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Share repurchases and Corporate Social Responsibility

A study on the relationship between actual share repurchases and ESG ratings of U.S. publicly listed firms

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Sander Lobéé
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Abstract

Using data on actual share repurchases and ESG ratings of U.S. publicly listed companies this research examines the relationship between share repurchases and CSR performance. The study shows that there is a positive relation between repurchases and CSR performance, but that there is a negative relation between buybacks and the delta of ESG ratings, the change in CSR performance to the next year. The research adds to the existing literature by providing a framework for future research to build on by implying that there might not be a negative general relation between buybacks and CSR performance, but also indicating that within a firm share repurchases might pose a distraction from the long-term CSR focus. Moreover the effects of relative undervaluation and stock-based compensation on these relations are highlighted, providing food for thought for regulators and users of share repurchases.

Keywords:

Share Repurchases, Buybacks, Corporate Social Responsibility, CSR Performance, ESG Ratings, Stock-based Compensation, Undervaluation.

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1. Introduction

Before 1982 companies in the S&P500 spent about 2 percent of their corporate profits on share repurchases. Today share repurchases are an increasingly popular method of returning capital to shareholders and S&P500 firms spend more than half of their profits on buybacks. In the fourth quarter of 2021 the total amount spent on share repurchases by S&P 500 companies hit a record high of 270 billion dollars and buybacks are expected to continue at an even higher level in the first quarter of 2022 (S&P Global, 2022).

Share repurchases are beneficial to the shareholders of a company as their stake in that company increases when the repurchased shares are retired. Repurchases are also in the interest of management as it increases the value of their stock-based compensation by driving up the share price and it helps them to achieve goals such as EPS (earnings per share) growth.

There are however also some potential problems created by the excessive share repurchases. Larry Fink, the Chair and CEO of Blackrock, suggests companies that spend their money on buying back their own shares invest less in the future growth of their company (Fink, 2014). This argument entails the opportunity costs of the capital that is spent on buybacks by corporations. That same cash could have been spent on innovation, maintenance or job creation, which arguably creates more value for both the company and society in the long-run. This paper dives into the existing literature on share buybacks and go over the potential positive and negative effects of share repurchases in the process of establishing the relationship between buybacks and corporate social responsibility in the form of ESG ratings. The relation between share repurchases and corporate social responsibility is not an obvious one. Companies however have been spending record amounts on share buybacks and CSR has never been higher on the corporate agenda than today. Repurchasing stock and corporate social responsibility both require capital investments and firms are actively making choices on where to allocate their capital. Possibly this could lead to situations where companies are faced with the dilemma of either investing in ESG initiatives that in turn improves their ESG rating or invest in share buybacks to return capital to their shareholders. Returning capital to shareholders in a lot of cases creates more positive outcomes for companies in the short-run, while investments in ESG initiatives could benefit the company on a longer term horizon. It is clear how both CSR and share repurchases require capital investment but both have wildly different outcomes. This research therefore aims to answer the question:

What is the relationship between share repurchases and corporate social responsibility in the form of ESG ratings?

Using data on the actual share repurchases and ESG ratings of U.S. publicly listed companies this question is researched. The results show a positive general relation between share repurchases and CSR performance as measured by ESG ratings but a negative relation between share repurchases and the

change in ESG ratings in the following year. Implying that firms that focus on buybacks might not have worse CSR performance in general, but a focus on share repurchases could have a negative relation with future CSR performance. The research also shows the negative relation of relative undervaluation on the general relationship between share repurchases and ESG ratings, suggesting that companies that are more undervalued focus less on CSR performance and more on share repurchases. The effect of stock-based compensation on the delta of ESG ratings is also negative suggesting that the use of stock-based compensation is associated with more focus on share repurchases relative to CSR performance.

The topic of share repurchases is very relevant as it is often at the center of debate. In 2020 during the pandemic the Federal Reserve banned share repurchases by large U.S. banks as they worried that the COVID crisis could push the most important lenders of the country close to their capital minimums (Noonan, 2020). This event highlights the importance of the academic and social understanding of share repurchases and its long-term and short-term effects. The implications of this research are quite large and could form a foundation for future research. A negative relation between buybacks and ESG ratings implies that companies are actively making an allocation decision on where to invest their excess cash flows, but a positive relation between share repurchases and ESG ratings this signals that companies with lots of free cash flow are able to invest in both and do not see this as a trade-off. A conclusion on this matter could have large implications for policy by governments. Talks about prohibiting firms from buying back their own stock could be accelerated by a negative relation between buybacks and ESG performance. In order to be able to answer the research question a set of hypotheses that are answerable with yes or no is researched. Aggregating these answers allows us to answer the research question.

The paper continues with a review of prior literature on the subject of share repurchases and CSR performance in section 2. Section 3 talks about the data and sample selection, section 4 provides the methodology for the new research that this paper proposes. Section 5 covers the results of this research and lastly section 6 presents the answer to the research question in the conclusion and go over limitations and recommendations for future research.

2. Theoretical Framework and Hypothesis development

In this chapter the theoretical framework that makes up the foundation of this research is discussed. It builds on the concepts of corporate social responsibility and share repurchases and reviews the prior literature on the subject. In section 2.1 some of the theoretical concepts and different theories on these concepts is discussed. Section 2.2 goes over the relationship between share repurchases and CSR. Lastly in section 2.3 prior literature is used to come up with the hypotheses that are researched in this paper. The answers to each of the hypotheses are aggregated into the answer to the research question.

2.1 Theoretical concepts

2.1.1 Corporate Social Responsibility

It is important to first lay out what is meant by Corporate Social Responsibility (CSR) when the term is used. CSR is often referred to as the corporate citizenship of firms as it entails the economic, social and environmental awareness of the company. It means that the firm is aware of the impact that its actions have on society and the environment and generally suggests that companies should strive for a positive impact in all of these areas or at least work to decrease the negative impact they might have on economies, societies or environments. It is therefore important for the groups that are impacted by the actions of the company, also referred to as stakeholders, but it is also important to the firm itself as it can help build good relations and mitigate risks that regulation might pose in the future. For example a firm that is not paying attention to their pollution at production facilities in third world countries could face large fines or face problems adapting to new regulations imposed by (local) governments. Not focusing on the CSR of the firm can thus be seen as a risk factor. CSR endeavors can be very costly, but can also be very rewarding for the firm as it can increase the happiness of employees and partners as they feel that they are contributing positively to society as opposed to making profits for the corporation at the expense of others. I briefly go over two of the classic views on CSR in the next two sections, namely the shareholder view and the stakeholder view of CSR.

