases SCOPUS, Web of Science, EBSCO, Elsevier eBooks, Emerald and in open information portals, were used. Thus, the list of sources of literature consists of 107 English-language academic papers.

The main results of this master's thesis contribute to the study of a new and relevant topic on the relationship of shareholder activism and capital structure of the company. The conclusions of this study can be useful for the management both of hedge funds and of companies that become their investment targets.

CHAPTER 1. SHAREHOLDER ACTIVISM OF HEDGE FUNDS

Since studies of shareholder activism that include the activities of all types of investors typically produce contradictory results, it became necessary to choose one type of active investor as an example for analyzing the relationship between equity activism and the capital structure of the target companies. Due to the fact that hedge funds, as institutional investors, have greater financial resources than individual investors to pursue a shareholder activism strategy and, due to their characteristics, are the most aggressive active investors among institutional investors, it was decided to focus this paper on them. This study, therefore, focuses on US hedge funds that have undertaken an equity activism strategy when acquiring a particular number of shares in US public firms. First, it is vital to comprehend hedge funds as institutional investors in greater depth and to identify their unique characteristics. In addition, it is necessary to define the concept of shareholder activism and examine the various strategies employed by hedge funds to implement this approach.

1.1. Hedge funds

1.1.1. Hedge fund: concept and definition

Numerous studies on hedge funds and their characteristics have been conducted to date, but experts have yet to agree on a single definition for hedge funds. The author of the paper (Briggs, 2006) emphasizes that there is no legal or widely recognized definition of a hedge fund. In his research, he proposes defining a hedge fund as any private entity that purchases securities or other assets using depositor funds and is not registered as a different sort of mutual fund.

The article (Klein, Zur, 2011) provides one of the most straightforward definitions: a hedge fund is a financial investment institution immune from regulation owing to its unique characteristics. This benefit is assured by the composition of the fund's members, as only a restricted number of investors are permitted and they must all have substantial investment expertise.

Numerous similarities between hedge funds and private equity funds (PE funds) have been identified by researchers. However, an important distinction between both sorts of institutional investors is frequently emphasized, and that is the nature of their investments. While hedge funds invest mostly in public firms, private equity funds invest primarily in smaller private enterprises (Bratton, McCahery, 2015). This statement may be considered accurate, although the divide has been less obvious in recent years, as private equity firms in the United States increasingly invest in publicly traded U.S. companies.

The writers of (Brav et al., 2008; Partnoy, 2015) note that there is no universally accepted definition of a hedge fund. Moreover, legislation does not define "hedge fund." However, the authors find four criteria that are widely used to identify hedge funds among other investors:

1. They are grouped into private, closed investor pools whose purpose is to benefit depositors' money;
2. They are managed by professional investment teams whose compensation is based on their financial performance at the end of the year;
3. They are not widely available to the general public;
4. Their investment activities are not governed by any stock market legislation.

The US Securities and Exchange Commission (SEC) has identified fourteen alternative definitions of a hedge fund, however the most accurate of these definitions is the one that describes the main features of these funds (Vaughan, Dechert, 2003):

1. Are private investment vehicles or offshore investment firms;
2. Employ a variety of investing methods;
3. Rely on short selling, investments in derivative instruments, and leverage in the majority of cases;
4. Pay their managers depending on the annual financial performance of the fund;
5. The investor base is comprised of affluent individuals and other institutions, and the typical minimum investment amount is \$100,000 or more.

In my opinion, AQR Capital Management¹ hedge fund co-founder gives one of the most appropriate definitions of hedge funds (Asness, 2004):

“Hedge funds are investment pools that are relatively unrestricted in what they do. They are relatively unregulated (at the moment), charge very high fees, don't necessarily give you your money back when you want it, and generally won't tell you what they do. They are supposed to make money all the time, but when they fail at it, investors abandon their services and go to someone else who has recently made money. They are usually aimed at rich people and their headquarters are in Geneva (Switzerland) or Greenwich (Connecticut)”.

¹ One of the pioneering hedge funds that today manages very large investor funds

1.1.2. Active management

Active management is a characteristic shared by most hedge funds. Actively managed funds are based on the premise that the manager has the opportunity to earn additional revenue regardless of general market conditions (Mallaby, 2010). The consequence is that managers reject the efficient market hypothesis², at least in its most extreme forms. By investing in hedge funds, you are placing a wager on the managers' ability to identify and benefit from market inefficiencies (Ilmanen et al., 2017).

1.1.3. Hedge fund structure

In the majority of cases, hedge funds are structured as limited partnerships (Dixon et al., 2012; Aragon, 2019). The structure is pretty straightforward; the fund has a general partner who is also the fund's manager. The fund's investors are limited partners who sign a limited partnership agreement with the general partner. The hedge fund receives capital inputs from both general partners and limited partners. As the general partner manages the hedge fund, he has limitless accountability for its activities. Frequently, the general partner is a limited liability business, which serves to mitigate investment risks. The general partner typically earns a management fee of 1-2% of assets used to cover operational expenses and 20% of the hedge fund's annual profit. It is important to note that investor partners have no control over the hedge fund's investment decisions, so their risks are essentially limited to the amount they are prepared to invest in the fund.

The limited partnership agreement also specifies terms such as the hurdle rate or "high water mark" in addition to the fund managers' compensation structure. The hurdle rate is the minimal rate of return on a fund's investments above which fund managers are eligible to receive performance fees. If the investment returns fall below the hurdle rate, the fund managers receive no performance fee.

This is how the high water mark operates: If the investment value of a fund falls during the time used to calculate compensation, the compensation will be reduced proportionally. If performance fees are given to fund managers, they will only be paid if the current value exceeds the highest investment value reached by the fund in one of the preceding periods. In the present time, for instance, the value of the fund's investments was \$40 million. In prior periods, the fund's maximum investment value for the period was \$70 million. Therefore, the high water

² The Efficient Market Hypothesis (EMH) is a hypothesis in financial economics, which states that asset prices reflect all available information. The direct implication is that it is not possible to consistently "beat the market" on the basis of risk because market prices need only respond to new information (Malkiel, Fama, 1970).

mark for the current period is \$70 million, and as the fund's investment value is below the high water mark, no performance fee is due.

It is also worth illustrating the organizational structure of a typical US hedge fund, as they are one of the key objects of the study (Fig. 1):

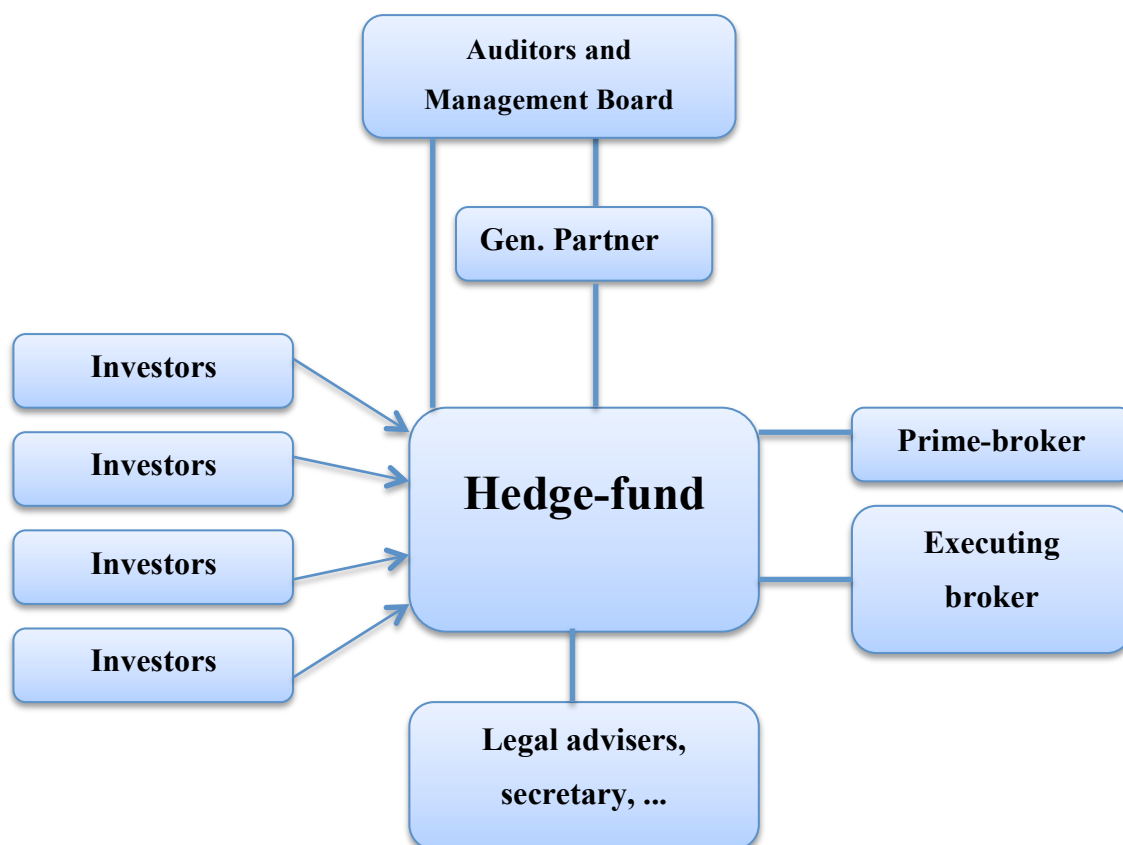


Fig. 1. *Typical organizational structure of a hedge fund*

Source: Compiled by the author of the paper

In addition, it is vital to highlight the key elements of the agreement between the contributing partners and the general partner (Lhabitant, 2007):

- The contract always includes the "terms of subscription", which specify the time period during which the investing partners may participate in the hedge fund;
- The contract also includes a "lock-up period," during which the investor may not withdraw funds from the fund. The lock-up term is typically between six months and one year, but can vary in rare circumstances;
- In addition, the contract contains the "terms of redemption," which govern when and under what conditions the investment partners can withdraw their money from the fund. Generally, depositing partners are permitted to redeem their

savings at the end of each quarter, however the terms vary. For instance, hedge fund investors whose funds are invested in illiquid securities are subject to more flexible withdrawal terms. In addition, hedge funds sometimes impose fines on investors who withdraw cash early than authorized.

The majority of hedge funds are immune from SEC oversight under Subparagraph D of the Securities Exchange Act of 1933. However, because the majority of fund managers in the United States are registered investment advisors, they are subject to the applicable regulations. Typically, hedge funds are structured as "3 (c) (1)" or "3 (c) (7)" entities.

- - "3 (c) (1)" - are restricted to a maximum of 100 accredited investors. Regulation D of the Securities Act of 1933 defines an accredited investor as "any individual whose individual income or joint income with that individual's spouse at the time of entry into the investment association exceeds \$1,000,000" or "any individual who has had individual income exceeding \$200,000 in the last two years or joint income with that individual's spouse exceeding \$300,000 in the same period, and there is a reasonable expectation of achieving the same level of income in the current year." Investors who wish to invest in hedge funds and are ready to pay management fees to professional investment advisors must have at least \$1.5 million in liquid assets or invest at least \$750,000 with the assistance of an investment consultant.
- "3 (c) (7)" - Funds may have as many as 500 investors, but each must be a "qualified purchaser." A qualified purchaser is a person who has previously invested at least \$5 million or a business that owns or manages at least \$25 million in investments.

1.1.4. Absolute income

Since hedge funds are "actively" managed, they are capable of generating additional income unrelated to market fluctuations. This was the underlying concept of the earliest hedge funds, whose primary objective was to hedge market risk and seek absolute profits. As hedge funds strive to create positive returns regardless of market volatility in the pricing of various financial instruments, one of their characteristic are absolute returns that are independent of market circumstances.

