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# Impact Investing and Company Performance

Evidence From the U.S. Stock Market

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**ABSTRACT:**

This thesis examines the effectiveness of impact investments in achieving two distinct objectives. Impact investing, which combines positive social and environmental impact with financial returns, has attracted significant interest among socially responsible investors. However, as the field is still recent, the literature considering its definition and performance is limited and divided among scholars. The literature review examines the idea of pursuing multiple goals with same means in the context of investing. The existing theoretical literature suggests that such multitasking can result in suboptimal performance to both goals, indicating that impact investments would not achieve market-rate returns. The aim of this thesis is to clarify the definition of the field and contribute new empirical evidence to the impact investments' financial performance.

Previous empirical research has yielded mixed results of the financial returns of impact investments, as some report below-market returns, while others suggest above-market returns. Major limitation in the prior studies arise from the lack of standardized impact investment index, leading to inconsistent samples. This thesis will address this research gap by studying publicly listed U.S. companies, which fill the carefully created definition of impact investments based on the prior literature. This impact portfolio consists of 35 companies, picked based on their ESG ratings, market capitalization, and rigorous impact criteria. Portfolios financial performance is examined from 2015 to 2024 through regression analysis and several performance measures. Results are benchmarked against the S&P MidCap 400 index, creating a meaningful comparison to the market.

The findings indicate that impact investments can achieve market-rate returns. Regression analysis did not show statistically significant underperformance nor overperformance, indicating that market-rate returns are possible. Further, both raw and risk-adjusted returns reinforced this conclusion, as the impact portfolio exceeded the numbers of the benchmark index. These empirical findings challenge the theories asserting that multiple goals inherently reduce the financial returns, however aligning with recent empirical studies considering impact stocks' performance. Consequently, results of this master's thesis show that impact investors do not have to sacrifice financial returns to make a positive impact to the world.

**KEYWORDS:** Impact investing, impact investments, ESG, SRI, multitasking theory, stock markets

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**TIIVISTELMÄ:**

Tämä tutkielma tarkastelee vaikuttavuussijoitusten tehokkuutta kahden erilaisen tavoitteen saavuttamisessa. Vaikuttavuussijoittaminen, jossa yhdistyvät positiivinen yhteiskunnallinen ja ympäristöllinen vaikutus sekä taloudelliset tuotot, on herättänyt merkittävää kiinnostusta vastuullisuussijoittajien keskuudessa. Alan ollessa vielä uusi, kirjallisuus sen määritelmästä sekä suorituskyvystä on rajallista ja eri tutkijoiden kesken ristiriitaista. Kirjallisuuskatsaus tarkastelee useiden tavoitteiden samanaikaisesta tavoittelusta sijoittamisen näkökulmasta. Teoreettinen kirjallisuus viittaa siihen, että moniajo (multitasking) voi heikentää molempien tavoitteiden toteutumista, viitaten vaikuttavuussijoitusten jäävän alle markkinatuottojen. Tutkielman tarkoitus on selventää alan määritelmää ja tuottaa uutta empiiristä tietoa vaikuttavuussijoitusten taloudellisesta suorituskyvystä.

Aikaisemmat empiiriset tutkimukset vaikuttavuussijoitusten tuotoista ovat sisältäneet ristiriitaisia tuloksia: osa raportoi alle markkinan olevia tuottoja, kun taas osa markkinaa parempia tuottoja. Näiden tutkimusten olennaisimmat rajoitteet liittyvät yleisen vaikuttavuussijoitusindeksin puutteeseen, johtaen eriäviin tutkimusotoksiin. Tämä tutkielma tuo uutta tietoa alalle tarkastelemalla yhdysvaltalaisia pörssilistattuja yrityksiä, jotka täyttävät aiemman kirjallisuuden pohjalta huolellisesti luodun vaikuttavuussijoitusten määritelmän. Tutkielman vaikuttavuusportfolio koostuu 35 yrityksestä, jotka valittiin niiden ESG-luokituksen, markkina-arvon sekä tiukkojen vaikuttavuuskriteerien perusteella. Portfolion taloudellista suorituskykyä tutkitaan vuosilta 2015–2024 regressioanalyysin ja useiden muiden mittarien avulla. Tuloksia verrataan S&P MidCap 400 -indeksiin, mikä tarjoaa mielekkään vertailukohdan markkinaan.

Tulokset osoittavat, että vaikuttavuussijoitukset voivat saavuttaa markkinatuottoja. Regressioanalyysi ei osoittanut tilastollisesti merkittävää ali- tai ylisuoriutumista, viitaten markkinatuottojen olevan mahdollisia. Lisäksi sekä absoluuttiset että riskikorjatut tuotot olivat paremmat vaikuttavuusportfoliolla kuin vertailuindeksillä, tukien tätä johtopäätöstä. Nämä empiiriset löydökset siis eriävät teorian kanssa, jonka mukaan useat tavoitteet heikentäisivät taloudellista tuottoa, mutta ovat linjassa viimeaikaisten vaikuttavuusosakkeiden suorituskykyä koskevien empiiristen tutkimusten kanssa. Näin ollen tutkielman tulokset osoittavat, että vaikuttavuussijoittajien ei tarvitse uhrata taloudellisia tuottoja saadakseen aikaan positiivista yhteiskunnallista ja ympäristöllistä vaikutusta.

**AVAINSANAT:** Vaikuttavuussijoittaminen, vaikuttavuussijoitukset, ESG, SRI, moniajoteoria, osakemarkkinat

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# 1 Introduction

People are facing the rising effects of environmental and social issues, such as climate change, pollution, malnutrition, and unemployment, all around the world. Larger crowd have awakened to the urgent need of solving these problems. Philanthropists have been more vigorous than ever in finding new ways to do good for those in need (Ben Abid, 2021, p. 10). However, solely governmental resources, charitable aid and philanthropy has not been able to combat these issues, and new alternative ways are necessary (O'Donohue et al., 2010). For one of the leading new ideas amongst institutions and individuals trying to solve this difficult task has risen impact investing, which would connect the two different worlds: social and environmental problem-solving and financial profit-making (Ben Abid, 2021, p. 9).

The fields of corporate sustainability and sustainable investing are large and contain various investing strategies. Many of the sustainable investing strategies focus only on the social and environmental aspect and can be seen solely as philanthropic acts, or only try to minimize negative impact, but do not seek positive impact (O'Donohue, 2010). In impact investing however, both positive social and environmental impact as well as financial returns are sought after simultaneously, and in its definition, would be as good investing strategy for a philanthropic and for a conventional investor only interested in making money (Höchstädter & Scheck, 2015). Impact investing has helped getting conventional financial players more involved in making good and has raised the interest for the field for general audience (Höchstädter & Scheck, 2015). As the term was officially developed and named only in 2007, the field is still fairly young and still contains disagreements among scholars about its definition and efficiency (Höchstädter & Scheck, 2015).

One of the main problems behind impact investing can be seen in its very idea of combining two differing goals. This is also in contradiction with the classical economic theory, shareholder theory by Friedman (1970), stating that sole purpose of a company is to make money for the shareholders. Adding to this, more recent literature considering

multiple investing objectives states that differing goals harm each other and that they cannot be simultaneously completed. According to various studies, investors must pay for the creation of positive impact (Barber et al., 2021; Fama & French, 2007; Geczy et al., 2021b; Holmstörm & Milgrom, 1991; Renneboog et al., 2008).

The previous studies considering the financial returns of impact investments have differing results, as some suggest that impact investments deliver below market-rate returns whereas others suggest above market-rate returns (Barber et al., 2021; Bernal et al., 2021; Yu et al., 2022). Based on these studies, a unanimous conclusion about the effectiveness of impact investments from the point of view of conventional investors cannot be made. Impact investing literature states that impact investors can be divided into impact-first and financial-first investors, which could be one the reasons for varying financial returns (Ormiston et al., 2015, Geczy et al., 2021a). If impact-first investors are willing to forego some of the financial returns, it could lessen the returns for all investors involved in the new sustainable investing field. Therefore, more general economic literature, but also impact investing literature, is to some extent in conflict with the definition of impact investing.

## 1.1 Purpose of the thesis

The purpose of this master's thesis is to examine how impact investments perform financially compared to the overall market. This study will also answer the question whether companies either benefit or suffer from the fact that they serve two different investing objectives, and whether investors must pay to make a positive impact to the world. By studying this, a contribution to the literature considering multitasking in investing is also being made.

All the three previously mentioned studies, which examined the financial returns of impact investments, have very differing criteria for impact investments (Barber et al., 2021; Bernal et al., 2021; Yu et al., 2022). Likely due to this, studies have yielded differing conclusions. As the field of impact investing is only becoming generalized, it is not easy to

define a sample which would perfectly meet the definition of impact investment. The field also lacks a generalized index or list, from which an impact investor would be able to pick an investment and construct a portfolio. Therefore, one of the main purposes of this study is to define a suitable sample of impact investments, and in this way contribute to the literature and better define the financial returns of impact investments. This also means that the thesis will carefully collect information from the previous literature and define the term of impact investment, as literature around the field still contains large scarcity among scholars and practitioners.

This thesis aims to study the financial returns of impact investments by examining the performance of company stocks, which can be classified as impact investments. The companies will be handpicked by reading annual reports, corporate sustainability reports, and rating companies. According to Bugg-Levine & Emerson (2011, p. 10-11), largest parts of impact investments are made through private equity investments, but to make a bigger contribution to larger audience, this thesis finds it suitable to study publicly listed stocks. Publicly listed stocks have also been the research subject of two previous research considering the financial returns of impact investments (Bernal et al., 2021; Yu et al., 2022).

Therefore, this thesis will make an important contribution to the field as the previous studies considering the subject have not been able to examine a well-fitting sample of impact company stocks. This is mostly due to the absence of an impact investment index, also recognized as a problem by the two previous studies (Bernal et al., 2022; Yu et al., 2021). The study by Barber et al. (2021), which examined dual-objective venture capital funds, used a sample best fitting for the definition of impact investment and will also be used as a reference on how data for this thesis will also be constructed. This thesis will provide new information about the financial returns of publicly listed impact companies with carefully chosen data sample. As an additional contribution, this thesis investigates the performance of impact companies during and after a crisis, in this research the crisis

being COVID-19, and compares the results with the previous literature considering the matter.

### 1.1.1 Research problem

The research problem arises from the previous literature, which states that simultaneous goals harm each other and that they cannot be achieved in full (Fama & French, 2007; Holmstörm & Milgrom, 1991; Renneboog et al., 2008). Therefore, as the main idea of impact investing is to combine two goals, it conflicts with the existing literature and would indicate that impact investing cannot be done in such a way that both objectives are accomplished. Therefore, it is worth studying whether impact investing can carry out what it promises in combining two different goals, and if the financial returns of the strategy are similar with conventional investing.

This research problem stated as a research question would therefore be: "Can two different investing objectives, positive financial returns and positive social and environmental impact, be accomplished simultaneously with impact investing?" This research question therefore will study in focus the performance of impact investing, one of the most recent and emerging sustainable investing strategies, but also in more general whether two different objectives harm each other in the context of investing.