2.1.2 Stakeholder view

The stakeholder view or the stakeholder theory is closely related to corporate social responsibility. It presents the view that firms, most often in a setting of capitalism, are interconnected with everyone that is impacted by their actions. These parties include employees, customers and suppliers but also the people that might live in the neighborhood of a firm's production facilities. Firms that operate within the stakeholder theory take into account the interests of all the groups that are impacted by its actions and aggregate all of these interests into an optimal decision for all parties. This stakeholder theory was first introduced by Edward Freedman in 1984 in his book titled "Strategic management: A stakeholder approach". Before this book literature on the subject was expanding but offered no model that could be used by managers. Freeman (1984) started by laying out the definition of a stakeholder, the word was a

play on the word shareholder or stockholder often used by Milton Friedman and associates. “A stakeholder is any group or individual that is affected by or can affect the achievement of an organization’s objectives” (Freeman, 1984). This theory and its very broad definition of the word stakeholder eventually gave rise to CSR, which also focusses on how a corporation affects the environment, society and economy. The stakeholder view does not talk about companies buying back their own shares or returning capital in general, but one could argue that returning capital to shareholders is not in line with stakeholder theory in most cases as it really only benefits the shareholders and not the stakeholders.

2.1.3 Shareholder view

The shareholder view or the shareholder theory opposes the stakeholder view. The most famous proponent of this view is Milton Friedman who in 1970 wrote an article in the New York Times magazine titled “The social responsibility of business is to increase its profits”, this quote summarizes the shareholder theory that builds on the principle that only people can have a social responsibility but businesses do not. Friedman (1970) argues that corporate executives are the employees of the owners of the business and therefore aim to serve the interests of these owners. The owners of the businesses Friedman is talking about are in the case of publicly listed companies of course the shareholders. Of course executives also feel a social responsibility to certain parties like friends, family, church or a club, but in these instances when he is striving to fulfill these responsibilities he is acting as principal not as the agent (Friedman, 1970). In the setting where he serves as the executive of the corporation he is an agent and the owners of the corporation are the agents, so the classic agency theory should apply here. The owners of the business could strive for multiple things but in most cases the common denominator is the desire for profit. The shareholder view is a very normative view on CSR, but can play an important part in this research as the shareholder view is more helpful in explaining why corporation return capital to their shareholders. Share repurchases make a lot of sense in the shareholder theory framework as they are an effective method to return capital to shareholders, which directly benefits the owners of the business.

2.1.4 ESG ratings

In this research ESG ratings are used as a proxy for corporate social responsibility, because it is notoriously hard to quantify the CSR performance of companies as CSR is naturally qualitative. ESG however is strongly related with CSR although not interchangeable, it is naturally quantitative and therefore makes it easier to compare the relative performance of different companies. To be able to research the relationship between ESG ratings and buybacks it is important to first establish what ESG ratings mean and how they are assigned to companies. ESG is the abbreviated name for Environmental, Social and Governance factors and naturally the ESG rating encapsules all three of these factors where the Environmental factor captures how the company preserves nature, pollutes and uses scarce resources. The Social factor shows the social footprint of the company which reflects how a firm treats its

employees, engages with the communities surrounding it and their product responsibility. The Governance factor lastly shows how the company governs its management and shareholders.
In this research a database by Thomson Reuters is used and therefore a brief description is given of how these ESG ratings are formed. As there are many different methods of assigning ESG scores to companies it is important to set out how Thomson Reuters goes about this process to better understand the implication of the findings of this research. ESG ratings given by Thomson Reuters are based on ratings in three different categories. First the Environmental category that consists of three sub categories: resource use, emission and innovation. The social category is rated by taking into account workforce, human right, community and product responsibility. Lastly The Governance category includes management, shareholders and corporate social responsibility. Each category is assigned a weighting and all the ratings and weights are aggregated into the final ESG rating for the company. The ESG score is objectively assessed from these 11 subjects using the data that is reported by the firms (Thomson-Reuters, 2017).
This research leans on ESG ratings as a proxy for CSR and it is therefore important to use objectively assigned ESG ratings to be able to assess the relationship between ESG ratings and buybacks. The ratings assessed by Thomson Reuters definitely asses the ESG performance of a company as objectively as they can using the information available to them. However the relation between ESG scores and ESG performance is not an undisputed one. Dimson (2020) shows that the relation between the ESG ratings that are given to the same firm by different ESG rating agencies is quite weak. All of these rating agencies claim to objectively asses the ESG performance of the firms, but it's hard to believe they do a very good job at assessing this performance when the ratings are as divergent as they are. There are of course some differences in the methods and models used by the agencies that could explain some of these differences. ESG ratings are also a relatively new concept and this could also be a reason that the agencies come up with the divergent ratings as they are still figuring out the best process. For my research this could imply that the relationship between CSR performance and ESG ratings is somewhat weak, which could form a problem when deriving causal relations from the findings of this paper and therefore is discussed more extensively when talking about the limitations of the paper. However I expect the sign of the results to be helpful in discussing the relationship between share repurchases and CSR and the research mainly serves as a framework for future research to build on.

2.1.5 Share repurchases

Prior literature on share repurchases is quite extensive as it is an important method for companies of distributing capital to shareholders. Share repurchases are an increasingly popular use of excess cash and the literature on the subject is also expanding. As I build on the concept of share repurchases throughout this research it is important to establish a clear definition of the concept beforehand.
Firms can buy back stock using a tender offer or through open-market repurchases. In a tender offer the firm offers shareholders a price at which they can sell their stock to the corporation within a certain

timeframe. More common are the open-market share repurchases, these are corporate actions where the firm goes into the market and buys back its own shares, the shares are then retired which increases the percentage ownership of the non-selling shareholders. The remaining shareholders have the same amount of shares after the repurchase has been executed but the amount of shares outstanding is reduced. Firms can have multiple reasons for buying back their own stock, it is first and foremost a method of returning capital to non-selling shareholders, but the various motives firms have for using share repurchases are discussed.

Dittmar (2000) builds on prior literature on share repurchases to answer the question why firms repurchase their own stock. Two notable correlations prior research found were the positive relation between excess cash flow and share buybacks (Jensen, 1986) and the negative correlation between prior returns and share buybacks (Vermaelen, 1981) These two findings could lead us to think that firms buy back their own stock to distribute excess cash flow to shareholders and signal undervaluation of their stock. The relation between buybacks and cashflows and undervaluation are the most notable and persistent in prior literature, however a wide variety of other motivations for repurchases exist.

