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**THE EVOLUTION OF SUSTAINABLE FINANCE**

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LONJA TJAJŠA TAVČAR

## AUTHORSHIP STATEMENT

The undersigned Lonja Tjaša Tavčar, a student at the University of Ljubljana, School of Economics and Business, (hereafter: SEB LU), author of this written final work of studies with the title The Evolution of Sustainable Finance, prepared under supervision of Igor Lončarski, PhD.

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## TABLE OF CONTENTS

TABLE OF CONTENTS.....	iii
INTRODUCTION.....	1
<b>1 Sustainable Finance.....</b>	<b>3</b>
1.1 Definition of sustainable finance.....	3
1.2 Types of financial instruments.....	6
1.2.1 Bonds.....	6
1.2.2 Loans.....	9
1.2.3 Sustainability Linked Loans and Revolving Credit Facility.....	9
<b>2 Evolution of sustainable finance.....</b>	<b>10</b>
<b>3 Ratings and Regulation.....</b>	<b>23</b>
3.1 Ratings.....	23
3.1.1 S&P ESG Evaluations.....	25
3.1.2 Fitch Ratings' ESG Relevance Scores.....	30
3.1.3 Moody's Ratings' ESG Risk Assessment.....	32
3.1.4 MSCI ESG Ratings.....	34
3.1.5 Sustainalytics ESG Risk Ratings.....	37
3.2 Sustainability reporting.....	38
3.2.1 Global Reporting Initiative (GRI).....	39
3.2.2 Sustainability Accounting Standards Board (SASB).....	41
3.2.3 Task Force on Climate-related Financial Disclosures (TCFD).....	42
3.3 EU Taxonomy.....	44
3.3.1 Company Disclosure.....	47
3.3.2 Financial market participants disclosures.....	49
3.3.3 Recommendations for the future.....	53
<b>4 Discussion.....</b>	<b>54</b>
CONCLUSION.....	64
REFERENCE LIST.....	66
APPENDIX.....	75

## **LIST OF FIGURES**

Figure 1: ESG factors.....	4
Figure 2: UN Sustainable Development Goals .....	18
Figure 3: Profile Development.....	26
Figure 4: ESG Profile Building Blocks.....	27
Figure 5: Long-Term Preparedness.....	29

## **LIST OF TABLES**

Table 1: Comparison across the ratings providers .....	24
Table 2: Products included in scope for Taxonomy disclosure .....	51
Table 3: Categories of investment funds under Sustainability-related Disclosures.....	52

## **APPENNDIX**

Appendix 1: Povzetek (Summary in Slovene language).....	1
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## LIST OF ABBRIVIATIONS

sl. – Slovene

**CBI** – (sl. \*Pobuda za klimatske obveznice); Climate Bond Initiative

**CDP** – (sl.); formerly, Carbon Disclosure Project

**CEO** (sl. Izvršni direktor); Chief executive officer

**Ceres** – (sl. \*Koalicija okoljsko odgovornih gospodarstev); Coalition of Environmentally Responsible Economies

**CRA** – (sl. \*Zakon o ponovnem vlaganju v skupnost); Community Reinvestment Act

**DNSH** – (sl.); Do no significant harm

**ECB** – (sl. Evropska centralna banka); European Central Bank

**EIB** – (sl. Evropska investicijska banka); European Investment Bank

**EPs** – (sl. Načela Equator); Equator Principles

**ESG** – (sl. Okolje, družba in upravljanje); Environmental, Social and Governance

**EU** – (sl. Evropska unija); European Union

**EUR** – (sl. Evro); Euro

**FSB** – (sl. Odbor za finančno stabilnost); Financial Stability Board

**GBP** – (sl. \*Načela za zelene obveznice); Green Bond Principles

**GBP** – (sl. Britanski funt); British Pound

**GHG** – (sl. Toplogredni plini); Green-house gases

**GIIN** – (sl.); Global Impact Investing Network

**GLP** – (sl. \*Načela za zelena posojila); Green Loan Principles

**GRI** – (sl. Pobuda za globalno poročanje); Global Reporting Initiative

**GSIA** – (sl.); Global Investment Alliance

**HLEG** – (sl. Skupina strokovnjakov na visoki ravni); High-level expert group

**IIRC** – (sl. Mednarodni svet za celovito poročanje); International Integrated Reporting Council

**ILO** – (sl. Mednarodna organizacija dela); International Labour Organisations

**MDGs** – (sl. Razvojni cilji tisočletja); Millennium Development Goals

**MiFD** – (sl. Direktiva o trgih finančnih instrumentov); Markets in Financial Instruments Directive

**MIS** – Moody’s Investment Service

**MSCI** – Morgan Stanley Capital International

**NDCs** – (sl. Na državni ravni določeni prispevki); Nationally determined contributions

**NFRD** – (sl. Uredba o nefinančnem poročanju); Non-Financial Reporting Directive

**OECD** – (sl. Organizacija za gospodarsko sodelovanje in razvoj); Organisation for Economic Corporation and Development

**PDC** – (sl. Koalicija za dekarbonizacijo portfelja); Portfolio Decarbonisation Coalition

**PRI** – (sl. Načela za odgovorne naložbe); Principles for Responsible Investment

**RCF** – (sl. Obnovljiv kredit); Revolving Credit Facility

**SASB** – (sl. \*Odbor za trajnostne računovodske standard); Sustainability Accounting Standards Board

**SDGs** – (sl. Dolgoročni cilji za trajnostni razvoj); Sustainable Development Goals

**SDR** – (sl. \*Razkritja povezana s stabilnostjo); Sustainability-related Disclosures

**SSE** – (sl. Trajnostna borza); Sustainable Stock Exchange

**TCFD** – Task Force on Climate-related Disclosures

**TEG** – (sl. Skupina tehničnih strokovnjakov za trajnostne finance); Technical expert group on sustainable finance

**TR** – (sl. Uredba o taksonomiji); Taxonomy Regulation

**UCITS** – (sl. Kolektivni naložbeni podjemi, ki vlagajo v prenosljive vrednostne papirje); Undertakings for the Collective Investment in Transferable Securities

**UK** – (sl. Združeno Kraljestvo Velike Britanije); United Kingdom

**UN** – (sl. Združeni narodi); United Nations

**UN CC: Learn** – United Nations Climate Change Learning Partnership

**UNEP FI** – (sl. \*Finančna pobuda Programa Združenih narodov za okolje); United Nations Environment Programme Finance Initiative

**UNFCCC** – (sl. Okvirna konvencija Združenih narodov o spremembi podnebja); United Nations Framework Convention on Climate Change

**USA** – (sl. Združene države Amerike); United States of America

**USD** – (sl. Ameriški dolar); American dollar

## INTRODUCTION

More than 10 years ago in 2008, the global financial crisis was triggered by the collapse of Lehman Brothers when the greed and short-term profit seeking of the financial industry were revealed to the public (Newsweek Vantage, 2018; Robnis, 2008). Since then the expectations from society and investors' expectations of the industry and business practices have changed (Kuzmina & Lindemane, 2017) leading to a revolution that is now known as sustainable finance (Newsweek Vantage, 2018).

Sustainable finance is an alignment of the financial system with sustainability. It is an interaction of financial (lending and investing) with economic, social and environmental issues, meaning that environmental, social and governance (ESG) indicators are included in the financial decision-making processes. An important characteristic of sustainable investments is choosing to invest in the long-term as opposed to seeking short-term profit (Krosinsky & Robins, 2008). Another reason for this alliance, besides that both finance and sustainability look at the future, is that finance is good at pricing risk for valuation purposes and could apply this to the uncertainty about environmental issues (Schoenmaker & Schramade, 2019).

The roots of sustainable investing date back 3500 years and were initially driven by the desire to “do well by doing good”, by rejecting investment in products or companies that are in conflict with the investors' ethical, moral or religious views (e.g. alcohol, gambling, tobacco, weapons). The first publicly offered fund catering for the investment need of religious groups and their moral values in the USA was funded in 1928 (Viviers & Eccles, 2012; Lumberg, 2017). It was not until the 1970s when responsible investing started to lose its religious connotation and moved to a more secular sphere, gaining in popularity due to activism and anti-war movements. 1971 saw a launch of Pax World fund, the first sustainable mutual fund (Viviers & Eccles, 2012; Liu, 2020). Nowadays the ethos of sustainable investing is to actively seek and make investments in companies that are creating a positive, long-term impact in areas of environment, society and governance, while also providing financial benefits (Lumberg, 2017). This behaviour is supported by the ratification of significant international agreements such as the UN Sustainable Development Goals and the Paris Climate Agreement, as well as industry specific various standards, e.g. Principles for Responsible Investing, Equator Principles, Green Bond Principles etc.

With the rise in value of sustainable investment – the global sustainable investment reached \$30.7 trillion at the start of 2018 (GSI Alliance, 2018) – and with higher expectations from society (Kuzmina & Lindemane, 2017) came also a demand for environmental, social and governance ratings of companies and appropriate disclosure of sustainable activities within the companies. Recently, big credit rating agencies have also joined (or acquired) the specialised firms on the market. Financial Times estimates that the global market for ESG

ratings is currently worth around \$200 million (estimations from Huber Research Partners). However, these ratings can vary among the agencies, leading to a confusion among the companies (Nauman, 2019). Just as there is not only one rating, but there are also no real rules on how to report sustainability information. Even though such disclosure is still voluntary, many companies are deciding to issue sustainability reports. When creating those they are encouraged to turn to guidelines set out by the Global Reporting Initiative (GRI, n.a.) and industry specific sustainability reporting standards from Sustainability Accounting Standards Board (SASB, 2018d). These standards aim to improve the quality of reporting the impact on sustainability issues and financially-material sustainability information to their investors. The European Union has taken it upon itself to further encourage and regulate the field of sustainable finance, at least within the Union. The Green Deal includes also the establishment of a detailed classification system – taxonomy – creating EU labels for green products that comply with the low-carbon criteria and strengthening the transparency of companies on their environmental, social and governance policies to make sure the right information is provided to the investors and to support sustainable growth (EU Commission, 2020d).

The aim of the thesis is to provide an overview of the historical evolution of sustainable finance, ranging from its beginnings in the 18th century up to now and to highlight the importance of sustainable investing becoming the new norm in the upcoming years.

The goals of the thesis are:

- To examine the existing principles, regulation and standards regarding sustainable finance;
- To examine the different approaches used by rating agencies when making ESG ratings;
- To examine the European Union's efforts in establishing a common taxonomy for sustainable ratings;
- To discuss the current developments in sustainable finance.

The thesis is divided into four main chapters: the first chapter defines sustainable finance, including different financial instruments, styles and strategies used in sustainable investment process; the second chapter lays out the historical evolution of sustainable finance, beginning briefly with Biblical times and more in detail from 20<sup>th</sup> century onwards; the third chapter is dedicated to the description of various ratings providers (S&P, Moody's, Fitch, MSCI and Sustainalytics) and standard setting bodies (GRI, SASB and TFCF) as well as a section dedicated to the work of European Union with developing its own binding regulation; the discussion in the final chapter is dedicated to assessing the current stage of sustainable finance and the considerations for the future. I also address some of the most important



challenges that sustainable finance is facing, as well as how it compares to traditional finance.

The majority of observations in my thesis rely on information provided by articles published in various scientific journals and from official information found on websites or reports by government bodies, such as the European Commission and United Nations (with its subordinate entities) and international organisations, standards, principles or initiatives in the field of sustainable finance (Global Sustainable Investment Alliance, Green Bond Standards, Global Reporting Initiative, Sustainability Accounting Standards Board). Included is also information from special reports from KPMG and Newsweek and newspaper articles that emphasise the current developments in the field. For resources regarding the rating agencies, I rely on the information provided by the agencies themselves on their websites. The main documents regarding the analysis of the measures to create a common EU standard are the Technical Reports by the EU Technical Expert Group on Sustainable Finance from 2019 and 2020.

## **1 Sustainable Finance**

### **1.1 Definition of sustainable finance**

Sustainable finance can be described as the alignment of the financial system with sustainability, meaning that environmental, social and governance (ESG) indicators are included in financial decision-making process. Its main characteristic is that it is driven by investing into the long-term as opposed to seeking short-term profits (Krosinsky & Robins, 2008). Sustainable investing can be perceived as a merger of traditional investment, which seeks financial risk-adjusted returns, and philanthropic donations, the purpose of which is purely for the advancement of social, environmental or governance benefits. All sustainable finance products combine the two but differ in the focus of their return as some focus more on profit, while others focus on impact (UN CC:Learn, n.d.). The European Union understands sustainable finance as a type of finance to support economic growth while reducing pressure on the environment and at the same time considering social and governance aspects. An important part of sustainable finance is also transparency on risk related ESG factors that may have a material effect on the financial system, and the mitigation of such risks through governance of financial and corporate actors (EU Commission, 2020a).

Sustainable finance is made out of four main areas: economic return, governance structure, social impact and environmental impact (UN CC:Learn, n.a.).

Figure 1: ESG factors

<b>Economic</b>		
<i>All products seek economic risk-adjusted return</i>		
<b>Environmental</b> <i>Green investment</i>	<b>Social</b>	<b>Governance</b>
mitigation of climate change	positive impact on individuals, communities and societies as a whole (e.g. better work conditions and gender equality)	poor governance, structure can jeopardise the positive environmental/social impact of the investment
adaption to climate change	better work conditions, gender equality, customer privacy	an important indicator for risk assessment of sustainable finance product
other environmental issues (biodiversity, conservation)	community impact	issues can undermine an investment's return

*Adapted from Wallace*

The term sustainable investing is the latest name for investment practices that consider ESG issues. Throughout the years this practice has appeared in academic literature under many different names. In their review of academic research Viviers and Eccles (2012) find that the most common names include: socially responsible investment (the most predominant), social investment, ethical investment, green investment, sustainability/sustainable investment and responsible investment, while some less used are community investing, environmentally responsible investing, faith-based investing and mission-based investing (Viviers & Eccles, 2012). After reviewing the literature for the thesis, I can conclude that the most used terms in the last ten years are socially responsible investing, ESG investing and sustainable investing. It is also my opinion that with the launch of *Journal of Sustainable Finance & Investment* in 2010, the latter term is becoming increasingly more popular.

In their book *Sustainable Investing, the art of long-term performance* Krosinsky and Robins (2008) introduce five investment styles:

1. Ethical investing is an approach led by the values of investors. It is equal to traditional social investing in the USA and to a large part of socially responsible investing. It applies mostly to individual investors, charities and foundations, which include values into their decisions.
2. Responsible investing includes taking into account ESG factors by institutional investors as they pursue their fiduciary duties to clients and beneficiaries.
3. Clean tech investing represents investment into environmental projects, such as energy efficiency, renewable energy, pollution mitigation, sustainable transport, waste and water management, etc. Linked to this is “climate change investing”.
4. Social investing is an approach that seeks social along with financial returns. It is intended to impact those that are often most disadvantaged in a society.

In 2012 the Global Sustainable Investment Alliance published a list of definitions of various activities and strategies that can be used in sustainable investing in its *Global Sustainable Investment Review 2012*. These have become a global standard of classification (GSI Alliance, 2018):

1. Negative/Exclusionary screening describes the exclusion of certain sectors (tobacco, guns, alcohol), companies or practices from a fund or portfolio based on specific ESG criteria (GSI Alliance, 2018). This practice used to be common with the early versions of socially responsible funds in the 1980s and 1990s and is less used today, because it can lead to financial underperformance (Wallace, 2020).
2. In case of Positive/Best-in-class screening, investment is made in sectors, companies or projects selected for positive ESG performance relative to industry peers (GSI Alliance, 2018). Most of sustainable funds today use this strategy, as it tilts the portfolio towards companies, which are better at managing ESG issues and therefore face a lower risk of lawsuits, fines and reputational damage (Wallace, 2020).
3. Norms-based screening is a type of strategy where investments are compared against minimum standards of business practice. These are based on international norms usually issued by OECD, UN, UNICEF or other similar organisations. Norms-based screening is common for ethical or values-based investing.
4. With ESG integration the investment managers include environmental, social and governance factors into financial analysis.
5. Sustainability themed investing is a type of investment strategy where investment is made in assets related to sustainability. Examples of such are clean energy, green technology or sustainable agriculture.
6. Impact/Community investing provides financing to businesses that are trying to solve social and/or environmental problems. In case of community investing the capital is directed to traditionally overlooked individuals or communities.
7. Corporate engagement and shareholder action describe the use of shareholders power to influence corporate behaviour. This type of behaviour includes direct corporate

engagement, such as communicating with senior management and boards of companies, filling or co-filling shareholder proposals, and proxy voting that is guided by ESG guidelines.

By applying different strategies to their investment decision-making process funds can be divided into the following groups (Wallace, 2020):

1. ESG Consideration funds are funds that state in their prospectus that they consider ESG factors but typically do not use exclusionary screening, impact analysis or shareholder engagement as a part of their investment decision-making process.
2. ESG Focus funds are the opposite of the previous. Here sustainability factors are an important component of security selection and portfolio construction.
3. Impact funds often focus on specific themes, such as decarbonisation, gender equality, green bonds etc. The aim of such funds is to deliver social and/or environmental impact as well as financial returns.
4. The main focus of Sustainable Sector funds are stocks of companies that contribute to and aim to benefit from the transition to a green economy (renewables, energy efficiency...).

## 1.2 Types of financial instruments

Financial instruments used for the purpose of sustainable investing are almost the same as in traditional finance. They differentiate the most in the way they are called, and most importantly, where the proceeds are allocated. The most popular financial instruments for financing sustainable projects are bonds and loans (Hall, n.d.).

### 1.2.1 Bonds

Types of bonds used in sustainable investing can be classified as theme bonds, which have been known throughout history, some examples are 19<sup>th</sup> century railway bonds and 20<sup>th</sup> century war bonds. Theme bonds are used to give political signals to other stakeholders and provide means for direct funding in an area of importance for the stakeholders as well as allow institutional investors (such as pension, government and insurance funds) to invest in these areas for the same credit risk and returns as standard bonds. Otherwise in terms of operation and function, theme bonds are more or less the same as conventional bonds. Meaning they are risk-weighted, have a credit rating based on the creditworthiness of the issuer and can be traded in international secondary bond markets. The issuers of theme bonds are (local/regional) governments or companies. Examples of large issuers of corporate Green Bonds include Apple, Berlin Hyp, Credit Agricole and Engie. Major Green Bond municipal Green Bond issuers are US states, but examples of other issuers include Province of Ontario,

City of Johannesburg and Province of la Rioja (Argentina) and city of Gothenburg, which issued the first city Green Bond (CBI, n.d.).