### 1.1.2 Hypotheses

Based on the research problem, the hypotheses for the thesis can be formulated. The thesis consists of null hypothesis, which the hypothesis H1 is trying to reject or disprove. An additional hypothesis H2 considering companies' performance during and after crises is also formulated to broaden the contribution in examining uncertain market conditions. The general definition of impact investing states that the strategy can accomplish both market-rate financial returns as well as positive social and environmental impact. The null hypothesis, which this thesis tries to disapprove, is then simply made to match the definition of impact investments. As the study sample is made to fill the criteria of

generating a positive impact, the financial returns side of the strategy is being examined. Based on this, the null hypothesis for this thesis is stated as:

$H_o$ = Impact investments achieve market-rate financial returns.

As the literature of field of impact investing is still scarce and certainty for its functionality are yet to be shown, this thesis builds the hypothesis based on literature focusing on the idea of investing with multiple objectives. As was already in the introduction chapter gone through, previous literature has a clear view that multiple objectives cannot be accomplished simultaneously. For example, Friedman (1970) sees that when a manager of a company is focusing on anything other than generating value for shareholders, in this case making positive impact to the world, the financial returns are being compromised. Additionally, several other studies suggest that multitasking harms the completion of the objectives. Therefore, hypothesis H1 is formulated as:

$H_1$ = Impact investments achieve below market-rate returns.

However, it is worth noting that there is also a possibility that financial returns could be higher than those of conventional investing due to the made impact. For example, Kang et al. (2016) suggested that better corporate social responsibility (CSR) improves companies' performance in the long run, as the impression of the company improves in the eyes of the shareholders and other stakeholders. This was also shown with the empirical study of impact investments' performance made by Yu et al. (2022). Based on the overall literature considering the field, it is still seen more likely that the conflict of objectives is more harmful than the benefits gained from CSR, and the hypothesis H1 is left as previously stated.

In addition to studying whether impact investments achieve market-rate returns overall, this thesis aims to create new evidence on the performance of these investments during and after uncertain market conditions. Earlier research by Bernal et al. (2021) found

evidence that impact companies underperformed in the years following the 2008 financial crisis but significantly improved after 2014, outperforming the benchmark. The authors speculated that this might be due impact companies taking longer time to recover from crises when compared to other companies. Therefore, to extend the evidence of the performance of the impact investments related to crises, this thesis will create an understanding of the investments' performance during and after the COVID-19 pandemic, most recent big crisis affecting the stock markets. Based on this previous literature, this additional hypotheses is stated as:

$H_2$ = Impact investments take longer to recover from crises.

The thesis will answer the research questions based on the empirical quantitative research through the previously set hypotheses. The thesis will then conclude if the null hypothesis can be disapproved based on the found facts, and if the hypothesis H1, which was formulated based on the previous literature, holds. In addition, the validation of hypotheses H2 is considered based on the same research methods. If sufficient evidence for the rejection of the null hypothesis is not found based on the empirical study, it cannot be disapproved.

## 1.2 Structure of the thesis

This subchapter will describe the following parts of the thesis, and how it is structured. The first chapter introduced the thesis, the contribution, the research problem, and the hypotheses.

The second chapter of the thesis will introduce the field of impact investing in more detail. This will be done by going through the term's definition, history, possible challenges and solutions for them and by explaining its differences with closely related concepts. The reader of the thesis will also have a clear understanding of the term after reading this chapter.

The third chapter will discuss the theoretical framework of the thesis. Theories and practices relevant to this thesis are examined and validated, and their relevance to this thesis is highlighted.

The fourth chapter continues with a literature review, as theories and previous studies considering the idea of multiple investing objectives are examined. The theories considering investing with multiple objectives, such as shareholder theory and stakeholder theory as well as multitasking theory are examined. Other additional literature such as investor tastes and willingness to pay models are gone through. The reader of this chapter will acquire deeper understanding about the challenges faced with impact investing.

The fifth chapter addresses the data and methodology of the thesis' empirical study part. The criteria and the basis on the selection of hand-picked company stocks and the formed portfolio will be discussed, as the selection of the chosen benchmark. The chapter will introduce and reason the research methods being used to study the performance of impact portfolio.

The sixth chapter of the thesis will introduce the results of the empirical study. From these results, the thesis will conduct an answer for the research question through the previously introduced hypotheses.

The seventh and final chapter concludes the thesis by comparing the initial research question and the hypotheses with the understanding made based on the literature review, regression analysis, other empirical basis and other facts collected through the thesis. The thesis will make a solid and reliable conclusion based on studied information.

# 2 Impact investing

In this chapter, impact investing and impact investments are introduced through previous literature. In the first subchapter the term is defined, its relevance is underlined through its exponential growth and different players in the field are introduced. The following chapters briefly introduces the history of impact investing, previous studies considering the financial returns, and what kind of challenges the recent investing field faces. Lastly, closely relevant concepts are discussed to create distinction between impact investing.

## 2.1 Definition of impact investing

Impact investing is commonly defined as an investing strategy, in which the investor expects financial returns combined with measurable positive environmental and social impact (Höchstädter & Scheck, 2015). Impact investments are mostly intended towards the underprivileged and for the health of the environment, and in a such way, that the impact in these issues can be measured (O'Donohue et al., 2010). According to O'Donohue et al. (2010), the success of impact investing over more traditional sustainable investing strategies is in that the investments are expected to generate market-rate financial returns. Global Impact Investing Network (GIIN, 2023), which is the leading organization dedicated to improving the field of impact investing, describes impact investments the following: "*Impact investments are investments made with the intention to generate positive, measurable social and/or environmental impact alongside a financial return*". According to Amir Bouri, the Chief Executive Officer of the GIIN, "*Impact investing is a movement of people who believe that capital can and should solve our global problems, not make them worse"* (Hand et al., 2024).

The impact investing market has grown rapidly in recent years, which can be seen in Figure 1. The combined impact investing assets under management in 2024 worldwide was estimated to be 1 571 billion USD, as in 2018 the same number was only 228 billion USD (Hand et al., 2024; Mudaliar et al., 2018). The sustainable investors have therefore

seen exponential growth of the fairly new investment market, as in only six years the impact investing market has gotten more than 1 340 billion USD of new funding and has increased almost sixfold. Impact investing is not usually seen to be limited to any particular asset class or investor profile, although there has been ambiguity also in this matter (O'Donohue et al., 2010; Bugg-Levine & Emerson, 2011, p. 9). However, impact investments are generally venture capital and private equity investments, as well as direct lending, as these have the ability of being the most direct route to those sectors in need of funding (Bugg-Levine & Emerson, 2011, p. 10-11).

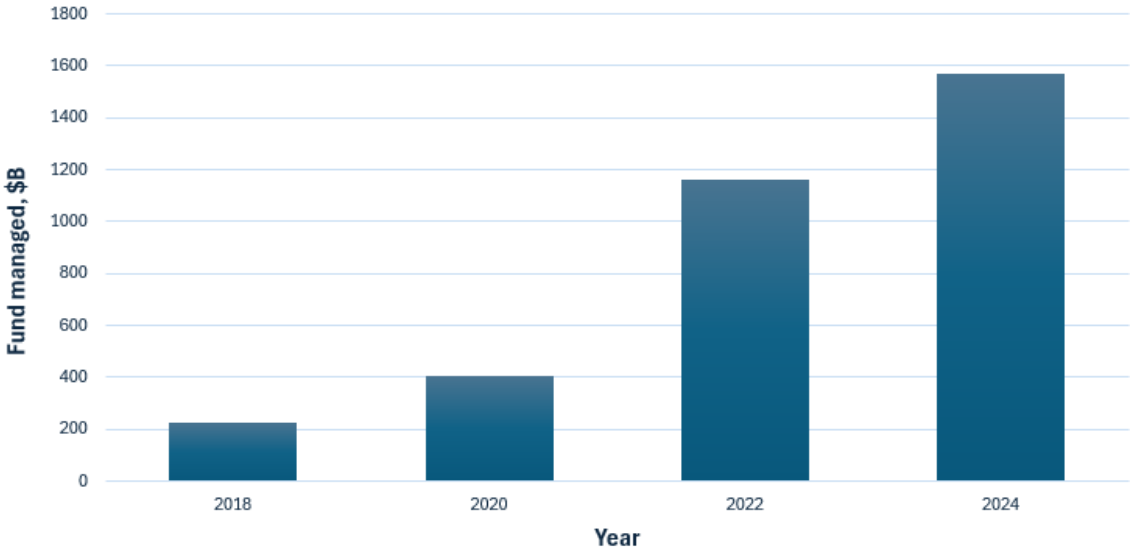


**Figure 1.** Size of the impact investing market (adapted from Hand et al., 2020; Hand et al., 2022; Hand et al., 2024; Mudaliar et al., 2018)

Impact investing market is an investing market that considers many different types of investors. The market involves banks, different types of foundations, and government agencies, but also high net-worth individuals with the goals of doing charity (Agrawal & Hockerts, 2021). Impact investing has also given birth to a new group of investors, who aim to combine their goal-oriented investing with a philanthropic mindset (Bugg-Levine & Emerson, 2011, p. 8-9). Impact funds are the most important of the various organization types performing impact investing, as fund managers oversee 59 % of the whole

impact investing market (Hand et al., 2024). This can be also seen from the average portfolio sizes of impact investors answering the survey, which in 2024 was 986 million USD (Hand et al., 2024).

Different investors and their intentions with impact investing can be broadly divided into two groups, financial-first and impact-first investors (Ormiston et al., 2015). These two groups are divided by their main goal with impact investing: financial-first, typically institutional investors, set their sights on market-competitive financial returns, and impact-first, typically foundations and non-profit organizations, aim for the environmental and social impact (Ben Abid, 2020, p. 15). It must be at this point recalled that although impact investing and investors can be divided in such a way, its aim before anything else is to combine these two goals. This division of investors will be studied in more detail in the chapter four, as it may have a significant effect on the financial returns of the whole impact investing strategy, due different goals of the investors.

Because this thesis is going to study company stocks which can be considered as impact investments, reasoning on which stocks are impact investments, and which are to be picked for the final sample, is important. Based on Höchstädter & Scheck (2015), O'Donohue et al. (2010) and GIIN (2023), this thesis creates a specified definition for impact investments stocks, stated as:

*Impact investment stocks create a positive and measurable environmental or social impact to the world while also expecting to generate market-rate financial returns.*

## 2.2 Historical impact investing

Impact investing as a term is rather young, as it was only introduced in a meeting hosted by the Rockefeller Foundation in 2007 (Harji & Jackson, 2012). In this meeting the leading names from the fields of finance, philanthropy, and development assembled with the idea of building a new investing industry combining the best aims of the three different worlds (Höchstädter & Scheck, 2015). A year later in 2008, a second meeting was held,

where the Rockefeller Foundation's Board of Trustees approved the funding for Impact Inventing Initiative based on the previously made plans, and which's goal was to build the basis for the new industry (Harji & Jackson, 2012).

Although impact investing was invented only in 2007, the concept of investing so that it generates positive environmental and social impact, has been around for several decades (O'Donohue et al., 2010). The first examples of investing with the idea of making positive impact are from 1948 and 1956, when the Commonwealth Development Corporation and later the International Finance Corporation started making investments in emerging countries, respectively (O'Donohue et al., 2010). When considering the broader field of SRI, history goes all the way back to 1920s, when Methodists avoided investing in "sinful" companies, such as those producing alcohol, tobacco or weapons (Renneboog et al., 2008). According to Renneboog et al. (2008), the first mutual fund based on these kinds of values, the Pioneer Fund, was introduced in 1928. These predecessors of impact investing have brought up environmental and social discussion, but only before the invention of impact investing did the discussion of combining those with generation of financial returns emerge.