Management can use buybacks to display confidence in the future of the company by buying back their own stock they signal that they think the stock is undervalued or that the firm is producing a lot of cashflow and is able to give back to shareholders. The demand for the stock by the corporation itself also puts upwards pressure on the stock price which can also lead to more shareholder satisfaction. Share repurchases are, just like any other use of capital by a firm, an investment and the executives should therefore asses what the yield on this investment is compared to alternative investments. Good management should in theory only repurchase shares if they have no alternative investment that yields better returns. In this aspect share buybacks are very similar to dividends, however literature shows that share repurchases are a more flexible alternative to dividends as investors seem to get attached to dividends more. Share repurchases are also a more tax efficient method of returning capital to shareholders as there is no double taxation such as the case with dividends.

Potential problems with share repurchases could lie in the incentives of management. Management is often paid by the way of stock based compensation and often have a portion of their pay linked to financial performance of the firm. Share repurchases can be used to improve some of the financial ratio's such as earnings per share by decreasing the shares outstanding. The upward pressure on the stock price also increases the value of the stock options held by management making it easy to see why repurchases are such a popular method of returning capital to shareholders.

Share repurchases bring a lot of short-term benefits to shareholders and management, but is important to see if these attractive short-term benefits crowd out the long-term investments that are necessary to ensure the survival and success of the corporation. This research therefore focusses on the effects of share repurchases and CSR as measured by ESG ratings.

2.2 The relationship between share repurchases and Corporate Social Responsibility

The relationship between CSR and share repurchases is researched from an array of different angles and this section talks about a few important papers on the subject and what their findings might imply for the research. Literature that covers the general relation is discussed after which the details of the relationship between share repurchases and CSR is covered in the next section where the hypotheses are developed. Samet (2017) showed that companies that have high CSR performance engage more in payout policy to shareholders. High CSR firms also choose to use buybacks more often than dividends compared to their lower CSR peers and are more substitutable between dividends and repurchases. These findings have interesting implications for our research as Samet and Jarboui (2017) seem to find a relation between CSR and share buybacks, but also argue that high CSR firms substitute buyback programs for dividends more easily. They also claim that CSR is important in the design process of the payout policy. It is interesting to see if this relation holds when ESG ratings are used as a proxy for CSR and when solely looking at share repurchases instead of general payout policy.

Vaupel (2022) takes a very broad perspective when researching the tradeoffs between shareholder satisfaction and sustainability by analyzing sustainability orientation scores and sustainability performance ratings in relation to share repurchases. The data allows Vaupel et al. (2022) to show a negative relation between the amount of share repurchases and the environmental value orientation of the firms. As can be seen from the papers of Vaupel et al. and Samet and Jarboui the findings of the research is not yet conclusive. Therefore in the next section hypotheses are developed using prior literature to research the relation between share repurchases and ESG ratings as a proxy for CSR performance.

2.3 Hypothesis development on share repurchases and CSR

In this section some of the prior literature is used to formulate hypotheses. These hypotheses are either researched by the research that are laid out later in the paper. The results and answers to the hypotheses help us formulate an answer to the research question of this paper. This section consist of 3 subsections that respectively talk about the short-term versus long-term tradeoff between investing in CSR or share repurchases (2.3.1), the relative undervaluation and how this affects the relation between share repurchases and CSR(2.3.2) and lastly stock-based compensation and how this effects the relation between share repurchases and CSR(2.3.3). Each of these sections help us formulate a set of hypotheses and together these give us insight in the relationship between share repurchases and CSR in different scenarios.

2.3.1 Short-term versus long-term tradeoff

Vaupel (2022) researches the relationship between share repurchases and the committed sustainability orientation. The data enables the researchers to show a negative relation between share repurchases and the environmental orientation for firms, leading to worse future social and environmental performance for firms that perform buybacks.

The findings of Vaupel seem to align with the shareholder view presented by Milton Frieman. This theory argues that companies do not have a corporate social responsibility and therefore should almost solely be concerned with increasing the profits for the owners, which in the case of public firms are the shareholders. Share repurchases are an effective method of returning cash to shareholders and therefore fit into the view of Friedman, which could lead us to think that firms that focus on buybacks might be less concerned with their CSR performance than the firms who perform less buybacks. To research this relation the following hypothesis is developed:

Hypothesis 1: The relationship between share repurchases and CSR performance as measured by ESG ratings is negative.

The expectation that this hypothesis holds stems from the findings of the prior literature that talks about the tradeoff that firms face between investing in CSR or distributing cash back to shareholders. Firms that perform more share repurchases are expected to invest less in sustainability initiatives, resulting in worse CSR performance as measured by ESG ratings.

2.3.2 Relative undervaluation

Peyer (2008) confirms the hypothesis of Vermaelen (1981) that buybacks are often a response to a market overreaction to bad news for the company, creating an arbitrage opportunity for the company. Following a bad market (over)reaction to news could create a situation where the management of the company is of the opinion that the market overreacted to the news and if the yield on buying back the shares is higher than the yield that the company is able to achieve elsewhere, it makes a lot of sense to buy back the shares of the company. A good example of this could be when a company trades below its book value, this signals that investors think the company is worth less than the net asset value of the firm. If the firm believes that there won't be any large depreciation or amortization of the assets in the firm and the risk of bankruptcy is low, this situation creates an arbitrage opportunity for management to buy back the shares at a discount.

It is interesting to take this into account when researching the relation between share repurchases and Corporate Social Responsibility as a company that has recently had some bad news might be more inclined to invest in buying back their undervalued stock than in investing in ESG initiatives, which might lead to worse long-term outcomes for the firm.

Bobenhausen (2022) designed a different methodology to research the relation between share repurchases and stakeholder orientation. This paper's hypotheses might seem a little more farfetched as it argues that companies that have a stakeholder orientation (i.e. take into account all parties that are affected by the actions of the companies, as opposed to the shareholder orientation where the company only strive to serve its shareholders interests) won't buy back their own stock when they think it is undervalued, because this hurts the selling shareholder. This selling shareholder in the shareholder model does not

matter so much as the company's interests are aligned with those of the remaining shareholders. However the authors argue that in a stakeholder model this selling shareholder is also affected by the firm's actions and is thus a stakeholder. Bobenhausen et al. (2022) find that companies with higher CSR announce repurchases in periods of lower relative undervaluation. To research the effect of relative undervaluation on the relation between share repurchases and CSR performance I formulate the following hypothesis:

Hypothesis 2: The relation between share repurchases and future CSR performance as measured by ESG ratings is more negative for firms that are relatively undervalued.

This hypothesis is based on the combination of the literature on share repurchases and relative undervaluation by Vermaelen and Peyer and the literature on the relationship between share repurchases and CSR performance by Vaupel. The expectation is formed that relative undervaluation creates an environment where share repurchases are a distraction from the long-term CSR goals for management.

