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Corporate Social Responsibility and Stock Market Performance: CSR Impact After the Financial Crisis and the Role of Primary CSR Activities

Bachelor thesis

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Declaration of Authorship

I hereby proclaim that I wrote my bachelor thesis on my own under the leadership of my supervisor and that the references include all resources and literature I have used.

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Prague, 17 May 2017

Signature

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Abstract

This thesis analyses the relationship between corporate social responsibility and companies' stock market performance in the post-financial crisis period. A new measure of social responsibility is used, called Thomson Reuters Environmental, Social, Governance, and Controversies Score. The results of the Fixed Effects regression show a significant, positive impact of the Score on the financial results of companies.

Socially responsible activities are further divided into those closely related to the specific type of business of examined companies, called primary, and into those that are not directly related to the companies' business core, called secondary. Such distinction has not yet been made in the academic literature. Empirical results suggest that if companies aim at increasing their share prices also via the corporate social responsibility channel, they are encouraged to select their socially responsible initiatives strategically. The impact of the primary responsible activities on the corporate stock market performance is significantly positive, while the secondary responsible activities do not affect the financial results substantially.

JEL Classification: A130, G110

Keywords: corporate social responsibility, CSR, business ethics, stock market performance, fixed effects

Abstrakt

Tato práce analyzuje vztah mezi společenskou odpovědností firem a firemní výkonností na akciovém trhu v období po finanční krizi. Je použito nejnovější dostupné měřítko společenské odpovědnosti, zvané Thomson Reuters Environmental, Social, Governance, and Controversies skóre. Výsledky panelové regrese na základě modelu fixních efektů ukazují signifikantní, pozitivní vliv tohto skóre na finanční výsledky firem.

Společensky odpovědné aktivity jsou dále rozděleny na ty, které jsou úzce spjaté s konkrétním typem podnikání zkoumaných firem, zvané primární, a na ty, které s ním přímo spojené nejsou, zvané sekundární. Toto rozdělení doposud nebylo v akademické literatuře provedeno. Empirické výsledky naznačují, že pokud firmy chtějí zvýšit ceny jejich akcií skrze společenskou odpovědnost, tak je jim doporučováno, aby si vybíraly jejich společensky odpovědné iniciativy strategicky. Vliv primárních společensky odpovědných aktivit je signifikantně pozitivní, ale sekundární společensky odpovědné aktivity už finanční výsledky výrazněji neovlivňují.

Klasifikace JEL: A130, G110

Klíčová slova: společenská odpovědnost firem, podnikatelská etika, výkonnost na akciovém trhu, fixní efekty

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List of Abbreviations

BVPS Book Value per Share

CEO Chief Executive Officer

CSR Corporate Social Responsibility

CFP Corporate Financial Performance

EPS Earnings per Share

ESG Environment, Society, Governance

FE Fixed Effects

FD First-Difference

KLD Kinder, Lydenberg, Domini

LTDTA Long-Term Debt to Assets

NGO Non-Governmental Organisation

NIPS Net Income per Share

PE Price to Earnings

RE Random Effects

R&D Research and Development

RDPS Research and Development per Share

ROA Return On Assets

ROE Return On Equity

S&P Standard & Poor

SRI Socially Responsible Investment

VIF Variance Inflation Factor

TRBC Thomson Reuters Business Classification

TRESGC Score Thomson Reuters Environmental, Social, Governance, and Controversies Score

Bachelor Thesis Proposal

Author	Aneta Pinteková
Supervisor	PhDr. Jiří Kukačka, Ph.D.
Proposed topic	Corporate Social Responsibility and stock market performance: The evolution of CSR impact in time and the role of the business-relevant CSR activities

Topic Characteristics

In the past decades, there was an increasing interest in the concept of Corporate Social Responsibility (CSR), i.e. the commitment of businesses to behave ethically and to take responsibility for the influence of their business on the environment and society. Apart from the impacts that CSR activities might bring to the environment and society, there were numerous studies conducted to measure whether such activities are beneficial also to the firms themselves. There has been no consensus reached when the impact of CSR activities on the firm's financial performance was measured. There are several studies in which the share prices were taken as the performance measure. The older studies mostly found an insignificant or even negative impact of CSR on the share prices. However, in the recent years, the studies which find a positive effect of CSR (or, concretely, in most cases it is the CSR disclosure) emerge. As the public has become more aware of the importance of ethical corporate behaviour, there is a question to be asked, and that is, whether the situation in the stock market has changed over the years and if the impact of CSR on firm's performance has changed from negative/neutral to positive. As an addition to the concept of CSR, the concept of Creating Shared Value has arisen. It highlights the importance of the connection between business priorities and CSR activities. In this thesis, it will be further examined whether the relevant CSR activities are prior to those non-relevant ones when it comes to their impact on firm's performance.

Hypotheses

1. CSR activities of a firm have a significant impact on its share prices
2. The impact of CSR on the share prices has evolved over time and has changed from negative/neutral to positive
3. The impact of the business-relevant CSR activities is more significant than the impact of the non-relevant CSR activities

Methodology

Econometric analysis of the stock market data like those from Standard and Poor's, concretely the stock market indices measuring the stock price development of U.S. companies (e.g. S&P 500 Index), and the indices designed to measure the performance of securities from companies that meet environmental and social sustainability criteria (e.g. S&P 500 Environmental & Socially Responsible Index). Moreover, the CSR activities of selected subset of firms will be divided into those related and non-related to the firm's business purpose. Subsequently, an analysis will be made to examine whether there is a difference between them in relation to the firm's performance as measured by the stock prices.

Outline

1. Introduction
2. Literature review:

a) Defining CSR

b) CSR and its impact on a firm's performance—older studies

c) CSR and its impact on a firm's performance—recent studies

d) The concept of Creating Shared Value

3. Hypotheses
4. Data & Methodology
5. Empirical analysis of the CSR impact and its change in time
6. Analysis of the difference in impact between relevant and non-relevant CSR activities
7. Results summary & conclusion

Core Bibliography

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Introduction

The aim of this thesis is to examine the relationship between Corporate Social Responsibility (CSR) and Corporate Financial Performance (CFP). Firstly, the impact of the overall CSR on financial results is examined, and then the responsible activities are divided into those that are considered to be the most relevant for firms with respect to their type of business, named *primary*, and those that are not so closely linked to the companies' business core, called *secondary*. An analysis is made in order to see whether the two types influence the financial performance differently.

To introduce the concept of CSR, we may say that the main idea of it is that firms should try to improve the well-being of society and to protect the environment by engaging in responsible activities that are beyond the scope of law. Such idea stems from the fact that companies have power and influence to do so, and that it is morally correct of them to incorporate business ethics into their daily business operations.

In addition to that, many scholars emphasize that the responsible behaviour should bring benefits (e.g., increased customer loyalty or employee productivity) that result in improved financial results (e.g., Perrini, Russo, Tencati & Vurro, 2011). However, this claim has not been unanimously confirmed by empirical research so far. For that reason, in this thesis we decided to reexamine the relation between CSR and CFP in the period after the global financial crisis.

One of the main problems in the previous research was the lack of reliable measures of CSR. In this thesis, we use newly created, sophisticated Thomson Reuters Environmental, Social, Governance, and Controversies Score (TRESGC Score) released very recently—in March 2017. When it comes to the measure of CFP, corporate share prices are chosen. The impact of CSR on the stock market performance is analysed in 10 year period between years 2007 and 2016. It is the period after the US subprime mortgage crisis, which became the global financial crisis after the bankruptcy of

the American bank Lehman Brothers. One of the probable causes was the managers' irresponsible behaviour.

After such experience, it might be expected that companies and markets have learned a lesson and would now care more about the business ethics in order to avoid such consequences of the irresponsible behaviour in the future. The change might be driven, among other things, by the responsible consumers, who recently seem to have higher requirements on the product characteristics and can more easily access the product or company information via internet.

If this is the case, the more responsible firms would be preferred to those less responsible ones also by investors, which would be in turn reflected in the higher share prices. We examine whether it is so on the data for Standard & Poor (S&P) 500 Index constituents, as those are considered to reliably represent the American economy.

The results show that the TRESGC Score has a significant, positive impact on the stock market performance of companies. One percentile point increase in the TRESGC Score raises the share price by 0.3%, or even 0.4% on average, holding everything else constant. It is a useful information for investors, suggesting them to take into account the CSR aspect of companies when they decide where to invest their money.

Subsequently, we delve deeper into the issue and ask the question whether the specific type of the responsible action in which a firm engages matters. Kramer & Porter (2011) state that the largest benefits come when *the shared value* is created. This means that the company uses its unique abilities to help the society, and the improvement in the society well-being would later bring higher financial benefits to the company. Based on this idea, we divide the CSR activities into those closely related to a company's type of business (e.g., emissions are an actual issue for a firm in the transportation industry), and into those that are less relevant for the firm (e.g., a telecommunication firm does not have to care so much about emissions). We examine whether the impact of the two types of CSR on the stock market performance is

different.

The regression outcome shows that the score for primary CSR has a significantly positive impact on the share prices, while if the score for secondary CSR increases, the share price will not be influenced substantially.

This bachelor thesis is organized as follows. In the section 1, the concept of CSR is defined, together with the summary of how it has evolved and why it is expected to bring financial benefits to firms. In the section 2, the overview of existing research is presented. It is divided into the earlier research, including studies published between years 1972–2000, and the more recent research, i.e., the studies written in 2000 and later. In the section 3, we present the current trends in the area of CSR, as well as the concept of *creating shared value*, that is, the ideas why socially responsible actions of companies should be linked to its business core, in order to increase the companies' profits. Theoretical basis for the empirical analysis can be found in the section 4, where the research methodology and model specification are explained. In the section 5, hypotheses are stated and data are described, and results from the analysis of the link between overall CSR and stock market performance are reported. Both cases when financial data at the year t are paired with CSR at the year t and at the year $t-1$ are presented. Finally, in the section 6 we analyse the difference in impact of the primary CSR and of the secondary CSR on the companies' stock market performance.

1 The Concept of CSR

There has been a movement in the corporate world, as nowadays companies are more and more encouraged to contribute to the well-being of society. One of the reasons for it is that the companies, especially the big corporations, have significant power and influence, which arose also from people's loyalty and belief in the company. Therefore, companies are encouraged use that gained power responsibly, with the aim to rather help the society than to harm it. The notion of CSR and its alternatives such as "corporate citizenship" or "corporate sustainability" are emerging, and more and more firms are engaging in the socially or environmentally responsible activities, or at least they are involving the corporate philanthropy into their business strategies.

1.1 Defining CSR

The term "Corporate Social Responsibility" has been used since 1950s, when Bowen (as cited in Garriga & Melé, 2004) wrote the book named *Social Responsibilities of the Businessman*, where he defined the social responsibilities as the duties of a businessman to follow such policies, decide in such way, and to act accordingly, as the society desires. However, in the next years and decades the exact definitions have differed across authors. Dahlsrud (2008) conducted an analysis of 37 definitions originating from 27 authors, covering time from 1980 to 2003. The most frequently used one of them is the one stated by the Commission of the European Communities in 2001: "A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (as cited in Dahlsrud, 2008, p. 7). Another popular one was that of the World Business Council for Sustainable Development, stated in 2000: "Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the

local community and society at large" (as cited in Dahlsrud, 2008, p. 7). The last important definition that should be mentioned is the well-known Carroll's (1991) four-part definitional framework for CSRs, originally stated as follows: "Corporate social responsibility encompasses the economic, legal, ethical, and discretionary (philanthropic) expectations that society has of organizations at a given point in time" (Carroll, 1991). To sum it up, companies are encouraged to care about the impacts their business has on the society and the environment, as well as they are encouraged to contribute to and improve the well-being of the society's members.