Classification by Sustainalitics (Hall, n.d.):

- **Climate/Green bonds** are used to finance climate or environmental projects, e.g. renewable energy. In practice the terms Climate Bond and Green Bond are used interchangeably, in theory however, Green Bond proceeds could be used for many different environmental projects, not necessarily connected to climate change (e.g. loans to organic farms or park developments). Whereas the proceeds of Climate Bonds are used solely for projects fighting climate change (CBI Resources, n.d.).
- Proceeds from **social bonds** are used to finance social impact projects, e.g. investing in low cost housing for people without access to the housing market, access to essential services, food security, socioeconomic advancement and empowerment. They follow a similar criteria as green bonds, but the social bond market is much less developed than the green bond market. Critics have accused social bonds of being too complex and expensive. Also, it is difficult to create accurate measures of social results. Social bonds should not be confused with social impact bonds (SIBs). SIBs are not real bonds, but payments made by an organisation that commits to fulfilling a certain socially beneficial outcome. If the goal is achieved, investors are remunerated their initial investment together with an additional return on their investment. Currently the world leader in SIBs is the United Kingdom, which issued the first SIB in 2012. The Peterborough SIB is an GBP 5 million investment to reduce the number of reoffended prisoners that leave Peterborough prison (Schoenmaker & Schramade, 2019).
- **Blue bonds** are intended for funding of marine or water projects, e.g. investing in sustainable fish stock.
- **Sustainable bonds** are bonds that provide finance to social or green impact projects that are aligned with the UN SDGs. An example of a project would be providing energy efficient, low-cost housing for those without access to the housing market.
- **Sukuk or Islamic bond** is a financial certificate, which is similar to a bond, but is in compliance with Islamic religious law Sharia, which prohibits riba (interest). The issuer of sukuk sells an investor a certificate and uses these proceeds to purchase an asset, which is then partially owned by the investor. Both parties sign a contract that the issuer must buy back the bond at a future date at par value. Sukuk investors receive profit that is generated by the underlying asset on a periodic basis. The value of sukuk is based on the value of the underlying asset, meaning if the asset appreciates the sukuk can also appreciate. As well as with bonds it is considered to be a safer investment than equity instruments (Ganti, 2020).

## *Green Bonds*

Green bonds are actually the same as other bonds, with a notable exception that their proceeds go towards funding of projects that provide environmental benefits. More than 80% of green bonds issued are investment-grade, which is encouraging as they are interesting for institutional investors. Another positive fact is that the energy sector accounts for 43% of outstanding green bonds, which could lead to improvement of energy supply and efficiency (Schoenmaker & Schramade, 2019).

The International Capital Market Association has written four criteria for green bonds, which are: (i) that the proceeds are exclusively for green projects, (ii) the issuer has to clearly communicate to the investors what are the environmental objectives, (iii) the net proceeds of the green bond should be appropriately managed and verified and (iv) there should be mandatory reporting on the use of proceeds. Even though this marks green bonds for financing green projects, their payments are not necessarily tied to such projects, unless a green project represents all of the issuer's assets. Therefore, the bond carries the same risk as other bonds by the same issuer with the same conditions and should also be priced as such. While there exists evidence of a small green bond premium, for example by Zerbib from 2015, who finds that the average green bond premium is negative at 8 bp, there is also evidence that suggests that investors can buy most green bonds at a similar yield spread levels to conventional issues (analysis by Morgan Stanley, 2017) and that the initially lower yields for green bonds disappear as the market grows (Schoenmaker & Schramade, 2019).

Despite the rapid growth of the green bond market, many investors are still not familiar with how green bonds work, how much they cost and what is their goal. Various countries have issued green bonds to raise funding for large infrastructure projects, however sometimes investors are faced with a dilemma how seriously to take these environmentally-friendly ambitions. For example, Indonesia, a country that has issued green bonds, relies on coal for more than half of its electricity production and is the fifth largest GHG emitter in the world. In addition, green bonds are not suitable for complex transactions and companies face reputational risk by issuing green bonds, as they may not be recognised as such (e.g. in 2015 Unliver issued a GBP 250 million green bond that was excluded from the Bloomberg Barclays MSCI Green Bond Index). Another challenge is the lack of uniform and legally binding standardisation. There are many various standards, which allow for different interpretations. This ought to change with the EU Taxonomy and a common green bond standard (Schoenmaker & Schramade, 2019).

### *1.2.2 Loans*

An alternative way to raising funds is from a bank in form of a loan. The Loan Market Association developed a set of Green Loan Principles, a set of standards and guidelines that aim to provide a consistent methodology to be used across the green loan market (Hall, n.d.).

As with bonds Sustainalytics classifies loans in the following categories (Hall, n.d.):

- **Green Loans** dedicate the funds to environmental or climate projects, e.g. recycling
- **Social Loans** are awarded to funding social impact projects, e.g. improving employability
- **Sustainability Loans** provide funding for a combination of the green and social impact projects, e.g. providing employment for people with disabilities at a recycling plant.

### *1.2.3 Sustainability Linked Loans and Revolving Credit Facility*

Sustainability Linked Loans or Revolving Credit Facility (RCF) are tied to the ESG performance of the company, and not only on the manner in which the funds are used. ESG performance is determined by assessing how a company tackles sustainability and how this impacts its economic value. The performance of each of the ESG factors is individually covered to get the complete ESG performance (Hall, n.d.).

By linking the RCF to sustainability performance, the interest rate on the loan or RCF is tied to the sustainability performance of the company. Sustainability performance of the company is determined by the ESG performance or ESG rating of the borrower. If the ESG performance of the borrower improves, the interest rate will decrease and if the ESG performance worsens, the interest rate will increase. The company presents its ESG rating to the lender prior to approval of the loan, but it must also be committed to maintain or even improving its rating as time passes. The benefit of such a loan or RCF is that it enables a company access to funds even when it does not have clear green, social or sustainable projects to invest in and by agreeing to such terms the company also signals the market its commitment to improving its ESG performance (Hall, n.d.).

## 2 Evolution of sustainable finance

Sustainable investing has been around for more than 3500 years and was initially driven by the idea of doing good. In Biblical times a form of socially responsible investing (ethical investing) existed under the domain of the Jewish law. Tzedek (the first five books of what would later become known as the Bible, assumed to be written by Moses in 1500 to 1300 BC), which means justice and equality, contains the rules, which are meant to aid mankind in correcting the imbalances it has caused in the world. In accordance with Jewish tradition these rules should be applied to all aspects of life, including government and the economy (Lumberg, 2017).

The religious teachings of Islam include similar guidelines in the Quran, written between 609 and 632 CE. Throughout the years these have evolved to comply with the standards set by Shariah law. Aside from governing Muslim society in religious matters, Shariah law also outlines the responsibilities of institutions and individuals regarding risk and profit. In addition to setting financial rules, it prohibits investments in alcohol, pork, gambling, armaments, gold and silver (exemptions being spot cash, or money that is paid for something immediately). Riba is one of the most common prohibitions, which forbids all interest payments and the goal of which is to prevent exploitation (Lumberg, 2017).

In the United States socially responsible investing (SRI) began in the 18<sup>th</sup> century with the Methodists – a branch of Protestant Christianity. In line with the teachings of Methodism they did not participate in the slave trade, smuggling, conspicuous consumption, neither did they invest in companies manufacturing or promoting liquor, tobacco and gambling. In the 19<sup>th</sup> century the Methodists were followed by the Quakers, who forbade investments in slavery and war. The first publicly offered fund aimed especially towards the investment needs of religious groups and their moral values was called the Pioneer Fund, founded in 1928. It used screening as its primary strategy to eliminate “sin” industries (Eccles N.S., 2012, Lumberg, 2017).

In 1960s the responsible/ethical investment slowly shifted from the religious to the secular sphere (Lumberg, 2017).

In the 1970s SRI gained in popularity due to the rampant anti-war sentiment and activism against US involvement in the Vietnam War. This decade could be interpreted as the true start of responsible investing as the movement gained a much broader appeal than the earlier religious investment movements (Eccles N.S., 2012; Liu, 2020). In 1971 the first sustainable mutual fund was launched. PaxWorld fund (PAXWX) was founded by Luther Tyson and Jack Corbett, both United Methodists ministers. They did not want to invest church money in companies that were contributing towards the war in Vietnam but wished to instead align their investments with their personal values. Tyson and Corbett believed that companies



should abide by a standard of social and environmental responsibility (Liu, 2020). A year later journalist Milton Moskowitz made a list of “socially responsible stocks”, published in *Business & Society* journal with the aim to track performance of these stocks against broad market indices as well as first sustainable funds (Liu, 2020). The Congress of the USA passed the Community Reinvestment Act in 1977, which forbade discriminatory lending practices in low-income neighbourhoods (Lumberg, 2017). The Community Reinvestment Act requires that federal regulators assess the performance of each bank in fulfilling its obligations to these communities and this score is used when approving bank mergers, charters, acquisitions, branch openings, and deposit facilities (Kenton, 2020). Around the same time the Sullivan Principles were published as a code of conduct for companies by Rev. Leon Sullivan. Sullivan was a clergyman and a civil rights leader who hoped that these principles would promote corporate and social responsibility, as well as apply economic pressure on the government in South Africa because of its apartheid system of racial segregation (Liu, 2020).

After the end of Vietnam war, the 1980s were marked by the anti-apartheid movements and pressures from shareholders for corporate involvement in divestment from South Africa. This push reached the USA government, translating to public policy. Environmental concerns also contributed to the growth of sustainable investing. In 1984, after the Chernobyl and Three Mile Island nuclear disasters induced fear and anxiety over the environment and climate change, the US Sustainable Investment Forum (US SIF) was founded (Lumberg, 2017) with a goal to promote sustainable investment practices, long-term investment and generation of positive social and environmental impacts (US SIF, 2020). Disinvestment in South Africa and protests were at least partially responsible for the abolition of apartheid. Students of Columbia University in New York organised a sit-in in 1985. Their demand was that the University stops investing in companies doing business with South Africa (Lumberg, 2017). A year later in 1986 the US Congress passed the Comprehensive Anti-Apartheid Act, which banned new investments in South Africa (Liu, 2020). The efforts of students and the government resulted in \$625 billion investments being redirected from South Africa by 1993 as well as the abolition of apartheid and new South African constitution by Nelson Mandela and President F.W. deKlerk (Lumberg, 2017). In the late 1980s there was a raising concern about environmental issues, especially over the burning of fossil fuels and global warming. The Intergovernmental Panel on Climate Change was established by World Meteorological Organisation and United Nations Environmental Programme in 1988. A year later the Coalition of Environmentally Responsible Economies (Ceres) was founded as a response to the Exxon Valdez oil spill in Prudhoe Bay in Alaska. Ceres brought together investors, business leaders and public-interest groups to work together on accelerating the adoption of sustainable business practices and transition to a low-carbon economy (Liu, 2020).

In 1990s sustainable investment experienced a modest growth. The main strategy used by funds was a mix of negative and positive screening. This was also the decade, which saw

growing awareness about global warming and corporate responsibility. This led to developments, which had important impact on further defining sustainable finance. The first capitalization-weighted index built to track sustainable investment was launched in 1990 – the Domini 400 Social Index (now MSCI KLD 400 Social Index) (Liu, 2020). MSCI KLD 400 encompasses 400 publicly traded American companies that meet certain ESG standards and excludes those whose products have negative environmental or social impact (e.g. alcohol, tobacco, firearms, gambling, nuclear power and weapons) (Chen, 2019).

A month before the Rio Earth Summit in June 1992, the UNEP Statement by Banks on the Environment and Sustainable Development was launched in New York. This marked the beginning of the United Nation Environment Programme Finance Initiative (UNEP FI). UNEP FI is a partnership between UN Environment and the actors of the global financial sector “to change finance and finance change.” Original members of UNEP FI were Allianz SE, Banca Commerciale Romana, Banco Santander S.A., Credit Suisse, Danske Bank A/S, Deutsche Bank AG, Landsbankinn (NBI hf.), Royal Bank of Canada, Royal Bank of Scotland Group, Scotiabank (Bank of Nova Scotia), TISCO Financial Group Public Company Limited, UBS AG and Westpac Banking Corporation. In September 1994 UNEP FI held its first annual roundtable on “greening the financial markets” in Geneva, Switzerland (UNEPFI, 2017b).

The main focus of the Earth Summit in Rio de Janeiro was the development of a global framework in which sustainable development would be used as part of a solution for environmental degradation (UNEPFI, 2017b). On 21 March 1994, the international environment treaty adopted at the Rio Earth Summit – United Nations Framework Convention on Climate Change (UNFCCC) - came into effect. The objective of the treaty is to “stabilise greenhouse gas concentration in the atmosphere at the level that would prevent dangerous anthropogenic (human induced) interference with the climate system.” (UNFCCC, 2016).

There were 26 sustainable funds available to investors by 1994, with assets of around \$1.9 billion (Liu, 2020).

In December 1997 the world leaders, recognising the threat presented by greenhouse gases and carbon dioxide emissions to the planet, set goals for reducing carbon dioxide emissions and greenhouse gases. These goals were formally known as the Kyoto Protocol, because the Protocol was signed in Kyoto, Japan. The signatories of this agreement were bound to emission reduction targets (UNEPFI, 2017b; Tardi, 2019; Liu, 2020).

Dow Jones Sustainability World Index - the first global sustainability benchmark – was launched in September 1999 by S&P Dow Jones Indices together with RobecoSAM. It still provides guidance for investors that are looking for profitable companies that follow sustainable development principles (UNEPFI, 2017b) as it consists of the top 10% of the

largest 2,500 stocks in the S&P Global Broad Market Index with the best sustainability and environmental performance (Chen, 2020).

In 2000, Kofi Annan, the UN secretary general at the time, launched the Global Compact initiative. The voluntary initiative provided companies with international, independent standards on communicating their impact on climate change, human rights and corruption. The term ESG investing was created as well (Liu, 2020). Two years later Global Reporting Initiative, an international non-governmental organisation, launched the initial version of its Guidelines, which is still the most used framework globally for sustainability reporting (UNEPFI, 2017b).

An important document at the start of the millennium was the UN Millennium Declaration, ratified in September 2000 by the world leaders at the Millennium Summit. The Declaration set out a series of eight goals, known as Millennium Development Goals, and targets to reduce poverty for developing countries, which ought to be reached by 2015. It is a predecessor of UN Sustainable Development Goals (UNEPFI, 2017b).

Policymakers from States, Governments, non-governmental and financial institutions continued their work on financing development and providing standards for financial institutions. In June 2003 the risk management framework called the Equator Principles (EPs) was adopted. These principles are used to determine, assess and manage environmental and social risk in project finance. Their intention is to provide a minimum standard for due diligence to support responsible decision making (Equator Principles, 2019; UNEPFI, 2017b). EPs apply to four financial products: Project Finance Advisory Services, Project Finance, Project-related Corporate Loans and Bridge Loans across all industries globally. Financial institutions that are committed to implementing EPs should not provide Project Finance or Project-related Corporate Loans to clients that will not or are not able to comply with the demands of EPs. The EPs are constantly being updated; the latest version holds as of July 2020 (Equator Principles, 2019).

The EP as of July 2020 (published November 2019):

1. Review and Categorization,
2. Environmental and Social Assessment,
3. Applicable Environmental and Social Standards,
4. Environmental and Social Management System and Equator Principles Action Plan,
5. Stakeholder Engagement,
6. Grievance Mechanism,
7. Independent Review,
8. Covenants,
9. Independent Monitoring and Reporting,
10. Reporting and Transparency.

So far 101 financial institutions from 38 countries have officially adopted the Equator Principles, representing the majority of project finance debt in developed and emerging markets, subsequently increasing awareness on social standards and responsibility towards communities within the Project Finance market. As the EPs also promote convergence of common environmental and social standards multilateral development banks and export credit agencies are working on implementing the same standards as the Equator Principles (Equator Principles, 2019).

In April 2006, the Principles for Responsible Investment (PRI) were launched. The PRI are one of the most important, yet voluntary, document for institutional investors looking for reference for incorporating environmental, social and governance issues into their investment practice (PRI, 2006; UNEPFI, 2017b). They were developed by 20 representatives from institutions in 12 countries with the support of 70 experts from investment industry, intergovernmental organisations and civil society. The PRI are independent and not associated with any government, they are also not a part of UN, but are only supported by it. As signatories' institutional investors acknowledge that ESG issues can have an effect on the performance of investment portfolios (PRI, 2019). By signing the PRI, an institution commits to the following (PRI, 2019):

- Principle 1: to incorporate ESG issues into investment analysis and decision-making processes.
- Principle 2: to be active owners and incorporate ESG issues into ownership policies and practices.
- Principle 3: to seek appropriate disclosure on ESG issues by entities in which they invest.
- Principle 4: to promote acceptance and implementation of the Principles within the investment industry.
- Principle 5: to work together to enhance effectiveness in implementing the Principles.
- Principle 6: to report on activities and progress towards implementing the Principles

Currently there are more than 3,000 signatories of PRI (PRI, 2019), from more than 50 countries (Lumberg 2017; Liu, 2020).

By the end of 2006, 60 sustainable funds were available to investors (Liu, 2020).

In 2007, the European Investment Bank (EIB) issued the world's first Green Bond, which was labelled a Climate Awareness Bond at the Luxembourg Stock Exchange. The EIB still remains the leading issuer of Green Bonds with over EUR 26.7 billion raised across 13 currencies as at the end of December 2019 (EIB, 2019).

The financial crisis in 2008 had a negative effect on the majority of assets. However, according to US SIF assets-using strategies in accordance with socially responsible investing grew (UNEPFI, 2017b).

As the world was in the mist of the recession, the World Bank issued the first labelled Green Bond for mainstream institutional investors. This was followed by the launch of NIKKO AM/World Bank Green Bond fund and IFC inaugural Green Bond (World Bank, 2019).

In 2009 UNEP FI Insurance group began its work on potential integration of ESG factors in insurance underwriting and product development. It was also an important year for the launch of various initiatives. Those launched that year were Climate Bond Initiative, Sustainable Stock Exchange Initiative and Global Impact Investing Network (UNEPFI, 2017b).