2.3.3 Stock-based compensation

Fenn et al.(1998) find that a positive relation between share repurchases and a proxy for stock options held by management for dividend-paying firms and a negative relation between stock options and dividend increases. Indicating that management is more likely to substitute dividends for share buybacks when they hold a larger stock (option) interest in the company. However when researching the same effect for non-dividend paying companies this relation is weak and loses its statical significance. These finding could indicate that share repurchases create an agency dilemma for companies that pay management by using stock options. Share repurchases generally put an upward pressure on the price of the stock of the firm, whereas dividends put a downward pressure on the price of the stock of the firm. It would therefore more in the interests of a management that has options on the stock of the company to repurchase its own shares than to issue a dividend or increase the existing dividend. These incentives seem to be aligned with the incentives of the shareholders of the company but probably not with the incentives of the stakeholders.

Adding to this agency problem Bary (2013) finds that tech firms use stock based compensation to pay their employees often. Buying back stock of their own firm for these companies is often used to offset the dilution effects of this stock-based compensation. This seems like a unnecessarily complicated way of paying out employees as the company uses cash to buy back the shares that given out as payment to the employees, but there are several benefits that the corporations see in this method. Namely the incentives of the employees and shareholders are thought to be better aligned using stock based compensation. Hall (1998) shows that CEOs that have a larger interest in their firm in the form of stock or stock options perform better as measured by the stock’s return. Companies are also able to inflate their free cash flow by using stock based compensation to pay employees as it is a non-cash expense and the buyback expense does not need to be deducted from free cash flow, which could mislead investors into thinking the

company produces more cash than it actually does (Bary, 2013). The fact that the buyback expense is reported as cash from financing implies that the buyback does not show up in the net income or the free cash flow of the company. This means that on the financial statements of the company the amount of shares outstanding decreases and if the company buys the shares back at a higher price that the book value per share the book value of the firm decreases as a result. However the method of accounting for share repurchases creates an opportunity for management, they are able to use share repurchases to increase per share metrics like earnings per share and free cash flow per share. This is beneficial for management as it improves their performance metrics and put upward pressure on the stock price as the firm is buying its own stock. This helps the management to hit the targets set by the board and it increases the value of any stock based compensation that has been received.

It is easy to see why there is a lot of debate about share repurchases and how they could be used to create value for shareholders, but also be used for financial engineering. Figuring out the relation with CSR in the form of ESG ratings could be helpful to see if repurchases are more often used to make a positive impact or not.

Vaupel (2022) as covered in section 2.2 showed that there is a negative relation between share repurchases and sustainability orientation of corporations. Stock options paid out to management seem to accentuate this relation and future sustainability performance is worse for firms who buy back more stock (Vaupel, 2022). Vaupel used different sustainability performance metrics which are closely related to ESG ratings so it's interesting to see how his findings compare to the findings of this research. Using these findings the following hypotheses is formulated:

Hypothesis 3a: Firms that repurchase more of their own stock have worse future CSR performance, as measured by ESG ratings.

Hypothesis 3b: The negative relation between share repurchases and future CSR performance as measured by ESG ratings is larger when the company uses stock-based compensation to pay its employees.

Hypothesis 3a allows us to research the general relationship between share repurchases and future CSR performance as measured by ESG ratings, whereas hypothesis 3b covers the effect that stock-based compensation has on management in the payout decision and how this could accentuate the relation between buybacks and future CSR performance.

3. Data

This part of the research talks about the data that is used to investigate the research question. Building on the literature evaluated in the last section three databases are used to assess the relation between actual share repurchases and ESG ratings. The datasets used in this research are: A database on actual monthly share repurchases, the Thomson Reuters ASSET4 database on ESG ratings and the Compustat database on firm fundamentals.

The dataset on actual share repurchases was provided by the supervisor of this Master Thesis Amy (Y.) Li, a Phd candidate at the Erasmus School of Economics, who collected this impressive dataset on monthly actual share repurchases by U.S. publicly listed firms. The database provides a unique opportunity to this research to use actual share repurchase data instead of share repurchase announcement data. This provides a framework for the research that allows us to distill the relation between actual share repurchases and ESG ratings instead of the relation between the mere announcement effect of share repurchases in relation to ESG ratings. The second database is a database from Thomson Reuters, the ASSET4 database provides data on ESG ratings. These ESG scores are objectively created by Thomson Reuters. The ESG ratings are assessed using 4000 data points to create over 70 KPI's (Key Performance Indicators), which are used to assign a grade to firms in each of eleven categories that are aggregated into a final ESG score. Lastly the Compustat database provides data on the business fundamentals of U.S. public companies. These data are used to create the control variables used in the regressions that are performed to research the question of this paper.

Combining all these data gives us a database that contains data from 2004 till 2019 on American publicly listed companies. A choice was made to evaluate companies in the U.S. because it is a leading country in the financial world and the most interesting place to focus our research as share repurchases are used the most by U.S. companies as a method of returning capital to shareholders. The fact that only U.S companies are analyzed could mean that the implications of the research are less applicable to regions where share repurchases do not play such a large role in the distribution of capital to shareholders by publicly listed companies. However as the U.S. represents the largest part of the global financial markets the research is expected to produce results that should be applicable to most of the rest of the developed markets in the world. The researched period, namely 2004-2019, was chosen as it is the longest period that data was provided for. Researching a period of 15 years should enable the research to capture most of the large shifts in financial markets and get results that provide good insight in how the relation between share repurchases and ESG ratings might develop in the future.

4. Methodology

Using the prior literature as a framework this section presents a new research that seeks to provide results that help answer the research question by researching each of the hypotheses. An empirical study is performed to evaluate the acquired panel data and regressions iare used to test the hypotheses. To test our hypotheses ESG ratings are regressed on actual share repurchases to establish the relation between share repurchases and CSR performance. The results of the regressions will enable us to answer the research question when combined with the findings of the literature that has been reviewed. First this section goes over the variables that have been used to research the hypotheses and then it describes the empirical methods and models that are used in the research.

4.1 Variables

The databases are used to research the hypotheses of the paper, in order to research these the relevant variables are derived from the databases. A brief overview of the variables that are used in the empirical model are given in this section.