1.2 Brief Summary of the Evolution of CSR Concept

Regardless of how much companies are encouraged to help the society, it is not their primary role. Therefore, it is useful to look at where the CSR concept stems from. The notion started in 1953. In the 1960s, the CSR gained its popularity as there were wide social movements, mostly in the US. What became important at that time were civil rights, women rights and consumer rights, as well as there was an environmental movement (Carroll & Shabana, 2010). Murphy (as cited in Carroll & Shabana, 2010) described this period as the time when the awareness of social problems such as poverty, racial discrimination or pollution was raised. So, as the social environment was changing, there was also the pressure on businesses to behave in accordance with this societal mindset, and thus the concept of CSR was shaping and expanding. As a part of CSR, what stood out in that era was the start of corporate engagement in the corporate philanthropy, i.e. the charitable donations by businesses. On the other hand, what was not taken into consideration at that time was the link between CSR and corporate performance (Carroll & Shabana, 2010). This link became widely discussed and analysed in 1980s. Also, many related concepts arose in that period, such as business ethics or stakeholder theory. This trend continued in the 1990s and 2000s, when the notion of the corporate citizenship was added. In this concept the firm is considered to be a "citizen", or a member of the

society, so it has its responsibilities towards the local communities and the environment in which it operates (Garriga & Melé, 2004). The reason for the importance of this idea is that especially the beginning of 2000s was a period of enormous corporate scandals, such as those of Enron, Worldcom or Tyco, together with the subsequent scandals of Wall Street such as the bankruptcy of Lehman Brothers. Thus, also the theme of social responsibility was a little bit obscured at that time and the business ethics concern prevailed (Carroll & Shabana, 2010). However, these scandals were the reason at that time why the scholars looked at CSR and the related concepts, and why society was more and more expecting and requesting businesses to behave responsibly and ethically. The other reasons for the socially responsible behaviour of companies can be found rather not in the history, but in the elaborated academic work that relates to this question.

1.3 CSR Theories

Many scholars tried to explain the firms' motivation and eligibility to behave socially responsible, and elaborated various theories on CSR and related matters. The approaches towards understanding the CSR field have differed as well as the CSR definitions. Garriga & Melé (2004) classify the CSR theories and related approaches into 4 main groups. The first of them is called Instrumental theories, in which CSR is only considered to be "a strategic tool to achieve economic objectives and, ultimately, wealth creation" (Garriga & Melé, 2004, p. 3). These theories altogether state that companies should behave responsibly toward society only if it would increase shareholder value, help achieve competitive advantage, or it would bring profits in the long-run.

The second group called Political theories basically states that corporations should help the society, simply because they have power to do so. Thirdly, Integrative theories say that companies should satisfy the social demands, as their business depends on society and can exist only thanks to it. Finally,

Ethical theories claim that companies should do the good thing because it is ethically correct to contribute to the well-being of the whole society (Garriga & Melé, 2004).

The last three groups enumerate reasons why it is ethically or logically correct that companies behave socially responsible. These views have been gaining on more importance and have been spreading across scholars, organizations and all people interested in these issues in the recent years. However, the researchers supporting the first group, i.e., the theories claiming that businesses should primarily focus on the economic profits, remind us that we should not forget about this aspect. One of the most well-known of them is Friedman (1970), who states that business have only one responsibility toward society, and that is the profit maximization to the shareholders. Therefore, there is an important question to be asked, and that is whether engaging in the socially responsible activities pays-off to the companies, so that they help others without harming themselves.

1.4 Financial Benefits of the Socially Responsible Behaviour—Theoretical Basis

Together with business ethics awareness and the concern for the well-being of the firms' stakeholders, what dominated in the literature in the 1990s and 2000s was the search for the so-called business case, i.e., the research was focused on examining the link between CSR and CFP (Carroll & Shabana, 2010). So far, the empirical research has not given the final answer about which kind of link (i.e., positive, negative, or neutral) there exists, but scholars propose that there should be many positive outcomes of the socially responsible behaviour. Following the work of Perrini et al. (2011), the outcomes can be divided into these groups:

- **Organizational outcomes** —practices such as equal treatment of men and women, as well as of disabled, transparency in compensation, safety at the workplace, etc., might result in benefits as, for example, increased

productivity, employees' innovation initiatives, or lower turnover costs (Perrini et al., 2011). Moreover, Waddock & Graves (1997) suggest that the socially responsible firms are more likely to attract the high quality employees.

- **Customer-related outcomes** —if a firm diversifies by offering socially and environmentally friendly products, it has a good reputation or communicates transparently and reliably, it might be an incentive for the company's customers to purchase more of the firm's products. It can lead to customer satisfaction and loyalty (Perrini et al., 2011).

- **Supply chain outcomes** —if companies fight against the unsustainable practices among their supply chains (e.g., child labour, unsafe working environment, inadequate remuneration), they might achieve better quality of final product, higher potential for innovation, or improved coordination with their suppliers (Perrini et al., 2011).

- **Society-related outcomes** —investment in philanthropic activities such as community programs improves firms' competitive advantage as it enhances firms' reputation (Porter & Kramer, 2002). As it was partially mentioned, good reputation can result in loyalty of customers and employees, and also in a better relation with entities like banks or government officials (McGuire, Sundgren, & Schneeweis, 1988).

- **Environment-related outcomes** —behaving responsibly towards environment helps a firm avoid a number of risks, e.g., litigation charges for excessive CO_2 emissions (Lash & Wellington, 2007). It rather leads to cost savings, e.g., by reducing consumption of materials or energy (Perrini et al., 2011).

- **Governance outcomes** —if a company wants to behave socially responsible, it might also choose to publish a sustainability report that summarizes its actions and achievements. This initiative can in turn improve the internal communication and control processes, as well as it can raise awareness or motivation of the company's managers and em-

ployees (Herzig & Schaltegger, 2006).

All of these outcomes are likely to bring financial benefits to a socially responsible company. However, the important question is whether these assumptions are supported by real-world observations and can be proven by examining data collected on the actual financial and social performance of companies.

1.5 Introduction to the Existing Research

Apart from the theoretical research, scholars have also tried to examine the link between CSR and CFP empirically. There were approximately 180 studies published since the year 1972 examining whether the relationship exists. The major meta-analyses conclude that there is some link, however, it is relatively small (Misani, 2010).

Altogether, the results of the studies are mixed. There are several theoretical suggestions why it is so. Barnett (2016) claims that the more the socially responsible action of a firm brings direct benefits to the firm, the less probable it is that it improves relationship with its stakeholders, and consequently enhances profits, as it does not appear to be a really altruistic action. Further, if the firm is not taking the social action intensively and regularly, or if the firm behaves responsibly only after there is an external pressure, it will not be perceived as truly socially responsible, and thus the action will not bring the desired financial benefits (Barnett, 2016). Misani (2010) presents another point of view, and distinguishes between so-called convergent and divergent CSR. The former means that firms adopt only those CSR practices that have already been adopted by other firms in the industry (e.g., publication of a sustainability report, use of ethical labels, etc.). On the other hand, the divergent CSR means that firms try to be unique in their CSR action. In general, if a company wants to enjoy extra financial returns within an industry, it has to do some things differently (and better) than its peers, so that it achieves a competitive advantage. The same

logic should apply also in the case of CSR (Misani, 2010).

Apart from those proposed in the theoretical debate, there are prospective reasons for the differences in results of studies that can be seen directly from the existing research. One of them is the fact that financial performance measures differ across studies. The researchers use:

- **Market-based measures, i.e., stock prices** —sometimes an increase in prices is used, dividends are or are not taken into account, and the measures are risk-adjusted only in some cases.
- **Accounting-based measures** —Earnings per Share (EPS), Price to Earnings (PE) ratio, Return On Assets (ROA), Return On Equity (ROE), net income, profit margin, or even some other measures can be found in the research.

Moreover, some studies consider the short-term financial performance. These are called event studies, and they examine whether certain CSR action has an immediate impact on the CFP. It is also interesting to point out that some studies do not focus on CFP directly, but on the link between CSR and risk. Investors might consider the socially irresponsible firms to be a riskier investment, and thus it might in turn negatively affect the firms' financial results (McGuire et al., 1988).

The CFP measurement is not the only thing that differs significantly among studies. It is even more problematic to find the most appropriate measure for companies' social performance. The various measurements used in the research will be discussed more in detail in other sections.

Altogether, the empirical search for the link between CSR and CFP has not started such a long time ago. In many empirical papers, two studies from the year 1972 are considered to be the first to open the question if the more socially responsible firms are also more profitable. In this thesis, the review of the previous research is divided into the earlier research (1972–1999) and the more recent research (2000–now) section.

2 Literature Review of Previous Studies Examining the Link Between CSR and CFP

2.1 Earlier Research on the Link Between CSR and CFP (1972–1999)

2.1.1 Overview of Important Studies

At the beginning of the empirical investigation of the relationship between financial performance and social responsibility of firms we can find the work of Moskowitz (1972), published in the first issue of *Business and Society Review*. Moskowitz (1972) picked 14 firms he considered to be socially responsible. In the next issue, the 14 firms were observed to have 7.28% share price increase over the previous 6 months, which was much more than, for example, 4.4% gain for the Dow-Jones index constituents at that time. Later, these findings were re-examined by Vance (1975), who compared the market performance of the 14 firms in years 1972 and 1975. However, the results showed that all firms except for one underperformed the selected benchmarks, e.g. Dow-Jones Industrials or the New York Stock Exchange Composite Index. Some reasons for these inconsistent results, as suggested by Aupperle, Carroll, & Hatfield (1985), might be that the set of 14 firms is a very small sample to be truly representative, the firms were selected subjectively by Moskowitz (1972), and the period they observed was too short. The inconsistency of their results might be also attributed to the different market conditions.

Further, in the same study, Vance (1975) tried to extend his analysis and validate his findings, so he used not only Moskowitz's (1972) evaluation, but also ratings of 45 corporations by businessmen and business students, stated in surveys made by *Business and Society Review*, as a measure of corporate social responsibility. He examined the link between the rating and the percentage change in the price per share in 1974. This analysis also showed a negative relationship between CSR and firms' performance. How-

ever, Aupperle et al. (1985) draw attention to some limitations also in this part of Vance's (1975) study. To mention some of them, the response rate of the used survey was only 11%, and the year 1974 was a very unfavourable year for the stock market. Since these first examinations of the relationship between CFP and CSR were published, more studies on this topic started to emerge.

Bowman & Haire (as cited in Abbott & Monsen, 1979) took the number of lines in American food-processing firms' annual reports referring to the firms involvement in social activities as a measure of CSR, and ROE as a measure of financial performance. Their result suggests that there is an U-shaped relationship between CSR and CFP. The firms that performed insufficiently regarding the social aspects, or those that devoted too much effort to CSR, underperformed firms with the moderate social performance. One of the problems with this study is that the annual reports might not truly present the firm's socially responsible behaviour. Also, the authors did not control for other variables (McGuire et al., 1988).