Climate Bond Initiative (CBI) is an international not-for-profit organisation, which promotes the development of climate bonds. Through its work the organisation wishes to drive down the cost of capital for climate projects, which would help create a large and liquid climate and green bond market. The work of CBI is mainly focused on raising awareness about the existence and benefits of climate bonds and promoting investment in them, constructing standards for establishing, identifying and labelling climate and green bonds, and developing policy models, whilst also offering advice. Standards developed by the CBI are called the Climate Bonds Standards and require projects to comply with them to gain a Certification mark, serving as assurance for the investors that their money is being used for projects, which have a positive impact on climate. corresponding certification mark (CBI, n.d.; World Bank, 2019).

Sustainable Stock Exchange Initiative (World Bank, 2019) is a platform for encouraging sustainable investment, including the financing of the UN Sustainable Development Goals. The work of the Initiative is organised into three pillars: research, consensus building and technical assistance and regularly includes stock exchanges, capital market regulators, investors, companies and other experts to engage in it (SSE, 2019). In 2016 there were 60 stock exchanges part of the Sustainable Stock Exchange Initiative (UNEPFI, 2016).

Global Impact Investing Network is a non-profit organisation that is working to increase the scale and effectiveness of impact investing. It does so by building critical infrastructure and supporting activities, education, and research that help accelerate investments made with intention to generate positive social and environmental impact alongside a financial return (The GIIN, 2020).

During the previous decade (2010s), when most of the world was still recovering from the financial crisis, sustainability issues became important to consumers as they started making purchasing decisions based on them. The ESG investment grew, with many methods being

labelled as “sustainable”, and encouraged further attempts to regulate and standardise the field (Liu, 2020). One of the first important steps of 2010 was taken by the UNFCCC and the UN Green Climate Fund, who finally established the concept of “Climate Finance”. This was followed by a formal recognition of the potential of green bond market by the G20, IMF and OECD (World Bank, 2019).

In 2011 the Sustainability Accounting Standards Board was formed to create industry-specific standards for corporate reporting on ESG issues (SASB, 2018d; Liu, 2020).

UNEP FI continued its work by involving a number of leading financial institutions to collaborate on a project, which investigates the link between ecological risk and country level risk in sovereign bonds, as well as considering what a sustainable bank looks like and providing guidelines on how banks can apply ESG considerations to their daily operations (UNEPFI, 2017b).

By 2012 OECD and International Energy Agency were recommending governments to consider green bonds to finance their climate change situations (World Bank, 2019). In June UNEP FI released the global framework for the insurance industry. The Principles for Sustainable Insurance help the insurance industry to better manage environmental, social and governance risks and opportunities (UNEPFI, 2017b). The Global Sustainable Investment Alliance (GSIA), an association of international sustainable investment organisations such as EU SIF and US SIF, issued its first issue of the Global Sustainable Investment Review in 2012 (Lumberg, 2017).

In 2013 World Bank issued the first corporate green bond by a Swedish property company Vasakronan and the first municipality green bond by the state Massachusetts in the USA. It also recognised the importance of impact reporting at its Green Bond Symposium (World Bank, 2019).

2014 was an important year for World Bank in connection to green bonds as it issued the Green Bond Principles and as the Green Bonds were formally recognised as UN “Climate Action” under UNFCCC (World Bank, 2019). Green Bond Principles (GBP) are another set of voluntary guidelines that promote the development of a Green Bond market. All market participants are able to use them as they transition towards an environmentally sustainable business model. Issuance aligned with the GBP provides an investment opportunity with green credentials, improving insight into estimated impact. Four core components of the GBP are: Use of Proceeds; Process for Project Evaluation and Selection; Management of Proceeds; and Reporting. The GBP were last updated in June 2018, when additional guidance and recommendations for the use of external reviews was included as well as five high level environmental objectives (previously, four key concerns) to which eligible projects ought to contribute to (ICMA Group, 2018).

This was also the year when decarbonisation was starting to become a very important topic. In September the Portfolio Decarbonisation Coalition (PDC), a multi-stakeholder initiative that supports the transition to a low-carbon economy by organising institutional investors who are committed to restructuring their portfolios, was launched. Soon after its inception the PDC surpassed its target of achieving a total commitment to decarbonise the US\$ 100 billion worth of assets under management, when it achieved a total commitment of US\$ 600 billion (UNEPFI, 2017b).

In 2015 world organisations in collaboration with important stakeholders continued their work to push sustainability in the mainstream. The World Bank published its first green bond impact report and issued the first green covered bond (World Bank, 2019), the US Department of Labour ruled that pensions and plan sponsors are allowed to invest in socially responsible investments as long as they are appropriate for the plan and financially equivalent with the plan's return and risk (Liu, 2020), the United Nations launched the UN Sustainable Development Goals (SDGs) and the Paris Climate Agreement was reached (World Bank, 2019).

In 2001 the governments agreed on the Millennium Development Goals (MDGs). MDGs expired in 2015, leading to their expansion and adoption of the 2030 Agenda for Sustainable Development. All UN Member States officially adopted it at the UN Summit in New York in September 2015 (Ford, 2015; UN, 2015).

At the heart of the Agenda are 17 Sustainable Development Goals (SDGs), which are blueprints for achieving a more sustainable future. Thus the UN set universal goals, targets and indicators for its member states. All the countries (developed, as well as developing) are expected to use them in framing their agendas and political policies over the upcoming years, until 2030 (UN, 2015).

Figure 2: UN Sustainable Development Goals



Source: UN (2015)

The main aim of the Paris Climate Agreement is to keep a global temperature rise this century below 2°C and to limit the temperature increase even further to 1.5°C above pre-industrial levels (UNFCCC, 2016; UNEPFI, 2017b). Aside from limiting the global temperature levels, the Agreement also urges its signatories to work on lowering their greenhouse gas emissions. The key to achieving these goals are Nationally determined contributions (NDCs) to reduce normal emissions and adapt to the impacts of climate change, which are determined for each country individually. Each country is obligated to prepare, communicate and maintain NDCs that it intends to achieve. It is expected that developed countries support developing countries in achieving set goals. The Paris Climate Agreement was officially signed on 22 April 2016 (“Earth Day”) in New York. By January 2020 187 countries (out of 197) have ratified the Agreement (UNFCCC, 2016; Liu, 2020).

In 2016 the World Bank issued the first sovereign green bond by Poland and the first green *schuldchein* (promissory note) by Nordex, a German manufacturer of wind-power turbines, worth EUR 550 million (World Bank, 2019). It was also the year when China launched G20 Green Finance Study Group and Financial stability board launched task force on climate-related financial disclosures and recommended green bonds (World Bank, 2019). One of the largest US public pension funds CalPERS adopted a five-year plan to incorporate ESG principles into its investment process (Liu, 2020).

To pursue its environmental policy agenda the European Commission established a High-level expert group on sustainable finance (HLEG) in December 2016. Among the 20 members of the HLEG were experts from civil society, finance sector, academia and observers from European and international institutions. The HLEG published its final report



in January 2018, which forms the basis of the Action plan on Sustainable finance that was adopted by the Commission in March 2018 (EU Commission, 2020a).

In the beginning of 2017 almost 20 leading global banks and investors, with \$6.6 trillion in assets, launched the UNEP FI Principles for Positive Impact Finance (UNEPFI, 2017b). The Principles for Positive Impact Finance are guidelines for financiers, investors and auditors on how to increase their positive impact on the economy, society and the environment, contributing to the achievement of the SDGs. The Principles can be applied to all forms of financial institutions and financial instruments. An important feature of the Principles is that they consider an appraisal of both positive and negative impacts, which enables a holistic approach to sustainability issues. The four Principles for Positive Impact Finance are: Definition, Frameworks, Transparency and Assessment (UNEPFI, 2017a).

World Bank participated in the issuance of the first green sukuk for green financing in Malaysia, the first sovereign green bond from emerging markets issued by Fiji, and the first green commercial paper in 2017. The cumulative of green bond issuance was at US\$ 100 billion. Also, to complement the Green Bond Principles, the Social Bond Principles and the Sustainability Bond Guidelines were published, establishing rules for projects to be considered as social or sustainable (World Bank, 2019).

In 2018, Larry Fink, the CEO and founder of BlackRock urged the companies in his annual letter to consider the long-term profitability of their business and focus on the role of the corporation in society. Fink wrote that companies that are focusing on minimising negative environmental and social impacts, while highlighting positive ones would protect their brand, gain more customers that are increasingly more aware and attract top talent. All these would allow them an easier transition to a low-carbon and digital economy (Liu, 2020).

As the World Bank published guidance for public issuers on green bond proceeds management and reporting and the cumulative green bond issuance was US\$ 500 billion, the Green Loan Principles (GLP) were made available (World Bank, 2019). The GLP are another set of voluntary guidelines for market participants aimed at promoting types of loans for financing or re-financing new and/or existing green projects. Green loans must align with the four components of the GLP: Use of Proceeds, Process for Project Evaluation and Selection, Management of Proceeds, and Reporting (Loan Market Association, 2018).

Continuing its work in the field of sustainable finance and realising the need for a single regulation, the European Commission announced a sustainable finance action plan (World Bank, 2019). Key actions include establishing a clear and detailed classification system (taxonomy) for the entire Union, establishing labels for green financial products, strengthening the transparency of companies with regards to their ESG policies, and incorporating climate risks into banks' risk management rules (EU Commission, 2018a). Already in May, the Commission adopted a package of measures that implemented several

actions that were announced in the action plan, including a proposal for regulation that established the conditions and framework for the taxonomy, proposal for regulation on disclosures on sustainable investments and risks and proposal for an amendment that creates a new category of benchmarks covering low-carbon and positive carbon impact benchmarks (EU Commission, 2018b).

A technical expert group on sustainable finance (TEG) was set up by the European Commission to help with development of the taxonomy, recommendations for technical screening criteria for economic activities that make a substantial contribution to climate change adaptation and mitigation, development of an EU green bond standard, development of metrics for low-carbon indices and metrics for climate-related disclosure (EU Commission, 2020a). Initially the TEG had a mandate from July 2018 to June 2019, however it was extended until September 2020 so that it can conclude its technical work and provide advice to the Commission until the Platform on Sustainable Finance, a permanent body set up under the Taxonomy Regulation (Article 20), is completely functioning (EU Technical Expert Group on Sustainable Finance, 2020). The platform, which will be comprised of experts from both public and private sector, will work as an advisory body to the Commission on the technical screening criteria for the EU Taxonomy, the further development to the taxonomy and sustainable finance and monitor and report on capital flows towards sustainable investments. After the adoption of Taxonomy Regulation, the Commission and Council opened a call for applications for selection of members on 18 June 2020, which closed on 16 July 2020 (EU Commission, 2020a).

Along with its recommendations for the taxonomy, which I will describe in detail later, the TEG also published its report on EU Green Bond Standard on 18 June 2019. In the report they propose that Commission creates a voluntary EU Green Bond Standard to make the green bond market more transparent, comparable and credible and to encourage the market participant to issue and invest in EU Green Bonds, which would be debt instruments issued by European or international issuer and aligned with the EU Green Bond Standard. Based on the recommendations the TEG published a usability guide for the EU Green Bond Standard in March 2020, which offers guidance on the use of the standard and the set-up of market-based registration scheme for external verifiers. The European Commission is currently considering the possibility of a legislative initiative for an EU Green Bond Standard and will decide in the final quarter of 2020 on how to proceed (EU Commission, 2020c).

In September 2019 another set of voluntary principles was launched to promote sustainability within the banking system. The Principles for Responsible Banking enable banks to show the way they are making a positive contribution to environment and society. They were developed by a group of 30 banks and launched by 130 banks from 49 countries in New York City. They represent a single framework that places sustainability at the

strategic, portfolio and transaction levels across all business areas of a bank. The Principles for Responsible Banking are aligned with the SDGs and the Paris Climate Agreement (UNEPFI, 2017b).

On 11 December 2019, the European Commission presented the European Green Deal, a plan to make the European economy more sustainable and climate neutral by 2050. The latter is to be ensured by an adoption of an EU climate law. The plan outlines required investments and existing financing tools to boost the efficient use of resources by moving towards a clean, circular economy, restore biodiversity and cut pollution. To reach the set target of climate neutrality the EU and its Member states plan to invest in environmentally friendly technologies, support innovation, find cleaner, cheaper and healthier forms of private and public transport, decarbonise the energy sector, opt for more energy efficient construction and work with international partners to improve global environmental standards (EU Commission, 2020d).

A week later the European Parliament and Council reached a political agreement on the Taxonomy Regulation (EU Commission, 2020b), which sets out how financial market participants and companies should disclose their compliance with the integration of ESG risk and opportunities (UNEPFI, 2017b).

At the end of December 2019 flows into sustainable funds in the United States topped \$20 billion, which was more than quadruple of the previous annual record for net flows for sustainable funds from 2018 (Liu, 2020).

In the first month of 2020 the European Commission presented the European Green Deal Investment Plan, which predicts at least EUR 1 trillion of sustainable investments in the next ten years. It also facilitates both public and private investments that are needed for the transition to a climate-neutral, green competitive and inclusive economy. Following the COVID-19 outbreak the Commission announced a renewed sustainable finance strategy in the framework of the European Green Deal. The renewed strategy is to provide the policy tools needed to ensure that financial systems support the transition of businesses towards sustainability in a context of recovery from the impact of the pandemic (EU Commission, 2020a).

The Taxonomy Regulation was published in the Official Journal of the European Union on 22 June 2020 and entered into force on 12 July 2020 (EU Commission, 2020b). In November the European Commission published the draft delegated regulation on climate change mitigation and adaptation under the Taxonomy Regulation. The plan was to adopt the delegated act on climate change mitigation and adaptation under the Taxonomy Regulation by 31 December 2020 (EU Commission, 2020a).

At the beginning of 2020, the most pressing sustainability issue continued to be the environment. It was also one of the most discussed topics at the annual World Economic Forum in Davos. Everybody from Wall Street, Central Banks and Governments seemed to be more determined than ever to fight climate change by either investing or encouraging investment into green solutions and disinvestment from fossil fuels. It was thought that a lot of money would be made from ESG investments since climate solutions market (renewables, electric cars, biofuels) would double. Companies were thought to become more diligent in their ESG reporting, using frameworks such as SASB's standards, as lenders become more interested in ESG risks (Norton, 2020).

Another expectation was the raise of stakeholder capitalism, where stakeholders are represented not only by shareholders, but also by employees and customers (Norton, 2020). An example of this could be seen in July 2020, when after the publication of an article in The Sunday Times on the 5<sup>th</sup> of July 2020, which exposed poor working conditions in the supply chain of UK fashion brand Boohoo. Boohoo was faced with major backlash from its customers and other members of the society as well as lower stock price and GBP 2 billion devaluation of its previous GBP 5 billion valuation (Marsh, 2020).

However, 2020 was disturbed by the outbreak of the new coronavirus, which caused many countries across the world to enforce lockdowns and it might seem that the world is heading towards a new recession. Despite everything according to Morningstar's research \$45.6 billion was invested into ESG funds in the first quarter of 2020 (and \$384.7 billion in the broader fund landscape). Also, ESG stockpile has experienced a decline of 12% annually due to the COVID-19, which is less than other funds that experienced an 18% decline (Marsh, 2020).

Some companies which were hit the hardest by the pandemic now see sustainability (especially in terms of environment) as an "unaffordable luxury". Ryanair has admitted that some of its environmental agenda and targets will be put off for the next few years and governments might be too concerned with unemployment and the possibility of debt to care about climate change (Neuman, 2020).

On the other hand, EU does not plan to retreat from its climate ambitions and investors are also still considering ESG themes. Some even argue that an integration of ESG has never been more important or made more sense as they see parallels between the climate crisis and the corona virus crisis. Companies with good governance that consider environmental and social factors may be better equipped to survive the downturn (Neuman, 2020).

Pandemic is not stopping companies and climate-conscious shareholder to continue their efforts of enforcing long-term sustainability. In May, JP Morgan Chase announced it would demote Lee Raymond, a former chief of ExxonMobil, from his position as lead independent director and the Legal & General Investment Management (largest asset manager in the UK)

said it would vote against the board chair of ExxonMobil, because the company lacks strategic ambition around climate change. In the USA, a group of 300 companies (including Microsoft and Mars) urged the federal government to pass a carbon tax and to put green projects at the centre of recovery plans (Neuman, 2020).

On 8 July 2020, it was announced that for the first time ever the European Central Bank (ECB) will pursue green objectives as a part of its EUR 2.8 trillion asset purchase scheme. The president of ECB, Christine Lagarde has launched a strategic review on ways of addressing climate change at the beginning of the year but was put on hold in March amid pandemic. Other central banks were also pressured to be more proactive on green issues, however the US Federal Reserve has stayed out of the debate (Arnold & Roula, 2020).

### **3 Ratings and Regulation**

#### **3.1 Ratings**

ESG ratings have become especially important with investors interested in sustainability. As they try to direct their funds towards companies whose values are aligned with their own in regard to the environment, society and governance. An example of material financial risks caused by climate change is the bankruptcy of California utility Pacific Gas & Electric, which was held liable for billions of dollars in damages from wildfires (Nauman, 2019). This has led to a creation of a new industry, selling investors ratings of companies based on ESG factors and funds (Kerber & Michael, 2017). Financial Times reported that according to the estimations of Huber Research Partners the global market for ESG ratings was worth about \$200 million in 2019 with a potential to grow to \$500 million within five years. The first firms to specialise in the sector of ESG ratings were index providers, such as MSCI and niche firms such as Sustainalytics. In the last year also the big credit rating agencies have elbowed their way in. Moody's, S&P Global and Fitch now offer separate ESG scores in addition to their traditional assessment of creditworthiness (Nauman, 2019). However, unlike credit ratings, which are aligned most of the time, ESG scores often differ from agency to agency. Credit ratings rely on financial disclosures, while sustainability ratings reflect different weights given by rating agencies to each of the factors such as emissions, workers' rights or responses such as oil spills. For example, electric car maker Tesla received a top AAA score from MSCI, but a middle grade from Sustainalytics, which is a lower grade than traditional automaker Ford Motor CO and General Motors, due to not releasing carbon emissions data for its manufacturing plants (Kerber & Michael, 2017).

The following sub-sections are an overview of types of ratings various rating agencies and analyst companies offer. I have chosen the Big three credit rating agencies S&P, Moody's

and Fitch that have more recently entered the market of ESG valuations, and two leading firms in the field MSCI and Sustainalytics.