Researcher (Stulz, 2007) mentions the famous demise of Long-Term Capital Management (LTCM) as an illustration of a hedging strategy that preserved absolute returns. This hedge fund employed an absolute return strategy and exhibited significant financial

leverage. In 1998, the collapse of LTCM nearly brought down the global financial system. LTCM specialized in identifying mispriced bonds on the market. The hedge fund would then sell overpriced bonds while hedging against interest rate risk and other relevant risk factors. It was believed that the profits from such trades would depend solely on the subsequent correction of the inaccurate bond price and not on other market conditions. Many hedge funds still chase absolute returns in the present day. For other hedge funds, however, it is too costly to hedge their holdings, therefore they abandon this technique. In addition, all hedge fund holdings cannot be hedged.

1.1.5. Limited access to capital

The majority of investors in mutual funds can withdraw their capital on a daily basis. In contrast, hedge fund investors do not have this choice since their investments are subject to withdrawal restrictions. The majority of hedge funds permit monthly or quarterly cash withdrawals. The enormous risk hedge funds assume when they take short bets is the primary rationale for limiting their access to cash (Ang, Longstaff, 2013). Investors should view restricted access to capital as a value comparable to that, which occurs in financial transactions involving option contracts (Ilmanen et al., 2017).

1.1.6. Borrowed funds and derivatives

A distinguishing feature of hedge funds is that they employ a wide variety of investing techniques. Utilizing leverage and derivatives is a frequent hedge fund investing technique (Ang, Longstaff, 2013). Hedge funds only employ leverage when doing so is lucrative. Without leverage, hedge funds would never be able to produce larger returns on their holdings (Ang et al., 2011).

A significant amount of a hedge fund's cash is comprised of investments in derivatives. Derivatives may both decrease and raise the riskiness of an investment, depending on its intended use. The fact that 71% of hedge funds engage in derivatives trading demonstrates their tendency to adopt this investing approach (Chen, 2011).

1.1.7. Investors of hedge funds

Some restrictions on hedge fund investors have already been mentioned earlier. Accordingly, not everyone can invest in a hedge fund due to legal restrictions on hedge fund investors. Typically, hedge fund investors are high net worth individuals. The purpose of investing large capitals into a hedge fund is to protect it and obtain an acceptable return.

Large-cap investors dominate hedge funds for the following reasons (Lhabitant, 2007):

- The legal and organizational framework of the hedge fund, which places constraints on the number of investors. This often results in an initial investment level that surpasses \$250,000 on average.
- The relative complexity of hedge fund investing techniques;
- Only "accredited" and "qualified" individuals are permitted to invest in the fund.

Nonetheless, hedge fund investment partners may also be pension funds, endowment funds, insurance firms, and banks in addition to individuals. Such investment partners are currently the major contributors to hedge funds. According to the data collected in the study paper (Dixon et al., 2012), between seventy-five and eighty percent of the money pouring into hedge funds is invested by institutional investors. In addition, (Preqin, 2011) estimates that institutional investors controlled 61% of hedge funds' assets.

1.2. Shareholder activism

1.2.1. Fundamentals of a shareholder activism strategy

In the early 21st century, shareholder activism gained great popularity in the United States. Individual investors have less opportunity to exert influence on firms compared to institutional investors; hence institutional investors are more likely to utilize this method. However, individual investors have also utilized this strategy to take a proactive approach towards the company (Rehbein et al., 2004). Notably, insurance firms and banks in the United States were among the first to employ the equity activism tactic.

First, we must comprehend the meaning of shareholder activism as well as the primary methods inherent to this strategy. Due to the increased popularity of shareholder activism strategies, there has been an abundance of recent research on this subject, which has analyzed the possible tactics for implementing shareholder activism as well as the primary motivations that drive shareholders to take a proactive stance toward companies. Furthermore, organizations that are targeted by activists must understand the tactics activists may employ and the objectives they seek.

Since the early 1980s, the equity stakes of several investment funds, investment companies, bank trust departments, and pension funds have expanded considerably. The authors (Sias, Starks, 1998) indicate in their article that the stake of these institutions in the equity of US public businesses climbed from 24,2% in 1980 to 50% by the end of 1994. This reason prompted an upsurge in research interest of shareholder activism techniques, as institutional investors began to employ this method aggressively.

Emerging conflicts between managers and shareholders, often known as the agent-principal dilemma, are the primary cause for the need of shareholder activism. When shareholders determine that the company's internal governance processes are ineffective, they take an active investor position (Gillan, Straks, 2009). Therefore, the shareholders of the corporation must initiate an activism campaign to change the inappropriate management strategies.

(Karpoff, 2001) was among the earliest academics to identify shareholder activism. His perspective is that shareholder activism manifests itself in two ways:

1. A proposal delivered at an annual shareholders' meeting;
2. Private negotiations with the organization's management.

In addition, these two types of investor activism are not mutually exclusive and are frequently employed together. Typically, shareholder initiatives in the United States are submitted in accordance with SEC Rule 14a-8, which permits shareholders to add a 500-word proposal for a business change at the general meeting.

In their study, (Cocks et al., 2010) defined shareholder activism as the use of share ownership to actively influence the policies and operations of a firm.

The authors (Gillan, Starks, 2009) remark in their article that shareholders who are dissatisfied with any corporate practice of a firm in which they have invested have two alternatives. The first alternative is to take no action, and these stockholders are referred to passive. The second alternative is to voice discontentment. The authors believe that shareholders might express disapproval in one of two primary scenarios. First, shareholders can sell their shares, and this option should not be underestimated, since the possibility of a CEO's resignation typically increases significantly when a business sells a large number of its shares. Second, firm shareholders can express their dissatisfaction in a variety of ways and attempt to convince the company's management to make the necessary changes to their management activities. Thus, the authors view actions such as selling shares and expressing dissent as active, as in both cases the investors are trying to bring about changes in the management of the company. At the time of this study, the authors had updated the information, and it turned out that institutional investors held more than 70% of shares in US corporations in 2007. In addition, primary motivations for investors to be shareholder activists are as follows:

- A change in the company's management strategy;
- A change in the decision of the Board of Directors;

- The need to put "one of your own" on the Board of Directors;
- Forcing the purchase or sale of a company/subsidiary structure;
- Change of dividend policy.

In their study (Klein, Zur, 2009) define shareholder activism as the purchase of a minimum of 5% stake in a public company with the goal of implementing specific changes to its business operations and obtaining a return on investment. Since the study is more recent than the previously examined research, it possesses the following characteristic: the authors distinguish two types of activism. The first is entrepreneurial activism, which is undertaken by financial market participants such as wealthy investors, private equity firms, venture capital groups, and asset management organizations. The second form of equity activism is conducted by hedge funds. The particular distinctions between the two forms of equity activism will be examined later; for now, it is important to emphasize the similarities.

The start of an activist campaign defined as the filing of an initial SC 13D form with the SEC (US Securities and Exchange Commission), in which the activist is clearly required to state the purpose of buying shares in a public company (Klein, Zur, 2009). The Form 13D is to be completed by all investors who directly or indirectly acquire at least 5% of the shares of a public US company. This form also contains information about the investor's intention to influence the target company's development strategy. Among the main purposes of acquiring shares by activists, researchers identify:

- Changing the composition of the board of directors;
- Opposing a merger, sale or liquidation of the firm;
- Introducing strategic change in the firm's operations;
- Replacing the firm's CEO;
- Changing the firm's dividend policy;
- Changing the remuneration of the firm's management.

In (Gantchev, 2013) shareholder activism is presented as a sequential process of several steps taking into account specifics of the US market. The author believes that the definition of shareholder activism as actions taken by shareholders to implement changes within a company without altering the balance of power between shareholders describes the range of possible actions of hedge fund activists, but does not consider activism to be a decision-making process with a consistent set of tactics. This is how the author explains such a process: An activist campaign begins with a declaration of intent to make changes to the company, which is usually

documented on Schedule 13D when at least 5% of the shares are acquired. Shortly after completing Schedule 13D, the investor formally notifies the target firm's management of its proposed changes (e.g., selling the company, restructuring inefficient operations, executing a share buyout), marking the beginning of the activism process - the proposal for discussion (demand negotiations). If the investor is unable to have its proposed changes discussed, it can either end its campaign or seek a position on the board. This second stage starts with a formal request for the investor to suggest board candidates. In the event of failure, the investor may threaten a proxy fight³ (stage three). At the fourth stage, the investor begins to persuade other shareholders to grant it proxy-voting rights, i.e. it begins a proxy fight. Thus, (Gantchev, 2013) proposes a dynamic definition of shareholder activism, wherein the activist shareholder chooses more aggressive methods only after a less confrontational strategy has failed. The figure below provides a graphical representation of the concept (Fig. 2).

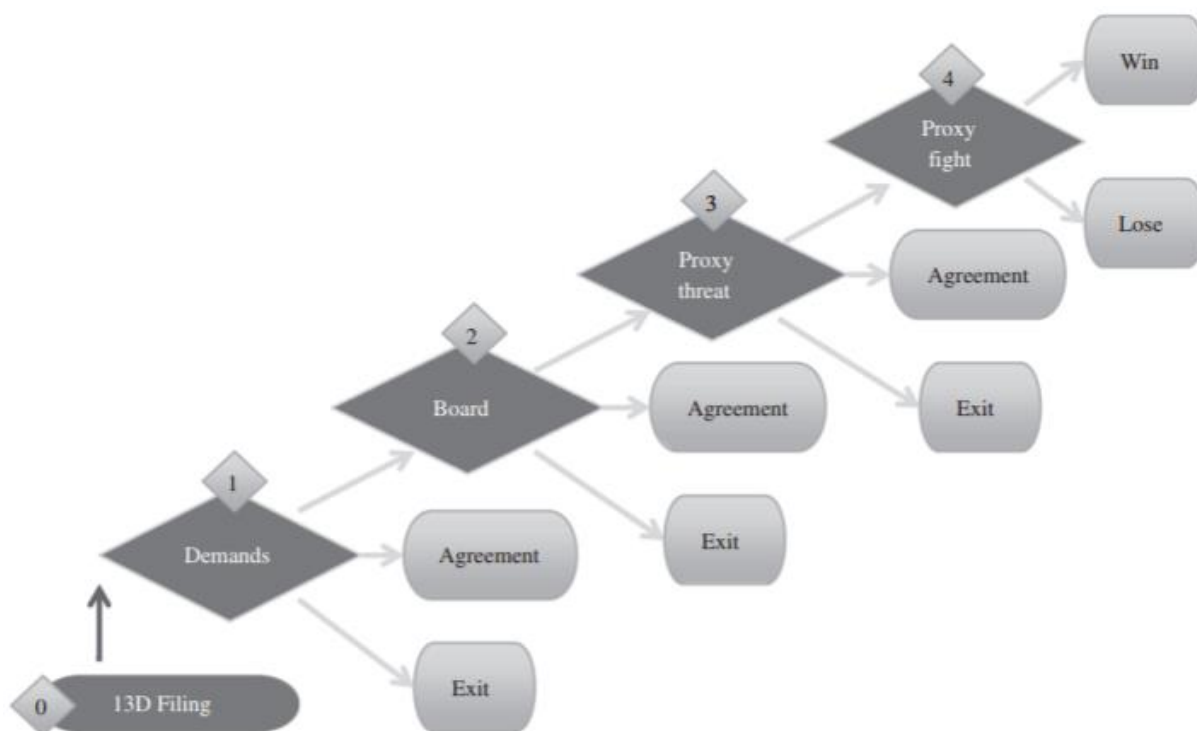


Fig. 2. *A dynamic representation of shareholder activism strategy*

Source: Gantchev, 2013.

1.2.2. Features of hedge fund shareholder activism

This section will focus on a subset of activists, specifically hedge funds. Previously, the concept of a hedge fund was established and its distinguishing characteristics were emphasized.

³ Proxy fighting - i.e. persuading other shareholders to vote on their behalf, thereby accumulating a majority of votes in "their hands"

Due to the fact that hedge funds gained popularity considerably later than other institutional investors, they were not studied in the context of shareholder activism until the middle of the 2000s. To date, however, hedge fund shareholder activism remains an appealing study topic, and a substantial body of literature has gathered on the subject. Therefore, the following discussion will concentrate on hedge fund shareholder activism in the United States.