The progress towards the new socially responsible investing industry, which later would get the name of impact investing, started at the beginning of the 21st century. Jed Emerson, one of the pioneers of the field, introduced the Blended Value Proposition in 2003, in which he introduced his thoughts about combining environmental and social impact with financial returns (Emerson, 2003). In his proposition, Emerson (2003) argued that the traditional belief of investors being able to only pursue one of the two, environmental and social impact or financial returns, is in fact "inherently wrong", and that both goals could be achieved with suitable investing decisions. According to Emerson (2003), for his Blended Value Proposition to be able to work in practice, a whole new way of measuring value and impact would have to be developed. The Blended Value Proposition can be seen to be the most important discussion openings for the creation of impact investing.

## 2.3 Financial returns

As has been previously mentioned, market-rate financial returns is one of the two objectives impact investing is trying to accomplish. The impact investing experts and scholars have not yet gotten to unanimity on which kind of financial returns can be expected from impact investments in regular, as different studies have yielded different results (Barber et al., 2021; Bernal et al., 2021; Yu et al., 2022). According to Ormiston et al. (2015), impact investments can have either above market-rate, market-rate, or below market-rate returns, which underlines that there is strong variances in this matter. In this subchapter the three most notable studies considering the financial returns of impact investments are introduced.

Barber et al. (2021) examine in their study how investor's returns are affected when investing in dual-objective venture capital (VC) funds. According to Barber et al. (2021), investors can be divided by their willingness to pay (WTP) for the impact, which could indicate that some investors are willing to forego some of their financial returns to achieve more impact. In their study Barber et al. (2021) show, that impact investors in fact do accept lower returns and therefore dual-objective VC funds achieve below market rate returns. Barber et al. (2021) concluded that dual-objective VC funds receive in total 4,7 percentage points lower internal rate of return compared to traditional VC funds. The returns are still positive, but the authors show that impact investing would not be rational for traditional investors, as other strategies generate better returns. For investors with high WTP, Barber et al. (2021) see that they are willing to forego internal rate of returns of even 6,2 percentage points. The authors state that the lower internal rate of return of dual-objective VC funds is in fact mainly due to impact-first investors, who are willing to trade money for impact.

The study by Bernal et al. (2021) also examines impact investing's capabilities in returning market-rate returns, as the authors examine how impact investments compare to mainstream markets. The authors study the financial performance of European publicly listed companies which meet the definition of impact investment. Bernal et al. (2021)

use a third-party list of impact investments as their data, which is based on United Nations' and GIIN's definitions of impact investments. The study by Bernal et al. (2021) shows similar results as Barber et al. (2021) also when studying publicly listed firms, indicating that impact investments achieve below market-rate returns. Going even further, Bernal et al. (2021) found out that publicly listed impact companies failed to deliver even non-negative returns when studying returns between January 2009 and May 2018. This means that investors would have to pay to make an impact, and that the strategy would only be suitable for an investor with solely philanthropic goals. However, Bernal et al. (2021) found great improvement in the performance of impact companies post-2014, which they presented to be caused by slower recovery from the 2008 financial crisis.

Even more recent study considering the field, made by Yu et al. (2022), came to a completely different conclusion as the two studies examined before. Yu et al. (2022) studied publicly listed companies by constructing a portfolio from third party list of "Most Ethical Firms". According to Yu et al. (2022), the most ethical firm portfolio outperforms the benchmark by 1,36 percent annually, and these investments have statistically significant positive alpha. The authors see that impact investments are undervalued in the markets due them being less informed and lack financial analyst coverage. This was also seen as a possibility in the paper by Barber et al. (2021), although their study resulted in a different conclusion. However, one of the limitations of the paper stated that there is not an impact investments index available, and that the results might not be generalizable to the whole impact investing field, as the portfolio studied was of most ethical firms (Yu et al., 2022).

As can be seen from the previous studies, there is no consensus when considering if impact investments can provide an investor with market-rate returns. Two of the studies (Barber et al., 2021; Bernal et al., 2021) suggested below-market rate returns, whereas one (Yu et al., 2022) suggested above-market rate returns. Although the study by Barber et al. (2021) studied different asset class as they studied VC funds, it does not explain the differences in the results as both Bernal et al. (2021) and Yu et al. (2022) studied

publicly listed companies but still ended up in different results. It can be seen that the differences in Bernal et al.'s (2021) and Yu et al.'s (2022) samples most likely explain the differing results. Based on the definition of impact investment this thesis constructed earlier, neither of the studies achieved to create a perfectly fitting sample. However, Bernal et al. (2021) most likely have a better sample, as it is said that their list of companies fit the definition of GIIN. More study still clearly needs to be done to better understand how impact companies perform in the markets.

## 2.4 Challenges

The idea of creating a whole new investing market with the goal of combining environmental and social impact with financial returns is great. Implementing this idea into practice successfully, however, includes challenges. While the execution of the strategy is difficult on its own, other kinds of challenges emerge from the fast growth of the newly established market. The Global Impact Investing Network (GIIN) gathered information in their years 2020 Annual Impact Investor Survey (Hand et al., 2020) about the challenges impact investors face when operating with impact investments. In this subchapter, the main challenges that the field of impact investing is facing now and in the future are gone through. The progress made so far to tackle these challenges is also introduced.

### 2.4.1 Measuring impact

According to the impact investor survey by Hand et al. (2020), one of the biggest challenges respondents are facing when investing for impact is the "sophistication of impact measurement and management practice". This underlines the understanding that measuring of the impact is often complicated and can be expensive (O'Donohue et al., 2010). However, the idea of measuring the impact is crucial as it is one of the key differences between impact investing and other socially responsible investing strategies (O'Donohue, 2010). Blended Value Proposition by Emerson (2003) already stated that for a strategy combining these two to work, a new way of measuring value would have to be invented. Ever since impact investing was introduced, there has been a clear ambition by impact

investors to create industry-wide standards and social-performance metrics to describe and measure the benefit gained by impact investments (Jackson, 2013).

To solve this inconvenience of measuring impact, Global Impact Investing Network has developed the Impact Reporting and Investment Standards (IRIS) (Reisman, 2018). IRIS provides impact investors with a way to collect impact data and transform it into a more comprehensible and more easily measurable form (GIIN, n.d.-a). The main features of IRIS include the metrics designed to simplify the measuring of the made impact, which are used by the top impact investors (GIIN, n.d.-a). A good indication of IRIS's status in the field of impact investing can be seen in those who use it, which are for example Allianz, Deutsche Bank, and WWF (GIIN, n.d.-b). Still, as impact investing is becoming more mainstream and known to the public, even better tools for measuring the impact are needed (Reisman et al., 2018). According to Reisman et al. (2018), there is still a very limited number of analytical reports of impact made by impact investments.

### 2.4.2 Impact washing

The difficulty of measuring impact also creates other issues. The growing popularity of impact investing has established many new impact investments, but also those which are labeled as impact investments but lack the real will to do impact (Findlay & Moran, 2019). Related to this, impact investor survey by Hand et al. (2020) introduces "impact washing" as the biggest challenge the market will face over the next five years. An umbrella term of impact washing, green washing, is more known phenomenon, which came to existence when people's interest in SRI grew (Finley & Moran, 2019). Finley & Moran (2019) believe that such side effects of grown interest have now developed its variant to the field of impact investing. According to McCreless (2017), it is difficult to see impact washing from a real market-rate impact investment. The only solution to this would be more research that combines realized impact with realized financial returns (McCreless, 2017).

## 2.5 Related concepts

The field of socially responsible investing has made rapid development over recent years, and various new terms have been created to describe specific strategies. This has led to a scarcity of literature and definitions between the strategies, which has caused differences of opinions among scholars and researchers (Ben Abid, 2020, p. 10-11). In the second chapter a comprehensive definition of impact investments was made, but to draw an even better understanding, closely related terms and their relevance to impact investing are introduced.

According to Renneboog et al. (2008), SRI is a form of investing in which social, environmental and ethical viewpoints are considered when making investment decisions. Like other responsible investing practices, SRI has gained new interest in recent decades by both practitioners and researchers (Sandberg et al., 2009). When compared to impact investing, SRI is more established and better defined, as the term itself has been around for longer time (Höchstädter & Scheck, 2015; Renneboog et al., 2008). SRI is sometimes considered to be an umbrella term for other, smaller investing strategies focusing on responsibility, including impact investing (Höchstädter & Scheck, 2015). Impact investing is however seen as clearly distinct and developed version of SRI (Ormiston et al., 2015). When examining the ways these strategies are carried out, differences can also be found.

SRI is traditionally based on negative and positive screening strategies, in which the unwanted stocks or industries are excluded from the portfolio or desired stocks are added to the portfolio, respectively (Renneboog et al., 2008; Sandberg et al., 2009). Investing by screening does not fulfill the description of impact investing, as its definition lacks the crucial intention of generating new positive impact (Ormiston et al., 2015). For example, excluding fossil fuel companies from a portfolio does not directly create a positive impact, but rather only avoids supporting harmful practices. Impact investing in its definition on the other hand channels funds directly to industries in need. Impact investing as a strategy is more proactive and ambitious in seeking good to the world compared to SRI (Höchstädter & Scheck, 2015; Ormiston et al., 2015). Impact investing can be defined as

"doing good", whereas SRI as "not doing bad" (Ng & Rezaee, 2024). SRI also keeps the more traditional goal of investing, making money, as its core objective. Where impact investments' returns vary, SRI investors often accept only market-rate returns (Höchstädter & Scheck, 2015).

Some authors debate that true impact investing should be made through active engagement rather than simply investing in companies with positive impact. According to Puttonen (2024), investing in high-emission industries and "brown" companies would be more effective than investing in already "green" companies. The author states that active engagement and the utilization of shareholder rights towards emission reductions would better help combat the climate change and sees this as the "ultimate solution" for meaningful sustainable investing. Accordingly, Berk & van Binsbergen (2024) see that for investors to make real impact, they should invest directly to "brown" companies through primary investing, and with exercising their rights have greater impact. It seems clear, that active engagement is the most effective and straightforward way of impacting to the "brown" companies and also combatting climate change. As Berk & van Binsbergen (2024) state, only negative screening of these "brown" companies however is unlikely to have a large impact. For a regular investor, which does not have substantial funds, investing to already "green" companies is probably most effective way to create positive impact.

Considering the ESG (Environment, Social and Governance) factors is one of the key actions shareholders perform when choosing their socially responsible investments. ESG is not seen as a separate investing strategy but is important and closely related when SRI actions are carried out. Although ESG factors can be used for aid when choosing an impact investments, they do not solely fill the definition (Ormiston et al., 2015). That is also why in this thesis ESG ratings are only used as a starting point in choosing the sample portfolio. Sustainability rating agencies (SRAs) provide stakeholders with an increasing amount of data based on ESG factors (Clementino & Perkins, 2020). Although ESG ratings cannot be alone used in choosing the impact sample portfolio, it is important tool as the

most widely used way of rating the companies' responsibilities to its stakeholders (Puttonen, 2024). For this thesis, one of the more well-known SRAs, Sustainalytics, is going to be used for the basis of ESG ratings (Clementino & Perkins, 2020). This will be gone through in more detail in the fifth chapter of the thesis, considering the data selection.