*Table 1: Comparison across the ratings providers*

	<b>S&amp;P ESG Evaluations</b>	<b>Fitch ESG Relevance Scores</b>	<b>Moody's ESG Risk Assessment</b>	<b>MSCI ESG Ratings</b>	<b>Sustainalytics ESG Risk Ratings</b>
Year of first ESG rating	2019	2019	2019	2015	2018
Separation from credit ratings	Stand-alone	Integrated	Stand-alone or integrated	n/a	n/a
Objective	Analysis of the potential financial impact of ESG factors on the entity	Show the impact of ESG factors on an entity's credit rating	Capture all consideration that have material impact on credit quality	Measure a company's resilience to long-term, financially relevant ESG risks	Identification and understanding of financially material ESG risks and their effect on performance
Basic Methodology	Evaluation of ESG Profile and Preparedness	Addition to already established credit rating analysis	Moody's general principles for assessing ESG risk in its credit analysis	MSCI ESG Rating model focusing only on issues which are material for each industry	On the basis of material ESG issues a company's exposure to industry-specific risk is assessed
Importance of individual factors	Governance profile is more important than environmental and social	Focus is on fundamental credit analysis and the ESG relevance scores are a part of that.	Social and governance more important for credit quality	Each Key Issue typically comprises 5 – 30 % of the total ESG Rating (industry and time horizon specific)	Management dimension (governance), how well the company is mitigating the risks
Final rating	0 – 100	1- 5	Aaa – C	AAA – CCC	0 – 100

*Source: Own work.*

### *3.1.1 S&P ESG Evaluations*

S&P Global Ratings is a credit rating agency from New York City, it is a part of S&P Global and is considered to be the biggest of the Big Three credit rating agencies. S&P (formerly, Standard and Poor's) is best known for their indices, such as the S&P 500 and S&P Dow Jones indices (Finney, 2019).

Already in 1999 S&P had created the Dow Jones Sustainability Index in partnership with RobecoSAM, an asset manager firm specialising in sustainability research. Twenty years later, S&P published its first ESG Evaluation (Nauman, 2019), which is a cross-sector, relative analysis of an entity's capacity to operate successfully and of how ESG factors could lead to a material direct or indirect financial impact on the entity (S&P Global, 2019).

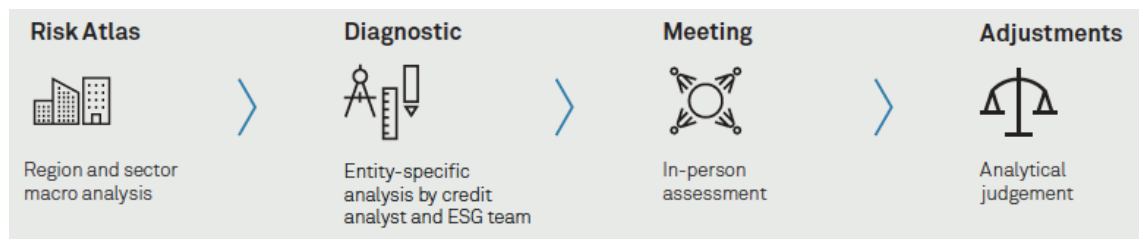
To provide this an assessment the S&P analysts use public and private data that is made available to them. It takes account of material ESG Events or issues and their likely impact on the entity's business operations, cash flow, legal or regulatory liabilities, access to capital, reputation, relationship with key stakeholders and relationship to society. Relevant, potentially material ESG events have to be reported by one or more reputable organisations, governmental agencies or are self-disclosed. Once such events are identified and which have happened over the past 10 years, they are flagged in the report. Examples of material ESG events include natural disasters, labour disputes, financial restatements, misdeeds of management, or other disruptions to operational activities (S&P Global Ratings, 2020). The final evaluation and ratings of each of the factors (environmental, social and governance) ought to help the company attract short and long term funds. Investors this information could gain insight into the opportunity and risk profile of the entity, as it includes both the analysis of the sector and region and the risk profile of the entity relative to local and global peers (S&P Global, 2019).

It is important to note that the final evaluation is not a credit rating, nor is it connected to the S&P's credit rating methodology. However, the information gathered for an ESG Evaluation can contribute to the credit analysis of the rated companies (S&P Global Ratings, 2020). S&P ESG Evaluation consists of ESG Profile of the entity and the S&P's opinion on entity's long-term preparedness (S&P Global, 2019; S&P Global Ratings, 2020).

#### *3.1.1.1 Profile*

Within the ESG Profile the exposure of an entity's operations to environmental, social and governance risks and opportunities is assessed, taking into account the effectiveness of governance structure in mitigating risks and capitalising on opportunities and trends in its performance against selected ESG indicators (S&P Global, 2019; S&P Global Ratings, 2020).

Figure 3: Profile Development



Source: S&P Global, (2019).

An entity's ESG Profile is ranked on a 100-point scale. Entities with higher scores are more likely to demonstrate stronger governance standards, are more likely to capitalise on ESG-related opportunities, have faced fewer ESG events, are more likely to operate in sectors and locations with lower ESG-related exposure, and are better at managing their ESG exposure (S&P Global Ratings, 2020).

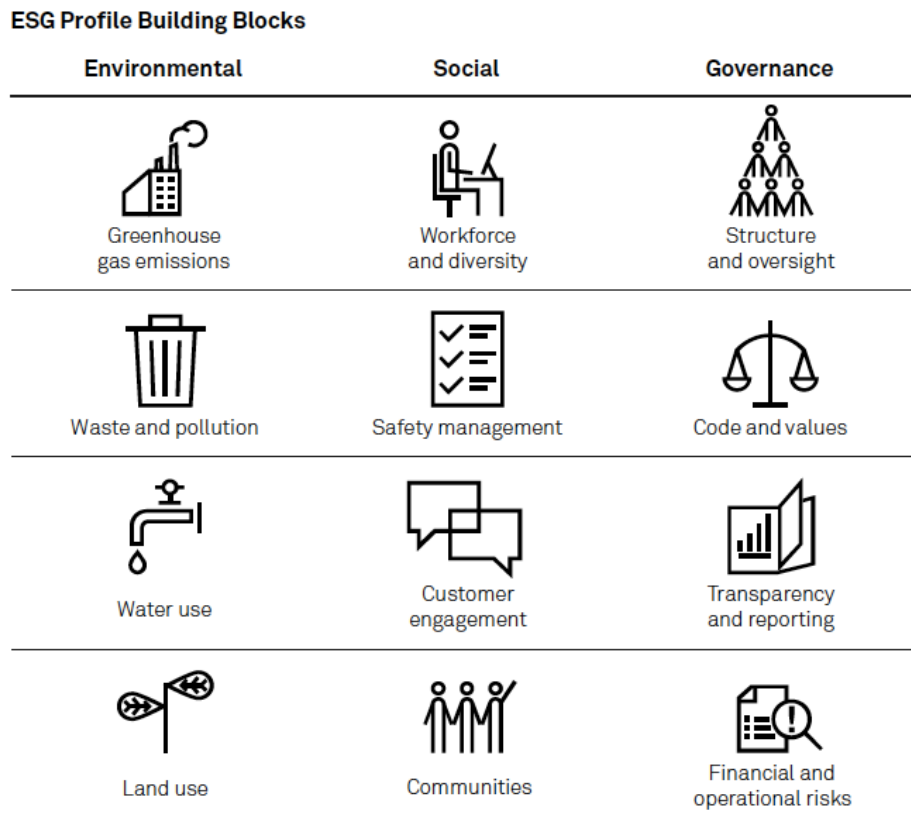
The ESG Profile is constructed out of assessments of Environmental, Social and Governance profiles of an entity. The environmental profile (E Profile) describes the relative sustainability of an entity based on environmental risks and opportunities compared to its sector or industry, the social profile (S Profile) describes the relative sustainability of an entity and its key stakeholders based on risks and opportunities relating to its social licence<sup>1</sup>, compared to its sector or industry and the governance profile (G Profile) reflects the extent to which current governance standards and practices could imply that the entity is likely to experience significant governance failure relative to other entities on a global basis (S&P Global Ratings, 2020).

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<sup>1</sup> A social licence to operate reflects the public's ongoing acceptance of an entity's practices (S&P Global Ratings, 2020)



Figure 4: ESG Profile Building Blocks



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Source: S&P Global (2019)

When assessing each of the three profiles, the following is considered: a weighted macro sector and region-based analysis of financially material ESG exposure; the entity's specific ESG exposure (if different from that of other entities within its sector or globally); for several factors, a qualitative and quantitative analysis of the entity's effectiveness at managing ESG-related risks and opportunities relative to other entities within its sector or globally, as well as its policies; additional risks and opportunities not fully captured under factor scores; the forward-looking effects of material ESG events (S&P Global Ratings, 2020).

When assessing environmental and social profiles first macro sector and regional of material risks and opportunities is completed as it serves as a basis for the derivation of a sector-region score, weighted by the entity's business mix (breakdown of revenue, assets, employees etc.). The entity's effectiveness of management of policies and selected indicators in compared relative to others in the sector. When assessing governance profile, first jurisdiction-based scores are applied to the entity based on the location of the head office (adjust the head office-score to account for potential risks of operating in countries with

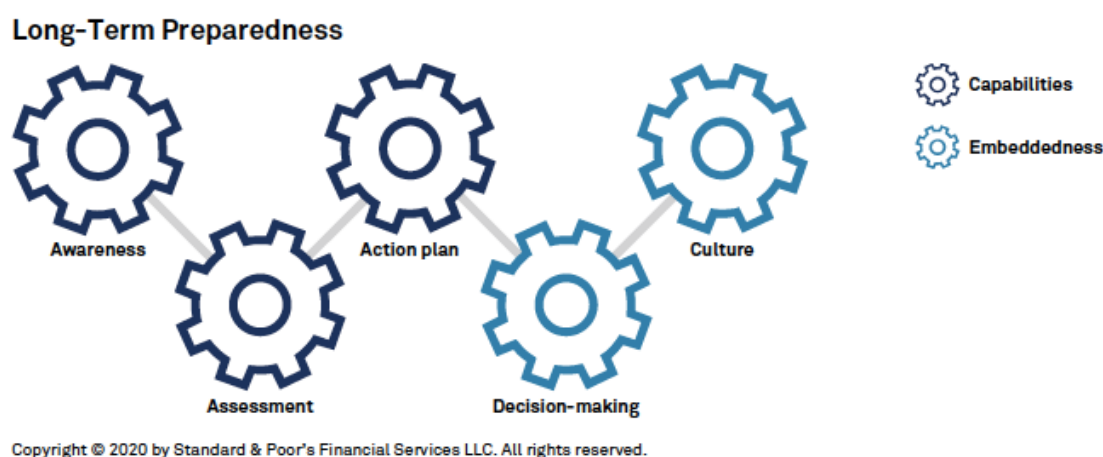
weaker governance standards). As the next step four key entity-specific factors (see **Figure 4: ESG Profile Building Blocks**) are considered. They are used to establish if the entity is actively and effectively managing its environmental/social/governance risk exposures compared with peers in its sector globally. Each of the four factors is differently weighted by sector or region to capture relative importance of the individual profile in the assessment. Also, not all Profiles carry the same weight, for example the G Profile is more important than E Profile and S Profile, because if the governance of the entity is stronger it can offset potential weaknesses in the country or region. The combination of the sector-region score and four factor assessment gives us the final E, S or G Profile, on a scale from 1 to 100. The final E, S or G Profile score can be adjusted to account for any relevant considerations that are specific to the entity, but have not been included in the entity-specific analysis (e.g. relative strength or weakness in the entity's environmental/social risks or opportunities, general policy strengths or deficiencies; use of recognised environmental certifications or certifications for social standards, significant outperformance or underperformance, major events or controversies affecting multiple factors, comparisons with the E or S Profiles of other entities, other participants in the value chain who might have particularly weak or strong governance attributes or limitations based on relationship with parent companies, sponsors or government entities) (S&P Global Ratings, 2020).

#### *3.1.1.2 Preparedness*

Preparedness is a reflection of the company's ability to anticipate and adapt to different possible long-term disruptions (S&P Global, 2019), not limited to environmental and social scenarios, but could also include technological, political or other significant events (S&P Global Ratings, 2020). S&P expresses their opinion of the Preparedness as one of the following: Best in Class, Strong, Adequate, Emerging or Low. When combining the ESG Profile score with Preparedness it can be seen that usually the highest ESG Evaluations generally reflect Best in Class or Strong Preparedness; low ESG Profile score is not likely to be offset by better Preparedness; it is rare that an entity will have a Best in Class Preparedness, but it would have a significantly positive effect on the final evaluation; and Low Preparedness is also very rare and it would have a significantly negative effect (S&P Global Ratings, 2020).

Preparedness assessments includes a meeting with the management team and board representation. The senior management and the board are evaluated on their awareness and assessment of emerging trends, potential disruptions to the business and long-term planning. The extent to which the entity's board and management have entrenched environmental, social and other long-term strategic considerations and potential scenarios into their decision-making and the entity's culture is also taken under consideration (S&P Global Ratings, 2020).

Figure 5: Long-Term Preparedness



Source: S&P Global Ratings (2020).

As observed in **Figure 5: Long-Term Preparedness** the factors of the Preparedness opinion are divided into two groups, which are further divided into sub-groups. Each of the factors is scored as Developing, Good or Excellent. The most important factor is Awareness and thus it is also weighted more significantly. The role and impact of the governing body and senior management are assessed for all of the above factors; however, they carry different weights. The governing body and its connection with senior management carries more weight in Awareness and Assessment, and the senior management carries more weight in Decision-making and Culture (S&P Global Ratings, 2020).

### 3.1.1.3 Evaluation

The relative overall ESG score allows comparison with sector peers and other entities globally (S&P Global, 2019). The final ESG Evaluation is a ranking on a 100-point scale. If the analysts award a higher ranking, this means that the entity is liked to be sustainable, as it is actively managing ESG-related risks and opportunities, has strong-governance and is able to adapt to change and take advantage of long-term trends and disruptive opportunities. In contrast, lower scores are usually given to entities with greater exposure to ESG-related risks, weaker governance and who are not as well equipped to handle or exploit potential long-term business disruptions and opportunities. The final ESG Evaluation might also be adjusted upwards or downwards to reflect any risks or opportunities that have not been captured under the Profile or Preparedness assessments, or to ensure that ESG Evaluations are comparable among entities (S&P Global Ratings, 2020).

While S&P will indicate to what extent the entity has adopted the TCFD at entity's request, it will not give an opinion on the quality of the disclosures or any potential climate change

scenario assumptions. It will comment on the proportion of metrics and targets in the disclosures, based on the TCDF's suggested disclosures list (S&P Global Ratings, 2020).

### *3.1.2 Fitch Ratings' ESG Relevance Scores*

Another one of the Big Three credit rating agencies is Fitch Ratings, with headquarters in New York and London (Finney, 2019). A Global Sustainable Finance group was established at Fitch in 2018. Its responsibilities are assessing the way ESG factors are incorporated into the credit rating process, increasing the transparency of ESG analysis and development of products and services that are different from credit ratings to cater for the growing needs of investors in the sector. To further emphasise its commitment towards incorporating ESG issues into investment practice and development of a more sustainable financial system Fitch Group signed the Principles for Responsible Investment in September 2018 (Fitch Ratings, 2019a).

Fitch Ratings announced the launch of their new scoring system on 7<sup>th</sup> January 2019. These so called ESG Relevance Scores, which are sector-based and entity-specific, show the impact of ESG factors on individual entity's credit rating. The new scores are being used across all asset classes, starting with non-financial corporate ratings and followed by banks, non-bank financial institutions, insurance, sovereigns, public finance, global infrastructure and structured finance (Fitch Ratings, 2019b). In the first stage of the launch of the new scoring system Fitch produced more than 22,000 individual environmental, social and governance scores for public rated corporate entities. Their belief was that 22% of their current corporate ratings are influenced by environmental, social and governance factors, with just 3% having a single environmental, social or governance sub-factor that led to change in the rating by itself. They also noted that there are significant differences between developed and emerging markets and geography and sector, respectively (Fitch Ratings, 2019b). By July 2020 Fitch Ratings has already published and maintained over 150,000 individual ESG Relevance scores, covering 10,750 entities and transactions (Environmental Finance, 2020; Fitch Ratings, 2020).

The primary mandate of Fitch is to provide credit rating and analysis for investors and their introduction of ESG Relevance scores only enhances this. Their ESG approach is to give an opinion on how ESG issues are directly affecting an individual entity's current credit rating (Fitch Ratings, 2019b). Andrew Steel, Global Head of Sustainable Finance at Fitch Ratings emphasised in a recent interview: "Our main business at Fitch is credit rating and analysis. The credit ratings we produce are based on short- to medium-term forecast, and we produce and maintain our ESG relevance scores concurrently with the credit ratings," (Environmental Finance, 2020). They continue to focus on fundamental credit analysis and the ESG relevance scores are a part of that. ESG relevance scores are not used to judge whether a company is engaging in good or bad ESG practices/making good or bad ESG decisions, they

do however draw out which environmental, social or governance risks are influencing the credit rating decisions. The final verdict and comparison are left to investors, as they are able to use ESG relevance scores to see how each of the elements of E, S and G influence the credit rating. Because ESG Relevance scores are a big part of their current work, these are prepared by Fitch's existing analytical teams (Fitch Ratings, 2019b).

“We saw the future would involve more and more integration of ESG factors in credit analysis, so we took the decision that, in turn, we should fully integrate ESG into our process and involve all our analysts in assessing these ESG factors. We have been able to create templates for industry sectors across all asset classes, including structured finance, which guide investors, issuers and our analysts on the areas of ESG risk that we consider to be most relevant,” said Steel (Environmental Finance, 2020).

Fitch Ratings has identified 14 or 15 ESG General Risk Issues per sector to which it applies ESG Relevance Scores. The categories of general issues are based on the SASB Materiality Map. Fitch has developed 100 unique ESG templates that are aligned with sector-specific Ratings Navigators and are used by analysts in assessing an entity, transaction or programme. Each of the E, S and G factors is given a score ranging from 5 to 1. A score of 5 indicates that a factor has a high impact on the credit rating, on the other hand a score of 1 means that a factor has no credit impact and is irrelevant. A high relevance score (4 or 5) indicates that the ESG risk is either influencing the rating together with other factors (a rating driver) or is causing a change to the current rating level by itself (a key rating driver). Most of the time high scores are associated with negative impacts, there are also exceptions, where they are a sign of positive impact and in such case the scores carry an + identifier as a Positive Impact Indicator (Fitch Solutions, 2020).