4.1.1 Dependent variables

The dependent variable in this research is the ESG rating of the firm which is used to examine the relation between share repurchases and ESG ratings. The variable is a numeric number that represents the score that the respective company was assigned by Thomson Reuters, the ESG rating agency. The score was aggregated from a group of scores in multiple categories to create an overall ESG score for the company. All scores are between 0 and 100 and this variables is used to regress on the dependent variable. The first dependent variable that is used to research the general relation between share repurchases and CSR performance is the ESG rating of the firm in the year t, where all the other variables are from the year t-1. This is a leading indicator as the effects of the share repurchases and other variables are reflected in the ESG ratings of the following year and not in the year t-1 itself. The literature points us in the direction that share repurchases influence future CSR performance in a negative way (Vaupel, 2022), but does not establish relation with current CSR performance. The leading ESG rating allows us to research the first hypothesis best. Furthermore the third hypothesis talks more specifically about the relationship between share repurchases and future ESG performance within firms and to be able to better research this a second dependent variable is used, namely the binary variable that indicates if the delta in ESG ratings is higher or lower than the median delta. To be more precise the ESG rating of year t less the ESG rating of year t-1 is the ESG delta, the median delta across the data is then taken and firms that have a higher delta than the median are assigned a value of 1, and the firms below the median delta are assigned a value of 0. The use of a binary variable allows the research to separate the firms that are improving their ESG rating at a higher rate than the median from the firms that are declining or improving at a lower rate. This allows us to research what the effect of share repurchases is on the firms improvements in CSR performance in the following year better than using the non-binary delta, because the delta of ESG ratings is often small.

4.1.2 Independent variable

The independent variable used to research the relation between share repurchases and CSR is the percentage of shares repurchased by the firm in year t-1. The dataset provides monthly data on share repurchases but as there are no monthly data on CSR performance the share repurchase data is aggregated into an annual number of shares repurchased. The number of annual shares repurchased is divided by the number of shares outstanding to get the percentage of the shares outstanding that has been repurchased by the firm in that year. This allows for comparison across different firms that differ in the number of shares outstanding or market cap as the percentage of total shares that is repurchased in a given year is used.

4.1.3 Control variables

The control variables in this research are: firm size, dividends, leverage, cash flow, cash holdings and undervalued and stock-based compensation. Control variables enable the research filter out the effects of these variables to be able to distill the true relation between share repurchases and CSR performance as measured by ESG ratings. Firm size is controlled for because smaller firms are more likely to repurchase shares (Ditmar, 2000). The firm size variable is the natural logarithm of total assets of the firm. Dividends are divided by assets to create a dividend variable that is comparable across all firms. Dividends are controlled for because firms are shown to have been substituting dividends for repurchases over time (Grullon, 2002). Leverage is used as a control variable as firms use share repurchases to increase leverage (Ditmar, 2000). Stephens (1998) shows that firms with higher cash flow repurchase more share so cash flow is controlled for, calculated by dividing the cash flow from operation by the total assets. Higher cash and cash equivalents are related to more share repurchases (Dittmann, 2022) so cash holdings are also controlled for. The undervalued variable is a binary variable that takes the value of 1 for firms that have a higher book-to-market ratio than the median and takes the value of 0 for firms that have a lower book-to-market value than the median. This allows us to research what the effect of relative undervaluation is in the sample. Ditmar (2000) finds that firms with a relatively high book-to-market ratio repurchase more of their own stock, in line with the undervaluation hypothesis of Vermaelen. Lastly the stock-based compensation variable is used, this variable is binary and indicates if firms use stock-based compensation and takes the value of 1 when firms use stock-based compensation and the value of 0 if firms do not used stock-based compensation.

Table 1 – Overview of the variables used in the empirical model

Variable		**Formula**
Dependent Variables	ESG score delta	Binary variable indicating whether the ESG score increase from year t-1 to year t is higher than the median delta.
	ESG score lead	ESG score in year t. Scores are a number between 0 and 100.
Independent Variable	Percentage of shares repurchased (lagged)	Total number of shares repurchased by the firm divided by shares outstanding in year t-1.
Control variables	Firm size	Natural logarithm of total assets in year t-1.
	Undervalued	Binary variable indicating whether the company has a lower book to market ratio than the median in year t-1.
	Dividends	Dividends paid divided by total assets in year t-1.
	Leverage	Total liabilities divided by common equity in year t-1.
	Cash flow	Cash from operating activities divided by total assets in year t-1.
	Cash holdings	Cash and cash equivalents divided by total assets in year t-1.
	Stock-compensation	Binary variable indicating whether the company uses stock-based compensation in year t-1.

Table 1: Overview of the variables with the formula or explanation.

4.3 Empirical methods and model

A panel study is performed in this research as this allows for an evaluation of the data of a particular population over a period of time. The model provided down below creates the results that are used to evaluate the hypotheses and in turn answer the research question.

The program "STATA" is used to evaluate the variables derived from the data in multiple ordinary least squares (OLS) regressions. The regressions use fixed effects to control for the effects that trends in industries, firms or years have on the CSR performance as measured by ESG ratings. The fixed effects allow for a regression where all unobservable factors on the firm, industry or year level remain constant. For every OLS regression first the regression using firm fixed effects is performed and then the same regression using both industry fixed effects and year fixed effects is performed. This should enable to distill the effect of share repurchases on ESG ratings from the data.

The hypotheses that were developed in the literature section are researched performing the following regressions:

Hypothesis 1: The relationship between share repurchases and CSR performance as measured by ESG ratings is negative.

$$ESG\ rating_t = \alpha + \beta_1(Percentage\ of\ shares\ repurchased)_{t-1} + Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \varepsilon_{i,t}$$

$$ESG\ rating_t = \alpha + \beta_1(Percentage\ of\ shares\ repurchased)_{t-1} + \beta_2(Cash\ flow)_{t-1} + \beta_3(Leverage)_t - 1 + \beta_4(Firm\ size)_{t-1} + \beta_5(Dividends)_{t-1} + \beta_6(Cash\ holdings)_{t-1} + Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \varepsilon_{i,t}$$

Hypothesis 2: The relation between share repurchases and future CSR performance as measured by ESG ratings is more negative for firms that are relatively undervalued.

$$ESG\ rating_t = \alpha + \beta_1(Percentage\ of\ shares\ repurchased)_{t-1} + \beta_2(Undervalued)_{t-1} + \beta_3(Cash\ flow)_{t-1} + \beta_4(Leverage)_{t-1} + \beta_5(Firm\ size)_{t-1} + \beta_6(Dividend)_{t-1} + \beta_7(Cash\ holdings)_{t-1} + Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \varepsilon_{i,t}$$

Hypothesis 3a: Firms that repurchase more of their own stock have worse future CSR performance, as measured by ESG ratings.

$$ESG\ delta\ (binary)_t = \alpha + \beta_1(Percentage\ of\ shares\ repurchased)_{t-1} + \beta_2(Cash\ flow)_{t-1} + \beta_3(Leverage)_{t-1} + \beta_4(Firm\ size)_{t-1} + \beta_5(Dividends)_{t-1} + \beta_6(Cash\ holdings)_{t-1} + Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \varepsilon_{i,t}$$

Hypothesis 3b: The negative relation between share repurchases and future CSR performance as measured by ESG ratings is larger when the company uses stock-based compensation to pay its employees.

$$ESG\ delta\ (binary)_t = \alpha + \beta_1(Percentage\ of\ shares\ repurchased)_{t-1} + \beta_2(Stock-based\ compensation)_{t-1} + \beta_3(Cash\ flow)_{t-1} + \beta_4(Leverage)_{t-1} + \beta_5(Firm\ size)_{t-1} + \beta_6(Dividends)_{t-1} + \beta_7(Cash\ holdings)_{t-1} + +Industry\ fixed\ effects_i + Year\ fixed\ effects_t + \varepsilon_{i,t}$$

All of the regressions above are also performed using firm fixed effects instead of industry and year fixed effects. These tests together provide our empirical results that are used to evaluate each hypothesis and are aggregated into the answer to the research question.