# 3 Theoretical framework

As this master's thesis will make new research on the performance of impact investment stocks by analyzing their returns through the study period, it is essential to ground the analysis in well-established asset pricing theories and portfolio performance metrics. In this chapter the theoretical framework will be addressed as the underlying theories and practices for the following research will be explained and validated. Asset pricing models from CAPM of Sharpe (1964) and Lintner (1965) to Four-Factor Model of Carhart (1993) are introduced. Additionally, portfolio performance measures relevant to this study are presented and discussed. Therefore, the theoretical framework will help create an understanding on how the impact investments' performance compares to the overall market. Upon reading this chapter, the reader will have knowledge and sufficient understanding to interpret the results of empirical study made in chapter 6.

## 3.1 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM), developed by Sharpe (1964) and Lintner (1965), is one of the best-known and widely used asset pricing models in today's finance world and has been the basis for many financial models that have been introduced after. The model is a foundational model in understanding the relationship between expected returns and risk in the context of portfolio management. CAPM posits that expected returns of an asset are linearly related to its sensitivity for market movements, referred to as its beta (Sharpe, 1964).

CAPM is also often referred as the "one factor model", as according to the model, the only variable affecting the expected returns is the sensitivity to overall market movements. Therefore, the model also highly simplifies the complex dynamics of asset pricing in stating that beta is the only variable affecting expected returns. CAPM is based on several assumptions, such as market efficiency, rational investor behavior, and the ability to borrow and lend with a risk-free rate (Sharpe, 1964). These assumptions can seem to be rather idealistic as they are not always realistic in real life situations. Some of these

assumptions, such as rational investor behavior, are related to the successful implementation of impact investing, and are analyzed in more detail in chapter 4.3.

At its core CAPM reflects the idea that investors are trying to maximize their financial returns when compared to their appetite for risk. If an investor is receiving enough compensation for his/her risk when making an investment, he/she would be willing to make that investment. Therefore, investors only take on additional risk if they are compensated for it. CAPM states that each investment is associated with a risk-free rate, or a risk each investment in theory automatically achieves. Additionally, each investment has a specific risk related to that certain type of investment. When an investment has a higher sensitivity to the market, also called systematic risk, it would according to CAPM have higher expected returns. Consequently, each investor can tailor their portfolios to best suit their individual risk-appetite and ambition with investing.

The CAPM is mathematically expressed as follows:

(1) $$ER_i = R_f + \beta_i(R_m - R_f)$$

Where:

$ER_i$ = *Expected Return of the asset* $i$

$R_f$ = *Risk-Free Rate*

$\beta_i$ = *Beta of the asset* $i$

$R_m$ = *Return of the market portfolio*

Beta is the factor indicating how sensitive an asset is to market movements. Beta is mathematically expressed as follows:

(2) $$\beta_i = \frac{Covariance(R_i, R_m)}{Variance(R_m)}$$

Where covariance measures the movements between two assets relative to each other, and variance how far the assets move from their means. Beta greater than 1 indicates higher volatility than the market, whereas a beta less than 1 indicates lower volatility.

## 3.2 Fama-French three-factor model

The Fama-French three-factor model introduced by Eugene Fama and Kenneth French (1993) expands the understanding of variations within asset returns. As was stated in the previous chapter, CAPM is highly simplified framework as it states the expected returns being solely the function of market risk. This was also identified by Fama & French (1993), for which they added two new factors to the equation: *size* and *value*. The authors showed that the size of the company, measured by market capitalization, as well as the value of the company, measured by book-to-market value, capture the factors of risk better than solely the beta. Historically small caps and value stocks have yielded higher returns than the overall market (Fama & French, 1993).

The first part of the three-factor model equation is consistent with the CAPM, representing the market risk premium. The first additional factor, SMB short for Small Minus Big (market capitalization), measures the historical excess returns of small cap companies over big cap companies (Fama & French, 1993). The second additional factor, HML, short for High Minus Low (book-to-market ratio), measures the historical excess returns of value stocks compared to growth stocks (Fama & French, 1993). With the new factors, the authors developed an improved model that makes a more comprehensive framework for understanding the drivers of asset returns.

The Fama-French three-factor model is mathematically expressed as follows:

(3) $$ER_i = R_f + \beta_i(R_m - R_f) + \beta_{smb} * SMB + \beta_{hml} * HML$$

Where:

$ER_i$ = *Expected Return of the asset* $i$

$R_f$ = *Risk-Free Rate*

$\beta_i$ = *Beta of the asset* $i$

$R_m$ = *Return of the market portfolio*

$\beta_{smb}$ = *Sensitivity of asset to the size factor*

$SMB$ = *Small Minus Big*

$\beta_{hml}$ = *Sensitivity of asset to the value factor*

$HML$ = *High Minus Low*

## 3.3 Carhart four-factor model

Another extension to the asset pricing models, the Four-Factor Model, was introduced by Mark Carhart (1997). In Four-Factor Model, the same factors are included as in the Fama-French Three-Factor Model, but another additional factor, momentum, is added. Research by Jegadeesh & Titman (1993) as well as Fama & French (1996) indicated that abnormal returns could be achieved with buying "winning" stocks and selling "loser" stocks, so those which have either exceeded expectations or underperformed the past twelve months, respectively. Based on these findings, Carhart (1997) recognized the importance of inclusion of momentum as the driver of returns, and for this new factor was created. The WML factor, Winners Minus Losers, measures the performance difference between these two groups of stocks.

The Carhart Four-Factor Model is mathematically expressed as follows:

(4) $$ER_i = R_f + \beta_i(R_m - R_f) + \beta_{smb} * SMB + \beta_{hml} * HML + \beta_{mom} * MOM$$

Where:

$ER_i$ = *Expected Return of the asset* $i$

$R_f$ = *Risk-Free Rate*

$\beta_i$ = *Beta of the asset* $i$

$R_m$ = *Return of the market portfolio*

$\beta_{smb}$ = *Sensitivity of asset to the size factor*

$SMB$ = *Small Minus Big*

$\beta_{hml}$ = *Sensitivity of asset to the value factor*

$HML$ = *High Minus Low*

$\beta_{mom}$ = *Sensitivity of the asset to the momentum factor*

$MOM$ = *Momentum*

## 3.4 Performance measures

In the following subchapter the most important measures for portfolio performance in the context of this thesis are introduced: The Sharpe Ratio, the Treynor Ratio, the Jensen's Alpha and the Compound Annual Growth Rate (CAGR).

### 3.4.1 Sharpe Ratio

The Sharpe Ratio is a measure widely used in assessing the performance of mutual funds and other portfolios of financial assets, developed by William Sharpe (1966). The ratio, also referred to as the reward-to-variability by Sharpe (1966), quantifies the relationship between the excess return of an investment and risk associated with it. It is a helpful tool in understanding how much additional returns are gained with additional total risk, assuming that investors are risk averse. According to Sharpe (1994), the ratio however also has drawbacks, as it does not take the correlation with the already owned assets into account, which could otherwise affect the choices. The Sharpe Ratio is mathematically expressed as follows:

(5)
$$S_p = \frac{R_p - R_f}{\sigma_p}$$

Where:

$S_p = Sharpe\ Ratio\ of\ the\ portfolio\ p$

$R_p = Return\ of\ the\ portfolio\ p$

$R_f = Risk\text{-}Free\ Rate$

$\sigma_p = Standard\ deviation\ of\ the\ portfolio\ p$

### 3.4.2 Treynor Ratio

The Treynor Ratio is another tool for measuring the performance of investment portfolios. The Treynor Ratio, also known as the reward-to-volatility, was introduced by Jack Treynor (1965). In contrast to the Sharpe Ratio, which evaluates the total risk, Treynor Ratio focuses only on systematic risk of a portfolio and therefore is aligned with market movements. Therefore, the measure is most suitable when the portfolio is properly diversified so that the unsystematic risk is minimized. The measurement of this systematic risk is made with portfolio beta, which consists of equal weighted average of all stocks in that portfolio. The drawback of the ratio, however, is that if the portfolio is not in reality fully diversifying the unsystematic risk away, the results might be misleading. Beta is, however, a particularly good measurement of risk when comparing well diversified portfolios, as they are primarily exposed solely to the market risk. The Treynor Ratio is mathematically expressed as follows:

(6)
$$T_p = \frac{R_p - R_f}{\beta_p}$$

Where:

$T_p = Treynor\ Ratio\ of\ the\ portfolio\ p$

$R_p = Return\ of\ the\ portfolio\ p$

$R_f = Risk\text{-}Free\ Rate$

$\beta_p = Beta\ of\ the\ portfolio\ p$

### 3.4.3 Jensen's Alpha

The third performance measure considered is Jensen's Alpha, introduced by Jensen (1968). The measure evaluates the excess return that a portfolio generates when compared to what CAPM predicts, given its exposure to systematic risk. It is commonly used as a measurement tool in assessing if fund managers have created value with active fund management. As Jensen's Alpha uses CAPM as its benchmark for expected returns, questions about the model's accuracy in its assumptions and usage of beta as single risk factor arise. Jensen's Alpha is mathematically expressed as follows:

$$\alpha_p = R_p - R_f + \beta_p(R_m - R_f) \tag{7}$$

Where:

$\alpha_p$ = *Jensen's Alpha of the portfolio p*

$R_p$ = *Actual return of the portfolio p*

$R_f$ = *Risk-Free Rate*

$\beta_p$ = *Beta of the portfolio p*

$R_m$ = *Return of the market portfolio*

The results of the measure can be implemented so that portfolio with zero alpha has earned an adequate amount of return for that amount of risk which was taken. Positive alpha indicates that the portfolio has earned excess returns to what was expected by CAPM, or in other words has outperformed the market. Negative alpha indicates underperformance, and that the portfolio has obtained too much risk for the returns obtained from the investment.

As was noted with each performance measurement introduced, each of them has limitations, regarding either the risk they are considering or the reliability of models such as CAPM. Because none of the measures are perfect and capture all the aspects of risk and performance, it is advisable to use more than one of them when measuring performance. In this manner, a more comprehensive view of portfolio performance can be achieved,

which accounts for both total and systematic risk, as well as the potential value addition of active portfolio management. Therefore, in this master's thesis each of these measures are used when constructing our understanding of risk-adjusted performance of impact investments.