The final overall or aggregate relevance score is an indication of the materiality of an underlying ESG risk to the entity or transaction. It is important to note that this score is observational and not an average or weighted score. The decimal places are not indicative of a fraction, but indicate the frequency of the highest ESG Relevance Scores among the 14 or 15 ESG risk issues (Fitch Solutions, 2020).

Also, the ESG Relevance Scores are assigned by the same analysts as the final credit rating of an entity, transaction or programme. That is why it does not judge the overall ESG performance, but only draws out which environmental, social and governance risks are influencing the credit rating decision. The information used in the process of ESG relevance rating assessment is the same as for the overall credit rating process. The primary source is public and private information disclosed by the issuer (Fitch Solutions, 2020).

The ESG Relevance Scores system allows for comparison of ESG Relevance Scores across sectors and regions. The scores are monitored and maintained together with credit ratings.

The Relevance Scores are based on the base case forecast used for rating, which are forward looking (typically a three to five year forecast for corporates) (Fitch Solutions, 2020).

Fitch is planning for the future with a number of initiatives at various stages of development. Some of these include complementing ratings by providing greater granularity and analysis around the longer-term vulnerabilities of issuers to ESG risks over time for different sectors up to 2050 and outside of the ratings a potential coverage of the green and sustainability bond market, including assessments of the ESG characteristics of unlabelled bonds (Environmental Finance, 2020).

### 3.1.3 Moody's Ratings' ESG Risk Assessment

The last, but not least of the Big Three American credit rating agencies is Moody's Investor Service (or Moody's for short) (Finney, 2019). Moody's wishes to become the leader in ESG integration into credit ratings and standalone ESG, Sustainable Finance, Climate Risk data assessments and insights (Venkataraman, 2019). As of November 2019 Moody's combined with all its entities and affiliates integrated more than 38,000 ESG assessments into its credit ratings and provided more than 5,000 ESG assessments, more than 6,600 Climate Risk scores and more than 200 Sustainable bonds assessments (Moody's, 2020b).

Its specialised ESG team has been formed in March 2017, but Moody's has been active in the field of ESG before that having launched Green Bond assessments in 2016. Moody's Investors Service is also a founding member of Principles for Responsible Investment ESG in Credit Risk and Ratings Initiative and a partner in Climate Bonds Initiative (Moody's, 2020b).

In order to chase after their leadership goal Moody's has acquired a majority stake in Viego Eiris, a provider of ESG research and services since the early days of the socially responsible investing movement in 1980s, in April 2019 (Nauman, 2019), a few months later (July 2019) it acquired a majority stake in Four Twenty Seven (Nauman, 2019), a firm specialising in climate research, risk assessment and tools. In October 2019 Moody's also acquired a minority stake in Syn Tao Green Finance, a leading service provider in green finance and responsible investment in China (Moody's, 2020b).

When providing an ESG assessments, whether integrated into credit score or stand-alone offering, each has its role to play. MIS Assessments & Affiliates is a primary provider of ESG data, new tools and products, MIS Ratings & Research provides credit analysis, including transparent integration of ESG risk assessments (Venkataraman, 2019), other relevant data is provided by Four Twenty Seven data models and scores regarding climate change and physical risks, Syn Tao Green Finance data models and tools regarding China

sustainable finance and Vigeo Eiris data models and tools on ESG and sustainability (Moody's, 2020a).

In January 2019 Moody's published a new methodology for assessing environmental, social and governance risks. The methodology is a description of Moody's general principles for assessing ESG risk in its credit analysis and can be applied to all sectors globally (Moody's, 2019b). Where ESG issues are deemed meaningful for credit profiles, they are incorporated into rating analysis in different ways: (i) in the scoring of qualitative and quantitative factors and sub-factors in a scorecard or model, or (ii) in the overall analysis of credit drivers that are meaningful to the rating, even when these considerations do not affect the measures in a sector-specific scorecard or model or where they cannot be quantified (Moody's, 2019b, Whieldon, 2018).

The objective is to capture all considerations that have material impact on credit quality, focusing on those considerations that may influence the relative risk of default and expected financial loss in the event of default for issuers and debt obligations over all time horizons. It is not necessary that those issues are classified as ESG issues. As with other rating considerations, future ESG considerations are incorporated at the present time, the ability to forecast the impact far into the future is in most cases limited. Direct impact on ratings comes generally from near-term risks because they come with greater certainty of how they will affect credit profiles. Moody's tries to identify and assess credit implications, which could arise from all material ESG concerns, whether they have a current or a potential future impact. Any mitigating or adaptive behaviour from the issuers could positively affect an issuer's credit profile (Moody's, 2019a).

The approach to ESG considerations includes an assessment of a certain impact on an issuer's cash flows and the value of assets over time. This is similar to the traditional approach for other material credit considerations. For a non-financial corporate, Moody's evaluates how ESG issues such as reputation, product safety and carbon transition influence demand for products, the cost of production and the need for financing to make capital expenditures as well as the potential for them to change over time. For structured finance transactions, Moody's assesses how ESG considerations may affect underlying asset values and how the special purpose vehicle's governance affects creditors. For sovereigns it assesses how ESG considerations such as economic effects of environmental, social or governance issues could affect the GDP, stability of the government's revenues and expenditures as well as the government's ability to withstand shocks (Moody's, 2019a).

As part of its overall credit analysis, it considers how ESG risks could affect the factors in the relevant scorecard model. If there is enough information ESG considerations can be incorporated into their projections, or they may consider scorecard-indicated outcomes based on a variety of scenarios. For example, the financial impact of the long-term decline

of the thermal coal industry resulting from more-stringent environmental regulations and product substitution cannot be projected over many decades with reasonable precision and thus would not be fully captured in a scorecard (Moody's, 2019a).

When considering environmental risks, Moody's distinguishes three tiers concerning to timing, certainty and severity: regulations that have been implemented or are likely to be introduced (e.g. proposals by regulators or legislators or binding agreements under international accord), longer-term regulatory initiatives where implementation is unclear or subject to large regional variations (e.g. general agreements under an international accord with no enforcement mechanisms), and direct environmental trends arising from climate change, which develop over very long-time frames (Moody's, 2019a).

Moody's believes that the broadest range of considerations among the ESG are the social risks. For them, social issues tend to be more important for the credit quality of public sector issuers, than private sector issuers. For public sector it is assessed how social issues, such as income inequality, access to education and housing, demographic change is likely to affect government creditworthiness. For private sector issuers they differentiate between issuer-specific considerations (e.g. product safety problems that harm an issuer's reputation) and the adverse effects of external factors (e.g. regulation that leads to higher compliance costs) (Moody's, 2019a).

Governance risk is perceived to be an important consideration for both public and private issuers. In contrast to environmental and social risks, which may be driven by external factors, governance risks are largely driven by the issuers themselves. Weak governance can affect scores for scorecard factors that are influenced by an issuer's actions, planning and policy decisions. For a country, regional or local government governance considerations, such as the rule of law, control of corruption, government effectiveness, are a part of the assessment of its fundamental credit strength. For private sector, the areas that may be considered in the assessment are ownership and control, board oversight and effectiveness and management structure and compensations (Moody's, 2019a).

In 2019, ESG risks were a material credit consideration in 33% of Moody's 7,637 rating actions for issuers in private sector. Of those (around 2,500), the most mentioned were governance issues (88%), followed by social issues (20%) and environmental issues (16%), with many referencing more than one ESG consideration (Moody's, 2020c).

#### *3.1.4 MSCI ESG Ratings*

MSCI (Morgan Stanley Capital International) is an American investment research firm. It is best known for its stock indices, but provides also portfolio risk and performance analysis,



as well as governance tools to institutional investors and hedge funds (Kenton, 2019; MSCI, 2020).

In addition to providing data, research and tools that aid ESG integration across the whole investment process, MSCI has published “The MSCI Principles of Sustainable Investing”. This is a framework of specific steps that investors can undertake to improve practices for ESG integration across the investment value chain (MSCI, 2020).

The MSCI Principles of Sustainable Investing are:

1. Investment Strategy: Asset owners should integrate ESG considerations into their process for establishing, monitoring and revising their overall investment strategy and asset allocation.
2. Portfolio Management: Portfolio managers should incorporate ESG considerations throughout the entire portfolio management process, including security selection.
3. Investment Research: Research analysts assessing companies and issuing investment recommendations to portfolio managers should integrate ESG consideration (including ESG company ratings) into their fundamental company analysis. (MSCI, 2019)

MSCI has also launched various indices to help track the performance of companies relative to its peers: MSCI Climate Change Indexes (June 2019), ESG Fund Ratings (July 2019), ESG Ratings Badges issued for corporates (August 2019), MSCI Provisional Climate Change EU Climate Transition and EU Paris-Aligned Indexes, designed to reflect the minimum requirements for EU climate benchmarks contained in the final TEG report from November 2019 on a provisional basis (MSCI, 2020).

Ratings, research and analysis of ESG business practices are provided by MSCI ESG Research LLC., a subsidiary of MSCI Inc. The obtained research and analysis are used in construction of the 1,000 MSCI ESG Indices (MSCI ESG Research, 2019a). By June 2020 MSCI ESG Research LLC. has analysed and rated business practices of over 8,500 companies (14,000 issuers including subsidiaries) and more than 680,000 equity and fixed income securities worldwide (MSCI, 2020).

MSCI ESG Ratings measure a company’s resistance to long-term, financially relevant ESG risks. They rate companies, countries, mutual funds and ETFs and score them on a “AAA” to “CCC” scale depending on their exposure to industry specific ESG risks and how well they manage them relative to peers (MSCI ESG Research, 2019b; MSCI, 2020).

For its analysis MSCI uses public data as well as alternative data. Alternative data sources are regulatory, government and NGO datasets, company disclosure documents and media. Using alternative data allows MSCI to reduce reliance on voluntary disclosures provided by the rated company (MSCI ESG Research, 2019a). In the process of isolating relevant

information from unstructured data MSCI uses machine learning and natural language processing to help cut the time needed and amplify precision of data collection (MSCI, 2020).

Despite collecting thousands of data points for each company, only a few of key issues are deemed financially relevant (MSCI, 2020):

- Environmental: climate change (carbon emissions, product carbon footprint, financing environmental impact, climate change vulnerability), natural resources (water stress, biodiversity and land use, raw material sourcing), pollution & waste (toxic emissions and waste, packaging material & waste, electronic waste), environmental opportunities (opportunities in clean tech, opportunities in green building, opportunities in renewable energy)
- Social: human capital (labour management, human capital development, health and safety, supply chain labour standards), product liability (product safety and quality, chemical safety, financial product safety, privacy and data security, responsible investment, health and demographic risk), stakeholder opposition (controversial sourcing), social opportunities (access to communication, access to finance, access to healthcare, opportunities in health and nutrition)
- Governance: corporate governance (board diversity, executive pay, ownership and control, accounting), corporate behaviour (business ethics, anti-competitive practices, tax transparency, corruption and instability, financial system insatiability).

MSCI ESG Rating model focuses only on issues, which are material<sup>2</sup> for each industry. Material risks and opportunities are identified using a quantitative model that considers average values and ranges for each industry for externalised impacts such as carbon intensity, water intensity, and injury rates. Company-specific exemptions are permitted for companies with diversified business models, which are facing controversies. Once Key Issues are identified, they are assigned to each industry and company. Each Key Issue typically comprises 5-30 % of the total ESG Rating. When assigning the weights for each Key Issue both the contribution to the industry, relative to other industries and the time horizon within which risk or opportunity for the company is expected to materialise are taken into account. The weights are set at the sub-industry level. At the end of each year Key Issues and corresponding weights undergo a formal review and feedback process. Based on the underlying Key Issue scores and weights a company's Weighted Average Key Issue Score is calculated. The Weighted Average Key Issue Score is normalised by industry, to get the final rating. The range of scores for each industry is established annually. With the help of

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<sup>2</sup> A risk is material to an industry when it is likely that companies in a given industry will incur substantial costs in connection with it. An opportunity is material to an industry when it is likely that companies in a given industry could capitalise on it for profit (MSCI ESG Research, 2019b)

these ranges, the Weighted Average Key Issue Score is converted to an Industry Adjusted Score from 0 – 10, this then corresponds to the final letter rating (MSCI ESG Research, 2019b).

MSCI ESG Ratings also consider controversies, as these could indicate structural problems with a company's risk management capabilities. An analyst decides if a controversy signals structural problem, in this case a company might be faced with a larger deduction from the Key Issue Score than if a controversy is deemed to be a vital indicator of recent performance but not a sign of future material risk. Each case is assessed as Very Severe, Severe, Moderate or Minor based on the gravity of its impact on society or the environment (MSCI ESG Research, 2019b).

### *3.1.5 Sustainalytics ESG Risk Ratings*

Sustainalytics has been one of the leading providers of ESG and corporate governance research, ratings and analysis for more than 25 years. Throughout the years Sustainalytics has provided research for and collaborated with Newsweek, Bloomberg, Yahoo! Finance and Morningstar (Sustainalytics, 2020a). On 6th July 2020 it was announced that Morningstar<sup>3</sup>, Inc. finalised its acquisition of Sustainalytics (Sustainalytics, 2020b).

Sustainalytics has data on 40,000 companies globally and has rated 20,000 companies and 172 countries. The company's ESG Risk Ratings are used by institutional asset managers, pension funds and other financial market participants that are integrating ESG factors into their investment decision-making process. Both the research and ratings underpin various indices and sustainable investment products, among which is also Morningstar's Sustainability Rating for funds (Sustainalytics, 2020b).

Sustainalytics' ESG Risk Ratings, which are publicly available online, are used as a key metric for borrower's and lender's sustainability performance. They are designed to help identify and understand financially material ESG risks and how those risks might affect performance (Sustainalytics, 2020c).

The two-dimensional materiality framework, which is supported by 20 material ESG issues, gauges a company's exposure to risk that is specific to the industry and how well a company is managing those risks. The ratings are categorised across five risk levels: negligible, low,

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<sup>3</sup> Morningstar, Inc. is a provider of independent investment research in North America, Europe, Australia and Asia. It provides data and research insights in a wide range of investment offerings for individual investors, financial advisors, asset managers, retirement plan providers and institutional investors. It launched the industry's first ESG scores for global mutual and exchange traded funds with scores based on Sustainalytics' ESG Research and Ratings (Sustainalytics (b), 2020).

medium, high and severe. Ratings scale is from 0-100, with 100 being the most severe. Corporate governance, material ESG issues and idiosyncratic issues are the three central building blocks of the ratings (Sustainalytics, 2020c).

The rating process starts by establishing exposure of the company to each material ESG issue at the subindustry level. The assessment is driven by sub-industry and factors specific to the company because companies are exposed to different ESG issues to different degrees. Secondly, Sustainalytics looks at the management dimensions, which measure how well the company is mitigating its exposure. For some companies a portion of risk may be considered unmanageable and is factored out of the calculation, for example, an oil company will never be fully able to eliminate all the risks associated with carbon emissions. For the proportion of risk that is manageable, a company's performance is echoed in its policies, programs, practices and quantitative performance measures. Controversies lower the company's management score, as they suggest that the company's programs and policies have not been completely effective and could lead to larger risk. The management score is discounted based on the frequency and severity of adverse events. By adding the amount of unmanaged risk for each material ESG issue the overall ESG Risk Rating of a company is calculated (Sustainalytics, 2020c).

In the final report risk of a company is measured against its industry peers globally. It is explained what are the material ESG issues of the company, how exposed the company is to certain risks and how well the company is managing those risks (Sustainalytics, 2020c).

ESG Risk Ratings may be beneficial because they can be better informed about the material risks to a company's performance and use the data to generate new insights. The exposure dimension of the ESG Risk Rating is forward-looking and includes risks that have yet to affect financial performance and is tailored to match a company's unique business model, taking into account its product portfolio, financial strength, geography and historical controversies. Governance assessments are also incorporated in the rating and have a considerable contribution to the overall rating. Absolute ratings enable comparability across sub-industries, industries, companies and regions at overall ESG and issue specific risk levels (Sustainalytics, 2020c).

### **3.2 Sustainability reporting**

Together with interest to integrate ESG considerations into investment process came also the need and demand for disclosures of ESG data (Environmental Finance, 2020). Since traditional reporting focuses on physical financial assets, not intangible ones, new tools had to be developed for this purpose. The most concrete solution so far is integrated reporting. The idea is that companies explain how they create integrated value and how its activities affect not just financial capital, but also intellectual, human, social, and natural capitals

(Schoenmaker & Schramade, 2019). An even bigger demand for such reporting and disclosures was apparent in 2017, when Task Force on Climate-related Financial Disclosures (TCFD) released its recommendations. According to data provided by Global Sustainable Investment Alliance in 2019, a large part of investment professionals were dissatisfied with the climate-related disclosures of publicly-traded companies (Marsh, 2020). Especially, climate-related risk is becoming an important subject of new reporting requirements, such as Non-financial Reporting Directive of EU (TCFD, 2020). Sustainable Accounting Standard Board has developed voluntary standards, which companies are encouraged to use for their sustainability reporting (Kerber & Michael, 2017, Nauman, 2019) and the EU is working to create a cross-market legal obligation for companies and financial market participants to report on their environmental efforts. The latter is an important part of the global movement towards environmental performance reporting standardisation. As many emerging markets are also adopting and enforcing disclosure regulations, e.g. South Africa, Brazil, India and China (Serafeim, 2020). International Platform on Sustainable Finance is such a movement, where EU together with Argentina, Canada, Chile, China, India, Kenya, Morocco, New Zealand, Norway, Senegal, Singapore and Switzerland, is working on coordinating a development of taxonomies (EU Technical Expert Group on Sustainable Finance, 2020). Despite the fact that integrated reporting is being practiced by an ever larger number of companies, it is not mandatory just good practice. An exception is South Africa, where since 2010 firms on Johannesburg stock exchange are obliged to explain their practices (Schoenmaker & Schramade, 2019).

### *3.2.1 Global Reporting Initiative (GRI)*

The Global Reporting Initiative (GRI) is an independent international organisation, whose mission is to empower decisions that create social, environmental and economic benefits for everyone. GRI was founded in 1997 and is based in Amsterdam, the Netherlands. The driving force upon which the organisation was founded is the idea to help businesses and governments with understanding and communicating their impact on sustainability issues (e.g. climate change, human rights, governance and social well-being) (GRI, n.d.).