Since the beginning of the 21st century, the hedge fund business has experienced significant expansion. A total of \$1 trillion was invested in hedge funds by various investors in 2006, and the number of hedge funds climbed from 5,000 in 2002 to 8,000 by the end of 2005 (Kahan, Rock, 2017)

The shareholder activism method employed by hedge funds, according to the authors (Klein, Zur, 2011), resembles the purchase of a small stake in a publicly listed business with the purpose of influencing the company's policy. The purchase of a 5% stake in a publicly listed business requires investors to complete a SC 13D form, which states the investor's identification, the target firm, the stake to be bought, and the purpose of the purchase. In addition, based on an analysis of several such forms, the authors identify some of the primary motives of hedge funds when investing in publicly traded companies:

- The desire to promote their nominee to the board of directors of the target firm;
- Opposition to a merger/acquisition/liquidation of companies;
- Replacing the CEO of the target company.

The shareholder activism of hedge funds is more effective than that of other institutional investors for three primary reasons (Klein, Zur, 2011). First, unlike other mutual funds, hedge funds are free from portfolio diversification regulations. Hedge funds can afford to hold more than 10% of any company's equity and can invest more than 5% of their total capital in any stock market asset. In addition, hedge funds are not required to maintain reserves to support redemptions, and they may restrict investors' ability to depart the fund. Additionally, they are permitted to invest in illiquid assets. All of these reasons make it possible for hedge funds to invest extensively in a wide range of publicly listed assets without limits.

Second, because hedge funds are not registered under the Investment Company Act of 1940, their investment methods including the use of short sales and leverage are unrestricted. Moreover, they are not obligated to disclose information on their assets, investing strategy, or capital structure. As a result of these exclusions, hedge funds can obtain voting rights through securities lending or derivatives markets without owning a long stake in a company's shares. As

it turns out, hedge funds employ this strategy to maintain a perception of an immediate threat in the form of a proxy fight.

Thirdly, there are no constraints on performance-based fees for hedge fund managers. The compensation of a hedge fund manager normally consists of a percentage of the capital invested in the fund as well as a percentage of the fund's returns (between 5% and 40%). Thus, hedge fund managers have a substantial personal incentive to earn excess profits through effective activist campaigns.

The primary distinction between active investment campaigns by hedge funds is the investment targets. Frequently, hedge funds aim their aggressive efforts toward more profitable, financially healthy businesses with substantial free cash flow. Their additional objective is to solve the agency problem by using the cash excess on the company's books to initiate dividend payments and share buybacks. Other institutional investors, on the other hand, target underperforming firms and solve the agency problem by altering management practices or decreasing the incentive compensation of target company managers (Klein, Zur, 2009).

The article (Gillan, Starks, 2009) also briefly addressed shareholder activism of hedge funds. When characterizing this specific field, they did not adjust their definition of activism in any way, but rather concentrated on particular motivations and strategies. In their perspective, the primary objectives of activist campaigns by hedge funds were as follows:

- Changing management practices and board decisions;
- Promoting their nominee to the Board of Directors;
- Changing dividend policy or commencing share buybacks;
- Forcing a merger/acquisition.

The authors also noted that activist hedge funds use two types of tactics: classic and specific. All activist shareholders employ standard strategies, including those stated in the study:

- Formal offers at shareholder meetings;
- Private negotiations;
- Media announcements.

The list of specific strategies includes the following:

- Proxy fight;
- Litigation;

- Hostile takeover.

According to (Kahan and Rock, 2017), hedge funds are becoming one of the most dynamic and influential shareholder activists. Consequently, hedge funds can address the agency costs faced by public corporations by dismissing ineffective management or contesting dubious strategies. Thus, hedge funds can benefit the firms in which they invest. The authors investigate hedge fund activism from two different perspectives: corporate governance activism and corporate control activism. The authors define hedge fund activism in the context of corporate governance as acts that impact a company's business strategy and management. This sort of activism can take a variety of forms, including public pressure on the corporation to alter its business plan, board rearrangement, and lawsuits with current and former managers. The authors use a battle between a hedge fund, Third Point, and an energy business, Star Gas Partners, in which Third Point owned a 6% investment, as an example of corporate governance activism. The hedge fund's managers openly condemned the then-CEO Irik Sevin's handling of the firm through the press. These methods were successful, and Sevin quit. The authors also provide examples of hedge fund activism in corporate governance, including: Wendy's, where Trian Partners won board seats and attempted to unseat some business lines; Heinz, where Trian nominated five board members; Pep Boys - Manny, Moe & Jack, where Barington convinced the company to sell itself or replace the CEO; and Delphi Corp., where Appaloosa Management attempted to obtain board seats.

Regarding corporate control activism, the authors (Kahan and Rock, 2017) classify this type of activity into three types. First, as shareholders of the acquiring firm, hedge funds may attempt to block an acquisition decision. The conflict between Carl Icahn's hedge fund and Mylan Laboratories' management over the acquisition of King Pharmaceuticals is an illustration of such a circumstance. Second, as shareholders of the target firm, hedge funds are able to prevent a takeover or negotiate better terms for shareholders. In 2006, Novartis made the decision to buy a 58% share in Chiron. Initially, Novartis offered \$40 per share to Chiron owners. Later companies agreed on \$45 per share, which was 23% above the bargain price. A month after the deal was announced, ValueAct Capital, Chiron's third largest stakeholder and a hedge fund, addressed a letter to the company's CEO criticizing the transaction. Mutual fund Legg Mason, the second largest stakeholder of the hedge fund, concurred with the viewpoint. This was sufficient to scuttle the transaction. Novartis was required to increase the purchase price per share to \$48 for the transaction to proceed. Finally, hedge funds can purchase businesses directly. Goldner Hawn, a private equity group, was going to pay \$24 per share for the ShopKo retail and pharmacy business. The hedge fund Elliott Associates, which had a

significant holding in ShopKo, and the investment firm Sun Capital, submitted a counteroffer of \$26.5 per share. Thus, Elliott Associates acquired ShopKo for \$29 per share.

The article (Clifford, 2008), characterized shareholder activism by hedge funds as the actions of investors who are in a position to influence the top management's decisions. The right to take such action emerges upon the acquisition of a certain share in the corporation. The author created the following approach in order to identify activist campaigns:

1. A search for transactions to buy at least 5% of the target company's total number of shares;
2. A campaign is active if the investor has filled out Schedule 13D;
3. If the investor filled out Schedule 13G, the campaign is regarded as passive.

(Brav et al., 2008) conducted one of the most exhaustive analyses of hedge fund shareholder activism. The authors discovered that hedge fund activists often target financially sustainable firms with a low market-to-book value ratio. To the point of intervention, dividend payments in these companies tend to be lower than in comparable companies. In their search for active investments, the researchers utilized a similar technique as in the (Clifford, 2008) publication. The difference was that the bar for purchasing a firm was reduced from 5% to 2%. This was explained by the fact that getting a 5% stake in major corporations demands a substantial financial commitment. In addition, the study classified activist efforts according to their goals:

1. Changes in the capital structure:
 - Debt restructuring, additional share issue;
 - Dividend payments, share buybacks, increased financial leverage, changes in free cash flow
2. Increasing the value of the company for shareholders
3. Change of business strategy of the company:
 - Selling part of the assets, setting up a subsidiary structure;
 - Increase operational efficiency;
 - Blocking deals or changing their terms;
 - Implementing a growth strategy.
4. Improvements in corporate governance:
 - Changing the CEO or board of directors;
 - Preventing the company's management from being protected from takeovers;

- Increase the number of independent directors on the board;
 - Reducing incentive payments to company management;
 - Increasing the information transparency of the company.
5. Sale/merger/acquisition/liquidation of the company

In addition to this categorization, (Brav et al., 2008) compiled a list of the most often employed activist strategies for influencing the target company:

1. Private hedge fund communicate with the company's board of directors/management;
2. The hedge fund promotes its nominees to the board of directors in a non-confrontational manner;
3. A hedge fund publicly criticizes the company or makes a formal proposal at a general meeting of shareholders;
4. The hedge fund publicly announces its intention to take over the company;
5. The hedge fund enters into litigation with the company;
6. The hedge fund enters into a proxy fight to make the necessary changes;
7. The hedge fund publicly threatens to start a proxy fight, i.e. it tries to collect proxies from the company's shareholders in order to vote for changes on their behalf.

In their paper, (Aslan. Maraachlian, 2009) examine shareholder activism from the perspective of the principal-agent issue. As owners of a company, shareholders, acting as principals, delegate control over the company to hired managers, agents. This separation of ownership and control enables managers to exert substantial influence over the company's operational, financial, and investment choices. Consequently, there is an information asymmetry: managers have more information about the firm's activities and can start behaving in their own interests, despite the fact that they should be managing the company in the shareholders' best interests. Employing a shareholder activism approach allows to control managers' actions so that they operate in the shareholders' long-term interests. According to the authors, activist hedge funds may raise the value of a company by managing corporate resources intelligently, altering the business plan, and avoiding opportunistic behavior by managers that could result in a decrease in the firm's value.

In general, (Aslan and Maraachlian, 2009) define shareholder activism as efforts taken by shareholders to impact change inside a corporation in order to enhance their returns. However, the authors underline that hedge fund activism has distinct characteristics that may be

categorized into two groups. The first category comprises hedge fund activism that aims to maintain open dialogue with the management of the target firm. In doing so, the hedge fund does not urge the firm to take a certain action, but rather seeks to participate in discussions around significant corporate decisions. The second group consists of hedge fund initiatives aimed at integrating changes within the organization. These changes can be classified as follows:

1. Relating to corporate governance, such as changing board members, promoting its nominees to the board, and decreasing executive compensation.
2. Relating to capital structure, such as share buybacks, changes in dividend payments, and the issue of new shares
3. Relating to strategic decisions, such as selling the firm, liquidating assets, proposing to sell unproductive assets, and transforming a separate business into a subsidiary.

According to (Goshen, Squire, 2017; Togan Eğrican, 2022), shareholder activism strategy refers to a shareholder's efforts to alter a company's direction. According to the authors, a hedge fund employs a shareholder activism approach as follows: The fund purchases around 10% of a company's shares that it feels is in need of change. The fund then threatens or initiates a proxy fight, which involves convincing other shareholders to vote in favor of removing board members, boosting dividends, or modifying the capital structure and corporate governance. The authors emphasize that regardless of the nature of the proposed changes, the hedge fund uses the voting mechanism to undertake a shareholder activism approach.

The analysis of these articles provides insight into what can be considered as a manifestation of equity activism by hedge funds and allows us to learn about the main motives for initiating activist campaigns and the tactics of their manifestation. Moreover, the study of these papers allows us to form a sampling methodology for further empirical research.

Thus, in this chapter the definition of hedge fund was discussed and the activities of a hedge fund as an institutional investor were analyzed. Moreover, the concept of shareholder activism was discussed and the main motives and strategies of activist hedge funds were examined. In addition, the legal regulation of shareholder activism by institutional investors has been analyzed. Further, the main classical theories of capital structure of a company will be analyzed and the concept of optimal capital structure will be introduced.

CHAPTER 2. CAPITAL STRUCTURE OF THE COMPANY

In this part of the study, the theoretical foundations of a company's capital structure will be investigated in order to conduct an analysis of the relationship between shareholder activism of hedge funds and capital structure of the company. To begin with, the key theories affecting the formation of a company's capital structure will be discussed. Then the concept of the optimal capital structure of a company will be introduced. Finally, the reasons for the possible relationship between hedge fund activism and the capital structure of target companies will be identified.

2.1. Classical theories of capital structure of the company

In general, corporate finance functions fall into two categories: decisions pertaining to investments, financial policy decisions. The first category of judgments relates to the suitability of investing in a firm or project, whereas the second group is responsible for financial forecasts, financial policy, and dividend policy. These two kinds of decisions indicate the underlying objective of any business: to maximize the enterprise's value through investment and cash flow decisions. Thus, capital structure is a crucial aspect of the second set of choices. For CFOs, it is the capital structure issues that are fundamental to any company.