5. Results

In this part of the research the results of the regressions that are used to research the hypotheses are presented and some comment is provided on what these results could imply in the process of answering the research question. The conclusion on the research question is given later in the conclusion section of the paper.

5.1 Descriptive statistics

The table with the descriptive statistics of the variables used in the research is displayed below. The variables are evaluated on the number of observations, the mean, the standard deviation and the minimum and maximum values for each variables. No oddities are seen in the data and can thus assume that the regression will produce relevant results.

Table 2 – Descriptive statistics of the data

Variable	Obs	Mean	Std. Dev.	Min	Max
ESG delta	4500	.5	.5	0	1
ESG score	4500	50.544	17.465	19.495	88.125
Percentage repurchased	4500	.099	.29	0	1.764
Firm size	4500	8.334	1.587	4.671	12.561
Cash flow	4500	.087	.097	-.412	.302
Leverage	4500	2.406	5.251	-19.368	32.039
Dividend	4500	.014	.018	0	.1
Cash holdings	4500	.166	.262	.001	1.97
Undervalued	4500	.373	.484	0	1
Stock compensation	4500	.984	.125	0	1

Table 2: The table shows the descriptive statistics of all the variables that are used in the models displaying the amount of observations, the mean value and standard deviation of the variable and the minimum and maximum value.

5.3 Hypothesis 1

Table 3 shows the results of the regression that is used to research the first hypothesis on the general relation between share repurchases and CSR performance as measured by ESG ratings. The relation between the percentage of shares repurchased and the ESG ratings in the following year is positive and significant at the 1% level for all of the regressions. The results do not provide any evidence for the first hypothesis that stated that there would be a negative relation between share repurchases and ESG ratings. The regression using control variables and firm fixed effects shows that firms that repurchase 1% more of their outstanding shares on average have a 3.645 points higher ESG rating in the following year(Column 4), the effect was larger without controlling for the control variables which shows that the control variables also contribute to some of the relation(Column 3). The R-squared of the regression stands at 0.388 indicating that 38.8% of the data can be explained by the relation displayed in Column 4.

Table 3 - Results OLS regression share repurchases on ESG ratings

VARIABLES	(1)	(2)	(3)	(4)
	ESG rating$_{t+1}$			
Percentage repurchased	2.251***	2.284***	6.294***	3.645***
	(0.523)	(0.513)	(1.016)	(0.799)
Cash flow		0.768		-0.419
		(2.929)		(1.795)
Leverage		0.000261		-0.130***
		(0.0344)		(0.0420)
Firm size		6.945***		7.262***
		(0.765)		(0.142)
Dividend		-5.383		23.15**
		(9.264)		(11.28)
Cash holdings		-1.558*		1.915**
		(0.864)		(0.755)
Firm fixed effects	YES	YES	NO	NO
Industry fixed effects	NO	NO	YES	YES
Year fixed effects	NO	NO	YES	YES
Constant	50.33***	-7.153	31.55***	-22.35***
	(0.0498)	(6.348)	(3.004)	(2.986)
Observations	4,500	4,500	4,500	4,500
R-squared	0.006	0.085	0.064	0.388
Number of gvkey	1,124	1,124		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: The table displays the results of the regression of the percentage of shares repurchased on the ESG rating in the following year. Column 1 and 2 use firm fixed effects, where column 3 and 4 use industry and year fixed effects. Columns 1 and 3 use no control variables, where column 2 and 4 use the control variables: cash flow, leverage, firm size, dividend and cash holdings.

5.4 Hypothesis 2

Table 4 shows the results of the regression performed to research how relative undervaluation influences the relationship between share repurchases and the ESG rating in the following year. As can be seen the relation between relative undervaluation and the ESG rating in the following year is negative and significant at the 1% level (Column 4). The magnitude of the effect implies that a firm being relatively undervalued, thus having a higher book-to-market ratio than the median, leads to a lower ESG rating by 4.666 points in the following year with the R-squared indicating that this relation explains 40.1% of the data (Column 4). It can also be seen that the relations between share repurchases and ESG ratings in the following year is less strong than in Table 3, namely 3.515 compared to 3.645. These findings are in line with the second hypothesis that states that relative undervaluation has a negative effect on the relation between share repurchases and CSR performance as measured by ESG ratings.

Table 4 – Results regression share repurchases on ESG ratings with relative undervaluation

VARIABLES	(1) hypothesis 2	(2) hypothesis 2	(3) hypothesis 1	(4) hypothesis 2
Percentage repurchased	2.180***	2.226***	6.283***	3.515***
	(0.515)	(0.502)	(1.016)	(0.784)
Undervalued	-1.988***	-2.353***	-0.273	-4.666***
	(0.627)	(0.581)	(0.553)	(0.469)
Cash flow		-0.652		-3.332**
		(2.873)		(1.640)
Leverage		0.00133		-0.143***
		(0.0343)		(0.0429)
Firm size		7.104***		7.524***
		(0.756)		(0.142)
Dividend		-2.954		27.04**
		(9.421)		(11.43)
Cash holdings		-1.087		2.714***
Firm fixed effects	YES	YES	NO	NO
Industry fixed effects	NO	NO	YES	YES
Year fixed effects	NO	NO	YES	YES
Constant	51.08***	-7.599	31.72***	-21.05***
	(0.237)	(6.278)	(3.016)	(2.817)
Observations	4,500	4,500	4,500	4,500
R-squared	0.014	0.095	0.064	0.401
Number of gvkey	1,124	1,124		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: The table displays the results of the regression of the percentage of shares repurchased on the ESG rating in the following year with the addition of the control variable for relative undervaluation. Column 1 and 2 use firm fixed effects, where column 3 and 4 use industry and year fixed effects. Columns 1 and 3 use no additional control variables, where column 2 and 4 use the additional control variables: cash flow, leverage, firm size, dividend and cash holdings.