Their work is focused on four areas:

1. Create standards and guidance to advance sustainable development
2. Harmonise the sustainability landscape
3. Lead efficient and effective sustainability reporting
4. Drive affective use of sustainability information to improve performance

The core product of GRI's work are the GRI Sustainability Reporting Standards (GRI Standards), which have been continuously developed for more than 20 years and are used for reporting on environmental and social issues. GRI Standards have been adopted by the

world's largest corporations and referenced in policy instruments and stock exchanges internationally. GRI claims that in 2017 75% of the largest 250 companies in the world reporting on sustainability used GRI and that more than 130 policies in more than 60 countries and regions reference GRI (GRI, n.d.).

The GRI Standards are issued by the Global Sustainability Standards Board (GSSB), which is an independent operating entity of GRI. GSSB is funded by grants, corporate programs and revenues from GRI's support services. The development process is formally defined and overseen by the Due Process Oversight Committee and includes experts from different stakeholder groups. Transparency is very important for GSSB that why all its meetings and the documents discussed at these meetings are accessible to the public on the GRI website, this also includes draft Standards, on which public comment periods gather stakeholder feedback are routinely conducted. All of this is intended to ensure that GRI Standards serve the public interest and can be used by any kind or size of an organisation to report on its sustainability impacts in a standardised, comparable way (GRI, n.d.).

The GRI Standards cover disclosures on a wide range of sustainability topics across the economic, environmental and social dimensions. To prepare a complete report on their impacts and sustainable development or to them and their stakeholders relevant topics, companies can download the Standards from the GRI website and use them free of charge (GRI, n.d.).

A company must identify topics relevant to its activities and operations, which reflect the company's significant economic, environmental and social impacts and are important to its stakeholders. There are two types of Standards. The universal GRI Standards do not only help the company identify its material topics and lay out principles to use when preparing a report, but also contain disclosures on the organisation's specific context such as its size, activities, governance and stakeholder engagement. Topic-specific GRI Standards contain disclosures that can be used by the company to report on its impacts in relation to its material topics, and how it manages these impacts (GRI, n.d.).

To remain relevant the GRI Standards are regularly reviewed to include new issues and update existing topics. This way organisations can respond to emerging demands from stakeholders and regulators for sustainability information (GRI, n.d.).

GRI works together with other reporting frameworks to avoid duplication in disclosure, that is why the GRI Standards can be used in combination with other reporting frameworks, such as International Integrated Reporting Framework and the SASB industry standards. The GRI Standards are also aligned with international instruments for responsible business behaviour, for example UN Guiding Principles on Business and Human Rights, ILO conventions, OECD Guidelines for Multinational Enterprises and can be used by organisations to report on their impacts and progress on the UN Sustainable Development Goals (GRI, n.d.).

### 3.2.2 Sustainability Accounting Standards Board (SASB)

The Sustainability Accounting Standards Board (SASB) is an independent standard-setting organisation (GlobeNewswire, 2018). Since 2011 when it was founded it has developed 77 industry standards, which were published in November 2018 (SASB, 2018d). The standards can be used alone, alongside other reporting frameworks or as a part of an integrated report. They are industry-specific and reference to the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry (SASB, 2018c; SASB, 2018d).

Each standard includes industry-specific disclosure topics and related accounting metrics; technical protocol for compiling data; and activity metrics for normalisation (SASB, 2018d).

According to SASB financially material issues are issues that are likely to impact the financial state or operating performance of a company, which is why they are important to investors. However, sometimes companies might face difficulties when deciding on the importance of sustainability topics when making financial decisions. Ultimately, companies have to decide which information they believe should be disclosed, taking into account legal requirements and issues relevant to their industry and sector. But to provide some assistance SASB identified a set 26 broadly relevant sustainability issues nested under 5 sustainability dimensions (SASB, 2018a).

These dimensions and issues are (SASB, 2018a):

- Environment: GHG emissions, air quality, energy management, water & wastewater management, water and hazardous materials management, ecological impacts
- Leadership and Governance: business ethics, competitive behaviour, management of the legal and regulatory environment, critical incident risk management, systemic risk management
- Social capital: human rights and community relations, customer privacy, data security, access and affordability, product quality and safety, customer welfare, selling practices and product labelling
- Human capital: labour practices, employee health and safety, employee engagement, diversity and inclusion
- Business model and innovation: product design and lifecycle management, business model, resilience, supply chain management, material sourcing and efficiency, physical impacts of climate change.

Companies and investors are also able to use an interactive tool that identifies and compares disclosure topics across different industries and sectors called the SASB Materiality Map® to focus their strategies on the most important issues and understand the metrics that

underpin each disclosure topic or to analyse portfolio exposure to sustainability risks and opportunities (SASB, 2018a).

It is beneficial for companies to use SASB standards not only for greater transparency, better risk management and improved long-term performance, but also because the standards help companies to identify the ESG and sustainability topics, which impact their long-term value creation the most, implement principles-based reporting framework, and communicate sustainability data more efficiently to investors (SASB, 2018c). Some companies that are already using SASB standards are GM, Merck, Nike, Kellogg's, JetBlue, Host Hotels and NRG Energy (GlobeNewswire, 2018). On the other hand, investors are using SASB standards to integrate ESG and sustainability considerations into their investment decisions. With their help investors are able to include ESG and sustainability impacts into their investment decisions, align with companies of these sustainability issues and fulfil their commitments as PRI signatories (SASB, 2018c).

The SASB standards are also aligned with the recommendations of TCFD and are complementary to the GRI (GlobeNewswire, 2018), the International Reporting Committee (IIRC) and the CDP (SASB, 2018b). This is intentional as the SASB considers the existing metrics whenever possible for companies to avoid additional costs and to align SASB's work with global corporate transparency efforts (SASB, 2018b). To ensure standards remain relevant and a reflection of evolving markets, SASB follows a regular, multi-year cycle of updates (GlobeNewswire, 2018).

### *3.2.3 Task Force on Climate-related Financial Disclosures (TCFD)*

Amid growing concerns of G20 Finance Ministers and Central Bank Governors the Financial Stability Board (FSB) announced the establishment of Task Force on Climate-related Financial Disclosures (TCFD) in December 2015. The reason FSB established the Task Force was to develop recommendations for more effective climate-related disclosures that could promote informed investment, credit and insurance underwriting decisions and enable an understanding of the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks. There are 32 international members, including insurers, large non-financial companies, accounting and consulting firms, and credit rating agencies. The Task Force is led by Michael Bloomberg (TCFD, 2020).

TCFD published its Recommendations, which provide a general framework for climate-related financial disclosures, along with two supporting documents, Implementing the Recommendations, a more detailed document on next level of implementation, and a technical supplement The Use of Scenario Analysis about implementations, and using the scenario analysis in June 2017 (TCFD, 2020).



The recommendations are structured in four thematic areas, which are important to operations of organisations: governance, strategy, risk management, and metrics and targets. For each of the four areas specific disclosures that organisations should include in financial filings or other reports are prescribed. Key features of recommendations are that they are adaptable by all organisations, they are designed to solicit decision-useful, forward-looking information on financial impacts, their focus is on risks and opportunities related to transition to lower-carbon economy, and that disclosure under the strategy and metrics and targets recommendations in financial filings is subject to a materiality assessment.

The Task Force recommends that all organisations with public debt or equity implement its recommendations to promote informed investing, lending and insurance underwriting decisions. However, since climate issues are also relevant for other types of organisations, TCFD encourages all organisations to implement the Recommendations. The implementation would help clients and beneficiaries to better understand the performance of their assets, consider the risks of their investments and make more informed investment choices (TCFD, 2020).

When implementing TCFD recommendations the organisation should consider building an internal process to manage climate-related issues, assess the materiality of long-term impacts of climate change, review requirements for financial and non-financial reporting, determine the placement of disclosures (in public annual financial reports or other financial company reports), develop a process to be able to report under the TCFD recommendations in line with regulatory requirements and consider collaborating in improving TCFD recommendations by participating in various workshops (TCFD, 2020).

The Task Force also issued Principles for Effective Disclosures to further help organisations with their implementation (TCFD, 2020).

1. Disclosures should represent relevant information
2. Disclosures should be specific and complete
3. Disclosures should be clear, balanced and understandable
4. Disclosures should be clear over time
5. Disclosures should be comparable among companies within a sector, industry and portfolio
6. Disclosures should be reliable, verifiable and objective
7. Disclosures should be provided on a timely basis.

According to TCFD the potential benefits of implementing the recommendations are, but not limited to: easier and better access to capital, as the investors and lenders are assured that the company's climate-related risks are appropriately assessed and managed; awareness and understanding of climate-related risks and opportunities within the company; more effective

financial fillings; addressing investors' demand for climate-related information thus by reducing the number of climate-related information requests received (TCFD, 2020).

As of February 2020 TCFD, has 1,068 supporters with a market capitalisation of over \$12 trillion. (TCFD, 2020).

### 3.3 EU Taxonomy

The EU Taxonomy is an assessment and classification tool for economic activities based on their contribution to EU's sustainability policy objectives, such low-carbon, resilient and resource-efficient economy and net-zero emissions by 2050 (EU Technical Expert Group on Sustainable Finance, 2019). The Taxonomy should help investors, companies, issuers and project promoters to plan and report on their transition to an economy that is consistent with before mentioned objectives, incentivise them to direct capital flows towards improvements in environmental performance and resilience, (EU Technical Expert Group on Sustainable Finance, 2020) and also stop and further prevent "greenwashing" (Khan, 2019).

The European Commission as well as other EU institutions intend on using these criteria for their investments. The European Investment Bank said it will use the taxonomy rules to identify the projects to invest in across Europe. The European Central Bank finds the rules helpful as it tries to pivot towards more sustainable lending (Khan, 2019).

The Taxonomy sets performance thresholds – technical screening criteria – for economic activities, which:

- make a substantial contribution to one of six environmental objectives (climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystems),
- do no significant harm (DNSH) to any of the other five environmental objectives,
- comply with minimum safeguards, such as OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights (EU Technical Expert Group on Sustainable Finance, 2020).

The Taxonomy Regulation (TR), which was agreed upon at the political level in December 2019, created a legal basis for the EU Taxonomy. It specified the framework and environmental objectives for the Taxonomy, as well as new legal obligations for financial participants, large companies and the EU along with its Member States. Going forward the TR will be supplemented by delegated acts, which will contain detailed technical screening criteria for determining when an economic activity can be considered Taxonomy-aligned. The development of delegated acts containing technical screening criteria will be done in

two phases: the first technical screening criteria concerning activities, which substantially contribute to climate change mitigation or adaptation, should be adopted by the end of 2020 and enter into application by end of 2021. Second phase includes technical screening criteria, which covers economic activities substantially contributing to the other environmental objectives, these should be adopted by end of 2021 and enter into application the following year (2022). By 1 June 2021, the European Commission will adopt a delegated act specifying how the corporate disclosure obligations should be applied in practice, considering the differences between non-financial and financial companies (EU Technical Expert Group on Sustainable Finance, 2020).

Although all economic activities have a role to play in achieving environmental objectives, only economic sectors and activities that are believed to have the potential to have a large impact on climate change mitigation and/or adaptation are included in the current version of the Taxonomy (EU Technical Expert Group on Sustainable Finance, 2020). The sectors included in the Taxonomy and prioritised when developing technical screening criteria are: Agriculture, forestry and fishing, Mining and quarrying, Manufacturing, Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation activities; Construction, Transportation and storage; Information and communication; and Real estate activities (EU Technical Expert Group on Sustainable Finance, 2019). Activities in these sectors are responsible for 93.5% of direct greenhouse gas emissions in the EU (EU Technical Expert Group on Sustainable Finance, 2020).

The technical screening criteria for substantial contribution to climate change adaptation can be applied to any economic activity. However, to be included in the Taxonomy, an economic activity must have criteria for the avoidance of significant harm to other environmental objectives (EU Technical Expert Group on Sustainable Finance, 2020).

For each environmental objective, the TR identifies two types of substantial contribution that can be considered Taxonomy-aligned:

1. Economic activities that are performed in a way that substantially contributes to the environment (e.g. building renovation, energy efficient manufacturing process, low carbon energy production)
2. Enabling activities are economic activities that is improving the performance of another economic activity without causing harm to the environment on its own and takes into account life-cycle considerations (e.g. manufacture of low carbon products, key components, equipment or machinery). Conditions for an activity to be qualified as an enabling activity are clarified by Article 11a of the Taxonomy Regulation.

Even those economic activities that do not meet technical screening criteria can count the financing of improvement measures as Taxonomy-aligned if they are a part of an implementation plan to meet the activity threshold over a set time period (TEG suggests a

limit of 5 years). However, when creating the implementation plan, organisations should take into account that some quantitative technical criteria will most likely be tightened over time (e.g. CO<sub>2</sub> metrics). Therefore, any implementation plan to meet the current technical criteria should be flexible enough to respond to future tightening, especially if the plan extends beyond the next criteria review cycle, which according to TEG's recommendations should be at least every 3 years (EU Technical Expert Group on Sustainable Finance, 2020).

The European Parliament and the Council determined that for an economic activity to be considered Taxonomy-aligned, this activity should be carried out in alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labour Organisation's (ILO) declaration on Fundamental Rights, Principles at Work, the ILO core conventions and the International Bill of Human Rights. Where applicable more stringent requirements in EU law apply (EU Technical Expert Group on Sustainable Finance, 2020).

In its recommendations made in June 2019 TEG outlined three sub-categories of substantial contribution made by economic activities to climate change mitigation: (i) activities that are already low-carbon, (ii) activities that contribute to a transition to a net-zero emissions economy, and (iii) activities that enable low-carbon performance or enable substantial emissions reductions (EU Technical Expert Group on Sustainable Finance, 2019). These activities are further specified in Article 6(1a) of TR on the basis of greenhouse gas emissions (EU Technical Expert Group on Sustainable Finance, 2020).

Companies are encouraged to consider "green" or "nature-based" solutions over "grey" solutions when considering climate change mitigation and adaptation that is why in its Technical Report from June 2019 TEG suggested that the EU Taxonomy should not include fossil fuel-based power generation, as it would undermine climate change mitigation objectives (EU Technical Expert Group on Sustainable Finance, 2019). This was included in the TR and Article 14(2a) states that "power generation activities that use fossil fuels are not considered environmentally sustainable economic activities." Other important articles in the TR are Article 12 which sets out the criteria for technical screening criteria to avoid significant harm to environmental objectives and Article 7 which introduces safeguards on solutions implemented to adapt economic activities, requiring that they lead to no increase in the risk of an adverse impact on other people, nature and assets and against harm caused by the economic activity itself, either to adaptation itself or the other five environmental goals (EU Technical Expert Group on Sustainable Finance, 2020).

There are three groups of Taxonomy users set out by the Taxonomy Regulation (EU Technical Expert Group on Sustainable Finance, 2020):

1. Financial market participants offering financial products in the EU, including occupational pension providers;

2. Large companies who are already required to provide a non-financial statement under the Non-Financial Reporting Directive (NFRD), which covers at minimum, large public-interest companies with more than 500 employees, including listed companies, banks and insurance companies;
3. The EU and Member States when setting public measures, standards or labels for green financial products or green (corporate) bonds.

Financial market participants are required to complete their first set of disclosures on their contribution to climate change mitigation and/or adaptation by the 31<sup>st</sup> December 2021. Companies will be required to disclose in the course of 2022. The European Commission will issue the technical screening criteria by the end of 2020 (EU Technical Expert Group on Sustainable Finance, 2020).

### *3.3.1 Company Disclosure*

Disclosure of non-financial companies, which should be incorporated in the non-financial statement, must include the proportion of turnover aligned with the Taxonomy and capital expenditures (if relevant also operational expenditures) aligned with the Taxonomy (EU Technical Expert Group on Sustainable Finance, 2020).

Turnover can be counted in climate change mitigation disclosure when an economic activity meets technical screening criteria defined in the Taxonomy for substantial contribution to climate change mitigation and relevant DNSH criteria. Capital and operational expenditure can be brought in where costs incurred are part of a plan to meet Taxonomy technical screening criteria for substantial contribution to climate change mitigation and relevant DNSH criteria. In case of climate change adaptation turnover can be recognised only for activities enabling adaptation, it cannot be recognised for adapted activities. Similarly, to climate change mitigation capital and operational expenditures can be recognised where costs incurred are part of a plan to meet Taxonomy technical screening criteria for substantial contribution to climate change adaptation and relevant DNSH criteria (EU Technical Expert Group on Sustainable Finance, 2020). This is illustrated in the two financing examples below:

Financing example 1 where turnover and capital expenditure are Taxonomy-aligned: A cement company is renovating and adapting two plants.

A cement company wants to renovate and adapt two of its biggest cement facilities that contribute 50% of its turnover. The renovated cement facilities are expected to achieve thermal energy and carbon intensities in line with the Taxonomy. The company also commissions a climate risk assessment of the facilities, which finds that they are vulnerable to flooding. That is why the company decides to increase the capacity of drainage systems

to make the facilities resilient to flooding. The costs of adapting the facilities are valued at EUR 5 million per facility. The overall renovation amounts to EUR 500 million, which represents 80% of the company's capital expenditures. The company raises funds in the capital market and issues green bond based on the EU green bond standard. This bond is Taxonomy-aligned. Once the work related to climate change mitigation is finalised, the company could claim all turnover generated from those facilities (50% of the company's turnover). The company will also be able to report that 80% of its capital expenditures are Taxonomy-aligned (EU Technical Expert Group on Sustainable Finance, 2020).

Financing example 2 where only capital expenditure is Taxonomy-aligned: A corporate company is adapting its headquarters as a step to make its the entire operations climate resilient.

A service-based company wants to make its entire business resilient to physical risks posed by climate change. None of its facilities are designed for the purpose of extraction, storage, transportation or manufacture of fossil fuels. A climate risk assessment shows that flooding and extreme heat are the main risk for the HQ and some other facilities. The corporate identifies several actions required to reduce the material risk, including passive cooling measures and increased capacity of drainage systems. The measures to be implemented are to be consistent with local and regional adaptation efforts, and with DNSH criteria for buildings. The overall cost of the proposed changes is EUR 50 million, and the company seeks several debt instruments over a three-year period. The adaptation of the HQ is estimated to be EUR 10 million, which is the amount of the first loan. Other EUR 40 million may be collected in additional loans or bond in private placement. Each of the loans will be Taxonomy-aligned, even if one loan on its own does not reduce all material physical climate risks to the activity – it is a necessary measure as part of a broader time-bound plan. The lending bank could commercialise the loans as green and 100% Taxonomy-aligned. Green loans might be bundled together and sold to investors as green securities. The EUR 50 million investment may be reported as Taxonomy-aligned capital expenditure. The company cannot report any proportion of Taxonomy-aligned turnover, as economic activities in respect of their own performance are (for now) not recognised in the Taxonomy (EU Technical Expert Group on Sustainable Finance, 2020).