Parket & Eilbirt (1975) surveyed corporations on their social responsibility, and treated the non-respondents as non active in CSR field. Then, the authors compared net income, profit margin, ROE, and EPS of the (presumably) socially responsible firms and of the other firms in Fortune 500. Each of the 4 measures was higher for the supposedly socially responsible firms. However, Parket & Eilbirt (1975) admit that their sample is relatively small and self-selected. Aupperle et al. (1985) further point out that no significance test was conducted, there is no adjustment for risk, and the claim that companies are more socially responsible only because they responded to the survey is a mere assumption.

Sturdivant & Ginter (1977) used the second reputation ranking created by Moskowitz (1972), who rated a number of firms as "outstanding", "honourable mention" and "worst" over several years. When they compared the firms' profitability, the "honourable mention" group had the best financial performance of them all, again suggesting the U-shaped relationship. Never-

theless, the validity of the CSR measure, i.e., the second Moskowitz's (1972) ranking, can be doubted, again for the reason that is was created subjectively based on any known criteria.

Alexander & Buchholz (1979) analysed the link between CSR and stock market performance in the case of U.S. corporations. As a measure of CSR, they used the same survey as Vance (1975), however, this study found no relationship between CSR and CFP. This paper was highlighted by other researchers as one of the few in the earlier research that applied a risk-adjustment (Abbott & Monsen, 1979; Aupperle et al., 1985). However, as in the case of Vance (1975), the sample the authors used is rather questionable.

Abbott & Monsen (1979) used a content analysis of the annual reports of Fortune 500 constituents, and constructed a Social Involvement Disclosure (SID) scale to measure CSR. The researchers examined its impact on the 10 year return to investors in 1964-1974. They did not find much difference between returns of the less socially involved and those highly involved firms, which suggested that there is only a weak positive effect of social involvement on firm profitability.

Cochran & Wood (1984) tried to improve the previous research by using a larger sample and industry-specific control groups. As a measure of social performance, they again used the reputation index of Moskowitz (1972). The interesting contribution of this study is that at first, when the authors regressed three CFP measures on industry and CSR dummy variables, the results show a positive, significant effect of CSR on two of them. However, when assets turnover and asset age were added as control variables, only a weak support for the positive link between CSR and financial performance was found. This suggests that the difference in the effectiveness of use of assets might play an important role when examining the link between CSR and CFP.

Aupperle et al. (1985) used the responses of Chief Executive Officers (CEOs) to a questionnaire as the CSR measure. The questionnaire was based on Car-

roll's (1991) pyramid, assessing whether CEOs put the greatest emphasis in certain situations on the economic, legal, ethical, or philanthropic performance. To measure CFP, the authors used risk-adjusted ROA. The study found no relationship between firms' social involvement and profitability. The drawback of the authors' approach is that CEOs might not see the social involvement of their company objectively.

McGuire et al. (1988) used data from Fortune reputation survey as a proxy for CSR, which was a measure not frequently used before. For the CFP, they not only used the stock-market measures and the accounting-based measures, but also the risk. Moreover, they also examined the reversed relationship, i.e., the effect of the prior financial performance on the CSR. Results show that the social performance is more closely linked to the previous financial performance than to the future performance. Nevertheless, the authors' data show that the companies with lower social performance also tend to have relatively lower ROA and stock market returns. The other interesting thing that authors find out is that CSR might not only enhance firms' profitability, but also reduce firms' risk exposure.

Waddock & Graves (1997) also made a deeper analysis, and not only tried to examine the sign of the relationship between financial and social performance, but also the direction of causation. As a proxy for CSR, they chose a sophisticated measure—a rank based on data from Kinder, Lydenberg, Domini (KLD), an independent rating service assessing the social performance of companies. KLD takes into account multiple attributes, as for example community (e.g., philanthropic contributions), diversity (e.g., equal treatment of men and women), employee relations, environment, etc. Waddock & Graves (1997) weighted the attributes according to their importance. To measure the financial performance, they chose accounting-based measures such as ROA. The results show a significant positive relationship in both directions, suggesting that the higher financial performance enhances higher social performance, which in turn results in better financial performance, and so on.

2.1.2 Summary of the Earlier Research

Out of the 11 studies published before the year 2000 mentioned above, some of them find:

- **Positive relationship**

  The studies of Moskowitz (1972), Parket & Eilbirt (1975), and Waddock & Graves (1997) support the view that if a company behaves socially responsible, their profits will increase. Moskowitz (1972) measured profits in terms of share prices, however, it is the most criticised study due to the self-selection of the socially responsible firms, based on no criteria. Parket & Eilbirt (1975) used multiple measures of financial performance, which might have been an improvement of the prior research. However, the authors' assumption about which firms are socially responsible might not truly reflect the social responsibility at all. Despite of the questionability of the two studies, there is the third study in this group, which seems to have the best approach so far. Waddock & Graves (1997) used sophisticated evaluation of CSR, and to measure CFP they also selected multiple measures. In their analysis, they controlled for size, risk and industry, and the sample they used is larger than those of the previous studies. Therefore, we might consider this study to be one of the most reliable studies in the earlier research.

- **Weak positive relationship**

  Abbott & Monsen (1979) and Cochran & Wood (1984) found only a weak support for the positive link between CSR and profits. Abbott & Monsen (1979) examined a large sample and the measurement of CSR was based on a content analysis of companies' annual reports, which is a relatively sophisticated approach. However, the link between the firms' statements and the actual socially responsible actions is uncertain McGuire et al. (1988). Cochran & Wood (1984) wanted to improve the prior research by comparing socially responsible companies to firms in their industry-specific control groups. The main finding of this analysis

is that there is an effect of the effective use of assets on the financial performance, and after controlling for this effect there seems to be only a small relation between CSR and profits. However, this study is limited by its measurement of CSR, the Moskowitz's (1972) ranking.

- **U-shaped relationship**

  The studies of Bowman & Haire (as cited in Abbott & Monsen, 1979; Aupperle et al., 1985) and Sturdivant & Ginter (1977) suggest that if companies do not invest enough, or when they invest too much into social activities, it will not bring them additional profits. However, in the case of optimal level of investment into CSR, their financial results will improve. Both studies used the accounting-based measures for CFP, however, the measure of CSR is questionable in both cases. Bowman & Haire (as cited in Abbott & Monsen, 1979; Aupperle et al., 1985) used the number of lines in annual reports referring to the firm's involvement in social activities, and Sturdivant & Ginter (1977) used the second Moskowitz's (1972) ranking.

- **Neutral relationship**

  The studies finding a neutral relationship are those of Alexander & Buchholz (1979) and Aupperle et al. (1985). The former one, even when it was highlighted by other researchers because of the risk-adjustment, again used the Moskowitz's (1972) ranking as a measure of CSR. In the latter one, the authors tried to improve the CSR measurement and used a sophistically created questionnaire that was sent to CEOs. They presented sound reasons why to use ROA to measure financial performance, and adjusted it for risk. Thus, this study can also be highlighted as one of the most reliable studies in the earlier research.

- **Negative relationship**

  The negative link was found by Vance (1975). Even when it was one of the first studies examining this question, and it has some notable limitations, it completes the range of possible links between CSR and CFP,

and thus makes us admit that there is also a possibility of unfavourable consequences of investment into the socially responsible activities, i.e., into something beyond the firm's core competencies.

One of the biggest problems in the earlier research was the measurement of CSR. In most studies, the following methods were used:

- **Rankings, i.e. reputation indices** —the advantage of this approach is that it is internally consistent, since the person who creates the ranking chooses the same criteria for all firms. However, these ranking are highly subjective (Cochran & Wood, 1984). In the earlier research, the most widely used is the ranking of Moskowitz (1972).
- **Content analyses** —some scholars created measurement scale according to the content of firms' annual reports. Even when this approach tends to be more objective than the previous one (Cochran & Wood, 1984), it is not certain that what a company claims it is doing truly reflects the reality.

Therefore, the crucial part of the further research is the search for a more appropriate measure of CSR.

2.2 More Recent Research on the Link Between CSR and CFP (2000–now)

2.2.1 Overview of Important Studies

McWilliams & Siegel (2000) claim that the models of previous studies were misspecified, as those authors have omitted an important control variable—investment in Research and Development (R&D). Regressing financial performance on social performance (in this case measured by a dummy variable, equal to 1 if a company is included in Domini 400 Social Index) without controlling for R&D investment, yields a positive and statistically significant coefficient on CSR. However, after investment in R&D was included in the model, no relationship between CSR and CFP was found.

Hillman & Keim (2001) distinguish between two types of CSR—stakeholder management (building relations with employees, customers, communities, etc.) and social issue participation (not engaging in industries such as alcohol or tobacco, or refusing to do business with countries where human rights violation is a common practice, etc.). Using data of S&P 500 firms, the authors find a positive association between stakeholder management and shareholder value. However, the social issue participation was found to be negatively related to the financial performance. Both types of CSR were measured by KLD data, the same as Waddock & Graves (1997) used.

Barnett & Salomon (2006) take a different, interesting approach. They focus on mutual funds making only Socially Responsible Investments (SRIs), and measure how intensity and type of social screening (funds' selection of companies into portfolio, according to CSR criteria) influences the funds' financial performance. Some researchers state that since the SRI funds exclude certain firms, or even whole industries (e.g., tobacco, alcohol, or gambling industry), their possibility to diversify is limited, and thus they are likely to incur financial losses. Barnett & Salomon's (2006) counterargument is that thanks to the social screens, actually the more stable and better-managed companies are chosen into the fund's portfolio. Their empirical results show that with more social screens used by the SRI fund (it is assumed that the funds which are stricter in their selection are more socially responsible) the financial performance (measured by risk-adjusted average monthly return on portfolio) initially decreases, but then starts to rise again as the number of social screens approaches the maximum, suggesting a curvilinear relationship between the funds' social and financial performance. The other finding of this study is that the type of social screens matters. Financial performance is enhanced by community screening, while environmental and labour relations screens lead to a lower financial performance.

Moneva, Rivera-Lirio, & Muńoz-Torres (2007) evaluate social performance of Spanish firms by building a scale measuring the quality of their sustainability reports. They find a positive but not significant relationship between

the higher quality of sustainability reports (which is assumed to reflect the external transparency of implementation of CSR strategies) and firms' financial performance.

Van der Laan, Van Ees, & Van Witteloostuijn (2008) find out that CSR dimensions related to secondary stakeholders (community, diversity, environment and human rights) are not linked to financial performance in the case of S&P 500 firms. On the other hand, those CSR activities related to primary stakeholders (employees, customer and investors) matter. Especially when the wishes of these 3 groups are disregarded, it would have a negative impact on CFP. As a measure of CSR, again, the KLD data are used.

Brammer & Millington (2008) focus on a specific aspect of social performance—corporate charitable giving. They examine its effect on the risk-adjusted market performance of a company's shares. Firstly, they estimate a Tobit model to see what is the expected charitable giving with respect to size, industry, profitability, R&D, and advertising intensity of the company. They use the residuals to identify firms with unusually high/low contributions to the charity. According to their results, the firms with exceptionally good social performance do not outperform the other firms in the short-run, however, they earn substantially higher profits in the long-run, suggesting that it just takes some time to benefit from the CSR activities.