### 3.4.4 Compound Annual Growth Rate (CAGR)

One performance measure, which will be used to represent solely the growth and raw returns of impact portfolio is included. Compound Annual Growth Rate (CAGR), which is to large extent equivalent to the geometric average return, is one of the most widely used measure to evaluate the historical performance of buy-and-hold portfolios (Dichev, 2007). CAGR measures investment's annual growth rate over chosen period and is useful tool for the comparison of variety of investments, also across different asset classes (Corporate Finance Institute, n.d.). Measure is ideal for evaluation of compounded and equal-weighted portfolios (Dichev, 2007), for which it is very fitting and valuable for the purposes of this thesis. The Compound Annual Growth Rate is mathematically expressed as follows:

(8)
$$CAGR_p = \left(\frac{EV_p}{BV_p}\right)^{\frac{1}{n}} - 1$$

Where:

$CAGR_p$ = *Compound Annual Growth Rate of portfolio* $p$
$EV_p$ = *Ending value of the portfolio* $p$
$BV_p$ = *Return of the portfolio* $p$
$n$ = *Number of compounding periods*

The disadvantage of the CAGR is that it does not evaluate the risks associated with the investment portfolio and does not therefore show risk-adjusted returns. As the measure assumes constant growth over the period, it might not indicate the actual situation occurring with highly volatile investments over different times (Corporate Finance Institute,

n.d.). Earlier performance measures introduced are therefore included in the study, as these are more useful in the evaluation of risk-adjusted performance. With the combination of all of these measures introduced, a well comprehensive understanding of impact investments' performance compared to the market and the benchmark index is constructed.

# 4 Investing with multiple goals

This chapter continues with the literature review part of this master's thesis. By the introduction of two classical economic theories, shareholder theory (Friedman, 1970) and stakeholder theory (Freeman, 1984), the idea of companies' responsibilities is tied to the thesis and the creation of shareholder value. Other relevant previous literature related to having multiple goals in investing, such as the multitasking theory by Holmström (1991), investor taste framework by Fama & French (2007) and willingness to pay models by Barber et al. (2021) are introduced. The behavior aspects of socially responsible investing are also studied, as studies by Geczy et al. (2021b) and Kabderian Dreyer (2023) are gone through. This chapter deepens the understanding behind the idea of impact investing, in which two different goals are pursued with same means.

## 4.1 Shareholder theory and stakeholder theory

The article published in New York Times in 1970 by Milton Friedman states already in its headline, that *"the social responsibility of business is to increase its profits"* (Friedman, 1970). The shareholder theory of Friedman (1970) is one of the most well-known economic theories and strongly criticizes corporate social responsibility. According to Friedman (1970), the primary responsibility of a company is for its shareholders, which are only interested in maximizing their own wealth. He states that when an executive of a company is taking actions towards social responsibilities, he is reducing financial returns of the company and therefore also spending shareholders' money (Friedman, 1970). Therefore, the author argues that market-rate financial returns cannot be made at the same time with CSR being implemented. Based on this, it can be also seen reasonably that when an executive's attention is in two different things at once, it could compromise the success of any of these two objectives.

Another theory considering business' responsibilities, the stakeholder theory, was introduced few years later by Freeman (1984). The theory sees these responsibilities quite differently, as it states that a business should also take other stakeholders than only

shareholders into account when making decisions considering the company. In the context of impact investing, these stakeholders of companies are for example communities and the overall environment (Renneboog et al., 2008). Therefore, the stakeholder theory has been very important basis for the creation of impact investing and the overall field of SRI, as it similarly strives to benefit broader societal and environmental outcomes than only creating wealth. If not for stakeholder theory and the awareness it raised among people, impact investing and other sustainable responsible investing strategies most likely would not be as generalized as they are today.

Although the shareholder theory in its original form is strict that social responsibilities are bad for the shareholders of a company as they lower financial returns, studies show that CSR could in fact raise also shareholders' value (Kang et al., 2016; Renneboog et al., 2008). Adding to this, if a company would not take sustainability into account in its actions and neglects all CSR, the company's financial returns could also be lower due to reputational damages (Renneboog et al., 2008). According to Kang et al. (2016), corporate social irresponsibility (CSI) has a significant negative effect on company performance. Companies "do well by doing good", but the amount of the financial benefits gained with CSR is still not clear (Kang et al., 2016). Kang et al. (2016) introduce four mechanisms based on the previous literature, which could explain why companies operating in CSR benefit from it and are good investments:

**1. Slack resources mechanism**: when a company is engaging in CSR, it has slack resources and is already doing well financially.

**2. Good management mechanism**: the company's cost of CSR is lower than its benefits from it due to good management related to CSR.

**3. Penance mechanism**: company's actions in CSR compensates for its past CSI, and in sort shows its "regret".

**4. Insurance mechanism**: engaging in CSR helps the company to create safeguard against future CSI and therefore acts as an insurance.

Although first introduced as opposing powers, it could be that shareholder theory by Friedman (1970) and stakeholder theory by Freeman (1984) might exist in the same world. When considering solely from the perspective of shareholders with only intention of increasing wealth, it seems clear that in today's world not all CSR actions are bad. Instead, according to Kang et al. (2016), CSR can in fact create value for also the shareholders through different mechanisms. Therefore, the idea of stakeholder theory in taking other stakeholders also to consideration, seems to also play key part in shareholder theory's idea of maximizing shareholder value. Additionally, as corporations nowadays are trying to combine profit maximation while also trying to achieve ESG targets, the connection with these theories is evident.

When thinking in the context of impact investing, financial returns and positive impact can be seen similarly as opposing powers, but also as aspects that can strengthen each other. Accordingly, based on this connection between shareholder and stakeholder theories, impact investments could have an edge over conventional investments when seeking financial performance, as impact investment companies have a head start in the always tightening ESG regulation. Additionally, the impact companies might have an advantage through the reputation gained with their positive impact.

## 4.2 Multitasking theory

Multitasking theory by Holmstörm & Milgrom (1991) studies the traditional principal-agent problem from a new setting. The model by Holmström & Milgrom (1991) studies a situation in which the principal must accomplish several tasks for the agent, or that the task has several dimensions to it. An example introduced by the authors would be such when a production worker is required to make good quality products with a high volume. This situation is similar to the one of impact investing's, where a fund manager of an impact fund tries to accomplish financial returns and positive impact. According to the

findings of Holmström & Milgrom (1991), one of the two goals might be substituted with the other. As there are two goals, the fund manager might lack the motivation to pursue both goals, and because of this, the goal which is harder to measure gets less attention (Holmström et Milgrom, 1991). When looking at this understanding from the point of impact investing, it seems clear that measurable environmental and social impact can be the goal which is substituted away, as it is notably harder to measure than financial returns.

The tension between shareholder and stakeholder theories underlines the core issue which is explored and tried to answer in multitasking theory. Stakeholder theory suggests that it is justified to pursuit both social or environmental goals and financial returns. Although multitasking theory does not turn down this idea undoubtedly as shareholder theory, it suggests that this duality reduces efficiency, especially when other of the two is harder to measure. This was also seen as the situation by the authors, as they conclude the principal-agent problem with the following thought: *"Given a highly incomplete set of performance measures and a highly complex set of potential responses from the agent, how can the agent be motivated to act in the social interest?"* (Holmström & Milgrom, 1991)

The performance of mutual funds, whose fund manager is controlling more than one fund at the same time, was studied by Agarwal et al. (2023). This kind of multitasking is more typical for a fund manager that has a proven good track record and runs bigger funds (Agarwal et al., 2023). Still, the study by Agarwal et al. (2023) found that multitasking fund managers generate on average 0,032 percentage points lower returns per month than fund managers managing only one fund. One main explanation for such an effect is seen to be the reduced attention managers can allocate to each fund (Agarwal et al., 2023). Similarly, in the context of impact investing, it was seen possible that fund managers' (or company executives') attention might be endangered when chasing two objectives simultaneously. Therefore, multitasking can be seen harmful for the performance of either of the goals. This would indicate that the key interest of this thesis, the

impact investments' financial returns, would suffer from the multitasking and that the strategy would generate below market-rate returns.

Geczy et al. (2021a) studied the multitasking theory introduced by Holmström & Milgrom (1991) in the context of impact investing contracting, as they see that there is a multidimensional principal-agent problem between impact investors (agents) and fund managers (principals), as the principal must accomplish two objectives. In their study, Geczy et al. (2021a) imply that the profit generation expectations of impact investing can be seen as a spectrum, and that all impact investors do not have same profit-making goals with the strategy.

Impact investment funds can be divided into market-rate-seeking (MRS) funds and non-market-rate-seeking (NMRS) funds (Geczy et al., 2021a). If there is a tradeoff between the two objectives, MRS funds would be willing to forego impact to achieve market-rate returns, whereas NMRS would be willing to forego money to have a bigger impact in the social matters. It cannot be, however, clearly said if these two fund types cancel each other out, or if the other has a bigger effect on the strategy's performance. If there were more NMRS funds than MRS funds, it could be that impact investment funds achieve below market rate returns because of the investors willing to forego returns. And if there are two different types of funds, it would mean that there are two different types of impact investors, as was also stated by Ormiston et al. (2015).

## 4.3 Investing with taste

Capital Asset Pricing Model (CAPM) is one of the most used and well-known financial measure models used to calculate and predict the required rate of return of a financial asset. The CAPM is based on many assumptions considering investors and markets. These assumptions state that investors are only interested in their future payoffs when choosing their investments, and that investors have a complete agreement on how each investment is going to perform in the future (Sharpe, 1964; Lintner, 1965). The CAPM states that investors always seek to maximize their returns for a given level of risk, and

therefore only pick companies with highest returns (Sharpe, 1964; Lintner, 1965). However, in the real world this is not the case, as investors do not always act in a way that is rational based on CAPM. Some investors have additional goals for their investing than solely maximizing their financial returns.

Fama & French (2007) studied the investors preferences in choosing investments and claim in their study that both previously mentioned assumptions in CAPM are unrealistic. The authors imply that some investors have tastes for assets or investments, as they are not concerned only with the financial returns of their investment portfolios. Examples of such tastes include for instance owning more domestic stocks than is rational, owning employer's stocks for "support" or trying to avoid taxes by not selling (Fama & French, 2007). The authors also mention investing in SRI as an "*extreme form of tastes for assets as consumption goods that are unrelated to returns*" (Fama & French, 2007) and therefore point out that investing in SRI is not rational from the point of view of CAPM. According to Fama & French (2007), investors can be divided into two groups: investors in group *A* are informed of the asset's prices based on all known information and do not have tastes for assets, whereas investors in group *D* are misinformed and have such tastes.