5.5 Hypothesis 3a

Table 5 shows the results of the regression used to research the relationship between share repurchases and the change in ESG rating in the following year. The results show a negative significant relation at the 1% level indicating that a firm that repurchases 1 % of the shares outstanding on average is 3.94% more likely to have a worse change in ESG rating than the median change (or delta) (Column 4). The relationship is a lot stronger when no control variables are used, namely 14%, so the control variables seem to have a lot of explanatory power in this relation (Column 3). The R-squared is also lower than for the other regressions indicating that 21.5% of the data can be explained by the relation displayed (Column

4). These result provide support for hypothesis 3a that states there is a negative relation between share repurchases and the change in ESG ratings, noting that the effect is very small and should not be given a lot of weight.

Table 5 – Results OLS regression share repurchases on ESG delta

VARIABLES	(1)	(2)	(3)	(4)
	ESG rating $delta_{t+1}$			
Percentage repurchased	0.0110	0.0116	-0.140***	-0.0394**
	(0.0189)	(0.0188)	(0.0184)	(0.0176)
Cash flow		-0.0422***		0.0518***
		(0.00900)		(0.00673)
Leverage		-0.000449		0.00106**
		(0.000558)		(0.000482)
Firm size		0.0366***		-0.0658***
		(0.00595)		(0.00155)
Dividend		0.154**		0.0332
		(0.0617)		(0.0562)
Cash holdings		0.00508		0.0344***
Firm fixed effects	YES	YES	NO	NO
Industry fixed effects	NO	NO	YES	YES
Year fixed effects	NO	NO	YES	YES
Constant	0.829***	0.594***	0.910***	1.244***
	(0.00102)	(0.0379)	(0.0543)	(0.0539)
Observations	4,500	4,500	4,500	4,500
R-squared	0.000	0.002	0.069	0.215
Number of gvkey	1,124	1,124		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: The table displays the results of the regression of the percentage of shares repurchased on the binary variable indicating whether the delta of the ESG rating in the following year was higher than the median delta. Column 1 and 2 use firm fixed effects, where column 3 and 4 use industry and year fixed effects. Columns 1 and 3 use no control variables, where column 2 and 4 use the control variables: cash flow, leverage, firm size, dividend and cash holdings.

5.6 Hypothesis 3b

Table 6 displays the results of the regression that is used to research how stock-based compensation influences the relationship between share repurchases and the change in ESG rating in the following year. The table shows a negative significant relation at the 5% level between stock-based compensation and the delta of ESG ratings. Column 4 indicates that a firm repurchasing 1% of the shares outstanding increases the chance of the firm having a ESG delta below the median by 3.15%. The magnitude of this effect is

again quite slim and therefore should not be given much weight. However the results do provide support for hypothesis 3b that states that stock-based compensation amplifies the negative relation between share repurchases and the change in ESG ratings, noting that the effect is rather small.

Table 6 – Results OLS regression share repurchases on ESG delta with stock-based compensation

VARIABLES	(1)	(2)	(3)	(4)
	ESG rating $delta_{t+1}$			
Percentage repurchased	0.0110	0.0116	-0.101***	-0.0391**
	(0.0189)	(0.0188)	(0.0179)	(0.0176)
Stock-based compensation	0.00845	-0.00593	-0.217***	-0.0315***
	(0.00522)	(0.00615)	(0.00522)	(0.00577)
Cash flow		-0.0426***		0.0452***
		(0.00911)		(0.00708)
Leverage		-0.000450		0.000902*
		(0.000558)		(0.000482)
Firm size		0.0374***		-0.0619***
		(0.00630)		(0.00185)
Dividend		0.154**		0.0226
		(0.0617)		(0.0563)
Cash holdings		0.00475		0.0324***
Firm fixed effects	YES	YES	NO	NO
Industry fixed effects	NO	NO	YES	YES
Year fixed effects	NO	NO	YES	YES
Constant	0.823***	0.594***	1.014***	1.240***
	(0.00391)	(0.0382)	(0.0518)	(0.0537)
Observations	4,500	4,500	4,500	4,500
R-squared	0.000	0.002	0.131	0.216
Number of gvkey	1,124	1,124		

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: The table displays the results of the regression of the percentage of shares repurchased on the binary variable indicating whether the delta of the ESG rating in the following year was higher than the median delta with the addition of the control variable for stock-based compensation. Column 1 and 2 use firm fixed effects, where column 3 and 4 use industry and year fixed effects. Columns 1 and 3 use no additional control variables, where column 2 and 4 use the additional control variables: cash flow, leverage, firm size, dividend and cash holdings

6. Conclusion

In the final section the conclusions that can be drawn from the analysis performed in the last section are discussed and the implications of these conclusions are covered. The limitations of this research and recommendations for future research are also talked about.

6.1 Conclusion

This research seeks to establish the relationship between share repurchases and ESG ratings through researching four different hypotheses. The expectation that was formed by examining the prior literature was that companies would face some kind of tradeoff between investing in share repurchases and CSR performance. Where investing in CSR or ESG initiatives benefits the company in the long-term, share repurchases lead to short-term shareholder satisfaction. Even if this tradeoff might not exist it could still be hard for firms to resist the temptation of short-term performance and abstain from actions like share repurchases to focus on the long-term, so if not a tradeoff the distraction effect of share repurchases is measured in this study.

No support was found in favor of hypothesis 1 as the results showed no negative relation between share repurchases and CSR performance as measured by ESG ratings in the following year. Support for hypothesis 2 is found as the relation between relative undervaluation and future ESG ratings was negative indicating that firms that are relatively undervalued might be more "distracted" by share repurchases and thus focus less on improving their CSR performance. Where the these hypotheses used the ESG rating of the following year as the dependent variable, the last two hypothesis more specifically looked at the change or delta of the ESG rating in the following year. Using a binary variable indicating whether the delta of the ESG rating was higher or lower than the median enable for the assessment of the relationship between share repurchases and the relative change in ESG ratings. Support for both hypothesis 3a and 3b is found as a negative significant relation was found between share repurchases and the change in ESG ratings in the following year. However it should be noted that the magnitude of this effect was rather small and therefore should not give to much weight to these findings.

The results lead us to a two part answer to our research question: The relationship between share repurchases and CSR performance as measured by ESG ratings is positive when looking at the entire population, indicating that firms that focus on share repurchases do not have worse CSR performance than firms who focus less on share repurchases, noting that being relatively undervalued does lead to lower future CSR performance which could be a result of the tradeoff or "distraction"-effect. However when looking at the change in ESG ratings, at the individual firm level a larger focus on share repurchases can lead to a less positive change in ESG ratings in the following year than for firm that focus less on share repurchases, this relation is also amplified by the use of stock-based compensation by the firm.