In their 1958 book "Cost of Capital, Corporate Finance and Investment Theory" Modigliani and Miller addressed the subject of the optimal mix of a company's capital structure for the first time. Since then, several "classical" theoretical articles have been devoted to the quest for the optimal debt-to-equity ratio in a corporation. A substantial number of people argue that such a balance does not exist, despite the fact that a majority of people believe that it does. Notably, the methodologies and ideas presented may often be categorized as either statistical or dynamic. The following will provide an overview of such and theories and analyze their main differences.

2.1.1. The Modigliani-Miller theory

In this groundbreaking study, (Modigliani, Miller, 1958) researchers demonstrate that the firm's value is independent of its capital structure; hence, there is no ideal debt-to-equity ratio. It is essential to stress that the initial assumptions behind this research have no bearing on reality.

The hypothesis excluding taxation

So, the original M&M theory is based on the following assumptions:

1. No taxation;

2. No transaction costs;
3. No information asymmetry;
4. The ability of all market participants to borrow unlimited funds at a risk-free rate;
5. No bankruptcy costs;
6. No agency costs;
7. The same expectations of all market players regarding the future profits of the company.

These assumptions allowed the authors of the research to infer that the capitalization of a firm is independent of its capital structure. Their evidence relied on the premise that businesses function in a perfect market. The theory generated two fundamental assumptions:

Assumption 1

$$V_U = V_L \quad (2.1),$$

where

V_U – value of the unleveraged firm;

V_L – value of the leveraged firm.

Under the first assumption, we see that a company's cost of capital does not depend on the combination of its equity and debt.

Assumption 2

$$r_e = r_0 + \frac{D}{E}(r_0 - r_d) \quad (2.2),$$

where

r_e – cost of leveraged capital;

r_0 – cost of unleveraged capital;

r_d – cost of debt capital;

D – the amount of debt capital;

E – the amount of equity capital;

Based on the second assumption, it may be deduced that the cost of equity in a firm's capital structure increases linearly with growing debt.

This theory has been heavily criticized because to its excessively strict initial constraints, which are not observed in the real world. However, the majority of experts in the field of the future have argued that inexpensive debt boosts the firm's market worth.

The hypothesis including taxation

After a flood of criticism, authors (Modigliani, Miller, 1963) revised their initial idea and published it to the public. The evolution of their theory was made feasible by challenging one of the initial assumptions, namely the nonexistence of taxes. A corporation can improve its market value, according to the new concept, by raising the proportion of debt in its capital structure, as this enables it to take advantage of tax shield benefits. The outcome of this effort is two new assumptions:

Assumption 1

$$V_U = V_L + tD \quad (2.3),$$

where

V_U – value of the unleveraged firm;

V_L – value of the leveraged firm.

D – the amount of debt capital;

t – tax rate.

Under the first assumption, the firm's value rises as its capital structure becomes more leveraged. In order to maximize its value, a company's capital structure must consist entirely of debt.

Assumption 2

$$r_e = r_0 + \frac{D}{E}(r_0 - r_d)(1 - t) \quad (2.4),$$

where

r_e – cost of leveraged capital;

r_0 – cost of unleveraged capital;

r_d – cost of debt capital;

D – the amount of debt capital;

E – the amount of equity capital;

t – tax rate

Under the second assumption, we can observe that the company's weighted average cost of capital is lower the greater the share of debt in its capital structure. In order to maximize its worth, the corporation must once again not use any equity, as in the prior scenario.

These implications of a modified theory also generated a large amount of dispute and disagreement. However, it is important to note that all subsequent models of capital structure were produced by analyzing the impact of one or more elements (market imperfections) that (Modigliani, Miller, 1963) disregarded.

Thus, the concepts already discussed were the starting point for later research into the issue of capital structure. There is a general statement that defends the importance of the Modigliani-Miller study: “While the Modigliani-Miller theorem does not provide a realistic description of how firms finance their activities, it provides a basis for finding reasons why finance may be key” (Luigi et al., 2009).

2.1.2. Trade off theory

The next theory, which follows and builds on the (Modigliani, Miller, 1963) concept, is the trade-off theory. It is worth noting that capital structure researchers distinguish two varieties of this theory: statistical and dynamic.

Statistical

All scientists who have committed their work to the study of trade-off theory agreed on one point: a firm management should undertake a cost-benefit analysis of each financing source before selecting the optimal funding plan (Kraus, Litzenberger, 1973; Kim, 1978; Bradley et al., 1984). The statistical trade-off theory offers several benefits over the M&M theory. Unlike their previous idea, this one incorporates a tax component. In contrast to the modified M&M theory, the trade-off idea takes into consideration the reality that debt cannot be regarded risk-free in the actual world. The previously described theory indicated that the firm's value is maximized in the absence of any equity. This conclusion is flawed due to the fact that 100% debt financing is practically unattainable in practice and a high level of debt not only impairs the firm's stability but also causes huge bankruptcy risks.

According to (Kraus, Litzenberger, 1973) the ideal capital structure is determined by balancing the benefits of tax savings (tax shield effect) with the costs of potential financial difficulties. The idea can be better understood in terms of marginal values: a larger level of debt results in a slower growth of the firm's marginal gain, while marginal expenses tend to increase. Thus, by comparing the advantages against the costs, the optimal debt-to-equity ratio may be determined.

In several more research, the application of trade-off theory has been shown. (Fama, Miller, 1972; Scott, 1977) demonstrate that the advantages of tax deductions can be constrained

by the risk of bankruptcy and other expenses that might have a detrimental impact on business performance. According to (Myers, 1984), businesses gain from the "tax shield" effect, but others incur so much debt that they have trouble servicing it and may declare bankruptcy.

An obvious disadvantage of statistical trade-off theory is that the analysis is carried out over only one period of time. As a result of this critical view, trade-off theory began to evolve towards dynamic trade-off theory.

Dynamic

The dynamic trade-off theory goes well beyond its statistical counterpart. With the addition of time to this idea, market players' expectations began to play an essential role. All subsequent financial decisions in the dynamic model were decided by the firm's future goals. At different times, corporations anticipated either paying down their debts or, alternatively, raising extra capital. (Brennan, Schwartz, 1984) were pioneers in this case, since they attempted to incorporate a time component into the evaluation of the trade-off between the benefits of the 'tax shield' and the risks of bankruptcy. Despite including a revolutionary component into their work, the writers did not account for everything. For example, their idea did not account for transaction expenses. This analysis concluded that a certain proportion of debt financing is logical owing to the substantial benefits of "tax shield".

The researchers (Collin-Dufresne et al., 2001) conclude that companies with relatively low levels of debt in their capital structure in the current period tend to increase the amount of debt in the future and vice versa. As a consequence, as long as companies determine the level of debt in line with expected future results, due to unpredictable changes of reality (level of operating costs, time delays and failure expectations) the capital structure will almost always deviate from the optimal one. Thus, the dynamic trade-off theory is unlikely to allow companies to match the theoretical and practical leverage in practice in future periods.

It is important to note, however, that revisions to the trade-off theory have radically altered contemporary perspectives on taxes, profits and retained earnings, and financial decision-making. Numerous empirical studies have been undertaken that provide empirical support for the trade-off theory (Fama, French, 2002; Syam-Sunder, Myers, 1999; Ospina et al., 2015).

Nonetheless, the dynamic trade-off theory has a number of important flaws, such as failing to account for agency and opportunity costs, which restrict a corporation from maximizing the growth prospects connected with the usage of borrowed capital.

2.1.3. Pecking order theory

(Donaldson, 2000) claims that there is no ideal debt-to-equity ratio. Instead, the research assumes that businesses have a preferred financing source hierarchy. Subsequently, (Myers, Majluf, 1984) developed this idea based on their empirical study. It is important to note that the authors used a market information asymmetry assumption that violates M&M theories. According to the theory, all successful companies largely fund new projects using retained earnings. In cases when this is not an option, businesses may turn to corporate bonds or bank loans. And only at the very end, in the absence of more favorable funding alternatives, do businesses turn to equity financing. This arrangement is reasonable if it is assumed that all market participants are rational: external investors have only part of the information about the company and this information is less accurate and trustworthy (Fama, French, 2002).

According to this theory, investors assume management has more knowledge of the company's capabilities. Therefore, corporations only issue new shares when they believe they will be compensated at a premium to their intrinsic value. All of these actions are taken to maximize the firm's value. Investors, on the other hand, lack complete knowledge about the firm and view new share issuance as the company's need for extra finance. Therefore, many of them consider that the fair price per share is lower than what the company's management demands. The market's informational asymmetries lead to such situations.

Pecking order theory was initially developed on the basis of empirical study, thus it is not surprising that it has been confirmed by credible empirical evidence in several other consistent scientific works (Fama, French, 2002; Leary, Roberts, 2010; Anderson, Carverhill, 2012). However, there are papers that contradict the hierarchy hypothesis (Lemmon, Zender, 2010; Khieu et al., 2014). They were all grounded in empirical study and conducted with regression analysis. The authors' primary point is that the proportion of corporations that issue shares has progressively climbed from 67% (on average) between 1973 and 1982 to 86% (on average) between 1993 and 2002 (Fama, French, 2005).

2.1.4. Agency theory

According to (Jensen, Meckling, 1976; Vitolla et al., 2020) an agency relationship is "a contract in which one or more persons (the principal(s)) engage another person (the agent(s)) to perform a service on their behalf, delegating certain decision-making responsibilities to the agent". This split between ownership and management in a firm is the cause of the 'agent' dilemma. The difficulty stems from the fact that the interests of investors and corporate management do not always align. In other words, instead of maximizing the profit to investors,

managers behave only in their own best interests. Worthwhile agency theories pertain to the investigation of the influence of the agency problem on the capital structure of the organization.

There are two types of agency problems (Vitolla et al., 2020):

1. Conflicts between shareholders and creditors;
2. Conflicts between shareholders and managers.

The first type of dispute is extremely straightforward and is based on the limited liability of shareholders for the company's debts. When a company declares bankruptcy, the shareholders lose just their initial investment, while the company's creditors pay the majority of the costs. Thus, by borrowing funds a company increases its risk of bankruptcy and all negative consequences associated with it are more significant for a company's creditors. Multiple manifestations exist for the agency dilemma between creditors and shareholders (Habib et al., 2018):

- Raising additional debt capital and transferring the risk on it to the old lenders;
- Selecting riskier projects with high rates of return and transferring risk to lenders;
- Overpriced dividend payments, which negatively affect the company's ability to pay interest on its liabilities.

The second sort of agency conflict is less apparent than the first, but it plays an equally crucial function. In general, managers must behave in the best interests of shareholders, i.e., to maximize the company's value and the investors' well being. However, managers occasionally prioritize their own interests. Managers are frequently tempted by their personal reputation and the possibility to construct "business empires." Such motivations frequently cause managers to engage in low-return ventures that accomplish nothing to benefit shareholders. This agency issue is extremely detrimental to businesses and produces free cash flow expenses. It was discovered that increased debt restricts the actions of corporate management since there is less accessible free cash flow (Alves, 2021).

In his work on agency theory, (Stulz, 1990) took a highly methodical approach to the challenge of picking the optimal capital structure. The author discovered that underinvestment becomes a concern when the proportion of debt rises. It is due to the fact that debt service expenses diminish the company's free cash flow, and as a result it cannot engage in lucrative ventures. As previously stated, the availability of debt simultaneously constrains managers and resolves the agency problem between them and shareholders. Thus, the ideal capital structure

achieves a compromise between the disciplining impact of debt and the cost of underinvestment in profitable projects.

(Grossman, Hart, 1982) have a similar viewpoint in their writings; they feel that when a company's liabilities rise, so do its bankruptcy risks, which in turn motivates managers to work more effectively because a part of the risks fall on their shoulders. In addition, the authors highlight a number of cases in which managers act primarily in the investors' best interests:

- Linking wages to the company's market value;
- Threat of hostile takeover related to the low market value of the company (risk of job loss).