There are no explicit requirements for formal verification of Taxonomy-related disclosures under the Taxonomy Regulation, just that the disclosures must be made as part of the non-financial statement. However, the TEG believes it would be good practice and consistent with recommendations from TCFD for companies to seek external assurance on Taxonomy-related disclosures (EU Technical Expert Group on Sustainable Finance, 2020).

A delegated act, which will take into consideration the differences between non-financial and financial companies and specify how their obligations should be applied in practice, will

be adopted by the European Commission by June 2021 (EU Technical Expert Group on Sustainable Finance, 2020).

### 3.3.2 *Financial market participants disclosures*

Under the Taxonomy the financial market participants are required to state the following for each relevant financial product:

- How and to what extent they have used the Taxonomy in determining the sustainability of the underlying investments;
- To what environmental objective(s) the investments contribute;
- The proportion of underlying investments that are Taxonomy-aligned, expressed as percentage of investment, fund or portfolio (EU Technical Expert Group on Sustainable Finance, 2020).

The financial market participants have to make the disclosures as part of existing pre-contractual and periodic reporting requirements and sustainability disclosure obligations under the regulation of Sustainability-Related Disclosures in the Financial Sector. Sustainability-Related Disclosures requirements include pre-contractual (including information on how environmental and social characteristics or objectives are met), website (including description of the environmental or social characteristics or objectives, information on the methodologies used for assessment and monitoring, data sources and screening criteria), and periodic (including an overall sustainability-related impact of the financial product by means of relevant sustainability indicators) (EU Technical Expert Group on Sustainable Finance, 2020).

It is important to note that the level of Taxonomy alignment in an individual investment product does not correspond to the achievement of an environmental objective at the EU level. It does not mean environmental additionality or address environmental opportunity costs related to other potential investments (EU Technical Expert Group on Sustainable Finance, 2020).

The Taxonomy will be used for a variety of financial products, equity and debt based and by private and public sector. Financial products that are marketed into or manufactured in the EU will be required to refer to the Taxonomy. In an exceptional case when it is not required to make a full Taxonomy disclosure for a product, it may carry a standard disclaimer, however financial market participants may decide to use the Taxonomy for these products as well (EU Technical Expert Group on Sustainable Finance, 2020).





Table 2: Products included in scope for Taxonomy disclosure

Market segment	In scope for Taxonomy disclosure
Pensions and Asset Management	<ul style="list-style-type: none"> <li>• UCITS funds:               <ul style="list-style-type: none"> <li>○ Equity funds</li> <li>○ Exchange-traded funds (ETFs)</li> <li>○ Bond funds</li> </ul> </li> <li>• Alternative Investment Funds:               <ul style="list-style-type: none"> <li>○ Fund of funds</li> <li>○ Real estate funds</li> <li>○ Private equity or SME loan funds</li> <li>○ Venture capital funds</li> <li>○ Infrastructure funds</li> </ul> </li> <li>• Portfolio management (under Article 4(1) of MiFD II)</li> <li>• Pensions:               <ul style="list-style-type: none"> <li>○ Pension products</li> <li>○ Pension schemes</li> <li>○ Pan-European personal pension products</li> </ul> </li> </ul>
Insurance	Insurance- based investment products
Corporate & Investment Banking	<ul style="list-style-type: none"> <li>• Securitisation funds</li> <li>• Venture capital and private equity funds</li> <li>• Portfolio management</li> <li>• Index funds</li> </ul>

Source: EU Technical Expert Group on Sustainable Finance (2020).

Individual financial instruments, like bonds, are not directly included in the disclosure obligation as outlined in the Taxonomy. There is also no disclosure regulation that obligates green bond or green loan issuers to disclose alignment with the Taxonomy. Yet, investors need this information when assembling a report on the portion of Taxonomy alignment of their funds (EU Technical Expert Group on Sustainable Finance, 2020).

The Regulation on Sustainability-related Disclosures in the Financial Services Sector also prescribes the nature of the required disclosure for different types of funds. Under the Regulation on Sustainability-related Disclosures there are three categories of investment

funds based on their approach to environmental objectives within the fund (EU Technical Expert Group on Sustainable Finance, 2020).

*Table 3: Categories of investment funds under Sustainability-related Disclosures*

Article SDR	Description	Obligation
Article 9	Financial products which have sustainable investment as their objective.	Must complete Taxonomy disclosures where the investment concerns activities that contribute to an environmental objective.
Article 8	Financial products which promote environmental or social characteristics of the investment, either alone or in combination with other characteristics.	Must complete Taxonomy disclosures where environmental characteristics are promoted
Article 7	All other financial products	Must complete Taxonomy disclosures or carry a disclaimer that “the investment(s) underlying this financial product do not take into account the EU criteria for environmentally sustainable investments”.

*Source: EU Technical Group on Sustainable Finance (2020)*

As is the case with companies disclosures, investors should also be aware of the differences in financial metrics for climate change mitigation and climate change adaptation (EU Technical Expert Group on Sustainable Finance, 2020).

There are two different methodologies when disclosing for equities and fixed income. For equities the proportion of fund that is compliant with the Taxonomy broken down by environmental objectives and activities, the proportion of the fund that is potentially Taxonomy-aligned broken down by environmental objectives and activities, and until the Taxonomy is finished also the percentage of fund that responds to EU environmental objectives different from climate change mitigation and climate change adaptation, including an explanation on the methodology and criteria used. These disclosures should be

made on the basis of the turnover. For corporate fixed income, the disclosures are the same, however they should additionally be broken down by the percentage invested in bonds compliant with EU Green Bond Standard, the percentage of the fund invested in green bonds partially aligned (and the percentage that is Taxonomy-aligned) and the percentage of the fund invested in corporate bonds (and the percentage that is Taxonomy aligned). These disclosures should be made on the basis of capital expenditure (and operational expenditure if relevant). Turnover could additionally be used in some cases where capital expenditure does not properly represent the investments made by the issuer (EU Technical Expert Group on Sustainable Finance, 2020).

As with companies, investors are not required to seek external verification or assurance of their disclosures. The European Commission will conduct a review of this by 2022 (EU Technical Expert Group on Sustainable Finance, 2020).

For EU companies and bond issuers that do not fall under the scope of NFRD and non-EU companies where full disclosures are not made, the TEG recommends that investors follow a five-step approach of implementing the Taxonomy (EU Technical Expert Group on Sustainable Finance, 2020):

1. Identify the activities conducted by the company or issuer or those covered by the financial product (e.g. projects, use of proceeds) that could be aligned with the Taxonomy, and certain environmental objective(s).
2. For each potentially aligned activity, verify whether the company or issuer meets the relevant technical screening criteria.
3. Verify that the DNSH criteria are being met by the issuer. To review the performance of underlying investees investors could use a due diligence type of process and rely on the legal disclosures of eligibility from investees.
4. Conduct due diligence to avoid any violation of the social minimum safeguards stipulated in the Taxonomy Regulation. Thorough due diligence is the best way for investors to ensure compliance with DNSH qualitative criteria and to avoid adverse impacts related to human and labour rights, and corruption.
5. Calculate alignment of investments with the Taxonomy and prepare disclosures at the investment product level.

### *3.3.3 Recommendations for the future*

In the future the Taxonomy ought to be improved with the addition of social objectives, to identify substantial contributions, and by including technical screening criteria for significant levels of harm to environment (for so called “polluting” or “brown” technical screening criteria) (EU Technical Expert Group on Sustainable Finance, 2020).

## 4 Discussion

Finance and sustainability are two concepts that are not completely foreign to one another. Three of the five functions of the financial system as listed by Levine in 2005 are especially relevant for sustainable finance. These are to produce information ex-ante about possible investments and allocate capital, monitor investments and exert corporate governance after providing finance. Additionally, they facilitate the trading, diversification, and management of risk. Firstly, allocation of capital towards sustainable organisations and projects could easily be described as the key role of finance. This is strongly driven by decisions investors or banks take when considering what companies to invest in or lend to. With their actions they can influence the transition to a low-carbon and circular economy. If they choose to finance sustainable projects and companies, the transition can happen much faster (Schoenmaker & Schramade, 2019).

The second role of financial system is monitoring investments and exerting governance. By monitoring their investments investors can control and direct corporate boards and greatly influence the daily operations of the company. Governance is especially important when balancing various interests of a corporation's stakeholders. There is a rising trend in sustainable investing, where investors engage with the companies in the hope of reducing risk of any adverse events occurring (Schoenmaker & Schramade, 2019).

The third function of financial system is risk management. This is not only important to sustainable finance, but to finance in general. Especially with environmental issues, there is a lot of uncertainty about the possible effects they may have for the economy. Some examples are: the effect of the rising carbon emissions on the climate, the future of climate mitigation policies and the time it will take for them to become effective. Risk management is a tool that can help deal with these uncertainties. Finance is already good at pricing the risk of future cash flows for valuation purposes. To assess the risk and valuation under different scenarios, scenario analysis is being used. This should help clarify the future price of carbon emissions and thus incentivise the company to change its behaviour (Schoenmaker & Schramade, 2019).

In their book Schoenmaker and Schramade describe the three phases of sustainable finance, which move away from the traditional maximisation of shareholder value and short-termism to stakeholder value and common good value optimisation in the medium to long-term horizons.

The first stage, SF 1.0, does not significantly differ from traditional finance. Its main focus remains profit maximisation (increasing profits while decreasing risk), but while avoiding "sin" stocks and remaining above the minimum level of social-environmental value ( $SEV^{\min}$ ). The objective function is given by:

$$\max FV = F(\text{profits}, \text{risk}), s. t. F'_{\text{profits}} > 0, F'_{\text{risks}} < 0, SEV \geq SEV^{\min} \quad (1)$$

*Objective function SF1*

Where FV = financial value = expected current and discounted future profits, and SEV = social and environmental value.  $F'_{\text{profits}}$  is the partial derivative of F with respect to the first term, and  $F'_{\text{risks}}$  with respect to the second term. This optimisation can be used by investors within a mean-variance framework to optimise their portfolio and by banks and corporations in a net present value framework to adopt decisions regarding financing new projects (Schoenmaker & Schramade, 2019).

“Sin” stocks are issued by companies with negative impacts either on environment or society, sometimes both. Most of the time they are easily defined by the sector they operate in (e.g tobacco, gambling, human trafficking) (Schoenmaker & Schramade, 2019). This type of negative screening has already been adopted by investors, who wished to align their religious beliefs with their investment choices, in the early 19<sup>th</sup> century. Today stocks are most often excluded due to pressures from various non-governmental organisations. The idea behind it is that divestment in harmful sectors and companies could set the norm for acceptable standards and force out the worst offenders. Sometimes exclusion and divestment can be effective strategies, as was the case with Apartheid in South Africa (Liu, 2020; Schoenmaker & Schramade, 2019). The reason behind its success was the massiveness of the movement. In their empirically calibrated model Heinkel, Kraus and Zechner (2001) indicate that more than 20% of green investors are required to make a polluting company consider reforming itself, but currently available empirical evidence shows there are at most 10% of green investors. In this refined shareholder value model companies are still focused on the short-term profits but include sustainability with a view to reduce costs and business risks, improve reputation and to respond to a new customer demand. But at least companies and financial institutions are required to put in place systems that help them measure and monitor environmental standards, diversity in employment, emissions management and sustainable purchasing (Schoenmaker & Schramade, 2019).

In SF 2.0, short-term profit maximisation is not the final goal anymore. Financial institutions begin to internalise negative social and environmental externalities because they wish to avoid risks as these externalities could potentially become priced in the medium to long-term future (e.g. adoption of carbon tax) and/or have a negative impact on an institution’s reputation. Because of technological innovation it is becoming increasingly possible to attach a financial value to social and environmental impacts, through which the integrated value can be determined as a sum of the financial, social and environmental values. To discount future cash flows financial institutions and companies, use a private discount rate as this rate is higher than the public discount rate due to uncertainties. Social and environmental impacts are much more uncertain than financial impacts and private

discounting leads to a lower weighting of social and environmental value than financial value. The privately discounted financial, social and environmental value are calculated to optimise the integrated value (increasing integrated profits and decreasing the variability of these profits), while not worsening their social and environmental impacts ( $SEV^p$ ). The integrated value is the sum of the financial value, the social value and the environmental value:  $IV = FV + SV^p + EV^p$ . The superscript p stands for privately discounted value of the social and environmental impacts. The objective function is given by:

$$\begin{aligned} \max IV = F(\text{intgrated profits}, \text{integrated risks}) \text{ s. t. } & F'_{\text{integrated profits}} > \\ & 0, F'_{\text{integrated risks}} < 0, SEV_{t+1}^p \geq SEV_{t+1}^p \end{aligned} \quad (2)$$

*Objective function SF 2*

Where  $SEV_{t+1}^p$  = next period social and environmental impact. In line with the integrated value methodology, not only profits but also risk is assessed in an integrated way, which includes the covariance between the profits (Schoenmaker & Schramade, 2019).

Optimisation of integrated value can lead to some unwanted outcomes, for example the negative environmental impact of deforestation can be offset by large economic gains, legitimising destruction. To avoid such outcomes the authors, include the constraint that the social-environmental value cannot be worsened compared to its initial value. SF 2.0 includes people, planet and profit. Its key characteristics are integrated profit and loss accounting and corporate governance that includes direct stakeholders (suppliers, employees, customers) and indirect stakeholders (society and environment) (Schoenmaker & Schramade, 2019).

The final stage is SF 3.0. In this phase only sustainable companies and projects that contribute to sustainable development are invested in. Here finance is used as a means to advance sustainable development in the medium and long-term time horizon, such as funding healthcare, green buildings or wind farms. In contrast with SF 1.0 where companies are excluded because of their negative impact, here companies and project are put on an inclusion list due to their potential to generate positive social and environmental impacts. In this stage social-environmental value is maximised (SEV) and only projects that generate this optimal social-environmental value are entitled to funding. The objective function is given by:

$$\max SEV = F(\text{impact}, \text{risk}) \text{ s. t. } F'_{\text{impact}} > 0, F'_{\text{risk}} < 0, FV_{t+1} \geq FV_{t+1}^{\min} \quad (3)$$

*Objective function SF3*

The aim of the investors is to increase their impact and decrease risk, subject to a minimum financial value  $FV^{min}$ . The financial viability of minimum financial value can be presented as:  $FV_{t+1}^{min} = (1 + r^{fair})FV_t^{min}$ , where  $r^{fair} \geq 0$  is a fair financial return for one period (Schoenmaker & Schramade, 2019).

But for sustainable development one still needs financial viability. The latter is also a condition for sustainable investment and lending. If a project does not provide a financial return, which at least preserves capital, it might not be completed. Therefore, for a project to be considered it also needs to provide a fair financial return.

Defining a fair financial return can be problematic. According to the respondents to the Annual Impact Investment Survey (GIIN, 2016) 59% primarily target risk-adjusted market rate returns, 25% target returns below market rate, which are closer to the market returns and only 16% are willing to accept returns closer to capital preservation for sustainability reasons. A much larger question is whether investors and ultimate beneficiaries are prepared to potentially give up some financial return in exchange for social and environmental return, for example to enjoy their pension in a liveable world. For socially responsible investment (SRI) funds social preferences seem to be more important than financial gains. Investors who opt for SRI funds expect to earn lower returns than they would have, had they chosen to invest in conventional funds, as they wish to invest according to their social preferences. However, what the ultimate effect of impact investing on financial return will be is still unclear. If investors could work together to accelerate the transition towards sustainable development, there would be a smaller likelihood of negative financial returns resulting from extreme weather events or abandoned assets. For this to hold a sufficiently large number of investments needs to move to SF.

Another interesting research, which Schoenmaker and Schramade introduce in their book, comes from the Global Alliance for Banking on Values, done in 2016. It compared a group of 25 sustainable banks with the group of 30 global systemically important banks, which are selected by the Financial Stability Board. During the global financial crisis, the sustainable banks maintained their financial return with a ROE fluctuating between 4 and 10% over the 2006-2015 period, while over the same time period, the median ROE for global banks fluctuated between 0 and 15%. While the average ROE is lower for sustainable banks (8.3%) than for global banks (8.7%), the variance of the ROE is also lower for sustainable banks (standard deviation of 4.9%) compared to global banks (standard deviation of 7.7%). As a possible explanation of this smaller variance the authors find a more stable return on assets for sustainable banks (0.5 to 0.7% vs. 0.2 to 0.8% for global banks) and a higher capital ratio (1 to 1.5% for sustainable banks). A lower capital ratio contributes to variability of ROE, as it means higher leverage with more debt and less equity. It is expected that entities with sustainable business practices tend to be more resilient and have a higher survival rate in the long run. Such companies are better at recovering from shocks as they have lower financial

volatility, higher sales growth and higher chances of survival over a 15-year period (Schoenmaker & Schramade, 2019). It might be interesting to observe this in a post-Covid-19 world. Will the companies that put greater importance on ESG issues come out better? It is safe to say that Covid-19 pandemic will have an impact on the way ESG issues are dealt with. Some wealth managers are already talking about the shift from E to S and G (Marsh, 2020). This makes sense, not only because supply chains were disturbed during the pandemic and because people lost their jobs, but also because of the movements such as the Black Lives Matter, calling for stronger diversity policies and fair employment practices.

Corporate governance is another important part of SF 3.0, especially legitimacy theory, which focuses on long-term value creation (LTVC) for the common good. Legitimacy theory says that it is the aim of the company to legitimize their corporate actions in order to obtain approval from society and ensure they are able to continue their operations. It can also be said they gain a social licence to operate, which is a mass of expectations that society has regarding the way an organisation should conduct its business. The companies therefore act within the bounds and norms of what the society perceives as responsible behaviour, which includes meeting social and environmental standards. In SF 3.0, companies develop an outside-in perspective. This means they are actively seeking solutions to social and environmental challenges. This is in contrast to SF 2.0 where companies still focus on inside-out perspective, by asking themselves how to not worsen the social and environmental issues. Example of outside-in approach is working within the ecological limits so natural resources are not depleted, waste is reused and carbon emissions stay within the carbon budget (Schoenmaker & Schramade, 2019).