Hull & Rothenberg (2008) show that the positive relationship between CSR (measured by using KLD data) and CFP, measured by ROA, is moderated by both industry innovation and level of differentiation. Concretely, the added differentiation through CSR seems to have higher effect on profits when competitors are poorly differentiated, and the innovation added by CSR can be beneficial when the firm is not forced to innovate, but chooses to do so, and thus becomes better than the other firms.

Makni, Francoeur, & Bellavance (2009) made their analysis on a sample of Canadian firms, using CSR data from Canadian Social Investment Database.

They find a statistically significant negative relationship between stock market performance and the aggregate CSR measure. However, no significant relationship was found between CSR and ROA or ROE. When the authors examined individual measures of CSR (rank on community activities, governance, human rights, etc.), a statistically significant relationship was found only for employees and environment. It was negative in both cases, suggesting that investment in such CSR activities is too costly for Canadian firms in the short-run.

Schadewitz & Niskala (2010) examine the effect of responsibility reporting based on the Global Reporting Initiative (GRI) guidelines on firm value. They use a sample of all listed Finnish firms and find that the reporting has a positive impact on the firm value in Finland.

Inoue & Lee (2011) again use KLD data, this time to examine more in detail how CSR activities influence profits of companies operating in tourism-related industries, where they are challenged to satisfy the socially-conscious travellers. They find out that the impact of CSR is negative in the short-run and there is no effect in the long-run in the airline industry. However, a significantly positive CSR effect on profits was found, both in the short- and the long-run, in the case of restaurants and hotels.

Eccles, Ioannou, & Serafeim (2014) identify 90 companies from S&P 500 as highly sustainable, and compare their financial performance in past 18 years to 90 benchmark companies. The high sustainability portfolio significantly outperforms the benchmark portfolio in 11 years, and in general it is shown to be less volatile.

Gregory, Tharyan, & Whittaker (2014) disaggregate the measure of CSR (according to KLD data) into both firms' strengths and weaknesses in terms of employee relations, community activities, diversity, environmental action, and product characteristics. Overall, strengths have a positive impact on firm value (which is significant in the case of employees and product), and weaknesses influence the firm value negatively (significantly in the case of

community, diversity, employees and environment).

De Klerk, de Villiers, & van Staden (2015) take a closer look at 100 largest companies in the United Kingdom and analyse whether CSR disclosure has an impact on their share prices. The findings show that CSR disclosure is a valuable information for investors and it leads to higher share prices. Moreover, De Klerk et al. (2015) show that the CSR disclosure is more relevant for firms operating in environmentally sensitive industries.

Qiu, Shaukat, & Tharyan (2016) extend the former analysis and examine the relation between both social and environmental disclosure and companies' financial performance, also in the context of United Kingdom. No link between environmental disclosure and profits was found, however, the findings show that social disclosures are those that are important for investors, and they lead to a higher market value of firms.

2.2.2 Summary of the More Recent Research

The studies published after 2000 start to take more sophisticated approaches when examining the link between social and financial performance. Therefore, some studies find a positive impact of certain aspects of CSR, and a negative impact of some others. Altogether, the resulting relationships found in the more recent research can be summarized as follows:

- **Positive relationship**

  Hillman & Keim (2001), Van der Laan et al. (2008), Brammer & Millington (2008), Hull & Rothenberg (2008), Schadewitz & Niskala (2010), Inoue & Lee (2011), Gregory et al. (2014), Eccles et al. (2014), De Klerk et al. (2015) and Qiu et al. (2016), i.e., 10 out of 14 selected studies, found some positive relationship between CSR and CFP. However, in almost all the studies the relationship was positive only in certain cases. Hillman & Keim (2001), similarly as Van der Laan et al. (2008), find a positive relation only in the case of CSR concerning the primary stakeholders (employees, customers and investors). Brammer & Millington

(2008) find a positive relationship only in the long-run, and Hull & Rothenberg (2008) report an impact of CSR only when there is a low innovation and low differentiation in the industry. Further, the analysis of Inoue & Lee (2011) demonstrates a positive relationship specifically in the restaurant and the hotel industry, but not in the airline industry. Moreover, when sustainability reports were analysed, De Klerk et al. (2015) find a positive influence on share prices, but when Qiu et al. (2016) get more in detail, they find a positive impact of social disclosure, but not of environmental disclosure. Therefore, it seems like it might be useful to distinguish between different types of CSR, and not to consider only an aggregate measure. On the other hand, there are still the studies (Schadewitz & Niskala, 2010; Gregory et al., 2014; Eccles et al., 2014) which find the positive relationship in every context they examine.

- **U-shaped relationship**

  The U-shaped relationship was found only in the study of Barnett & Salomon (2006), who examined the socially responsible mutual funds. Their analysis suggests that when there are no social screens applied when firms are selected to the portfolio, or if there are many of them, the financial performance of the fund will be enhanced.

- **Neutral relationship**

  McWilliams & Siegel (2000), Moneva et al. (2007), Van der Laan et al. (2008), Makni et al. (2009), Inoue & Lee (2011), Qiu et al. (2016) found some neutral relationship between CSR and CFP. Most of the neutral relationships are complementary to the positive ones mentioned before, e.g., Van der Laan et al. (2008) found no impact only of the CSR concerning secondary stakeholders (e.g., environment). On the other hand, McWilliams & Siegel (2000) report solely a neutral relationship after controlling for R&D investment, and Moneva et al. (2007) found positive but not significant relationship between high quality of sus-

tainability reports (i.e., better CSR) and CFP. Makni et al. (2009) did not find any impact of CSR (except for the one concerning employees and environment) in the case of Canadian firms.

- **Negative relationship**

  The negative relationship is reported only in special cases. We can find it in the studies of Hillman & Keim (2001) and Makni et al. (2009). Hillman & Keim (2001) find a negative relation between social issues participation (e.g., charitable giving) and financial performance. Makni et al. (2009) found a negative relationship for investment in employees and environment in the short run for Canadian firms.

Unlike in the earlier research, the more recent studies found more sophisticated ways how to measure CSR. Most of them use the KLD data, which are considered to be fairly reliable, as they are published by an independent third party and evaluate multiple dimensions of CSR (Waddock & Graves, 1997). Moreover, more sophisticated empirical approaches are taken. The studies also take into account the possibility that different types of CSR can have different effects on financial results. In addition to that, various types of industries are examined separately and the research is done in multiple countries.

The more recent studies tend to find the positive relationship between CSR and CFP more often, or the detected relationship is at least neutral. Other research papers also came to similar conclusion (e.g., Makni et al., 2009). However, there are still some contradicting results and more research is needed to show whether it really pays-off to companies to behave responsibly towards society.

3 Current Trends in CSR and a New Concept of Creating Shared Value

Even when the empirical results regarding financial benefits from CSR actions are mixed, it appears that CSR has become a well-known, wide-spread concept. The two visible CSR trends to mention are:

1. **Incorporation of CSR into company strategy**

   Eccles et al. (2014) note that over past 20 years, there is a growing number of companies involving the environmental and social issues into their business strategy. The evidence for this trend might be the growing number of sustainability reports summarizing the CSR actions taken by a company. Already 81% of S&P 500 companies had such report in 2015 (Governance & Accountability Institute, 2016).

2. **Emergence of Sustainability Indices and the Socially Responsible Investing**

   Since 1999, several sustainability indices have emerged. Financial Times (2017) defines the sustainability index as "A share index of companies that are managed in a way which respects the environment and the future interests of society and does not try to obtain immediate profits." One of the most well-known indices is the Dow Jones Sustainability Index, assessing the firms economic, environmental, and social performance, and accordingly choosing the top 10% of 2500 multinational companies as constituents. Next, there is the FTSE4Good Index, which screens firms based on their relationships with stakeholders, environmental sustainability, and concern for social and human rights. One of the indices with relatively stricter rules is the Domini Social Index 400 (Wang, Chen, Yu, & Hsiao, 2015). To measure the performance of socially responsible S&P 500 companies, there is also an index called S&P 500 Environmental & Socially Responsible Index.

   The sustainability indices are closely linked to a phenomenon called

Socially Responsible Investing (SRI). The Forum for Sustainable and Responsible Investment (2017) defines SRI as follows: "An investment discipline that considers Environmental, Social, and Governance (ESG) criteria to generate long-term competitive financial returns and positive societal impact." Such investment can be made directly into concrete companies, or into a socially conscious mutual fund or an exchange-traded fund. The sustainability indices can represent a base index which the SRI fund often tracks.

Despite the existence of such trends, the companies with the CSR strategy and the socially responsible investors still cannot be sure about the financial benefits of social responsibility.

In this thesis, the impact of CSR on share prices is analysed, thus providing useful information on whether the current trends we discussed have some reasoning and can be supported by empirical analysis. Besides that, a distinction is made between the CSR activities that are considered to be primary, based on the type of a company's business, and those that we call secondary CSR activities, as they are not directly related to the company's business core. Then, it is analysed whether the primary CSR activities have a higher impact on the share prices than the secondary activities. Such distinction has not yet been made in the previous research, and might provide a useful insight into whether the companies should choose the CSR activities strategically in order to achieve better financial results, or it does not really matter what type of responsible action they take.

In the academic literature, the strongest support for the view that CSR should not be far from the business core of a company can be found in the work of Kramer & Porter (2011). In their famous study named *Creating Shared Value*, authors define a new concept of common value creation as "policies and operational practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates".

A real-life example presented by Kramer & Porter (2011) is the food industry, where the companies can support the farmers by teaching them how to grow the crops most effectively, and by strengthening the local cluster. Then the farmers become more productive in the long-run, thus both the farmers and the company are able to earn more money—the shared value is created. On the other hand, if the farmers are supported only by, for example, higher income, which is the idea of the fair trade initiative, it will not sustainably improve their effectiveness and it will not bring the same benefits.

Regarding the other academic work making a distinction between the business-relevant and the less relevant CSR, an empirical paper written by Bruch & Walter (2005), even when considering only one aspect of CSR, the corporate philanthropy, distinguishes between different types of corporate giving. The one considered to be the best is called strategic philanthropy, when companies use their unique capabilities and resources to fulfil the needs of their stakeholders (an example is the IBM's Reinventing Education grant program aimed to make a technological improvement in school system, which also significantly boosted IBM's reputation and helped the firm to create many innovations, enhancing their financial results). On the other side, there is the so-called dispersed philanthropy, when companies neither exploit their knowledge, nor help their stakeholders (an example is a bank sponsoring a music festival—it is far from their business concern, and people on festival would barely notice the bank's logos in the amount of other logos, thus the bank cannot really expect great financial benefits from this action). This view of corporate philanthropy might be generalized also to the other CSR areas, and it can be assumed that the CSR activities linked to the company's core business line should bring greater financial benefits than the unrelated ones.