Thus, the authors of the reviewed papers concur that debt capital should be used to discipline managers and to mitigate conflicts between managers and investors, and that it is worthwhile to find the optimal balance between the benefits of debt capital's disciplining effect and underinvestment losses.

2.1.5. Signaling theory

The following theory is simply a set of principles with a unified approach to capital structure. All modifications of signal theory are predicated on the assumption of information asymmetry. Some academics have discovered that a company's share price reflects its capital structure decisions.

(Ross, 1977) paper is the first modification of this theory; it is based on Akerlof's "lemons and peaches" logic⁴. Thus, according to Ross, the selection of a funding source is directly dependent on management's understanding of the company's prospects. When a business borrows money, it incurs future commitments that it can only meet if its operational performance is good. It turns out that managers are sure that they will fulfill their obligations if they make them. Therefore, the raising of debt is a positive signal to potential investors. Due to their desire to maximize the firm's share price, managers tend to delay the issuance of shares until the company is at its peak. Consequently, if investors learn that a firm intends to issue further shares, they may assume that the company cannot attract another source of capital or that its managers have bad information that is not yet represented in the share price. Therefore, issuing extra shares sends a negative signal to potential investors.

The following modifications of the capital structure signaling theory address the problem of an IPO. According to (Lealand, Pyle, 1977; Welch, 1989) if a firm is about to go public and

⁴ A metaphor for George Akerlof's 1970 work on asymmetries of information

undertakes additional commitments, this is a sign of its promising future. Since an IPO is very expensive, only a financially secure and forward-thinking firm can afford it. The IPO is therefore a positive "signal" for investors. The authors believe, however, that a secondary issuance of shares indicates either more slow development or a shortage of finance. As a result, it is a negative "signal" that causes a decrease in share prices.

(Miller, Rock, 1985) represent another revision to the signaling theory. This research investigates the effect of dividend payments, debt payments, and issuance of Treasury bonds. All three of these components are favorable "signals" to investors since they demonstrate that the company is earning sufficient cash to pay dividends, resulting in an increase in the share price.

To summarize the several modifications of the signaling theory, it should be noted that they all reflect broad patterns of change in the structure of capital, as opposed to attempting to establish the optimal balance between its components.

2.1.6. Market timing theory

According to (Taggart, 1977), a company's decision to raise debt or equity capital depends on its future ability to fulfill its long-term borrowing commitments, which in turn is determined by its existing debt-to-equity ratio. (Marsh, 1982) claimed that the decision about a company's source of financing relied on two factors:

1. Current market conditions;
2. Past share price information.

(Myers, 1984) also backed this idea. According to him, corporations determine their capital structure based on market conditions. Thus, choices to pursue an IPO, to issue or repurchase shares, have a direct impact on the choice of financing source. (Baker, Wurgler, 2002) examined the behavior of U.S. corporations on the equity market and subsequently incorporated a market element into their model. Their theory asserts that companies follow the equity market over the long run, and that this has a substantial influence on the capital structure of the firm. It turns out that the capital structure is nothing more than the accumulation of all prior actions corporations have taken to track the equity market. So, there is essentially no optimal capital structure, as it is established as a result of changes in the market and taking advantage of favorable capital market opportunities. In addition, the authors argue that managers tend to employ debt financing when the firm is undervalued and stock issuance when it is overvalued.

According to (Welch, 2004), companies adjust their capital structure based on information about their past share prices. In a situation where a company is overvalued by the market, managers will issue additional shares until the share price returns to or falls below its fair value. It turns out that the company's management will gradually reduce the company's debt load.

Thus, market-timing theory demonstrates that the capital structure is dependent on market conditions; nevertheless, under such conditions, it is nearly impossible to establish a target capital structure or determine its optimal combination.

In conclusion, there is no consensus on the existence of an ideal capital structure, nor is there a consensus on the role of various elements in determining the debt-equity ratio. The result of the analysis of "classical theories of capital" is a comparative table (Tab.1):

Table 1. Comparative table of "classical" theories of capital structure

Theory	Based on	Key outcome	Empirical evidence	Definition of optimal capital structure
Modigliani-Miller theory	Theoretical study	In an ideal market, a company's capital structure has no effect on its market capitalization.	No	No
Trade off theory	Theoretical study	Companies should conduct a benefit-cost analysis of each funding source in order to build an optimal capital structure.	Yes	Yes
Pecking order theory	Empirical study	There is a tendency for companies to follow a certain algorithm when choosing a funding source.	Yes	No
Agency theory	Empirical study	The solution to the agency problem is an optimal capital structure that strikes a balance between the disciplining effect of borrowing and the cost of underinvesting in profitable projects.	Yes	Yes

Signaling theory	Empirical study	According to the framework, when information is asymmetric, managers' capital structure decisions give potential investors bad or good "signals" about its future prospects.	Yes	No
Market timing theory	Empirical study	Companies try to adapt to the market in such a way as to issue shares when the stock is overvalued and to borrow when the stock is undervalued.	Yes	No

Source: Compiled by the author of the paper

2.2. Contemporary theories of capital structure of the company

This paragraph will examine contemporary theories of capital structure. Notable is the fact that many of them are revisions of existing theories or tests of the "classical" theories' applicability in certain economic sectors.

The first study worth addressing is the paper (Fama, French, 2002). The paper's primary objective was to compare the trade-off theory and the pecking order theory. The authors attempted to determine which theory describes the level of debt and equity more accurately. As was previously discovered, the trade-off theory provides a definition of the target capital structure towards which a company evolves over time. Pecking order theory, on the other hand, does not propose a target or optimal capital structure; it merely suggests an algorithm for enterprises to follow when seeking additional funding sources. This research was designed as an empirical study and conducted based on data from over 3,000 companies.

As a result, authors came to ambiguous conclusions. Non-conflicting aspects of these two theories have been validated in practice. For instance, both, the trade-off and the pecking order, theories assume that enterprises with substantial investments have less debt. Additionally, a hypothesis about direct relationship between business size and debt load and a hypothesis about inverse relationship between earnings volatility and debt load were examined. These hypotheses were validated in the research (Fama, French, 2002).

On the other hand, the investigation did not support contradictory aspects of these two theories. For instance, (Fama, French, 2002) accept the pecking order theory regarding the inverse relationship between firm profitability and debt load. At the same time, the authors did

not find sufficient evidence to support the trade-off theory's assumption that an optimal capital structure exists.

Thus, the study (Fama & French, 2002) provided support for the non-conflicting parts of the two theories, but not for the contradictory points. Thus, the question of which theory best describes the capital structure-related behaviour of corporations remained open.

In the study (Lemmon et al., 2008) the capital structure issue is examined based on data gathered from non-financial companies. The primary finding of the research is that the debt load has remained essentially stable throughout time. This conclusion may be applied to both public and private companies. The result is explained by the presence of unobservable corporate characteristics and traits. These fixed factors account for most of the variance in capital structure.

The researchers argue that the high cost of changing the level of debt is the primary reason for the stability of the capital structure across time. Thus, it turns out that corporations employ their financial policies to control their debt levels. In this regard, the beginning level of debt is one of the most important aspects of the model under examination.

It is important to note that the primary recommendation of academics is to incorporate firm-specific variables into the model. Naturally, the authors did not address the ideal capital structure in their work because, in their view, only the level of debt obligations in the initial period is important (Lemmon et al., 2008).

The research (An, 2012) attempts to determine how taxes influence the structure of capital. The article presents an empirical study based on data gathered from Chinese companies. (An, 2012) argues that the capital structure of a corporation is contingent on changes in government taxation policy. The author used the "difference-in-difference" model, which permits the determination of the impact of a given event on the investigated factor and the direction of their relationship.

As a result of the study, it was determined that changes in taxation impacts the structure of capital, and this finding is not limited by Chinese companies and may be generalized (An, 2012).

The value of the (Lemmon, Zender, 2010) paper resides in the authors' introduction of a new variable to previously published research on verifying capital structure theories. The new variable is the firm's debt capacity, which defines how easily a company can borrow in the

future. In the paper, debt capacity was measured as the probability of a company's access to the debt market.

Authors attempted to refute the claim of numerous authors that the pecking order theory cannot be applied in practice. Thus, the authors demonstrated that small, fast-growing firms are constrained in their lending capacity. In other words, the frequent issue of extra shares by small businesses does not always indicate that the pecking order theory is invalid in practice. The primary finding of the study is that organizations with a large debt capacity prefer debt financing when they require additional finance. Companies with little debt capacity, on the other hand, frequently select equity financing due to their difficulty to obtain debt financing (Lemmon, Zender, 2010). This logic supports the pecking order theory.

The article (D'Mello et al., 2018) proves that the shareholders' assessment of the value of an additional unit of debt is a crucial aspect in determining the capital structure. The research was based on data gathered from non-financial companies in the United States from 1980 to 2014. According to authors, shaping the capital structure of the company, shareholders consider not only elements such as the schedule of interest payments and the cost of liabilities, but other factors as well. According to the authors, corporations evaluate the additional unit of debt based on their reinvestment strategy, changes in income, agency costs, dividend policy, and the impact of the tax shield (D'Mello et al., 2018). This paper also provides evidence of the trade-off theory's applicability to investors' perceptions of debt obligations.

The article (Greenwood et al., 2010), suggest that the maturity of debt and interest payment schedule has a significant impact on capital structure. This conclusion is compatible with the "gap-filling" funding theory. In a (Badoer, James, 2016) work that complements the previous one, authors claim that financial decisions about the capital structure of a corporation are directly tied to the availability of long-term government bonds. According to the authors, the growth in federal debt significantly decreases the demand for business debt financing sources. In other words, one source of debt capital is essentially displaced by another.

A separate series of publications investigates the relationship between the human aspect in decision-making and the construction of capital structure. There is a prevalent view that managers' confidence and optimism are positively correlated with the proportion of debt financing in a company's capital structure (Vasiliou, Daskalakis, 2009; Agarwal 2013).

The studied capital structure concepts are a good addition to the methodology base for future research, but they do not resolve the question of whether an optimal capital structure exists.

2.3. Target capital structure

It is important to emphasize that neither the authors of classical theories nor the developers of contemporary theories have reached a consensus on the optimal capital structure. The concept of "optimal capital structure" refers to a specific debt-to-equity ratio that maximizes a company's value. However, estimation of a perfect debt-equity ratio and, moreover, reaching the optimal point is quite challenging. In this regard, it is only feasible, within the framework of business financial management, to set a certain target level of capital structure for the firm, which will most significantly contribute to its successful development.

Numerous studies have been devoted to the subject of the existence and prediction of a company's optimal debt-to-equity ratio. (Titman, Wessels, 1988) were among the first to attempt to resolve this contentious dispute. Their study paper investigates numerous theories of the capital structure of corporations, which suggest that firms choose the debt-equity ratio depending on the benefits and costs of each financing option. The authors also note that it is unlikely that theoretical concepts will ever resolve the debate over the existence of an optimal capital structure, so all efforts should be devoted to empirical research on the possible relationship between long-term target debt-equity ratios and the various financial performance of organizations. (Titman, Wessels, 1988) conducted their research on a sample of publicly listed U.S. corporations from diverse industries and concluded that there are fundamental factors that influence a company's capital structure and from which a company's long-term target capital structure may be predicted. Among the most important explanatory variables emphasized by the authors were return on assets, measured by the ratio of operating income to all assets or the ratio of operating income to revenue, firm size, assessed by the natural logarithm of sales or all assets, and capital intensity or capital output ratio (Titman, Wessels, 1988).

(Rajan, Zingales, 1995) conducted an empirical study that was very similar to the previous one, but their sample didn't consist of public corporations from the United States; it also included public companies from the other G7 countries (USA, Japan, Germany, France, UK and Canada). The authors made the same conclusion as their colleagues, namely that the optimal capital structure could be conceptualized as a target long-term capital structure that is projected on the basis of the primary financial determinants of organizations. In addition to the determinants that have already been highlighted, the market-to-book ratio, which is the ratio of

the market capitalization of a firm to its book value, was another predictor that the researchers utilized in their models to estimate the target financial leverage (Rajan, Zingales, 1995).