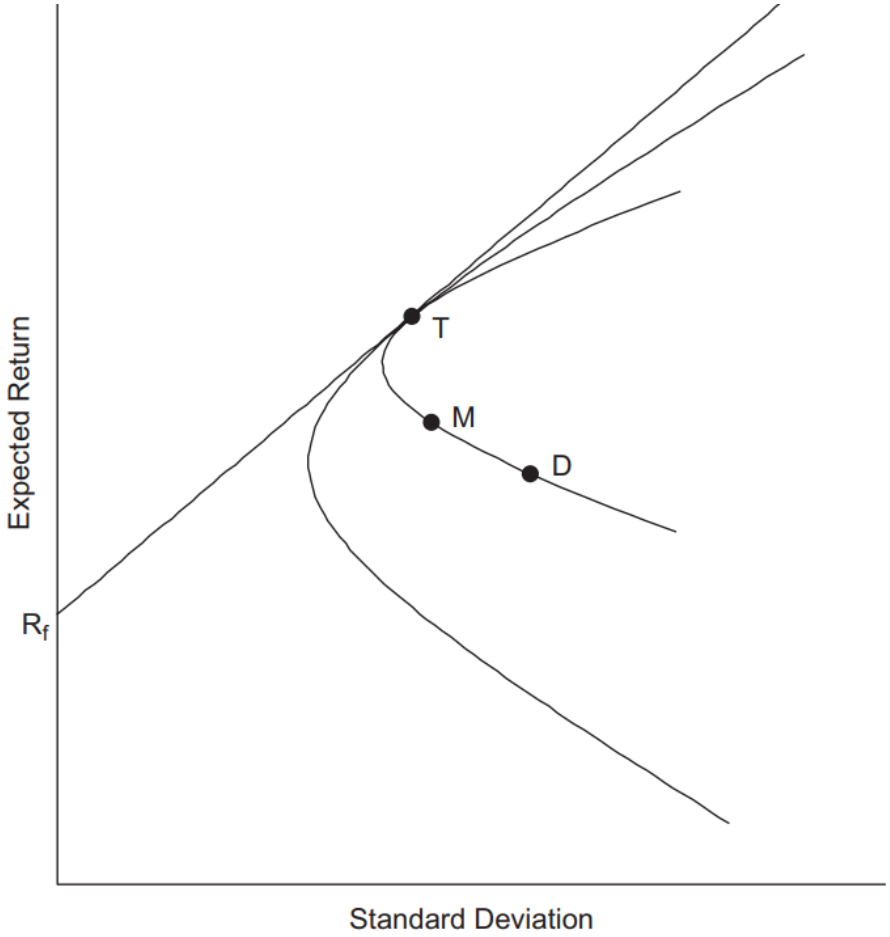


**Figure 2.** Investment opportunities of informed and misinformed investors (Fama & French, 2007)

Figure 2 supposes three different possible portfolios for investors: the tangency portfolio *T*, the market portfolio *M*, and the aggregate portfolio of misinformed investors *D* (Fama & French, 2007). According to Fama & French (2007), an investor from group *A* chooses their risky assets from the portfolio *T*, whereas an investor from group *D* chooses their assets from portfolio *D* as they do not pick their assets solely based on their payoffs. This also leads to a situation where the market portfolio *M* is not same as the tangency portfolio, but the aggregate of portfolios *T* and *D*. Fama & French (2007) came to a conclusion that there are large distortions of expected financial returns between investors based on whether or not they are informed or have tastes, as investors with tastes take positions which largely differ from the market portfolio. As their portfolios from which they choose their risky assets from in the figure 2 shows, the informed group *A* has positive alpha but

the group D which is misinformed and has tastes for assets has negative alpha (Fama & French, 2007).

Kabderian Dreyer et al. (2023) further studied the derived utility by investors with preferences. The authors state that individuals investing in green assets receive so called "warm glow". This phenomenon means that these investors receive pleasure for owning green assets, and in such way create mental benefit. Kabderian Dreyer et al. (2023) see that this warm glow effect raises the demand and therefore the prices of green assets. This again results in the reduction of the assets' financial returns. Such warm glow effect should also apply to any scenario where the investor is proud about holding the asset, for example from owning domestic stocks (Kabderian Dreyer et al., 2023). This study's conclusion agrees with Fama & French's (2007), stating that the additional utilities investors gain from their investments worsens the financial returns of such investments.

### 4.3.1 Willingness to pay

Willingness to pay (WTP) models by Barber et al. (2021) present the cost of different investors and goals in a concrete way. WTP in the context of impact investing represents the investors' valuation for impact. Barber et al. (2021) present that different investor types have different WTP for impact. The study by Barber et al. (2021) examined different limited partner (LP) types and their different WTP. The study found that development organizations, foundations, and public pensions are examples of agents which are willing to trade off their financial returns to make a bigger impact and therefore have high WTP, whereas corporations, wealth managers, and private pensions have very low WTP, as it is close to zero. These agents are not willing to trade off returns to make a bigger impact to the world.

According to Barber et al. (2021), LP types that have a high WTP are willing to forgo an internal rate of return (IRR) of 2,5-6,2 percent points in their impact investments. At the same time, a random LP is willing to accept an IRR of 2,5-3,7 lower than the traditional funds in its impact investment and therefore requires a better financial return from its

investment than LP with high WTP (Barber et al., 2021). Results from Barber et al. (2021) clearly indicate that impact investors which have high WTP do accept lower financial returns. This further broadens the view of the effect of different motivations, which has been building up the idea that the investors with high WTP, or in other words impact-first investors, have a negative effect on the financial returns.

When broadening the understanding to also cover the cost of sustainably responsible investing, Geczy et al. (2021b) found out that the amount of price the investors pay for investing in SRI depends on their level of belief in CAPM. Geczy et al. (2021b) studied the cost of SRI constraint. Socially responsible investor has this constraint as he/she is willing to only buy socially responsible investments. In their study, Geczy et al. (2021b) found evidence that SRI constraint is highest for investors who believe that fund manager skill has large influence on the fund's performance. On the contrary, for investors who rely on CAPM in evaluating performance and therefore invest in the market index, the costs of investing in SRI are far smaller and in fact only few basis points per month (Geczy et al., 2021b). However, there still is an SRI constraint and therefore a cost in investing socially responsibly.

The conclusions of Barber et al.'s (2021) and Geczy et al.'s (2021b) align very closely with that of Fama & French's (2007). All the studies see that impact investors are not always following CAPM and are not rational, as they are seeking other utilities from their investments based on their personal beliefs. This creates additional costs. Figure 2, which concludes the results of study by Fama & French's (2007) well, basically has the same message as the Geczy et al.'s (2021b) study concludes; the more the investors beliefs differ from the market portfolio, the more he is paying. Based on previous literature it is suggested that impact investments do not achieve market-rate returns because of the cost the investors pay for doing good.

Chapter four started with the introduction of ideological background for impact investing with the understanding of Shareholder and Stakeholder theories. Multitasking theory

thereafter explains the difficulties in combining goals, which spring from incentives executives face as well as insufficient practices. Studies by Fama & French (2007), Barber et al. (2021), Dreyer et al. (2023) & Geczy et al. (2021b) further examine empirically how investor preferences are not rational to what is stated in CAPM, and that personal preferences guide their decisions. This deepens the understanding of behavioral aspects of impact investors, and how they accept below market-rate returns. The insights based on these studies suggest that financial performance of impact investments is not solely influenced by market conditions, but also the beliefs of the field's actors and the tradeoffs the impact investors make.

# 5 Data & methodology

In this chapter, the data and methodology for the following empirical study of this thesis are explained. First, data selection and collection are introduced, with the emphasis on explaining how and why these stocks were selected for the sample. After that, the methodology for the study itself is explained. As this thesis consists of a quantitative study, it is essential that the background and the reasoning for what kind of study is used are well established.

## 5.1 Data

The most creditable study about the impact investments' financial studies by Barber et al. (2021) is used as a reference point on how the sample for this thesis is chosen. Barber et al. (2021) define a list of impact funds by using impact-related keywords and third-party lists of impact investments. More importantly, the authors manually read the descriptions of funds, and that way choose the ones that are most fitting for the description of impact investments. Two other studies which were introduced in the chapter, Bernal et al. (2021) and Yu et al. (2022) had clear defects in their samples. Bernal et al. (2021) used a sample constructed from a third-party list from Impact Group, which according to the study is based on United Nations' and GIIN's definition of impact investments. Therefore, it would be good basis for a sample. However, at the time of writing this thesis the list used by Bernal et al. (2021) was not anymore available from the internet, which raises concerns about its creditability. Yu et al. (2022) on the other hand used a sample collected from a "Most ethical firms" list. While this list might be more creditable than that of Bernal et al.'s (2021), it does not fit the definition of impact investment as well. As has been earlier studied, the impact investment is not only based on how ethical the firm is, but if it creates new positive impact. Additionally, hand-picked data will provide the field of study with better insights than only using another third-party list. The portfolio construction is further explained in the following chapter.

The data for this thesis consists of monthly stock returns from companies listed in the New York Stock Exchange (NYSE). The share price data used is adjusted for dividends and stock splits. The benchmarks used to compare the returns of impact investment portfolio to the general market is S&P MidCap 400, and the data used is the total return of the index. Therefore, both the share return data and index data are comparable. All the above-mentioned data is obtained from the LSEG Datastream database. The regression factor numbers are obtained from the Kenneth French's data library.

The selection of S&P MidCap 400 as the benchmark for the following study is seen appropriate as it represents the performance of 400 mid-sized companies (S&P Dow Jones Indices, 2025). S&P MidCap 400 is good representation of market, as it includes large number of companies without other determinants than the market capitalizations. As the impact portfolio sample is going to be constructed from companies with market capitalization of below 10 billion dollars, the S&P MidCap 400 is relevant and size-consistent for this study. This way, a meaningful evaluation can be made.

### 5.1.1 Impact portfolio construction

As has been earlier mentioned, the difficulty in the examination of impact investments arises from the lack of generalized index or list from which one could see all the stocks fitting the definition of impact investment. That is also why there is not yet a consensus whether impact investing is a valid investment strategy solely from the point of view of making financial returns. This is also the main research gap this thesis is filling, as its objective is to create a novel portfolio of impact investment stocks and in that way study the performance of impact companies. In this chapter the steps for the construction of this impact portfolio are gone through and reasoned.

The basis for the selection of the impact portfolio is made by creating a screener with Yahoo Screener tool (Yahoo Finance, n.d.). The screener made lists publicly listed equities, which are most likely to fill the definition of impact investments based on the filters set. Filters for the screener are selected based on the previous definition of the field.

Impact companies are often seen as smaller startup companies, as they are more innovative than large cap companies in trying to find solutions for environmental and social problems. It was also noted that although impact investments cannot be solely defined with the ESG scores of the company, the companies making impact often have good ESG scores. With this understanding, our screener consists of two filters. First, the market cap of the company should be below 10 billion dollars, which is the limit of small-mid cap companies. Second, the ESG risk score obtained from Sustainalytics should be below 20, indicating low ESG risk (Sustainalytics, n.d.). Also, as the field of impact investing is still small, a large exchange is used from which the stocks are picked to find most matches. Therefore, NYSE is chosen as one of the filters. With the above mentioned filters, the screener returned 360 stocks, which will be next taken to further examination.

As stated, the selection of impact investments cannot be made sufficiently with the usual screening filters, as they do not consider whether the company is trying to make a positive impact. At this point of data selection, the thesis will follow the data selection methods used by Barber et al. (2021). The 360 companies returned by the screener are taken into further examination, and online resources consisting of Annual, CSR, ESG or Impact reports of the companies are read. Based on the manually read information, each company is rated to describe which level of impact the company can be seen to create from 1 to 5.

The aspects evaluated for each of the companies consist of the following: 1. Industry, 2. Availability and extent of sustainability reporting, 3. Goals considering impact, 4. Overview of the company's sustainability actions. Additionally, all Real Estate Investment Trusts (REIT) were excluded automatically from the sample, as they are not seen as equities likely seeking positive impact. After this rating of the companies, the thesis was left with 35 companies, which were rated 4 or 5 for their positive impact efforts. These 35 stocks are going to be used as the sample portfolio. Following the study by Yu et al. (2022), the portfolio is equal-weighted between each stock included. The elimination of over 90% of the original low ESG risk score stocks underlines the minority position the

impact investing field still holds compared to the overall field of sustainable investing. This also makes it evident that all stocks with good ESG scores cannot be clearly stated as impact investments.