Michelon, Boesso, & Kumar (2013) also tried to examine empirically whether in case when the resources for CSR are allocated strategically, and are aimed at meeting stakeholder needs, the financial performance improves more than in the other case. Their results yield a positive answer, showing that the stra-

tegic CSR has a positive impact on both accounting-based and stock market measures of performance. Nevertheless, this study rather asks whether those CSR activities that a company considers to be a strategic priority bring more benefits than the other CSR actions. However, the company might choose to put an emphasis on the equality of men and women in their strategy, while that is not the primary issue in its business area, and it should rather focus on reducing its environmental impact. Therefore, in this thesis the CSR actions are divided into primary and secondary CSR, based on whether they are directly related to the company's business core or not. The analysis of the impacts of the two types of CSR is reported in the section 6.

Prior to that, we start with the examination of the link between the overall social performance and the financial performance. The section 4 summarizes the theoretical basis for the analysis. In the section 5, the hypotheses, data, and final results are presented.

4 Theoretical Basis for the Analysis of the Link Between CSR and CFP

4.1 Methodology

The data used for the estimation of the CSR–CFP link are an unbalanced panel. In the case of panel data, there are several options when choosing a method to estimate the specified model.

The first possibility is to use the pooled OLS model, where all data are just merged together and simple OLS is estimated. The problem is that this method ignores the nature of panel data and treats them as cross-sectional, without allowing for possible individual heterogeneity (often denoted as a_i, also called an unobserved effect, which might be present and might influence the individuals across time, but cannot be measured). In the case of companies, this can be for example the quality of management, which affects the company performance, but it is very hard to assess the quality of people. As this heterogeneity is disregarded in the pooled OLS, the assumption about no correlation between the error term (which then also encompasses the unobserved effect) and the explanatory variables is often unrealistic, resulting in a so-called heterogeneity bias (Wooldridge, 2012). Moreover, even without such bias, the pooled OLS inference is mostly invalid, as the serial correlation between errors corresponding to the same individual is ignored (Hill, Griffiths, & Lim, 2011).

The more suitable methods of estimation for panel data are called the Fixed Effects (FE) Estimator and the Random Effects (RE) Estimator. The condition which determines whether to use FE or RE is the correlation between the unobserved effect a_i and the explanatory variables. In other words, in the model

$$y_{it} = \beta_0 + \beta_1 x_{it1} + ... + \beta_k x_{itk} + a_i + u_{it}$$
$$\text{where } t = 1, 2, ..., T \text{ and } i = 1, 2, ..., N,$$

if $Cov(x_{itj}, a_i) = 0,\ j = 1, 2..., k$, then both RE and FE are consistent,

but RE is asymptotically more efficient. Also, RE allows for the inclusion of time-invariant independent variables into the regression. On the other hand, if this condition does not hold, then the FE estimation is still consistent, while RE is not. In such situation RE would attribute the effect of the unobserved heterogeneity to the explanatory variables. FE, on contrary, eliminates the unobserved effect a_i completely (Hill et al., 2011; Wooldridge, 2012).

To decide which one of the FE or the RE estimator to use, a Hausman test is conducted. The idea of this test is that if $Cov(x_{it}, a_i) = 0$, i.e., both FE and RE are consistent, they would converge to the true coefficient values as the sample gets larger. Then RE is preferred due to the reasons mentioned above. Therefore, the model (specified in section 4.2) is estimated using both the FE and the RE method. Then the null hypothesis that $Cov(x_{itj}, a_i) = 0$ is tested with the Hausman test, based on which we choose the FE model over RE. The concrete results are presented in the section 5.3.

In the FE estimation, it is assumed that the differences between individuals (the individual heterogeneity) are captured by the intercept (Hill et al., 2011). To get rid of this heterogeneity, the FE estimation works as follows: first, let us consider a simple regression

$$y_{it} = \beta_1 x_{it} + a_i + u_{it}$$
$$\text{where } t = 1, 2, ..., T.$$

There is no t subscript for a_i, as the unobserved effect is assumed to be time-constant.

The equation is then averaged across time for every i:

$$\bar{y_i} = \beta_1 \bar{x_i} + a_i + \bar{u_i}$$
$$\text{where } \bar{y_i} = 1/T \sum_{t=1}^{T} y_{it}, \text{ and similarly for } \bar{x_i} \text{ and } \bar{u_i}.$$

When the mean values are subtracted from the original equation, time-demeaned data are obtained:

$$\ddot{y}_{it} = \beta_1 \ddot{x}_{it} + \ddot{u}_{it}$$
$$\text{where } \ddot{y}_{it} = y_{it} - \bar{y_i}, \text{ and similarly for } \ddot{x}_{it} \text{ and } \ddot{u}_{it}.$$

After this data transformation, the unobserved effect a_i has disappeared,

and the pooled OLS for the new equation can be estimated (Wooldridge, 2012). The same approach applies when more explanatory variables are added to the regression. Of course, the FE estimation works properly only under certain assumptions, which will be commented in the section 5.4.

An alternative to this approach, where the unobserved effect a_i is eliminated as well, is the First-Difference (FD) estimator. In the approach applied to obtain the FD estimator the data are not time-demeaned, but differenced across time for each individual (i.e., values at the time $t-1$ are subtracted from the values at the time t, and the pooled OLS is applied on the differences).

The drawback of the first-differencing is that it can substantially reduce the variation in the independent variables. If the differences Δx_i exhibit little variation (i.e., the deviations from the mean $x_{ij} - \bar{x}_j$ are small), then from the formula

$$Var(\hat{\beta}_j) = \frac{\sigma^2}{(1-R_j^2)\sum_{i=1}^{n}(x_{ij}-\bar{x}_j)^2}$$

it can be seen that the standard errors of the estimator will be relatively high, and thus the t-statistics and the subsequent statistical significance will be lower. Moreover, as the data used in this thesis are an unbalanced panel, in the case of a missing value two observations are lost when using FD. For those reasons, the FE estimator is preferred also to the FD estimator.

4.2 Model Specification

For the empirical analysis, the model suggested by Gregory, Tharyan, & Whittaker (2014) is used. This paper belongs to the most recent work on the CSR–CFP topic in the academic literature, and it was published in the renowned *Journal of Business Ethics*, which is considered to be a relevant source of information regarding the ethical issues related to business.

The model based on this paper is specified as follows:

$$P_{it} = \beta_1 NIPS_{it} + \beta_2 BVPS_{it} + \beta_3 LTDTA_{it} + \beta_4 Size_{it} + \beta_5 RDPS_{it} + \beta_6 TRESGC\ Score_{it-1} + u_{it}$$

where P_{it} is the natural logarithm of the share price. Further, in the regression we include Net Income per Share (NIPS), Book Value per Share (BVPS), Long-Term Debt to Assets (LTDTA), Size of a company, measured either as the natural logarithm of assets or the natural logarithm of revenues, and Research and Development per Share (RDPS), all for the company i at the time t. Finally, TRESGC Score is included, which is a proxy variable for CSR of the company i at the time $t-1$.

As a measure of financial performance, the natural logarithm of share price P_{it} is chosen. In the academic literature, there has always been a debate about whether to use accounting-based measures, e.g. ROA or ROE, or market-based measures, of which the most commonly used is the share price. In this thesis, share prices are preferred as some researchers note that accounting-based measures are backward looking, and many times they are subject to managerial manipulation (McGuire et al., 1988; Hillman & Keim, 2001; Gregory et al., 2014). On the other hand, stock market measures reflect the investors' perception of a company's ability to generate future profits, and thus they should also reflect the impact of CSR on this perception and on subsequent investment decision (McGuire et al., 1988; Van der Laan et al., 2008; Gregory et al., 2014).

The reason why the dependent variable P_{it} is in the logarithm form is the interpretation. In the level form, if we say that the share price changes, e.g., by 5$, it is not the same when it increases from 10$ to 15$, and when it increases from 800$ to 805$. The use of logarithm allows us to interpret the change as a percentage.

As a proxy for CSR, a score constructed by Thomson Reuters company called TRESGC Score is used. It is further described in the section 5.2. It is used in a lagged form, i.e., the TRESGC Score from the previous year is

matched with current financial data for a company. The reason is that the score was constructed based on the annual reports published by companies, which are available for investors only at the end of the fiscal year, and thus investment decisions can be made only in the subsequent period. Moreover, the benefits coming from socially responsible behaviour, as well as penalties for controversies regarding CSR, are expected to be incorporated in the overall company reputation, which carries over into later time periods (Spicer, 1978). Last but not least, lagged CSR measure was used in a number of previous studies (e.g., Waddock & Graves, 1997). In the section 5.6, the additional analysis where the TRESGC Score is not used in the lagged form is presented.

In addition to that, control variables are included into the regression. Firstly, there are BVPS, and NIPS, reported after tax. Further, LTDTA is included, showing what percentage of assets the total long-term debt represents. It is used as a proxy variable for risk as it reflects the firms' leverage position. Inoue & Lee (2011) note that leverage has an impact on the CSR–CFP link as the firms that are more risk-tolerant (i.e., have higher leverage) behave differently when deciding whether to invest in CSR than those less risk-tolerant firms.

Next, various studies suggested to control for company size. The reason is that there might be a possibility that bigger firms are more likely to implement CSR into their strategy, as they might be more vulnerable to public pressure, or they could possibly gain profits more easily via economies of scale (Siegel & Vitaliano, 2007; Van der Laan et al., 2008). As a proxy for size, either the natural logarithm of total assets or the natural logarithm of total revenue is used.

Finally, the control variable RDPS is included into the model. It represents how much a company spends for research and development of new products and services. McWilliams & Siegel (2000) highlight the importance of R&D as a control variable, as it is an important determinant of profitability. When they examined the CSR–CFP link, their results were substantially different

after controlling for R&D. Multiple studies include R&D control as well (e.g., Waddock & Graves, 1997; Qiu et al., 2016). This suggests that the exclusion of R&D would lead to an omitted variable bias, causing endogeneity problem and resulting in biased and inconsistent estimators. Therefore, RDPS stays in the regression even when the R&D data were not available for all S&P 500 firms, which were selected as a sample on which the relation between CSR and CFP will be measured (see more detail in the section 5.2), or at least not in all periods. The filtering based on R&D availability leads to the resulting sample consisting of 152 companies, creating an unbalanced panel of 5153 observations.

The last thing to mention is the omittance of the industry dummy variable, which was originally included in the model of Gregory et al. (2014). Here, it is not included into the regression due to the selected methodology, where the variables that do not vary across time for any individuals cannot be chosen as a control variable.

5 The Analysis of the Link Between CSR and CFP

5.1 Hypotheses

To empirically examine the relationship between CSR and CFP, we state the hypothesis:

Hypothesis 1: There is no significant relationship between CSR and stock market performance after the financial crisis.

The Hypothesis 1 is the null hypothesis for the statistical test. Due to the reasons presented in the previous research (section 1.4), current trends in the CSR area (section 3), and based on the fact that a substantially large number of studies has examined this relationship since 1972, it is expected that at least some relationship between CSR and CFP exists, i.e., that the Hypothesis 1 will be rejected.

The researchers' opinions and expectations practically unanimously support the view that the impact of CSR on financial results is positive. CSR activities may increase employee satisfaction and productivity, bring customer loyalty, they can lead to an improvement of processes, cost savings, or many other benefits (see section 1.4). On the other hand, we should not forget that especially in the initial phases of implementation of CSR initiatives, the costs might be actually created. The question is whether these cost can be later outweighed by the future benefits.