In the research (Hovakimian et al., 2004), return on assets and the ratio of a company's market capitalization to book value were identified as the most important factors in determining the target capital structure for a given organization. However, in addition to the known explanatory variables, they singled out the following ones: Dividend Yield, ROA (return on assets), R&D (research and development) expenses, and an industry-wide average values for financial leverage. The most important thing that the researchers discovered was that over the long term, businesses tend to reach the targets that they have set for their capital structure, despite annual adjustments of the ratio (Hovakimian et al., 2004).

The research (Welch, 2004) investigated how changes in the stock price of a corporation correlate to the target capital structure of that company. According to the author's point of view, companies are powerless to defend themselves against the impact that continuous stock price changes have on their financial leverage. Therefore, the effects of changes in stock price on a company's capital structure can have very long-lasting consequences, at the very least for several years. (Welch, 2004) conducted his research based on information on publicly traded companies in the United States from 1962 to 2000 and concluded that in comparison to fluctuations in stock prices, the other determinants described earlier do not have significant effect on a company's capital structure.

(Flannery, Rangan 2006) argue that companies, indeed, constantly change the ratio of debt and equity. However, in addition to the already classical determinants they added to their study such indicators as: depreciation, market capitalization of companies, median values of leverage in an industry and by year in the United States, and dividend payments. The researchers concluded that typical firms, on average, cut one-third of the distance from current leverage to target leverage per year.

A global examination of the use of leverage by corporations reveals that capital structures differ by industry. The average proportion of long-term liabilities to total firms' capital in the United States is presented in a table below (Tab.2). (Ehrhardt, Brigham, 2003) noted that the debt levels of U.S. enterprises operating in the same industry vary significantly.

Table 2. Average share of long-term liabilities in total company capital by industry in U.S.

Industry	Average share of long-term liabilities in the total capital of the company
Technology	19%
Energy	30%
Medicine	32%
Transportation	40%
Raw Material	46%
Industrial and technical goods	46%
Conglomerates	54%
Services	63%

Source: Ehrhardt, Brigham, 2016

(Smart et al., 2007) note that a company's capital structure follows certain industry trends regardless of its country of origin. In developed countries, some companies have high debt-to-equity ratios, whilst other industries have low long-term liabilities. These patterns demonstrate that the mix of assets in an industry and the variety of the operating environment “substantially affect the capital structures selected by enterprises around the world”.

For several years, identifying the optimal capital structure for a corporation has been a difficult and elusive task. While there are some similarities between capital structures used in the same industries, it is also true that companies in the same industries use very different levels of debt compared to equity.

In contemporary works studying the various factors influencing a company's capital structure, the significance of the determinants on establishing a target debt-to-equity ratio has been compared. Thus, researchers in several papers at once agreed that the main explanatory determinants of target leverage are (Harford et al., 2009; Denis, McKeon, 2012; K unhausen, Stieber, 2014; Hang et al., 2018):

- Median values of the market debt-to-total capital ratio in the industry, or for all companies in the country (depending on the sample size);
- Market-to-Book Ratio (the ratio of a company's market value to its book value);
- Capital intensity (ratio of tangible assets to total assets);
- Return on assets (defined as the ratio of operating income to all assets);
- Size (natural logarithm of all assets).

The optimal capital structure will be defined in this study as the target capital structure that is annually predicted based on key determinants.

Thus, this chapter reviewed the main classical and new theories of company's capital structure and introduced the concept of target capital structure. Next, an empirical study will be conducted to analyze the relationship between hedge fund shareholder activism and the capital structure of target companies.

CHAPTER 3. EMPIRICAL STUDY

3.1. Research hypotheses

As practice shows, hedge funds can use both active and passive strategies when investing (Berezinets, Ilina, 2022). In one of the most influential publications on hedge fund activism, the authors found that 18.8% of their sample were hedge fund activists who aimed to change the capital structure of companies in a deal (Brav et al., 2008). Recent research on the manifestation of shareholder activism has shown that capital structure is one of the most attractive company characteristics that activists consider when choosing public companies (Brav et al., 2015; Coffee et al., 2016; Denes et al., 2017).

A relevant question arises: Why does the share of debt in total equity serve as a determinant for hedge funds in initiating the activism strategy in the target company? The answer can be found in traditional theories of capital structure, some of which argue that there is an ideal level of leverage that allows management to maximize the market value of the company (Jensen, Meckling, 1976; Stulz, 2007; Antill, Grenadier, 2019). According to (McCahery et al., 2016), about 68 percent of institutional investors identify suboptimal capital structure as a major driver of shareholder activism.

However, the results of empirical studies are mixed. Some find that the share of debt in total capital of target firms is relatively high compared to the control group (Karpoff et al., 1996; Brav et al., 2008; Klein and Zur, 2011), others find that the share of debt in total capital of target firms is relatively low compared to the control group (Boyson and Mooradian, 2011), and still others find that the financial leverage of target firms is the same as that of the control group (Strickland et al., 1996; Boyson et al. 2017). A study (Ganguly, Ge, 2018) concludes that activist hedge funds are more likely to target firms that have a higher current debt-to-total capital ratio than the target group. Based on the analysis of the results of all the above studies, the following hypothesis has been proposed:

H1: The targets of a hedge fund shareholder activism strategy are more likely to be portfolio companies in which the current market leverage exceeds the target leverage.

Continuing our discussion of activist hedge fund preferences, let us focus on examining the relationship between the magnitude of the deviation of current leverage from the target and the likelihood of manifestation of a shareholder activism strategy. A number of researchers believe that activist shareholders view any positive deviation of current leverage from the target as an opportunity to create additional value by restructuring the debt-to-equity ratio. Moreover,

the greater such deviation, the greater the opportunity for hedge funds to add value to the target company (Klein, Zur, 2011; Ganguly, Ge, 2018). Companies with insufficient leverage have been found to be characterized by limited financial flexibility. This means that under-borrowing of cash at the current moment in time reduces the target company's potential ability to raise additional debt in the future. In future periods, there may also be an unforeseen decline in profits, resulting in the inability to raise additional debt (Denis, McKeon, 2012).

Obviously, the deviation from the target leverage ratio can be in either direction, i.e., companies can be overleveraged and underleveraged. In (Ganguly, Ge, 2018) the authors found that for companies with excess leverage, the greater the absolute value of the difference between the current leverage and the target, the more likely shareholder activism by hedge funds. For companies with insufficient leverage it was found that the smaller the absolute value of the difference between the current share of debt in total equity and the target, the greater the probability of equity activism by hedge funds.

Based on the conclusions reached by the authors in the studies mentioned, the following hypotheses were formulated:

H2: For overleveraged targeted firms there is a direct relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the absolute value of the deviation of the current market leverage of the firm from the target value.

H3: For underleveraged targeted firms there is an inverse relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the absolute value of the deviation of the current market leverage of the firm from the target value.

3.2. Methodology of the study

3.2.1. Model to estimate the likelihood of becoming the target of an activist campaign

The econometric study used a binary choice model (logit model). The choice of model variables is based on the analysis of existing studies on the manifestation of shareholder activism strategy and the capital structure of the company (Brav et al., 2008; Brav et al., 2015; Coffee, 2016).

The basic logit model (Ganguly, Ge, 2018) will be employed to fulfill the purpose of the study:

$$P(Y=1|X) = \frac{e^z}{1+e^z}, \quad (3.1),$$

where:

$$Z = \beta_0 + \beta_1 \ln(MV_{i,t-1}) + \beta_2 MVBV_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 SalesGrowth_{i,t-1} + \beta_5 MarketLeverage_{i,t-1} + \beta_6 DividendYield_{i,t-1} + \beta_7 R\&D_{i,t-1} + \beta_8 Analysts_{i,t-1} + \beta_9 AmihudIlliquidity_{i,t-1} + \beta_{10} InstitutionalOwnership_{i,t-1} \quad (3.2),$$

A description of the variables used in the models described above is given in the table below (Tab.3):

Table 3. Model for estimating the probability of becoming the target of a hedge fund activist campaign

Variable	Description
Dependent variable	
Activism Dummy	A binary variable equal to 1 if the company was the target of the hedge fund activism strategy, equal to 0, if the company was the target of the hedge fund passive investment strategy
Independent variables	
Current Leverage Dummy	A binary variable showing if current leverage exceeds (1) or falls short (0) of the objective
Distance from target	The absolute value of the difference between actual market leverage and long-term leverage estimated using equation (3.3)
$MV_{i,t-1}$	The market value of the company i at $t-1$ period of time
$MVBV_{i,t-1}$	Market-to-book ratio of company i at $t-1$ period of time (the ratio of a company's market capitalization to its book value)
$ROA_{i,t-1}$	The return on a company's i assets at $t-1$ period of time, measured as: $\frac{NP_{i,t-1} + \%_{i,t-1}}{TA_{i,t-1}}$, where $NP_{i,t-1}$ – is the annual net profit, $\%_{i,t-1}$ – amount of percentage payable, $TA_{i,t-1}$ – annual total assets

<i>SalesGrowth_{i,t-1}</i>	The company's <i>i</i> sales growth rate at <i>t-1</i> period of time, calculated as: $\frac{S_{i,t-1} - S_{i,t-2}}{S_{i,t-2}}$, where $S_{i,t-1}$ – annual company's sales
<i>MarketLeverage_{i,t-1}</i>	Market leverage of the company <i>i</i> at <i>t-1</i> period of time, estimated as: $\frac{TD_{i,t-1}}{TD_{i,t-1} + MV_{i,t-1}}$, where $TD_{i,t-1}$ – total debt in the end of the year, $MV_{i,t-1}$ – market value of the firm
<i>DividendYield_{i,t-1}</i>	Dividend yield of the company <i>i</i> at <i>t-1</i> period of time
<i>R&D_{i,t-1}</i>	Share of R&D costs in total company <i>i</i> assets at <i>t-1</i> period of time
<i>Analysts_{i,t-1}</i>	Number of external analysts assessing company <i>i</i> performance at <i>t-1</i> period of time
<i>AmihudIlliquidity_{i,t-1}</i>	Liquidity of the company <i>i</i> at <i>t-1</i> period of time, assessed according to Amihud methodology: $ILLIQ_{i,t-1} = 10^6 * \frac{1}{D_{i,t-1}} \sum_{t=1}^{D_{i,t-1}} \frac{ R_{i,t-1} }{DVOL_{i,t-1}}$, where $D_{i,t-1}$ – monthly trading days, $R_{i,t-1}$ – is the daily return on the stock, $DVOL_{i,t-1}$ – is the daily trading volume of the stock
<i>InstitutionalOwnership_{i,t-1}</i>	Share of the company's <i>i</i> shares held by institutional investors at <i>t-1</i> period of time

Compiled by the author of the paper

3.2.2. Model for predicting the target capital structure

Let's focus on the method of finding the distance from target leverage to current market leverage of the company. The choice of methodology for assessing the company's target debt-to-total capital ratio is a crucial step in the empirical study conducted. There are several studies that seek to resolve this issue. Predicting the target level of capital structure, in this paper was based on the methodology (Harford et al., 2009; Denis, McKeon, 2012), as they conducted a

comparative analysis of the significance of various determinants of the target capital structure and highlighted the most important of them.