Table 1 presents the companies included in the impact portfolio. The minimum number of companies in the portfolio was 22 in the start of the period in January 2015, where the maximum number 35 in the end of the period in December 2025. This is line with the understanding that companies with positive impact are often start-up companies, or recently listed companies. Average number of companies for the whole period studied was 28. Lastly the average market capitalization of the companies is presented, which was 5 911 million USD. Therefore, the average market capitalization fits well within the limits of mid-cap companies. Also, the previously selected benchmark is well consistent with the size of companies, as the market caps of companies included in the S&P MidCap 400 index averaged 7 062 million USD as of April 30th, 2025 (S&P Dow Jones Indices, 2025).

**Table 1.** Descriptive statistics

Descriptive statistics of the impact investment portfolio constructed for a period between January 2015 and December 2024. The table presents minimum, maximum and average number of companies in the studied period. Also, the average market capitalization of companies is presented.

| | |
|---|---|
| Minimum number of companies | 22 |
| Maximum number of companies | 35 |
| Average number of companies | 28 |
| Average market capitalization (USD M) | 5 911 |

Although the number of stocks included in the portfolio may appear limited compared to traditional market indices, the small number of companies is explained with the fact that the field of impact investing is still niche. The criteria for choosing companies was kept strict, as the portfolio construction was made based on the accepted definition of

impact investing discussed in chapter 2.1. Alignment with the purpose of this research was therefore prioritized over sheer sample size to make a more prominent contribution to the field. Additionally, the time series data used, which includes over 100 monthly observations, allows for valid analysis of the performance of the portfolio and maintains its statistical robustness. The number of companies is recalculated monthly, as part of the companies included in the portfolio went public during the period. The number of companies is also suiting for the purpose of studying a portfolio a common investor might hold when investing to impact investment stocks.

## 5.2 Methodology

In this study the performance of impact investments, especially in the context of impact stocks, will be examined with empirical models, which will explain the performance from both statistical and more practical investment perspectives. In this chapter the contribution which will be made from these different ways of evaluating the performance will be explained.

First, the methodology will start with a creation of regression based on Carhart four-factor model introduced in chapter 3.3. With inclusion of Carhart's model to the methods, an understanding of impact portfolios performance based on the exposure to market risk, size, value and momentum is created. The regression's results will estimate the impact portfolio's Jensen's Alpha, and in this way determine if the portfolio delivers statistically significant returns which are either below or above what can be explained based on these four common risk factors. Carhart's model is widely used model in examining the performance of risk-adjusted abnormal returns and will create important contribution also to this empirical study.

In addition to the regression analysis, a practical evaluation of performance of impact portfolio's raw total returns compared to the benchmark index's will be included in the study. A simple calculation of cumulative total returns for both the impact portfolio and the benchmark index S&P MidCap 400 total returns will be presented with a graph for a

clear visual representation. Compound Annual Growth Rate (CAGR) will be also calculated to create a standardized viewpoint of impact investments' monthly and yearly total returns. CAGR also provides for a meaningful comparison across other asset classes and studies. With the help of these clear and comprehensible methods and presentations the performance of impact companies would be easily understood by an investor evaluating whether to invest in impact investments.

Although they provide clear representations of long-term portfolio performance, deficiencies of cumulative returns graph and CAGR rise from the fact that they do not account for risk and volatility. To complement these raw performance metrics, two risk-adjusted performance measures evaluating the impact portfolio relative to the benchmark index are calculated. The Sharpe Ratio will relate the returns to the total risk, whereas the Treynor Ratio focuses on systematic risk, thereby offering complementary perspectives on portfolio efficiency. Additionally, the alpha from the Carhart model generates important information about the possible risk-adjusted excess returns. With the inclusion of all these measures, a well-rounded understanding of the portfolio's performance from several perspectives is created. Afterwards, this comprehension is used in answering the research question and hypotheses.

# 6 Results

The results of the empirical study, as in regression analysis and the other performance measures introduced in the methodology chapter, are presented in this chapter. The results of the analysis and measures are presented in the following tables, and they are further discussed. The purpose of this chapter is to assess whether the previously constructed impact portfolio is capable of generating market-rate financial returns compared to same sized index benchmark. Based on this empirical basis created, this thesis is able to answer research question and the hypotheses.

## 6.1 Regression analysis

Beginning to build the understanding about the financial performance of the impact portfolio with empirical study, the results of the regression analysis created is presented in the table below:

**Table 2.** Regression results for the Impact Portfolio (2015-2024)

This table presents the results of a time-series regression analysis estimating the excess returns of the impact investment portfolio. The regression is using the four-factor model introduced by Carhart (1997), an extension of the Fama & French (1993) three-factor model and the CAPM (Sharpe, 1964; Lintner, 1965). The independent variables of the analysis include the market excess return (Mkt-Rf), size (SMB), value (HML), and momentum (MOM). The dependent variable is the monthly excess return of the impact portfolio. R square of regression is 65,0% based on 120 monthly observations. Standard errors, t-statistics and p-values are reported.

| *Regression Statistics* | |
|---|---|
| Multiple R | 0,8063 |
| R Square | 0,6501 |
| Adjusted R Square | 0,6379 |
| Standard Error | 3,6075 |
| Observations | 120 |

| | *Coefficients* | *Standard Error* | *t Stat* | *P-value* | *Lower 95%* | *Upper 95%* |
|---|---|---|---|---|---|---|
| Intercept (Alpha) | 0,1475 | 0,3411 | 0,4324 | 0,666236197 | -0,5282 | 0,8232 |
| Mkt-Rf | 0,8954*** | 0,0803 | 11,1446 | 5,25779E-20 | 0,7362 | 1,0545 |
| SMB | 0,5807*** | 0,1282 | 4,5308 | 1,44594E-05 | 0,3268 | 0,8346 |
| HML | 0,0621 | 0,0923 | 0,6729 | 0,50233164 | -0,1207 | 0,2449 |
| MOM | 0,0264 | 0,0980 | 0,2693 | 0,788147529 | -0,1677 | 0,2205 |

*p-values indicate statistical significance: * p < 0.10, ** p < 0.05, *** p < 0.01*

Table 2 shows two of the four factors statistically significant at the 1% level, whereas two as not statistically significant. First of the statistically significant factors, the market factor (Mkt-Rf), having a coefficient of 0,8954, indicates that the impact portfolio is following the market movements fairly closely. However, as the beta is below 1,00, it is indicating that the portfolio is even less sensitive to the market risk than the index benchmark, assumed to have beta of 1,00. Similarly, the size factor (SMB) is significant and having a coefficient of 0,5807 confirms that the impact portfolio is heavily tilted towards small-mid cap companies. This aligns with the criteria used in the portfolio construction. In contrast, the value factor (HML) and momentum factor (MOM) are not statistically significant. As the impact portfolio was not designed to follow a value, growth or momentum strategy, this shows that the portfolio is not unintentionally biased towards these styles and supports the methodology. From these results it can be reassured that the construction of the impact portfolio was successful in being driven by impact characteristics.

The intercept coefficient, or alpha, is 0,1475 and statistically insignificant. This result indicates that after controlling for beforementioned common risk factors, the impact portfolio does not produce statistically significant abnormal returns. Therefore, based on the portfolio's risk profile, it did not either outperform or underperform related to what could be expected. The R square 65,0% of regression indicates that the variation of the portfolio is to large extent explained with these factors. Overall, the regression results state that the impact portfolio could deliver market-rate returns, thus failing to reject the null hypothesis.

## 6.2 Cumulative and annualized return analysis

Following the regression, the empirical study expands to evaluating the impact portfolio's returns compared to the chosen benchmark. Cumulative total returns are calculated for both the portfolio and benchmark for the studied period and presented in a well apprehensible way. The results are presented in figure 3 below:

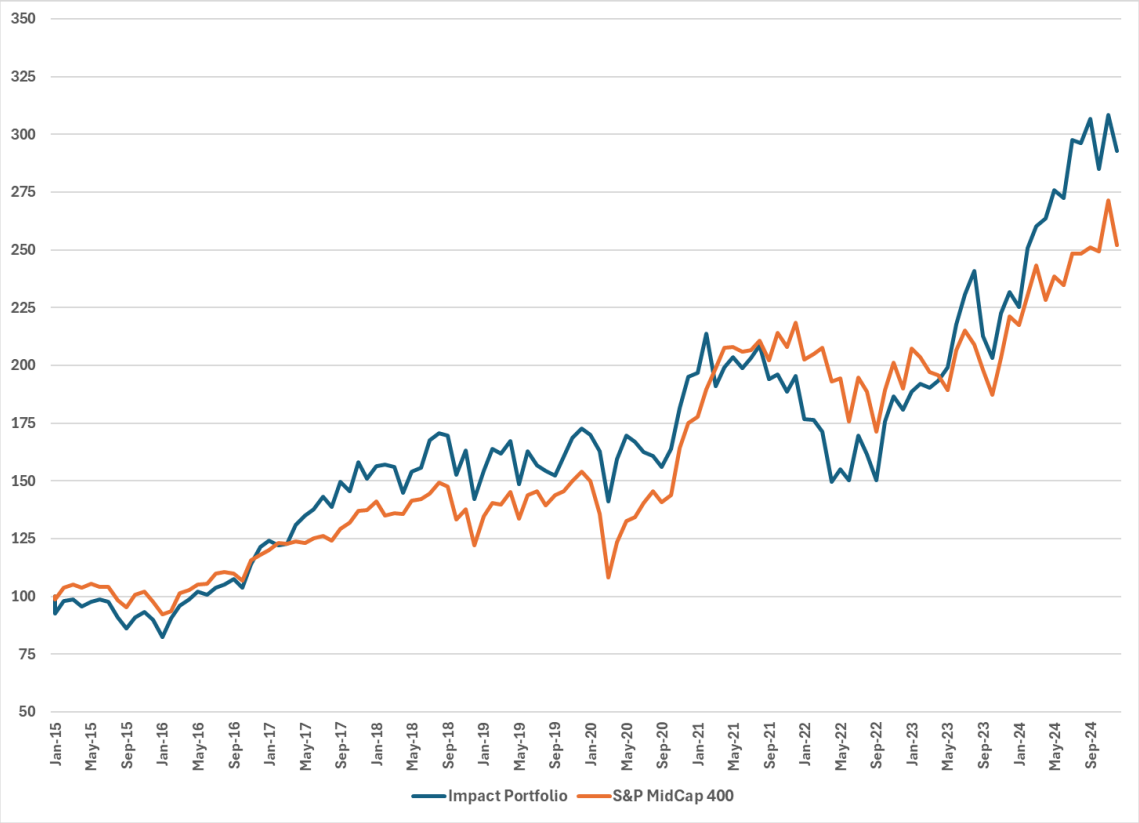


**Figure 3.** Cumulative returns of the Impact Portfolio and the S&P MidCap 400 index

Figure 3 shows the cumulative returns for both the studied portfolio and the benchmark for the period between January 2015 and December 2024. The base index value used in the figure is 100. At the end of the period, the portfolio's index value is 293, whereas the benchmark's index value is 252.