The implications of these findings are a little ambiguous as the results reflect some differences. However there seems to be some merit in the tradeoff hypothesis between share repurchases and CSR performance

even though firms that use more share repurchases do not generally perform worse on CSR, they do seem to improve at a slower rate than firms who focus less on CSR. The implications of these findings can provide arguments for both sides in the public debate on share repurchases. The proponents of buybacks might say that firms that focus more on buybacks are performing better on CSR performance as measured by ESG ratings than their peers that focus less on buybacks, however the opponents could argue that less positive change in ESG ratings is seen when more shares are repurchases. So if CSR performance makes its way higher on the political agenda it should not be surprising if some limitations are imposed on share repurchases like the Federal Reserve imposed on the large banks in 2021.

6.2 Limitations

Although this research attempts to lay out a comprehensive model for the empirical analysis of the available data to answer each of the hypotheses, there are limitations to the research that are briefly covered. The first and largest limitation of the research lies in the imperfect measure for CSR performance that is used. CSR performance is notoriously hard to measure and in this research ESG ratings are used as a proxy for CSR performance, however some of the prior literature pointed out that ESG ratings are diverging across different rating agencies and it cannot be assume that they serve as a perfect proxy for CSR performance. This therefore poises a limitation to the research that might become better over time as the objective assignment of ESG ratings improves.

A second limitation lies in the ambiguity of the relationship between share repurchases and CSR performance. It is very hard to definitive evidence that the relation actually exists and is not explained by other variables of which some are impossible to observe or measure. To be able to prove the relation a natural experiment should be performed for which the resources were not available, making use of the available data and resources this research tries to distill the relationship between share repurchases and CSR performance as objectively as possible recognizing that it is not perfect.

Another smaller limitation of the research is that it only makes use of data on U.S. publicly listed firms. This choice was made as this data was most readily available, but this could mean that the findings and implications are less relevant for other parts of the world especially for less developed markets. Markets where share repurchases are less prominent could show a very different relation with CSR performance, but as the U.S. is the largest financial market in the world the sign of the effect is expected to be the same in most cases and the differences are expected to be in the magnitude of the relation.

6.3 Recommendations

This research aims to serve as a framework for future research to build on as the literature on the relation between share repurchases and CSR performance is scarce. In the ideal world the relationship should be researched by the way of a natural experiment where only the amount of share repurchases is changed and the effects on CSR performance can be isolated. Realizing that it is nearly impossible to perform such an experiment it is recommended that future research looks at the improvements in the measurement of CSR performance, for example the improvement of the objective assignment of ESG ratings, and use this to its

advantage. Using the data that is available today researchers could look to other proxies for CSR performance and compare the results to that of this research to see if the findings are robust.
Future research could also focus on the explanation for the relation between share repurchases and CSR performance by for example surveying managers on their motivations for share repurchases and how this influences their focus on the Corporate Social Responsibility of the firm. I look forward to seeing the literature on the subject of share repurchases and CSR performance and sincerely hope that this research can be a drop in the bucket that helps us answer the large sustainability problem that society faces at this moment in time.

References

Bary, A. (2013). Beware the Hidden Costs in Tech. *Barron's, 93*(22), 21-22. https://www.proquest.com/trade-journals/beware-hidden-costs-tech/docview/1364797085/se-2?accountid=13598

Bobenhausen, N., Knetsch, A., & Salzmann, A. J. (2020). Share Repurchases, Undervaluation, and Corporate Social Responsibility. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3754283

Dimson, E., Marsh, P., & Staunton, M. (2020). Divergent ESG Ratings. *The Journal of Portfolio Management, 47*(1), 75–87. https://doi.org/10.3905/jpm.2020.1.175

Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022). The impact of the corporate calendar on the timing of share repurchases and equity grants. https://ssrn.com/abstract=4004098

Dittmar, A. K. (2000). Why Do Firms Repurchase Stock? *The Journal of Business, 73*(3), 331–355. https://doi.org/10.1086/209646

Edmans, A., Fang, V. W., & Huang, A. (2021). The Long-Term Consequences of Short-Term Incentives. *Journal of Accounting Research*. http://dx.doi.org/10.2139/ssrn.3037354

Fenn, G. W., & Liang, J. N. (1998a). Good News and Bad News about Share Repurchases. *Finance and Economics Discussion Series, 1998*(04), 1–28. https://doi.org/10.17016/feds.1998.04

Fink L. D. (2014). Letter to CEOs of S&P500 companies: "Encouraging a focus on long-term growth strategies". *BlackRock*. https://online.wsj.com/public/resources/documents/blackrockletter.pdf

Freeman, E. R. (1984). *Strategic Management: A Stakeholder Approach*. Harpercollins College Div.

Friedman M. (1970). *The Social Responsibility of Business is to Increase its Profits.* The New York Times Magazine.

Grullon, G., & Michaely, R. (2002). Dividends, Share Repurchases, and the Substitution Hypothesis. *The Journal of Finance, 57*(4), 1649–1684. https://doi.org/10.1111/1540-6261.00474

Hall, B. J., & Liebman, J. B. (1998). Are CEOs Really Paid Like Bureaucrats? *The Quarterly Journal of Economics, 113*(3), 653–691. https://doi.org/10.1162/003355398555702

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review, 76*(2), 323–329. http://www.jstor.org/stable/1818789

Noonan, L. (2020, 26 juni). Fed caps dividends and bans buybacks by big US banks. *Financial Times*. https://www.ft.com/content/58c63f45-9bb0-437b-8ba4-c50820c5eae2

Peyer, U., & Vermaelen, T. (2008). The Nature and Persistence of Buyback Anomalies. *Review of Financial Studies*, *22*(4), 1693–1745. https://doi.org/10.1093/rfs/hhn024

Samet, M., & Jarboui, A. (2017). Corporate social responsibility and payout decisions. *Managerial Finance*, *43*(9), 982–998. https://doi.org/10.1108/mf-01-2017-0020

Stephens, C. P., & Weisbach, M. S. (1998). Actual Share Reacquisitions in Open-Market Repurchase Programs. *The Journal of Finance*, *53*(1), 313–333. https://doi.org/10.1111/0022-1082.115194

S&P Global. (2022, March 15). S&P 500 buybacks set quarterly and Annual record. News Release Archive. Retrieved April 14, 2022, from https://press.spglobal.com/2022-03-15-S-P-500-Buybacks-Set-Quarterly-and-Annual-Record

Thomson Reuters, (2017), "Thomson Reuters ESG scores", Thomson Reuters Eikon.

Vaupel, M., Bendig, D., Fischer-Kreer, D., & Brettel, M. (2022). The Role of Share Repurchases for Firms' Social and Environmental Sustainability. *Journal of Business Ethics*. https://doi.org/10.1007/s10551-022-05076-3

Vermaelen, T. (1981). Common stock repurchases and market signaling. *Journal of Financial Economics*, *9*(2), 139–183. https://doi.org/10.1016/0304-405x(81)90011-8