To estimate the target capital structure, the following tobit regression model was chosen:

$$ML_{it} = \beta_0 + \beta_1 MedML_{i,t-1} + \beta_2 MVBV_{i,t-1} + \beta_3 AssetTangibility_{i,t-1} + \beta_4 Profitability_{i,t-1} + \beta_5 Size_{i,t-1} + \varepsilon_{i,t-1} \quad (3.3),$$

The table below provides a description of the variables that were used in the model (Tab.4):

Table 4. Description of the model variables for predicting the target capital structure

Variable	Description
Dependent variable	
$ML_{i,t}$	Market leverage of the company i at $t-1$ period of time, estimated as: $\frac{TD_{i,t-1}}{TD_{i,t-1} + MV_{i,t-1}}$, where $TD_{i,t-1}$ – total debt in the end of the year, $MV_{i,t-1}$ – market value of the firm
Независимые переменные	
$MedML_{i,t-1}$	Median value of market leverage of the company i at $t-1$ period of time
$MVBV_{i,t-1}$	Market-to-book ratio of company i at $t-1$ period of time (the ratio of a company's market capitalization to its book value)
$AssetTangibility_{i,t-1}$	Asset Tangibility is the share of a company's i tangible assets in its total assets at $t-1$ period of time
$Profitability_{i,t-1}$	Profitability of the company i at $t-1$ period of time, measured as: $\frac{OP_{i,t-1}}{TA_{i,t-1}}$, where $OP_{i,t-1}$ – annual company's operating profit, $TA_{i,t-1}$ – annual total assets

<i>Size_{<i>i,t-1</i>}</i>	<p>The size of a company <i>i</i> at <i>t-1</i> period of time, measured as:</p> $\ln(TA_{i,t-1})$ <p>, where $TA_{i,t-1}$ – annual total assets</p>
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Compiled by the author of the paper

It is worth noting that the authors use market leverage as the dependent variable because, firstly, hedge funds focus on market performance, secondly, balance sheet ratios are subject to manipulation and the market provides a more robust valuation (Rajan, Zingales, 1995; Hovakimian et al., 2004; Flannery, Rangan, 2006; Harford et al., 2009; Leary, Roberts, 2010; Denis; McKeon, 2012).

3.3. Sampling and descriptive statistics of variables

Current empirical research was conducted on a sample of transactions in which U.S. hedge funds acquired shares of publicly traded companies on U.S. exchanges. The American market was selected for examination since the financial institution of hedge funds, disclosure of information and the financial market are the most developed in the United States. Due to the lack of a centralized database that contains data about hedge fund transactions in which shareholder activism was confirmed, the sample for this empirical study was compiled in several stages. On this basis, the first step was to extract from the ZEPHYR Bureau van Dijk database a list of transactions in which various U.S. funds acquired shares in U.S. publicly traded companies. These terms were included in the search query:

1. The main/supplementary activity of the acquiring company: fund management activities.
2. Target company: public.
3. Country affiliation of the buyer company and the target company: USA.
4. Time period: from 01.01.08 to 31.12.16;
5. Size of share to be acquired: not less than 5%.
6. Status of the transaction: completed.

At this point, 4261 trades were included in the list. However, besides hedge funds other institutional investors participated in the purchasing of companies. Such transactions were excluded from the list. In addition, companies that went private after the purchase over the time period up to and including 2021 were eliminated from the list. This elimination was

needed because information on the financial performance of the target companies was collected until 2021. After removing the deals from the list, 1681 observations remained.

In the next step, there was a splitting of deals, in which hedge funds participated, into active and passive. On one hand an investment of hedge fund is active, if the fund acquired at least 5% of the target firm's stock and noted the corresponding deal objective on Form SC 13D. On the other hand an investment is passive, if the fund acquired at least 5% of the target firm's stock and completed Form SC 13G (Clifford, 2008). So, the decisive rule is the following: if *the SC 13G form was filed within 10 days of the transaction, the investment is considered passive* and if the acquiring hedge fund filled out *the SC 13D form, the transaction is considered active and shareholder activism can be identified* (Klein, Zur, 2006; Brav et al., 2008; Bebchuk et al., 2015; deHaan et al., 2019; Foroughi et al., 2019). At this stage, 135 passive investments of hedge funds were identified, in the remaining deals hedge funds filled out form SC 13D, respectively, these investments were active (1546 deals).

The following step was made to identify the purpose of shareholder activism cases in the remaining deals. In Section 4 of Form SC 13D, where activists are expected to explain why they are acquiring shares of a public company, the motivation for the transaction may be discovered (Togan Eđrican, 2022). Consequently, all forms required for the remaining transactions were downloaded from the SEC EDGAR (the Electronic Data Gathering, Analysis, and Retrieval system) online database. On this basis, the final stage of deals list filtering was carried out. From the list were excluded transactions in which the primary objective of the hedge fund is:

- Reorganizing the target company in bankruptcy proceedings.
- Investing money in the long term to benefit from the planned merger/acquisition of the target company by another organization.
- Investing money in U.S. foundations and other financial institutions engaged in investor capital management, financial advisory, and auditing.

These filters were applied because the motive and consequences of such shareholder activism are significantly different from the shareholder activism discussed earlier. Moreover, these restrictions were established since the primary objective of this study was to investigate the relationship between the manifestation of shareholder activism and the capital structure of non-financial enterprises.

The final number of deals, where shareholder activism of hedge funds was identified, was 135, while the number of deals considered as passive was the same 135. Due to limited access to data sources, the sample of actively targeted companies consisted only of 135 entities.

The table next provides descriptive statistics for the variables employed, broken down by two subsamples (Tab.5). The first subgroup is comprised only of targets, where hedge fund employed the strategy of shareholder activism, whereas the second subgroup is comprised of targets, where hedge funds employed passive investment strategy, between 2008 and 2016. Additionally, the mean values of the variables across the subsamples were tested for equality. Except for market capitalization and institutional investor share, the mathematical expectations of all mentioned variables differ significantly between the two subsamples.

Table 5. Descriptive statistics of variables

Variable	Actively targeted companies			Passively targeted companies			Difference
	Mean	Med	StDev	Mean	Med	StDev	T-stat
Market Value	4915,21	874,35	20714,89	4017,47	1035,87	10570,42	1,325
MVBV	1,927	1,51	1,438	2,169	1,553	1,841	-3,071***
ROA	0,041	0,028	0,270	0,073	0,047	0,193	-2,6521***
Sales Growth	0,032	0,025	0,251	0,056	0,051	0,250	-1,391*
Market Leverage	0,265	0,228	0,245	0,226	0,157	0,243	-1,663*
Dividend Yield	0,740	0	1,186	1,414	0,47	1,961	-6,783***
R&D	4,857	1,502	9,561	9,006	1,851	24,538	-10,956***
Analyst	7,965	5	7,693	8,981	6	8,484	-2,459**
Amihud Illiquidity	0,174	0,072	0,391	0,098	0,007	0,243	-2,461**
Institutional Ownership	0,356	0,351	0,276	0,354	0,375	0,215	0,271

*, **, *** denote 10%, 5%, and 1% significance level respectively

Calculated by the author in the statistical package Stata

At this stage of the research, the key goal was to identify whether the mathematical expectation of market leverage of the actively targeted companies and passively targeted companies differed significantly. As seen in the table, the mathematical expectation of this variable varies significantly across the two subsamples, with the actively targeted companies having more market leverage on average than passively targeted companies (Tab.5). In addition, the significant difference between the mathematical expectations of MVBV (Market-to-Book Ratio), ROA, and Sales Growth indicates that hedge funds target actively underperforming and generally undervalued companies.

The analysis of descriptive data reveals that, on average, the shares of actively target firms are more liquid than shares of passively targeted firms. (Norli et al., 2015) who discovered that activists are more inclined to target actively firms with greater liquidity, as this significantly decreases the expenses related to the manifestation of shareholder activism, made similar findings. Significant differences in mathematical expectations of dividend yields, R&D costs and the number of analysts who report on company performance and prospects in the two subgroups are consistent with the findings of several research papers (Brav et al., 2008; Brav et al., 2015; Coffee, 2016).

As noted earlier, the target leverage for all firms in the sample was predicted using the regression tobit model (3.3). For further analysis, the difference between current and target leverage values was calculated. The table below presents the descriptive statistics of the variable that evaluates the difference between current and target leverage for the two subsamples of actively targeted firms and by year (-5 years before the transaction; 5 years after the transaction): for overleveraged companies and underleveraged companies (Tab.6).

Table 6. Descriptive statistics of the deviation of the current leverage from the target

	Deviation of the current leverage from the target			
	Overleveraged firms		Underleveraged firms	
	Mean	Median	Mean	Median
-5	0,297	0,183	-0,205	-0,098
-4	0,242	0,191	-0,129	-0,116
-3	0,258	0,167	-0,214	-0,112
-2	0,280	0,159	-0,257	-0,087
-1	0,299	0,219	-0,279	-0,109

Continuation of Table 6

0	0,324	0,170	-0,286	-0,121
1	0,298	0,156	-0,255	-0,086
2	0,223	0,173	-0,172	-0,106
3	0,221	0,154	-0,143	-0,084
4	0,226	0,127	-0,165	-0,088
5	0,202	0,159	-0,114	-0,072

Calculated by the author in the statistical package Stata

It is worth noting that in both cases, the maximum deviation of the current capital structure from the target is observed in year zero, which is when the activist hedge fund initiates the transaction. Another interesting result is that the deviation of the actively targeted firms' current leverage starts to decrease immediately after the deal is executed. The main reduction in leverage occurs in the first two years after shareholder activism campaign. However, an important factor is that even five years is not enough time for companies to fully reduce their current leverage deviation to target values.

3.4. Results of econometric analysis

In order to test the hypotheses put forward, the parameters of the following logit model (with fixed effects) were estimated, the results of the estimation are presented in the table below (Tab.7).

Table 7. Results of regression analysis

Variable	Dependent variable: Activism Dummy		
	(1)	(2)	(3)
	<i>Full Sample</i>	<i>Overleveraged firms</i>	<i>Underleveraged firms</i>
Current Leverage Dummy	0,195**	-	-
Distance from Target	-	0,953**	-2,600***
Ln(MV)_{t-1}	-0,091	0,369*	-0,278**

MVBV_{t-1}	-0,342***	-0,417***	-0,709**
ROA_{t-1}	-0,030**	-0,004**	0,033
Sales Growth_{t-1}	-0,019	-0,180	0,010*
Market Leverage_{t-1}	0,265	0,187	-0,795
Dividend Yield_{t-1}	-1,068	-1,011	-0,325*
R&D_{t-1}	0,033***	0,029	-0,079
Analysts_{t-1}	0,011	0,026**	-0,081
Amihud Illiquidity_{t-1}	-0,054	-0,021	-0,049
Institutional Ownership_{t-1}	0,517*	0,139*	0,781
Observations	2142	1285	857
Pseudo R2	14,8%	17,38%	14,83%
P-value	0,000	0,000	0,000

*, **, *** denote 10%, 5%, and 1% significance level respectively

Calculated by the author in the statistical package Stata

All of the logit models presented in Table 7 are statistically significant. In column (1), the binary variable *Current Leverage Dummy* is significant, the parameter value before the variable is positive, respectively: hedge funds are more likely to target actively portfolio companies in which the share of current leverage exceeds the target. Based on the results, hypothesis H1 is accepted. Variables MVBV (1% significance level), ROA (5% significance level), R&D (1% significance level) and Institutional Ownership (10% significance level) are also significant in the model (1). MVBV and ROA are inversely related to the probability of manifestation of shareholder activism by hedge funds, while R&D and Institutional Ownership are directly related the probability of manifestation of shareholder activism by hedge funds.

In the second model (2) and in the third model (3), the variable that measures the absolute deviation of the current market leverage from the target leverage (the target leverage was

predicted by the tobit model) is of most interest. The parameters of the second model were estimated on a subsample of firms with excess leverage. In the second column (2), the variable *Distance from Target* is statistically significant and the coefficient before the variable is positive, i.e. the larger the absolute deviation of the current market leverage from the target leverage, the more likely the overleveraged company is to become a hedge fund shareholder activism target. Thus, hypothesis H2 is accepted. In addition, variables MVBV (1% significance level) and ROA (5% significance level) are significant in the model, which have an inverse relationship with the probability of manifestation of shareholder activism by hedge funds, i.e. with their increase the probability of becoming a target of hedge fund activism decreases for overleveraged firms. The Analysts (5% significance level), Ln (MV) (10% significance level) and Institutional Ownership (10% significance level) variables have a direct relationship with the probability of manifestation of shareholder activism by hedge funds, i.e. increasing them increases the probability of becoming a target of hedge fund activism for overleveraged firms.