Regarding the outcomes of the past empirical research, even when the results have always been mixed, it appears that as the time passes it is more frequent that a positive relationship is found (from the summarized studies, it was found by 3 out of 11 studies in the earlier research, compared to 10 out of 14 in the more recent research).

Also, when looking at the current trends, it is obvious that companies create their socially responsible strategies and investors invest into the SRI funds not simply for the satisfaction that they are doing a good thing, but also because they assume that it pays-off.

Therefore, it seems that the CSR concept has gained on its importance as the time passes, especially now in the period after the financial crisis, due to which people should be more aware of the importance of businesses to act responsibly, and they should also adequately appreciate it. Thus, it is expected that the impact of socially responsible behaviour on CFP has evolved over time and now it positively influences the company's share prices.

On the other hand, some of the more recent studies still found a negative impact of CSR on CFP in certain context. Therefore, this fact is also taken into consideration, and the alternative hypothesis is that CSR activities of a company have a significant (positive or negative) impact on its stock market performance after the financial crisis.

The regression results will show whether the Hypothesis 1 (which, in other words, says that the coefficient β_6 in the specified model is statistically

indistinguishable from zero) can be rejected in favour of the alternative two-sided hypothesis.

5.2 Data

The data used for the empirical analysis were obtained from the Thomson Reuters Eikon database. It is a renowned source of information for investors and financial specialists, providing analytics such as data on pricing, fundamentals, financial estimates, global news in financial area, and so on.

From this database, quarterly financial data for S&P 500 Index constituents were obtained for the period 2007–2016. S&P 500 Index is considered to represent the American economy as a whole, since it covers a substantial portion of the overall market capitalization of the American stock market, and it is well diversified. The data for its constituents in the period beginning in 2007 allow us to examine whether the concept of CSR has gained on importance on the American market after the financial crisis.

The descriptive statistics for the data are presented in Table 1.

Table 1: Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Max
NIPS	5,153	0.7	1.3	−20.9	8.6
BVPS	5,153	9.3	18.7	−149.3	172.5
LTDTA	5,153	0.2	0.1	0.0	1.0
Assets	5,153	30 052 m	46 241 m	601 m	358 586 m
Revenues	5,153	5 295 m	11 199 m	−3 366 m	133 776 m
RDPS	5,153	0.5	0.6	−0.2	9.5
TRESGC Score	5,153	48.4	13.3	9.2	82.2
Share price	5,153	64.9	74.7	2.6	837.3

Table 1 contains also the descriptive statistics for our measure of CSR, the TRESGC Score. When it comes to CSR, it has always been a problem in the academic literature to find an objective measure of it (Waddock & Graves, 1997; Hull & Rothenberg, 2008). The problem was mostly highlighted in the earlier research, while in the more recent research most of the studies used the data obtained from KLD database. KLD data have been viewed as a comprehensive CSR measure, but they have already been used by quite a large number of researchers. Therefore, the re-estimation of the CSR–CFP link using new CSR evaluation might be a useful contribution to the existing literature.

In March 2017 Thomson Reuters Eikon released brand new percentile rank CSR scores for more than 6000 companies from the whole world, designed to measure companies' performance in the ESG area. More than 400 ESG metrics were created in total, out of which the 178 most relevant measures are chosen for each company. All of them are then benchmarked against either Thomson Reuters Business Classification (TRBC) Industry Group (in the case of Environmental and Social metrics), or against the Country (Governance metrics).

The ESG measures are further divided into categories introduced in Table 2.

Table 2: Categories of ESG Measures

Pillar	Category
Environmental	Resource use
	Emissions
	Innovation
Social	Workforce
	Human Rights
	Community
	Product responsibility
Governance	Management
	Shareholders
	CSR Strategy

In this thesis, firstly an aggregated percentile rank score on ESG performance for each company is used. It is named TRESGC Score, and it is based on the reported information regarding ESG, adjusted for the negative stories published in media—in a case of a scandal, a company's score will be decreased. It is a sophisticated measure of CSR performance, as a large number of publicly available information about companies (annual or CSR reports, company website, NGOs websites, etc.) is analysed together with all new media materials.

To create the TRESGC Score, a weighted sum of the firm's percentile rank in 10 ESG categories is computed, which is further adjusted for the controversies. The category weights are the ratio of the number of monitored indicators belonging to the category (e.g., in the Workforce category, the monitored indicators are health and safety policy, employee satisfaction, working hours, etc.) and the number of all indicators used in the TRESGC Score framework. The weights are shown in Table 3.

Table 3: ESG Category Weights in Scoring

Pillar	Category	Indicators in scoring	Weight
Environmental	Resource use	20	11%
	Emissions	22	12%
	Innovation	19	11%
Social	Workforce	29	16%
	Human Rights	8	4.5%
	Community	14	8%
	Product responsibility	12	7%
Governance	Management	34	19%
	Shareholders	12	7%
	CSR Strategy	8	4.5%

5.3 Regression Results

The method to estimate the specified model was chosen based on the Hausman test, described in section 4.1. When the test is conducted, it yields the following results:

$$\chi^2 = 1039.565 \qquad p - value < 2.2e - 16$$

As the $p-value$ is very low, the null hypothesis stating that $Cov(x_{itj}, a_i) = 0$ is rejected in favour of the alternative that there is a correlation between error term and explanatory variables. Therefore, FE estimator is still consistent, in contrary to RE, and thus it is the preferred method to be used. The results obtained from the FE regression, where the company size is measured as both the logarithm of assets and the logarithm of revenues, are stated in Table 4.

Table 4: Regression Results

	Dependent variable: Log(shareprice)	
NIPS	0.078***	0.050***
	(0.004)	(0.005)
BVPS	0.0001	0.0003
	(0.001)	(0.001)
LTDTA	0.004***	0.009***
	(0.001)	(0.001)
Log(assets)	0.597***	
	(0.015)	
Log(revenues)		0.426***
		(0.015)
RDPS	−0.091***	−0.213***
	(0.014)	(0.014)
TRESGC Score	0.003***	0.004***
	(0.0004)	(0.0005)
Observations	5,153	5,152
R^2	0.417	0.347
Adjusted R^2	0.405	0.336
F Statistic	596.267*** (df = 6; 4995)	441.914*** (df = 6; 4994)
Note:		*p<0.01; **p<0.001; ***p<0.0

Both models have a reasonably high R^2, suggesting that the independent variables explain the proportion of the variance in the dependent variable by 34.7%–41.7%. Regarding the statistical significance, all independent variables but BVPS (which is also not economically significant) are statistically significant in both models.

Let us first look at the coefficients on control variables. In the first model, 1 dollar increase in the NIPS results in 7.8% increase in the share price, while for the second model it is a 5% increase, ceteris paribus. LTDTA is expressed as a percentage in the data, and therefore the results show that 1 percentage point rise in the debt to assets ratio can lead to 0.4% or even 0.9% increase in the share price, holding everything else fixed. The positive direction of this relationship arises probably due to the fact that the higher level of debt financing might be a signal to an investor that the company is investing more and thus he or she expects higher profits in the future.

When it comes to size, the regression results exhibit its positive impact on profitability. If measured by assets, a 1% increase in firm size causes 0.597% rise in share price, and when measured by revenues, an increase of 1% in size results in 0.426% increase in the share price, holding other factors constant. Finally, a significant negative relationship between RDPS and share price was found using both model specifications. The results from the first model show that a 1 dollar rise in RDPS decreases the share price by 9.1%, while the second model suggest even much larger decrease, concretely by 21.3%, ceteris paribus. One possible explanation might be that the investment into innovation often has an uncertain outcome, and therefore the investors may not immediately expect the firm to have high return on such investment. Thus, they might not expect high profits from investing into the innovating company in the short- to medium-term time horizon.

Now let us take a look at the coefficient of our proxy variable for the corporate social responsibility, the TRESGC Score. The model in which the size is measured as the logarithm of assets suggests that 1 percentile point increase in the TRESGC Score leads to 0.3% increase in the share price on

average. The second model shows that there might be even stronger impact of CSR on CFP, as the 1 percentile point rise in the TRESGC Score results in 0.4% increase in the share price, holding other things fixed. Therefore, in both cases, the Hypothesis 1 is rejected in favour of the alternative, showing that there is a statistically significant positive relationship between CSR and firms' stock market performance in the period after the financial crisis.

5.4 Assumptions for the Fixed Effects Estimation

To verify the results of the FE estimation, it needs to be checked whether all the FE assumptions hold.

Firstly, the random sampling assumption is expected to hold, as the S&P 500 Index constituents are carefully chosen in order to truly represent the American economy. Secondly, no explanatory variable is constant over time for any company.

Further, when checking whether there is no perfect correlation between the explanatory variables, we look at the correlation matrix for cross-sectional data from the last quarter of the year 2016, displayed in Table 5. No correlation coefficient that would be close to 1 is observed, except for the correlation between assets and revenues, which does not cause problems as those are not used in the regression at the same time. Therefore, we assume that the situation is similar also in the other time periods, and the assumption of no perfect correlation is satisfied.

Table 5: Correlation Between Explanatory Variables

	NIPS	BVPS	LTDTA	Assets	Revenues	RDPS	TRESGC Score
NIPS	1.00	0.24	-0.10	0.17	0.24	0.21	-0.03
BVPS	0.24	1.00	-0.41	0.23	0.25	0.30	0.02
LTDTA	-0.10	-0.41	1.00	-0.15	-0.18	-0.22	0.04
Assets	0.17	0.23	-0.15	1.00	0.88	0.18	-0.26
Revenues	0.24	0.25	-0.18	0.88	1.00	0.31	-0.24
RDPS	0.21	0.30	-0.22	0.18	0.31	1.00	-0.10
TRESGC Score	-0.03	0.02	0.04	-0.26	-0.24	-0.10	1.00

The next FE assumption is a little bit more tricky. In Wooldridge (2012, p. 509), it is stated as follows:

For each t, the expected value of the idiosyncratic error given the explanatory variables in all time periods and the unobserved effect is zero:

$$E(u_{it}|X_i, a_i) = 0.$$

What leads to the violation of this assumption, i.e., what causes the error term to be correlated with explanatory variables, are usually a measurement error or an omitted variable. As the data are obtained from a highly relevant source, with the financials extracted from the companies' annual reports, no measurement error in data is expected.

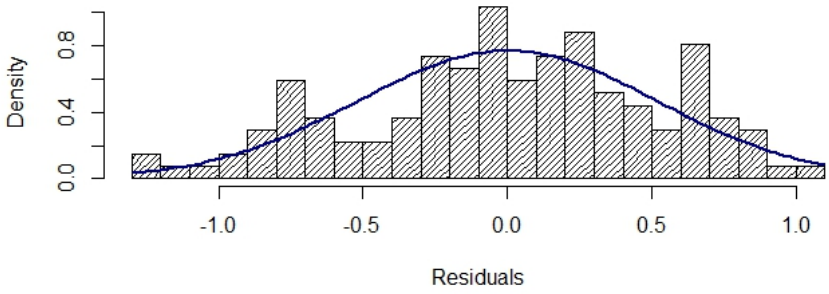
Based on the previous research, we are not aware of any missing explanatory variable, thus the omitted variable bias should not be present neither. The only thing that might raise concerns about the omitted variable bias is the unbalanced panel. Wooldridge (2012) states that the unbalanced panel causes problem only when the reason why there are some missing data is correlated with the error term. However, the FE estimation actually allows the reason to be correlated with the unobserved effect a_i as the effect is then removed. As it is actually reasonable to assume that the reason why some data for certain firms are missing is captured by a_i, i.e., the individual heterogeneity (e.g., some unobserved characteristics determining whether the company's financials are tracked by Thomson Reuters), the omitted variable problem is not expected to arise either.