Based on the cumulative return figure, the performance of the impact portfolio and the S&P MidCap 400 index has been largely similar for most part of the period. Especially between the period of 2015 to 2022 the portfolio does not seem to outperform the benchmark systematically, but both of the lines can be seen to move in similar fashion. However, towards the end of the study period, the portfolio begins to show stronger performance compared to the benchmark. Therefore, figure 3 is indicating that if one invested specifically for this period of time, the investor would have gained more money with investing to the impact portfolio. As overperformance however was occurring only

in the last two years of the study period, it cannot be unambiguously stated that impact portfolio is always creating better financial returns for the investor, and more evidence of the performance is needed.

To provide an alternative perspective on the period's performance throughout the period studied, annualized returns are presented and analyzed. For this purpose, the Compound Annualized Growth Rate (CAGR), as introduced in chapter 3.4.4, is calculated for both the impact portfolio and the benchmark index. As illustrated in figure 3, the returns of the portfolio grew drastically towards the end of the period. To be able to better examine this shift in returns, the period is also divided into two subperiods: the first eight years (2015-2022) and the last two years (2023-2024). CAGR is calculated separately to each of these periods to capture the changes in growth rates. The results are presented in the table below:

**Table 3.** CAGR for the Impact Portfolio and the S&P MidCap 400 index

| | 1/2015-12/2024 | 1/2015-12/2022 | 1/2023-12/2024 |
|---|---|---|---|
| **Impact Portfolio** | 11,35 % | 7,70 % | 24,63 % |
| **S&P MidCap 400** | 9,68 % | 8,35 % | 10,20 % |

Table 3 shows the CAGR figures for the impact portfolio and the benchmark index across three different periods: the full 10-year period and the two subperiods. Over the entire 10-year period, the impact portfolio achieved CAGR of 11,35%, indicating a clear outperformance over the benchmark yielding CAGR of 9,68%. However, as figure 3 indicates, the performance was not consistent across all subperiods. From 2015 to 2022, the impact portfolio underperformed the benchmark, generating annualized returns of only 7,70%, compared to the 8,35% for the index. In contrast, the last two years of the period from 2023 to 2024 show sharp reversal of the performance: the impact portfolio delivered vast number of 24,63%, significantly outperforming benchmark's 10,20%. The CAGRs seem consistent with figure 3, showing that the performance of the two were

consistent for the first eight years, but the impact portfolio gained outperformance towards the end.

The dramatic overperformance of the impact portfolio in raw returns towards the end of the period may be attributed to several factors. One possible explanation for this is the ever growing interest towards sustainability trends among investors, particularly among younger market participants. However, even more possible contributing factor might lie in slower recovery from COVID-19 pandemic for impact companies, as the uncertainty in investors has hampered the growth of new impact companies. Now, as the uncertainty has prevailed, new money could have been flowing towards these new interesting ideas. These findings related to the performance of impact investments during and after crises are concluded in more detail in chapter 6.4.

However, as the regression analysis suggested, significant risk-adjusted excess returns were not seen for the full period. The higher growth rate for the 10-year period is more likely to indicate that impact investments possess more upside potential during favorable economic cycles than the market, but at this time the long-term overperformance cannot be declared. More data or a longer time frame would be needed to robustly assess outperformance starting from year 2023, as was also stated with cumulative returns. As noted earlier, the drawback of these measures is in their inability to account for the riskiness of the portfolio. Therefore, the following chapter evaluates risk-adjusted performance through risk measures.

## 6.3 Risk-adjusted performance analysis

To better understand the risk associated with impact investments, the risk measures of Sharpe (1964) and Treynor (1965) are calculated and analyzed next. These measures help create an understanding on how impact investments perform compared to the benchmark index adjusted for both total risk and market risk. The results of these measures are presented in the table below:

**Table 4.** Risk measures for the Impact Portfolio and the S&P MidCap 400 index

| | Sharpe Ratio | Treynor Ratio |
|---|---|---|
| **Impact Portfolio** | 0,54 | 1,05 |
| **S&P MidCap 400** | 0,50 | 0,78 |

Table 4 shows the Sharpe Ratio and the Treynor Ratio for the impact portfolio and the benchmark index for the whole 10-year period studied. For the calculation of the Treynor Ratio the impact portfolio's beta used was 0,8954 as presented in table 2. Beta for the benchmark was assumed to be 1,00, as it is broad index closely following the market.

The results are similar also in risk-adjusted performance than in raw returns, suggesting impact portfolio being better investment than the benchmark index and having at least market-rate financial returns. Both the Sharpe Ratio and the Treynor Ratio were higher for the portfolio compared to the benchmark, indicating that it offers superior performance when adjusted for total and systematic risk, respectively. The Sharpe Ratio of the impact portfolio being 0,54 exceeds marginally the benchmark, indicating that it delivers slightly more return against each unit of total risk. The Treynor Ratio, however, showed more material difference: 1,05 for the portfolio versus 0,78 for the benchmark. Given that the beta for the portfolio obtained from the regression analysis was 0,8954, the numbers of Treynor Ratios suggest significantly better performance against market risk exposure for the portfolio.

The overall results of the empirical study comprised of several parts suggests that impact portfolio could create at minimum market-rate returns. When comparing both the raw returns and risk adjusted returns of the portfolio to the returns of the benchmark index, the impact portfolio had better performance. These results were also reported by Yu et al. (2022), indicating that impact portfolio could create even above market-rate returns. As the regression model created in this thesis did not show significant overperformance, similar conclusion as Yu et al. (2022) is not made solely based on the cumulative returns,

CAGR, and risk measures studied. However, all of the results in this empirical study indicate that the null hypothesis of this thesis, stating that “impact investments achieve market-rate returns”, could not be disapproved. Additionally, the hypothesis H1 stating that “impact investments achieve below market-rate returns”, does not hold.

## 6.4 Crisis recovery analysis

The purpose of this chapter is to consider the performance of impact investments during and after crises, providing new valuable insight into their dynamics in different market conditions. The most significant study considering this matter was made by Bernal et al. (2021), who found that publicly listed impact companies underperformed in the aftermath of the 2008 financial crisis. On the contrary, the authors showed these same companies having a clear improvement in performance after 2014. These findings suggest that impact investments may take longer to recover from major market disruptions compared to traditional investments. These findings are next compared to the results of this thesis.

As illustrated in the cumulative return graph figure 3, both the impact portfolio and the S&P MidCap 400 benchmark index experienced significant drawdowns in early 2020 at time of the outbreak of the COVID-19. A notable lagging of the impact portfolio can be seen extending all the way to the end of the 2023, whereas the benchmark index had been fully recovered from the crisis at this point. As the S&P MidCap 400 continued its recovery trend right away after the initial drop at the time of the outbreak, the impact portfolio experienced a deeper and more prolonged drawdown. The gap between the portfolio and the benchmark widened again especially in the early 2021 and did not begin to close until early 2023. This underperformance in the period following the COVID-19 outbreak showed in the figure 3 is consistent with the hypothesis H2, proposing impact investments’ taking longer to recover from crises.

This delayed recovery of impact investments is further reflected in the CAGR results presented in the table 3. In the numbers from period of 2015 and 2022, therefore also

including the years of COVID-19, the impact portfolio lagged the benchmark index. However, in the subperiod spanning from 2023 to 2024, the impact portfolio significantly outperformed the benchmark, as the greatest impact of COVID-19 had already been settled. These results suggest that although impact investments may initially be slower in recovering from such crises, they might be more capable in delivering strong performance in the later recovery stages. Also, these findings are in line with those made by Bernal et al. (2021). Based on this thesis' results, hypothesis H2, stating that "Impact investments take longer to recover from crises", holds.

# 7 Conclusion

Impact investing was invented in the year 2007 to combat the rising effects of climate change by combining the best worlds of philanthropy and finance. Impact investing seeks to create positive environmental and social impact whilst also generating positive financial returns, therefore combining these two distinct goals. This new field of sustainable investing has gained a large amount of interest since its establishment and is becoming more relevant way of investing for institutional investors, fund managers, and individual actors. However, there still is not a consensus on whether impact investments can meet the high expectations set to it, and if both the goals are met simultaneously. These tensions related to the field create the research gap for this master's thesis. The thesis is answering the question of whether these two distinct objectives can truly coexist in a single investment strategy.

In addition to the previous literature about impact investing, the literature review consists of theories related to the idea of combining multiple goals. Stakeholder theory and related studies about CSR's importance to companies suggest that the returns might be increased with positive social and environmental impact. The multitasking theory, however, strongly indicates that multiple goals harm each other and that neither of the goals could be efficiently performed simultaneously. This was also concluded by studies related to the behavioral aspects of the impact investors, stating that their willingness to pay for impact harms financial returns. According to the literature, there is a constraint for impact investors, leading to worse returns. Because of the impact-first investors and non-market rate seeking funds, the overall returns of the strategy would be below the market-rate.

The empirical research of this thesis is made to determine if the impact investments, especially in the context of publicly listed stocks, can create market-rate financial returns. The previous empirical literature has varying conclusions on the matter, as some authors state that the investments generate below market-rate returns, whereas others observe above market-rate returns. With the inspection of these studies, it was noticed that the

way of constructing a sample studied were different in all of them. Nonetheless, almost all of the previous studies about impact investments' financial performance included deficiencies related to their ability in following the definition of impact investments. For this reason, one of the main contributions of this master's thesis was to create a novel impact portfolio, which would closely follow the definition of impact investment. Impact portfolio was constructed by hand-picking NYSE listed companies which are making a positive impact according to predetermined definition and criteria.

The performance of the impact portfolio was studied by creating a regression analysis, and by comparing both the raw returns and risk-adjusted returns of the portfolio to the benchmark index. The regression analysis did not show either statistically significant overperformance or underperformance, implying that the impact portfolio could achieve market-rate returns. When compared to the benchmark index through different performance measures, the impact portfolio had better performance both in raw returns and risk-adjusted returns for the full 10-year period. The impact portfolio's CAGR underperformed the benchmark index for first eight years, but drastically improved for the last two years, overperforming the benchmark. One possible reason for this was seen to be that impact companies take longer time to recover from crises, such as the 2008 financial crisis or COVID-19.

The research problem of this thesis states that multiple goals, such as impact investments' positive impact and financial returns, cannot be achieved simultaneously. The null hypothesis of this thesis states that the impact investments achieve market-rate returns, as it is the definition of the impact investing. The previous literature suggested that the hypothesis H1, stating that impact investments achieve below market-rate returns, would hold. The empirical study of this thesis, however, could not reject the null hypothesis, as the results did not show statistically significant underperformance for the impact portfolio compared to the market and the benchmark index. Therefore, the hypothesis H1 does not hold, and according to the empirical study, the impact portfolio can achieve market-rate returns. Based on the evidence gained, it is stated that impact

investments can successfully achieve both of the two distinct objectives. To create a contribution regarding the impact investments' performance during uncertain market conditions, an additional hypothesis H2 was studied and shown true, stating that impact investments take longer to recover from crises.

Overall, the results show that an investor who wants to create positive impact with his/her investments can do it without having to sacrifice financial returns. This thesis holds important implications to the investors and other practitioners, seeking new ways to invest responsibly. Additionally, new support to the legitimacy and relevance of the field is created so that the strategy can become more mainstream and better help tackle the social and environmental issues we are facing. The most important future development for the field is in the creation of standardized impact index, from which an investor could more reliably pick their impact investments. For this to be possible, a more generalized way of measuring the impact is needed, although improvement in this matter is already being made. After this, also the financial performance of impact investments can be studied in more thorough way.

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