In column (3), the model parameter estimates for the subsample of companies with insufficient leverage are presented. The explanatory variable *Distance from Target* is statistically significant at the 1% level of significance and the coefficient before it is negative. So there is an inverse relationship between the absolute deviation of a company's current market leverage from the target and the probability of manifestation of shareholder activism by hedge funds towards underleveraged companies. On this basis, hypothesis H3 is confirmed. Moreover, Sales Growth (10% significance level) in the model is significant and has a direct relationship with the probability of manifestation of shareholder activism towards underleveraged firms. Ln (MV) (5% significance level), MVBV (5% significance level) and Dividend Yield (10% significance level) are inversely related to the probability of manifestation of shareholder activism towards underleveraged firms.

3.5. Analysis of the results

Thus, the results obtained in the course of the study make it possible to conclude on the existence and nature of the relationship between the manifestation of the shareholder activism strategy and the capital structure of the company on the example of US hedge funds' activism campaigns. In the course of the work, the purpose of the study was achieved: based on a sample of 135 active hedge fund investments and 135 passive hedge fund investments conducted between 2008 and 2016. An econometric analysis revealed that a relationship between the manifestation of shareholder activism and the capital structure of the company exists. In the course of achieving the purpose, all of the objectives were met.

Now let 's concentrate on the study's findings. In model (1), the statistically significant coefficient before variable *Leverage > target* has a positive sign. So it turns out that hedge funds are more likely to actively target companies with excessive leverage (i.e., current market leverage exceeds target leverage) than firms with current market leverage less than target leverage. The researchers (Ganguly, Ge, 2018; Pandey, Sahu, 2020) reached the similar conclusions, which is that hedge funds are far more likely to actively target companies with a debt-to-capital ratio that exceeds the target one. This relationship might be explained by the approach proposed by (Klein, Zur, 2011), according to which hedge funds target firms whose management is more tolerant to leverage, allowing activist hedge funds to force target companies to pay larger dividends by raising their debt load. In essence, there is a transfer of value from the company's creditors to its shareholders.

In a further study, the main sample was divided into two sub-samples. The first sub-sample, on one hand, consisted of companies with current market leverage greater than the target (overleveraged firms). The second sub-sample, on the other hand, contains companies with current market leverage lower than the target leverage (underleveraged firms). This approach enabled a more detailed understanding of the specifics of the relationship between shareholder activism and a company's capital structure. In model (2), the statistically significant coefficient for the variable *Distance from Target* in the first subsample of companies is positive. Consequently, when hedge funds target corporations with excessive leverage, there is a direct relationship between the probability of an activist campaign against the target firm and the absolute value of the divergence of the current market leverage from the expected target capital structure. This may be explained by the fact that activist hedge funds view each positive deviation of existing financial leverage from the target as a chance to create more value by restructuring the debt/equity ratio (deHaan et al., 2019). In addition, the higher the deviation, the greater the possibility for hedge funds to create value (DesJardine et al., 2021).

Model (3) provides similarly interesting findings for the subsample of companies with current leverage below the target. The statistically significant coefficient for the *Distance from Target* variable was negative. It turns out that for this subsample of companies there is an inverse relationship between the probability of manifestation of shareholder activism strategy by hedge funds and the absolute deviation of the current leverage and target values. This relationship for underleveraged companies is explained by (Denis, McKeon, 2012) in their study. Thus, according to the authors, underleveraged firms have limited financial flexibility. This implies that under-borrowing at a given point in time reduces the potential for target companies to be able to raise additional debt in future periods. That's because there is no guarantee that

companies will have attractive investment opportunities that they need to borrow against. Moreover, there is a chance that target enterprises may experience unexpected downturns in earnings in future periods, making it impossible for them to take on extra debt (Brühart et al., 2020). Hedge funds therefore cannot be certain that they will be able to influence the capital structure of underleveraged companies after the initiation of an activist campaign.

The practical value of this paper is that, based on this research, firms may project their target capital structure and assess the likelihood that they will become the targets of activist hedge fund campaigns. As a consequence, management will be able to act proactively if there are fears of being targeted by hedge fund activists. According to (Aziev, 2021) planning against shareholder activists is more crucial than ever. On the other hand, the findings are also of practical relevance to hedge funds. On the basis of the asymmetry in the relationship between the probability of shareholder activism by hedge funds and the absolute value of the deviation of current market leverage from the target for different subgroups of target firms, hedge funds can identify the most favorable target firms for pursuing specific strategies. Thus, when a company is characterized by excessive leverage, hedge funds should target the firms with the largest positive deviation from their leverage targets. Due to the limited financial flexibility of underleveraged firms, for activist hedge funds it is better to target firms with relatively low negative current leverage deviations from their target leverage. In addition, the study has practical implications for investors, who will be able to forecast the actions of activist hedge funds with regard to particular companies.

Further research could focus on analyzing the change in distance from the current financial leverage to the targeted ratios of the targeted companies after the direct manifestation of hedge fund shareholder activism. Additionally, it is possible to investigate which components of a company's capital increase or decrease the difference between the current market leverage and the target financial leverage.

CONCLUSION

As practice shows, many different investors use such popular investment strategy as shareholder activism (HBR, 2018). The meaning of this strategy is that the investor acquires a share of a public company, and then begins to take certain actions aimed at changing the vector of the firm's development and adjusting the operating activities. The main purpose of implementing the strategy of shareholder activism, is to maximize the return on invested funds, that is, in fact, activists are trying to increase the market capitalization of the company through their actions, which, in turn, leads to an increase in the wealth of the shareholders-activists themselves (The Economist, 2018). Although hedge funds initially rarely used this strategy, they are increasingly beginning to make active investments. Among the main motives of shareholder activism researchers highlight: restructuring the company's Board of Directors, changing the company's management team or changing their remuneration, changing dividend policy and others. Based on the analysis of academic articles, it can be concluded that hedge funds are increasingly beginning to actively target companies in order to change their capital structure (Ganguly, Ge, 2018). This raises a legitimate question: what kind of target companies do activist hedge funds target, in particular, what share of borrowed funds in total company capital and how much does it differ from the target market capital structure?

In the process of writing this master's thesis an empirical study was conducted, the purpose of which was to establish the relationship between the probability of choosing a strategy of shareholder activism by hedge fund and the capital structure of the targeted company. To achieve the stated purpose, the analysis of existing literature on the definition of the concept of shareholder activism strategy was performed, the activities of hedge funds as shareholder activists were reviewed and analyzed, the review of studies on the capital structure of the company and the question of its optimality was presented, the preferences of activist hedge funds in choosing a target company based on the capital structure were outlined. Moreover, an empirical study was conducted and the corresponding results were analyzed.

The first chapter analyzed the main approaches to defining the concept of shareholder activism. Since the empirical study was conducted on a sample of hedge funds that made active and passive investments in American public companies, the analysis of approaches to the definition of shareholder activism included the works of American researchers only. Further, the activity of hedge funds as institutional investors was analyzed and the specific characteristics of this type of fund (hedge fund concept, organizational structure, remuneration of managers, depositors and others) were examined. In addition, approaches to the definition of shareholder activism of hedge funds were considered in more detail. Based on the academic papers reviewed

in this chapter, the definition of shareholder activism of hedge funds was defined and the method of sorting specific investments into active and passive ones was chosen.

In the second chapter the basic classical and modern theories of capital structure of the company were reviewed. These theories were checked for the definition of the optimal capital structure, the results are summarized in a comparative table (Tab.1). In addition, the concept of the optimal capital structure of the company was introduced and the main approaches to predicting the target market leverage were discussed.

The third chapter presents the results of an empirical study aimed at establishing the relationship between the probability of choosing a strategy of shareholder activism by hedge funds and the capital structure of the targeted company. The empirical study consisted of three stages and was conducted on a sample of 135 active and 135 passive investments of hedge funds covering the period from 2008 to 2016. The first stage of the study included a comparative analysis of descriptive variable statistics for actively targeted companies and passively targeted companies. It was found that there is a significant difference in the mathematical expectations of the financial performance of actively targeted companies by hedge funds and passively targeted companies. Thus, hedge funds are more likely to actively target companies with higher current market leverage than others. In addition, in determinants such as MVBV (Market-to-book ratio), ROA and Sales Growth, the mathematical expectations between target companies subgroups also differed significantly, indicating that hedge funds actively target undervalued and underperforming companies. In addition, hedge funds are more likely to actively invest in organizations whose shares are more liquid than those of the control group, thus reducing the costs of shareholder activism. At the second stage the annual target market leverage for all companies in the sample was estimated with the regression Tobit model and the annual deviations of the current leverage values from the target values were calculated. Based on the descriptive statistics of this indicator, it follows that hedge funds invest both actively and passively at a time when the deviation of current leverage values from the target is maximal. Moreover, target firms reduce most of this deviation in the first two years after hedge funds invest. The third step showed that the targets of hedge funds' shareholder activism strategy are more likely to be portfolio companies in which the current market leverage exceeds the target. Moreover, for overleveraged companies there is a direct relationship between the probability of an activist campaign against the target firm and the absolute value of the divergence of the current market leverage from the expected target capital structure. For underleveraged companies there is an inverse relationship between the probability of manifestation of shareholder activism strategy by hedge funds and the absolute deviation of the current leverage and target values.

The findings of the study can be valuable for hedge fund managers as well as managers of companies that may face activist scrutiny. Company management may forecast their long-term target capital structure and, as a result, evaluate the likelihood of being actively targeted by hedge funds using the proposed methodology. As a result, firm management will be able to make any proactive adjustments necessary to avoid being targeted by activist hedge funds. The study's findings were also beneficial to hedge funds. Due to the specifics of hedge funds' strategies, they should pay close attention to the company they are targeting. As a result of an empirical study, hedge funds are more likely to target firms with excessive leverage, which is not surprising given that companies with insufficient leverage are characterized by limited financial flexibility. Consequently, the greater the difference between existing and target leverage for underleveraged firms, the more difficult it is for hedge funds to achieve the aim and alter the capital structure, making the task of creating additional value even more difficult. Furthermore, other investors can utilize the study's findings to forecast hedge funds' behavior in relation to publicly traded firms.

Further research can be carried out in the analysis of the change in the deviation of the current values of the company's leverage from the target values after the direct initiation of the shareholder activism campaign. Moreover, it also seems relevant to study what tools and tactics are used to change the capital structure of the target company after the manifestation of shareholder activism.

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APPENDICES

Appendix 1

Item 4. Purpose of Transaction.

The Reporting Person acquired the securities described in this Schedule 13D for investment purposes, and he intends to review his investments in the Issuer on a continuing basis. Any actions the Reporting Person might undertake may be made at any time and from time to time without prior notice and will be dependent upon the Reporting Person's review of numerous factors, including, but not limited to: an ongoing evaluation of the Issuer's business, financial condition, operations and prospects; price levels of the Issuer's securities; general market, industry and economic conditions; the relative attractiveness of alternative business and investment opportunities; and other future developments.

Depending upon overall market conditions, other investment opportunities available to the Reporting Person, and the availability of the Issuer's securities at prices that would make the purchase or sale of the Issuer's securities desirable, the Reporting Person may acquire additional securities of the Issuer, or retain or sell all or a portion of the securities then held, in the open market or in privately negotiated transactions.

The Reporting Person and his representatives may, from time to time, engage in discussions with members of management and the board of directors of the Issuer (the "Board"), other current or prospective shareholders, industry analysts, existing or potential strategic partners, investment and financing professionals and other third parties regarding a variety of matters related to the Issuer, which may include, among other things, the Issuer's business, management, capital structure and allocation, corporate governance, Board composition and strategic alternatives. Except as set forth above, the Reporting Person has no present plans or proposals which relate to or would result in any of the transactions required to be described in Item 4 of Schedule 13D.

Fig. 3. Example of SC 13D form

Appendix 2



Source: Modified from Graham, Smart, and Megginson (MBA Level Corporate Finance Textbook)

Fig. 4. Illustration of relationship between the manifestation of shareholder activism and the capital structure of the company