The last assumption commented in this section, based on Wooldridge (2012, p. 509) is:

Conditional on X_i and a_i, the u_{it} are independent and identically distributed as Normal(0, σ_u^2).

To check whether this assumption holds, we plot the residuals and look at their distribution. Also in this case it is done with the cross-sectional data from the last quarter of the year 2016.

Figure 1: Histogram of Residuals for 2016



Note: The blue line represents the theoretical normal distribution defined by sample mean and sample standard deviation

From Figure 1 we can see that the residuals are close to being normally distributed.

The remaining assumptions are stated and commented in the following sections, together with the corresponding tests. The assumption formulations are based on Wooldridge (2012, p. 509).

5.4.1 Testing for Heteroskedasticity

Regarding the variance of idiosyncratic errors, it is assumed that:

$$Var(u_{it}|X_i, a_i) = Var(u_{it}) = \sigma_u^2, \text{ for all } t = 1, ..., T.$$

To test whether this assumption holds, the Breusch-Pagan (BP) test is used.

$$BP = 3736.305 \qquad p - value < 2.2e - 16$$

The results show a very low p-value, and therefore the null hypothesis of homoskedasticity is rejected in favour of the alternative, which states that heteroskedasticity is present in the data.

5.4.2 Testing for Serial Correlation

The next FE assumption is:

For all $t \neq s$, the idiosyncratic errors are uncorrelated (conditional on all explanatory variables and a_i): $Cov(u_{it}, u_{is}|X_i, a_i) = 0$.

To test the null hypothesis of no serial correlation in errors, Wooldridge's test for serial correlation in FE panels is used.

When the test is run on the model, it yields the following result:

$$\chi^2 = 3736.305 \qquad p - value < 2.2e - 16$$

As the p-value is practically zero, the null hypothesis is rejected in favour of the alternative stating that the serial correlation in the errors is present.

5.5 Correcting for Heteroskedasticity and Serial Correlation and the Final Analysis Results

To correct for heteroskedasticity and serially correlated errors, robust standard errors suggested by Arellano (1978) are used. The model specification where the size is measured as a logarithm of assets is chosen. In the second column of Table 6, also the results from the original regression are reported, in order to compare the two models more easily.

From the Table 6 it can be seen that after using heteroskedasticity and serial correlation robust standard errors, the significance of some variables has changed. No change is observed for NIPS, BVPS, and size, i.e., $Log(assets)$. On the other hand, LTDTA is now significant only at the 5% level, and RDPS at the 1% level, compared to previous zero level in both cases.

The significance of TRESGC Score has also decreased, but only slightly. The variable is still significant at 0.1% level, i.e., the Hypothesis 1 is again rejected in favour of the alternative, demonstrating that there is a statistically significant positive relationship between CSR and firms' stock market performance.

Table 6: Results with Robust Standard Errors (SE)

	Dependent variable: Log(shareprice)	
	Model with Robust SE	Original model
NIPS	0.078^{***}	0.078^{***}
	(0.011)	(0.004)
BVPS	0.0001	0.0001
	(0.001)	(0.001)
LTDTA	$0.004^{\cdot}$	0.004^{***}
	(0.002)	(0.001)
Log(assets)	0.597^{***}	0.597^{***}
	(0.040)	(0.015)
RDPS	-0.091^{*}	-0.091^{***}
	(0.042)	(0.014)
TRESGC Score	0.003^{**}	0.003^{***}
	(0.001)	(0.0004)
Observations	5,153	5,153
R^2		0.417
Adjusted R^2		0.405
Note:	$^{\cdot}$p<0.05; *p<0.01; **p<0.001; ***p<0.0	

5.6 The Analysis of the Link Between CSR and CFP—No Lagged Value for CSR

So far, the TRESGC Score was used as a lag, which means that, for example, the financial data from the year 2016 were matched together with the TRESGC Score for the year 2015.

However, an investor might closely watch a company during the whole year, and be aware of the company's CSR actions, as well as of what media say about it. Therefore, the TRESGC Score, published at the end of the year, might be only a reflection of the investor's perceptions, which have already

influenced his or her investment decisions throughout that year. Thus, the CSR actions of the company, e.g. in 2015, would already have an impact on the share prices in 2015.

To see whether this is the case, the following model is estimated:

$$P_{it} = \beta_1 NIPS_{it} + \beta_2 BVPS_{it} + \beta_3 LTDTA_{it} + \beta_4 Size_{it} + \beta_5 RDPS_{it} + \beta_6 TRESGC\ Score_{it} + u_{it}$$

Where the variable TRESGC Score at the time t is included. The same analysis as the one with the lagged CSR variable was conducted, with the size measured by both the logarithm of assets and the logarithm of revenues, and also with the heteroskedasticity and serial correlation robust standard errors. Only the number of observations is slightly lower than in the previous analysis, as the current TRESGC Score was not available for all firms in all time periods.

For the matter of space, the results of this analysis are not reported, as they are nearly identical to those presented in sections 5.3 and 5.5. They show that also in the case when the TRESGC Score is not in the lagged form, it has a significant positive impact on the share price. The 1 percentile point rise would lead to 0.4% increase in the share price, holding other things fixed. This outcome supports the view that the socially responsible behaviour might influence the investor's decision-making immediately, even when it has not yet been summarized in the annual report.

Therefore, according to the results, CSR affects the share prices both at the time when the CSR action is taken, as investors would follow the current information about the company, and also later, when the effect of CSR action would be carried over till the next year, either because it has created some reputation, or because the summary in the company annual reports convinces new investors to invest into the company.

6 The Analysis of the Difference in Impact of the Primary and the Secondary CSR Activities on the Share Prices

6.1 Model Specification and Hypotheses

To extend the previous examination, which shows that CSR affects the share prices positively, the socially responsible activities are divided into the primary CSR, which is closely connected to companies' business operations, and into the secondary CSR, which is farther from the companies' type of business.

To see whether there is a difference in the impact on the share prices between the primary and the secondary CSR activities, we specify the following model:

$$P_{it} = \beta_1 NIPS_{it} + \beta_2 BVPS_{it} + \beta_3 LTDTA_{it} + \beta_4 Size_{it} + \beta_5 RDPS_{it} + \beta_6 PrimaryCSR_{it-1} + \beta_7 SecondaryCSR_{it-1} + u_{it}$$

As was suggested in the empirical research, summarized in section 3, it is assumed that the primary CSR activities, i.e., those connected to the business core of a company, should have some impact on the share prices of a company. To support this assumption, the following hypothesis would have to be rejected:

Hypothesis 2: Primary CSR has no impact on the companies' stock market performance.

Hypothesis 2, in other words, states that the coefficient β_6 in the specified model is not statistically distinguishable from zero.

On the other hand, the secondary CSR activities are regarded as less relevant with respect to the companies' business core, and therefore they are likely not to bring some substantial financial benefits to the companies. Therefore, we hypothesise that:

Hypothesis 3: Secondary CSR has no impact on the companies' stock market performance.

According to this hypothesis, the coefficient β_7 is expected not to be statistically different from zero.

Apart from the examination of the difference in impact of the two types of CSR activities, the other reason for making this distinction is to control for the industry specifics as it is suggested by previous empirical studies. It was not possible to include an industry control variable in the previous analysis, since the specification of the FE estimation does not allow to include time-invariant variables into the regression.

6.2 Primary and Secondary CSR Categories

When deciding which CSR factors are primary for which company, the ten ESG categories (from Thomson Reuters classification, see section 5.2) were marked either as primary or secondary for every S&P 500 industry category (or subcategory, when it was not possible to generalize).

A CSR category is denoted as primary if the aspects contained in that category are closely connected to the company's business core. Then it makes sense to evaluate the companies on their performance in those CSR areas, and find out whether they try to reduce their negative impact or whether they use their potential to make improvements in that area of sustainability.

On the other hand, the secondary CSR categories are not directly linked to the company's type of business. For example, companies in the transportation industry should really try to reduce their emissions, while for banking industry it is not an actual issue.

In Table 7, it is explained why the CSR category is regarded as primary for some industry. The explanation also reveals which indicators were considered by Thomson Reuters company when the overall score for the concrete CSR category was computed.

Table 7: Denoting CSR Category as Primary

1.) Environmental
Resource use:
To evaluate the company performance regarding the use of resources is considered to be relevant for companies which are prone to spend too much energy, water, or those that tend to contribute significantly to the earth's land change. Moreover, it is relevant for firms that have potential to use (or even produce) renewable energy.
Emissions:
Emissions should be of concern to those firms that usually produce a lot of CO_2, NO_x, or SO_x emissions. Also, the firms that produce too much (hazarduous) waste should be closely watched in this aspect.
Innovation:
Environmental innovation is considered to be important in the industries where companies could try to offer more eco-friendly or organic products, to gain some eco-labels or other certifications, or to invest more into the environmental innovation. Also, it is an important CSR area to watch in the case of companies that could be suspected to be testing their products on animals, or genetically modifying them (e.g., crops).
2.) Social
Workforce:
In the industries where workers' safety and health might be of a concern, where people might have too much stress and excessively long working time, or where equal opportunities should be given to women and disabled, it is relevant to measure the company's effectiveness to cope with these problems.
Human Rights:
In general, companies are obliged to obey the law and accordingly respect the human rights. Therefore, the CSR initiatives in the area of human rights beyond the scope of the law are regarded as primary only in the industries that are especially sensitive to human rights violation, such as healthcare industry.

Community:

This CSR category is seen as primary for companies that can use their unique abilities and resources to help communities in which they operate (e.g., pharmaceutical companies may donate pills to those in need). Also, it is the relevant aspect to watch for companies that are prone not to behave responsibly in the area of business ethics, corruption, and fair play on the market.

Product Responsibility:

If companies are making products/offering services such that they can influence the product/service characteristics (it is not possible when producing electricity, for example), and these characteristics could be potentially harmful for health, safety, etc. in some way, then it is important to evaluate the companies on their capacity to avoid these harmful impacts, as well as on their willingness to communicate the product characteristics transparently.

3.) Governance

Management:

If independence and diversity of board members is crucial, this CSR category is regarded as primary for the industry (an example is the banking industry, where the irresponsible behaviour of managers in American banks stared the financial crisis in 2008, or the oil industry, where the political engagement of the management can even lead to some military conflicts).

Shareholders:

As every company should use shareholders' money responsibly, this category is considered to be primary for all.

CSR Strategy:

The direct communication of the CSR strategy is considered to be of a primary concern to companies that are visible for public, and interact directly with final customers. If a company is rather operating "in the background", then the excessive CSR communication might not really bring the desired benefits (e.g., CSR reporting of apparel manufacturers has not the same reasoning as the CSR reporting of the fashion brand itself).

Based on this rationale, the ten CSR categories were denoted as primary or secondary for the concrete industry (sub)group. The distinction was made with the help of CSR Consult, s.r.o., a company providing consulting services

in the area of corporate social responsibility in the Czech Republic since 2005. The final selection of the primary and the secondary CSR categories resulting from the professional consultation is presented in Table 9. The category *Shareholders* is not reported as it is considered to be of the primary concern for every company.

6.3 Calculation of the Primary and the Secondary CSR score

For each company, the primary CSR score was computed as a weighted sum of the Thomson Reuters scores for each category denoted as primary in the industry where the company operates (see Table 7). The weights were based on the weights reported by Thomson Reuters, but recomputed so that they always add up to 100%.

Let us consider an example of the basic materials industry, where the primary CSR activities are the resource use (RS), environmental innovation (EI), and workforce (W). Then, the primary CSR score is equal to:

$$\frac{w_{RS}}{w_{RS}+w_{EI}+w_W} * RS_{score} + \frac{w_{EI}}{w_{RS}+w_{EI}+w_W} * EI_{score} + \frac{w_W}{w_{RS}+w_{EI}+w_W} * W_{score}$$

The same logic applies for all industries and also for the computation of the secondary CSR score.

To have a better idea about the calculation results, the descriptive statistics for the primary CSR and the secondary CSR percentile scores are reported in Table 8.

Table 8: Descriptive Statistics for Primary CSR and Secondary CSR

Statistic	N	Mean	St. Dev.	Min	Max
Primary CSR	5,153	61.08	19.20	10.40	98.23
Secondary CSR	5,153	64.99	22.04	0.91	99.48

Table 9: Primary CSR Categories for Specific Industries

Industry category	Industry subcategory	Primary CSR	Secondary CSR
1. Basic materials—chemicals, mineral resources, containers & packaging	None	Resource use, Environmental innovation, Workforce	Emissions, Community, Management, Human rights, Product responsibility, CSR strategy
2. Consumer Cyclicals	**a) Retailers**—apparel, PCs, electro, cars, household goods, personal care **b) Cyclical consumer services**—media, publishing, hotels, entertainment	Resource use, Community, Human rights, Product responsibility, CSR Strategy	Emissions, Environmental innovation, Management, Workforce
	c) Cyclical consumer products—home building, furnishing, household goods, toys, textile **d) Automobiles & Auto Parts**	Emissions, Resource use, Environmental innovation, Workforce, Product responsibility, Management	Human rights, Community, CSR Strategy
3. Consumer non-cyclicals—food & beverages, personal & household products and services	None	Emissions, Resource use, Environmental innovation, Workforce, Community, Product responsibility, CSR strategy	Management, Human rights
4. Energy—fossil fuels	None	Emissions, Resource use, Environmental innovation, Workforce, Management	Human rights, Community, Product responsibility, CSR strategy
5. Financials—banking & investment services, insurance, real estate	None	Resource use, Workforce, Community, Product responsibility, Management, CSR strategy	Emissions, Environmental innovation, Human rights
6. Healthcare—healthcare services & equipment, pharmaceuticals & medical research	None	Emissions, Environmental innovation, Resource use, Community, Product responsibility, Management, Human rights, CSR strategy	Workforce

7. Industrials	**a) Transportation**—airlines, logistic services	Emissions, Environmental innovation, Product responsibility	Resource use, Workforce, Community, Management, Human rights, CSR strategy
	b) Industrial goods—machinery, heavy vehicles, aircraft manufacturing, aerospace and defence	Emissions, Resource use, Environmental innovation, Workforce, Product responsibility, Management	Community, CSR strategy, Human rights
	c) Industrial & commercial services—business support, compliance, info services, rating agencies, transactions, waste management, construction, engineering	Resource use, Community, Management	Emissions, Environmental innovation, Workforce, Product responsibility, CSR strategy, Human rights
	d) Industrial conglomerates	Emissions, Resource use, Environmental innovation, Workforce, Product responsibility, Management, CSR strategy	Community, Human rights
8. Technology	**a) Software & IT services**—software, server, database, social media, search engines, internet security, etc.	Resource use, Workforce, Community, Product responsibility, Management, CSR strategy, Human rights	Emissions, Environmental innovation
	b) Technology equipment—PCs, phones, electronic equipment	Emissions, Resource use, Environmental innovation, Workforce, Product responsibility	Community, Management, Human rights, CSR strategy
9. Telecommunication services	None	Resource use, Community, Product responsibility, Management, CSR strategy	Emissions, Environmental innovation, Workforce, Human rights
10. Utilities—electric utilities	None	Emissions, Resource use, Environmental innovation, Workforce, Community, Product responsibility, CSR strategy	Management, Human rights

6.4 Final Results

When estimating the specified model including both primary and secondary CSR variables, the results presented in Table 10 are obtained.

Table 10: Regression Results—The Impact of Primary and Secondary CSR on Share Prices

	Dependent variable: Log(shareprice)	
	Original SE	Robust SE
NIPS	0.078***	0.078***
	(0.004)	(0.011)
BVPS	−0.0001	−0.0001
	(0.001)	(0.001)
LTDTA	0.003***	0.003
	(0.001)	(0.002)
Log(assets)	0.563***	0.563***
	(0.016)	(0.041)
RDPS	−0.086***	−0.086*
	(0.014)	(0.041)
Primary CSR	0.005***	0.005**
	(0.001)	(0.002)
Secondary CSR	0.002***	0.002
	(0.0004)	(0.001)
Observations	5,153	
R^2	0.423	
Adjusted R^2	0.410	
F Statistic	523.187*** (df = 7; 4994)	
Note:		*p<0.01; **p<0.001; ***p<0.0

This time, only the model where the company size is measured as the logarithm of assets is reported (in the case when the size is measured as the logarithm of revenues, a similar result is obtained). For the reason that heteroskedasticity and serial correlation in errors were detected also in this model, the results with the robust standard errors are presented as well.

In the model with the non-robust standard errors, both primary and secondary CSR are statistically significant, showing that the one percentile point increase in the primary CSR score leads to 0.5% rise in the share price on average, which is a higher influence than was the one of the overall CSR (see section 5.3). The one percentile point increase in the secondary CSR score raises the share price only by 0.2%, holding other things fixed.

When the model is estimated with the robust standard errors, the secondary CSR loses its significance, while the primary CSR still stays significant at the 0.1% level. Based on the corrected results, the Hypothesis 2 is rejected in favour of the alternative that the primary CSR has a significant impact on the companies' stock market performance. Furthermore, we do not reject the Hypothesis 3, which states that there is no significant impact of the secondary CSR activities on the share prices.

What might raise concerns in this analysis is the relatively high correlation between the primary CSR and the secondary CSR:

$$corr(primary\,CSR, secondary\,CSR) \;=\; 0.695$$

To see how severely the correlation affects the results of the regression, the Variance Inflation Factors (VIFs) are computed:

$$VIF_{primary\,CSR} = 2.15 \qquad VIF_{secondary\,CSR} = 2.06$$

The VIFs show how much the variance of the regression coefficient is inflated due to the multicollinearity. In general, if VIF is higher than 10, it indicates that the correlation between variables causes problems. The most conservative view is that VIF equal to 2.5 and above should be of a concern, but as in our case the VIFs are even below this level, we conclude that the correlation between the primary and the secondary CSR is not an issue. Also, when the regression is estimated only with primary CSR score, and then only with the secondary CSR score, there is almost no change neither in the regression coefficients nor in the significance of variables.

Therefore, our results suggest that the companies should focus on the CSR activities that are closely related to their business core, and dedicate less time to the other CSR activities, in order to achieve higher financial benefits. The results thus support the view of Kramer & Porter (2011), as they show that the socially responsible activities bring most of the advantages when the shared value is created.

Conclusion

The purpose of this thesis is to examine the impact of corporate social responsibility on companies' stock market performance, measured by share prices, in the period after the financial crisis, i.e., in the years 2007–2016. In addition to that, we distinguish between the socially responsible activities that are directly related to a company's business core, i.e., the primary CSR activities, and those that are not so close to the company's type of business, i.e., the secondary CSR activities. We analyse whether the primary and the secondary CSR activities have a different impact on the share prices.

The link between CSR and CFP of companies was examined and discussed in the academic literature since 1972, but no final answer was given to the question whether the CSR affects the financial results positively, negatively, or has no impact at all. In this thesis, the analysis of the relationship is conducted with brand new, sophistically created CSR measure, released by Thomson Reuters in March 2017, called Thomson Reuters Environmental, Social, Governance, and Controversies Score (TRESGC Score). The reexamination of the CSR impact on CFP with such data is a useful contribution to the existing research, as it brings the newest insight into the topic and helps to make it more clear which type of relationship exists between CSR and the stock market performance after the global financial crisis.

The dataset is an unbalanced panel, containing CSR percentile rank scores and financials for the sample of 152 constituents of the S&P 500 Index, which covers a substantial portion of the American stock market capitalization. The link between CSR and stock market performance was then estimated by the Fixed Effects regression.

The results show a significant, positive impact of CSR on the companies' stock market performance. Concretely, a one percentile point increase in the TRESGC Score leads to 0.3% or even 0.4% increase in the share price, depending on which proxy variable we choose to control for company size. This indicates that the responsible behaviour of firms would result in the presumed outcomes such as customer loyalty, employee satisfaction, or lower litigation charges, which would be in turn reflected in the financial results of the company. This findings provide useful information for investors, advising them to be aware of the social performance of the companies they invest in, as the more socially responsible firms can bring higher future profits than

those less responsible ones.

Similar results were obtained in both of the cases when CSR proxy variable was used in the lagged form and when not. This tells the companies that their socially responsible efforts influence their financial results at the time when they take the responsible action, as well as in the next year when the CSR initiatives are presented in the companies' annual reports.

Further, it is examined whether it is important what type of responsible action the company takes, or if all the CSR activities contribute equally to the higher financial results. The CSR activities, which were originally grouped into 10 categories (resource use, workforce, product responsibility, etc.) by Thomson Reuters, are denoted either as primary or as secondary for each industry, depending on the companies' type of business. The distinction was made with the help of professional consultants in the area of CSR—the Czech company CSR Consult, s.r.o. Then, for every company, the primary CSR score and the secondary CSR score were computed based on the industry where the company belongs. As far as we know, such distinction between primary and secondary CSR activities has not yet been made in the academic literature, and thus such analysis is an important contribution to the existing research on the topic of CSR.

The results show that the primary CSR activities have a significant, positive impact on the company's stock market performance, while the influence of the secondary CSR activities is positive, but not statistically significant. These results support the famous view of Kramer & Porter (2011), who claim that the economic value creation (i.e., business operations) and the social value creation should be closely connected.

From the practical point of view, the results suggest that the companies should select strategically in what type of CSR initiatives they engage, as those responsible activities that are not directly related to the core of their business would not bring substantial financial benefits. Our findings thus give useful advice to corporations when they decide about investments into CSR, and suggest that they should think more deeply about what type of CSR action is appropriate for their type of business.

In the future research, the relationship between CSR and CFP can be examined with a different dataset, as the new TRESGC Scores are available for the companies outside the S&P 500 Index as well. Moreover, a revision of

the distinction between primary and secondary CSR activities can be useful, as it is not always unambiguous which CSR initiatives are really the most relevant ones for some industries. A consultation with professionals from each industry could help with this issue.

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