All three stages of sustainable finance are in contrast to Friedman's (1970) belief that the responsibility of business is to engage in profit increasing activities and that it is the responsibility of the government to take care of the social and environmental goals. (Schoenmaker & Schramade, 2019).

The three stages lead to different levels of realised social-environmental value. In the first two stages the entities still focus on themselves and work towards preventing reputation risk by meeting the public demands of a minimum level of corporate social responsibility and expecting that externalities will be priced at some point in the future (Schoenmaker & Schramade, 2019). It can also be said that in these two stages companies address sustainability as a cell phone case, something added for protection. Damaged reputation in the eyes of customers, investors and financial institutions could greatly impact the financial success of a company (Serafeim, Social-Impact Efforts that Create Real Value, 2020). In the third stage investment and lending are used to take advantage of all opportunities for beneficial social-environmental impact. When we consider at what stage of SF we are currently, we quickly realise that the majority of companies and financial institutions are still putting financial value first. About 20 to 30% of corporate institutions consider sustainable



principles in their investment decisions and business practices, while this percent is slightly higher for financial institutions and stands at 30 to 40%. All of these are wedged somewhere between SF 1.0 and SF 2.0, just above but still very close to  $SEV^{\min}$ . Authors assume that social-environmental value is incorporated for about 10%. It is understandable that a complete switch between the two stages is challenging and cannot happen overnight as it requires a shift in mentality from shareholder value (SF1.0) to shareholder welfare (SF 2.0). An example of the battle between the two models is the attempt of a takeover of Unilever by Kraft Heinz in 2017. Kraft Heinz has a portfolio of slower-growing brands concentrated in the USA, which is supported by debt-financed deals. It has implemented an aggressive cost-cutting strategy to generate margin expansion that allowed it to repay the debt and reinforce shareholder returns. Meanwhile, Unilever has a number of strong brands under its belt and is present in some of the biggest and emerging markets. Its chief executive shifted the focus on better balancing the profitability with social and environmental sustainability. Kraft Heinz offered \$143 billion for Unilever, but Unilever did not want to give up its sustainable business model and thus the take-over was aborted (Schoenmaker & Schramade, 2019).

The number of financial institutions already adopting SF 3.0 is very small, less than 1%. There continues to be an increasing pressure on investors by NGOs to raise the minimum level of SEV by expanding the number of exclusions, also through government regulation or taxation (Schoenmaker & Schramade, 2019).

Schoenmaker (2017) has also written guidelines to govern sustainable finance for companies, investors and supervisors. He advises companies to move from shareholder to stakeholder model, to strive for LTVC for the common good and to include sustainability indicators (e.g. integrated profit & loss accounts and rankings in sustainability indices). Executives and investors should focus on the long-term, also in the reporting structure, moving away from quarterly reporting and change the pay structure to end differed rewards based on generated profits. Investors should build investor coalitions to work together on engagement with corporates on social and environmental issues. Supervisors should reduce their bias towards listed liquid investments and allow “buy and hold” investments. Also, financial institutions should undergo stress tests to measure their exposure to and concentration in carbon-intensive assets. These stress tests could consist of various climate scenarios, including scenario of late adjustment (Schoenmaker & Schramade, 2019).

It seems that easiest solution to address environmental and social risks would be to simply put them in the existing economic models. The problem is that these models are confined to capital and labour and do not include the goods of nature. Looking at the Cobb-Douglas production function from 1928, which uses labour input (the total number of person-hours working in a year) and capital input (the value of machinery, equipment and buildings) for the production of goods, we see that many of the social and environmental issues are considered external effects, which are not reflected in market prices. In neo-classical model's

market prices are considered as relevant signals for decision-making (investment, production and consumption decisions) and do not incorporate social and environmental externalities. In these case governments can use regulation or taxation to price externalities. The efficient market hypothesis is also problematic as it states that asset prices already reflect all available information. As an alternative adaptive market hypothesis is suggested. Adaptive market hypothesis implies that individuals adapt to a changing environment and can thus explain why new risks are not fully priced in. Generally speaking, the problem is that traditional finance is much more focused on short-short term value creation and is based on linear production and consumption process and locked-in government budgets, while sustainable finance is aimed at long-term value creation (Schoenmaker & Schramade, 2019).

More than one survey shows that in recent years ESG funds have increased in popularity and in profitability. A survey released by Morningstar showed that out of 745 sustainable funds in Europe, 58% did better than non-sustainable funds over three, five and ten years (Marsh, 2020). According to data from Deloitte, the share of global investors that have applied ESG criteria to at least a quarter of their total investments has jumped from 48% in 2017 to 75% in 2019 (Amaro, 2020). But there is still a lot of work to be done. Transparency and standardisation are the two of the most important challenges. There has been an increase in the number of ESG rating and scoring providers, however as the area is largely unregulated, it is difficult even for the regulators such as ESMA to make sense of the methodologies. In addition, there is a mismatch between the expectations of investors, who wish to invest more and more in ESG type of products, and the number of actually available ESG products which could truly be marked as sustainable. As there is no clear definition or criterion two fund managers could easily disagree on whether a company is or is not ESG-friendly (Amaro, 2020).

When looking at the composition of any fund, even ESG, it is still important to consider that funds are invested in to get a return for the portfolio. That is why they can include stocks based on sector views that may or may not relate to an ESG view. This is especially evident when we consider the composition of some ESG funds (Amaro, 2020). There are some funds that screen out all companies from a certain industry, such as oil and gas, and instead focus on smaller, less known firms active in areas such as renewable energy or boardroom diversity (Otani, 2020). The largest ESG fund in the world is MFS Value Fund (according to data by Refinitiv, September 2020). In July 2020 the share of its total portfolio allocated to oil exploration firms was 2.45%, while ten years ago it was 11.66% (Amaro, 2020). It might be naïve, but one does not expect such companies to be included in sustainable funds. Another problem are large tech companies. The most commonly held S&P 500 stocks in actively managed sustainable equity funds in the autumn of 2019 were technological companies such as Apple, Alphabet and Microsoft, according to an RBC Capital Markets analysis, while companies that focus on issues associated with ESG movement are relatively underrepresented. For example, NextEra Energy Inc., the world's largest operator in wind

and solar farms, was not on the RBC's list of widely owned stocks in ESG funds (Otani, 2020). The fourth largest ESG fund, Parnassus, had 17.26% of shares in companies such as Apple, Alphabet and Amazon. Amazon registered a carbon footprint of 51.17 million metric tons of carbon dioxide last year, which is a 15% annual increase. The portfolio managers argue that because Amazon is committed to reducing its carbon emissions and become carbon neutral by 2040 its stock is ESG friendly (Amaro, 2020). An obvious question that arises is why the fund is still investing in Amazon, even if it is clear they are not following through with their commitment. The answer is because asset managers believe that divestment is an old-school approach and not optimal to push for change. They favour engagement and stewardship by investing and asking for a clear timeline for improvements (Amaro, 2020). This already signals a slight shift away from SF 1.0 towards SF 2.0 and SF 3.0. But is this really not just an excuse for funds? They still need to make a profit. Those funds that focus on smaller, lesser-known companies are exposed to a higher risk of delivering lower returns than the broader market. Therefore, the biggest players often try to minimise the amount by which their fund deviates from the broader market, which they do by creating a portfolio that is very similar to S&P 500, but without the companies with the worst ESG practices within each industry. The reason these stocks are relatively easy to classify as ESG-friendly is that also ESG rating providers give them high scores across multiple elements that analysts take into consideration in their evaluations. MSCI Inc. gave Microsoft an "AAA" rating, because of the company's strength on privacy and data security, corporate governance, lack of corruption and instability, and clean-tech-innovation capacity. On the other hand, Facebook and Amazon earned poor ratings on privacy and data security and on labour management respectively but are still held by a number of large sustainable funds since they satisfy other criteria. Brown Advisory's Sustainable Growth Fund excludes companies that conduct animal testing for nonmedical purposes, own fossil-fuel reserves, derive revenue from controversial weapons or defy the United Nations Global Compact Principles, but does not disqualify companies with controversies related to user privacy or labour rights (Otani, 2020). There are niche ESG funds such as State Street Global Advisors' SPDR SSGA Gender Diversity Index ETF that comprises shares of large companies that have at least one female board member or as CEO and Invesco's Solar ETF holds only companies in the solar-energy industry. But they attract much lower inflows compared to ESG offerings that are more closely aligned to the S&P 500. Even Securities and Exchange Commission has begun to wonder how and what do the companies determine are socially responsible investments (Otani, 2020).

The regulation from the EU is the first step. By the end of 2021 portfolio managers of ESG funds in Europe will have to provide explanation on how and to what extent they are applying set performance thresholds and safeguards when deciding if a company is sustainable. The regulation will also require more information on sustainability from the companies. Now companies are responsible for the information they publish, which makes it easy for them to

withhold data that might provide an important insight into ESG compliancy. Companies could clearly claim they are adopting an environmental policy, but it is hard to measure the progress towards that policy, which leads to the risk of “greenwashing” (Amaro, 2020). “Greenwashing” is a practice where companies give a false impression that their products are environmentally friendly to capitalise on the demand for such products (Kenton, 2020). This could apply to anything from claiming that t-shirts are made from organic cotton to funds claiming that they invest a certain percentage in sustainable financial products.

Companies are not the only ones accused of “greenwashing”. The risk arises also with funds. According to the data collected by *Pensions & Investments* assets managed under ESG principles reached \$14.6 trillion in 2019, a 168.1% increase from \$5.4 trillion in 2016, when it began collecting the data and 27.3% increase from the end of 2018. These are all astonishing figures, however as much as 86% of the \$1.2 trillion in sustainable mutual funds and ETFs added in 2019 came from rebranding of fund names, according to Michael Cosack, a principal at sustainable investing consultant ImpactWise LLC, and Henry Shilling, director of research for Sustainable Research and Analysis LLC in New York. This means a lot of confusion, which makes it hard to determine, which funds are legitimate, and which are just marketing themselves to be sustainable (Bradford, 2020). Many retail investors do not have the time to check the practices of each company individually, that is where the ESG investment funds come in, who could also be guilty of greenwashing. There are two types of greenwashing: the products that are built by managers and may be misrepresented and the asset managers or pension funds that are greenwashed by the companies. The problem is also that there are so many ratings providers, each with their own methodology. True ESG performance is complex and hard to understand. Asset managers can design their own set of metrics to make them look like leaders. This issue is then how consistent are they in actions like proxy voting (Bradford, 2020). Vanguard has had two of the most high-profile ESG fund launches in the recent years, one in the US and one international. Later it was revealed that those portfolios included almost 30 stocks that were not actually ESG friendly and were excluded. Vanguard explained they were included in an ESG index designed by FTSE Russell their benchmark provider by mistake because of an issue in the screening methodology. However, this is not the only controversy, the fund is also criticised when it comes to shareholder engagement. In 2018 Vanguard ranked in the bottom 10 mutual-fund companies for its poor record supporting environmental proposals. Another large money manager and supporter of ESG, BlackRock also landed in the bottom 10 (Jones, 2019).

Another approach to greater transparency and prevention of “greenwashing” is by using integrated financial reporting. These reports are similar to traditional financial reporting, but express social and environmental value in money. These could then be published in integrated balance sheet and integrated profit and loss accounts. There is no consensus on the monetization of social and environmental values as standards for auditing have just started emerging. Some have even gone so far to suggest separate key performance

indicators should be designed to express the social and environmental values, e.g. payment of living wages, health and safety conditions, carbon-neutral production, zero net deforestation (Schoenmaker & Schramade, 2019). To facilitate this type of reporting is also the goal of the Impact-weighted Financial Accounts Initiative at Harvard Business School. It has found that at least 56 large companies are already using some version of this type of financial reporting. Such reporting system would help funds offering ESG products be more informed as they could use companies' impact-weighted accounting numbers as part of due diligence, underwriting and reporting efforts. Asset owners could then use these numbers as well to monitor that their allocations are aligned with impact, while rating agencies could integrate them in their own data (Serafeim, Zochowski, & Downing, 2019). The latter could then potentially lead to a more unified rating system.

Until such integrated reporting methodology is developed companies should continue to provide ESG disclosures, where they report policies that are expected to lead to positive outcomes, such as improving data privacy, water management, climate change mitigation, diversity and so on. However, they should also include their strategic vision of the company and its capabilities to achieve and maintain its strong ESG performance and the actions it is undertaking with actual results, e.g. the amount of carbon emissions saved, percentage of women and people of colour promoted to management positions etc (Serafeim, Social-Impact Efforts that Create Real Value, 2020). To provide a more holistic reporting approach and to simplify the standards GRI and SASB have been considering aligning their standards and guidelines since 2018. This makes sense as there are areas in which both standards are similar or overlap. Harmonised standards would also be aligned with the TCFD recommendations. This could be one of the first steps to standardised sustainability reporting approach that would a part of annual reports and easily available to the public for all stakeholders and investors – as recommended by TCFD (DFGE, 2018).

The European Union is addressing irregularities and working towards increasing transparency in the green market in the EU with a unified Taxonomy. Some research shows that after the EU announced broader disclosure requirements the stock market reacted positively to firms with strong ESG disclosures and negatively to those with weak ESG disclosures (Serafeim, 2020). By linking sustainable investment with the core values of the Union, and passing the necessary regulation, the EU could actually enforce change at least concerning the environmental disclosures and by encouraging investment into environmentally friendly solutions. However, in the future EU will have to address also other levels of sustainability, such as social issues. A common Taxonomy for disclosures on social level is also one of the recommendations of the EU Technical Expert Group on Sustainable Finance.

There is some criticism about the technical screening criteria of the EU Taxonomy, especially from the transport sector. Sustainability grading is based on the revenues a

company generates from vehicles with engines that have zero emissions and critics find these criteria to be too strict. They are afraid how asset managers would treat shares and bonds issued by companies such as Volkswagen, that have high ESG ratings, in favour of companies that are considered greener but have lower ESG ratings, such as Tesla (Khan, 2019). It makes sense that EU would include such criteria to achieve carbon-neutrality by 2050. A company's contribution is much more than its net-carbon emissions, it is also what it does for the community, how it treats its employees, how it addresses privacy issues and much more. Something that is ignored in the EU Green Plan, but to some extent considered by the various ESG Ratings providers that consider each factor individually and attach corresponding weights to get a comparable score.

European Union is just one of the government bodies trying to incentivise green finance. The USA is with \$118.6 billion issued green bonds in 2018, the leader in the green bond's issuance. According to the information provided by the Global Sustainable Investment Review the US-based managed assets using sustainable strategies grew from \$8.7 trillion at the start of 2016 to \$12 trillion in 2018. The reason for this growth is supposedly due to client demand. Among the interviewed US fund managers 40% cited UN SDGs as their motivation for investment in sustainable schemes. In 2017, France issued its first sovereign green bond, which was at the time the largest issuance with the longest maturity date ever seen on the green bond market. This move allowed the country to borrow €7 billion to provide financial support for clean energy projects. On the other side of the Channel, the UK government and the industry are cooperating to form a set of Sustainable Finance Standards. These would allow investors to consider all financial risks and opportunities concerning climate and financial factors in investment decision making. In July 2019 the UK government presented its Green Finance Strategy, with the view to creating a regulatory framework for green finance and improve access to investment for green projects. Green finance policies are not a topic only in the western world, but also in the East. China, as a major economic player, has also developed its own green finance policy. By encouraging private investment in green sectors, it plans to boost the transition to low-carbon economy (Rooney, 2019).

## **CONCLUSION**

Throughout my thesis the common theme has been that the topic of sustainability not just sustainable investing is becoming more popular. The most publicised issue was at first climate change. How could it not when the world was experiencing extreme weather events, droughts, flooding, air pollution and ever hotter summers. Then in 2018 Greta Thunberg's protest outside the Swedish Parliament calling for stronger action on climate change policy grew into a global movement "Fridays for Future". In the post-Covid-19 pandemic era I expect that social issues will become more pertinent for the global policy discussions (for

example workers safety, greater calls for fighting systemic racism and finding better ways to facilitate equal opportunities for all). All of these are issues that have already been discussed before, but movements such as “Me-too” and “Black Lives Matter” have ignited greater demands for change.

Ideas about what is considered to be good ESG and sustainability practice have changed over the years in business as well as personal lives. Simple actions were enough just ten years ago, such as recycling and choosing public transport, or cycling instead of driving by car, and buying your vegetables at the farmers market, or even including ESG disclosures into annual reports, releasing sustainability reports, holding sustainability themed events, reducing waste, strengthening relationship with external stakeholders and improving management in corporate setting. All of these activates are now basic requirements of “good business” and almost obligatory for any individual that wishes to say there are conscious of the environment they live in and for any enterprise that wishes to remain on the market and stay competitive. To provide guidance for investors on how well entities are performing in the field of ESG and sustainability various rating agencies provide ratings of these entities. The ratings encompass an entities management of environmental and social risks as well as its internal governance. Most ratings providers put the largest weight on governance as they believe, and I agree, it can have the largest impact on how an entity addresses environmental and social issues.

The growing interest in sustainable finance can in my opinion be the only next logical step. Because at its core sustainable finance is an interaction of financial with economic, environmental and social issues. Both fields have a very important common characteristic, their focus towards the future. Finance is good at pricing risk and by anticipating such events and incorporating those expectations in valuations for investment decisions could contribute to a transition towards a low-carbon and more circular economy.

Since 2018 EU has been working in the scope of its Green Deal towards establishing a common EU Green Bond standard and Taxonomy. The Taxonomy regulation entered into force on 12<sup>th</sup> June 2020. This could provide an important regulation on a currently unregulated field. Under the Taxonomy Regulation financial market participants, companies that are obligated to provide non-financial disclosures and EU Member states that are setting standards for green financial products will have to provide disclosures of their activities in terms of climate change mitigation and climate change adaptation. The first disclosures ought to be completed by the end of 2021. The core part of the Taxonomy are the technical screening criteria for economic activities, which make a substantial contribution to one of the six environmental objectives of EU, do no significant harm to any other of the five environmental objectives and comply with minimum safeguards imposed by global organisations such as UN. With this regulation EU hopes to incentivise investors, companies and issuers to direct capital flows towards improvements in environmental performance and

resilience, encourage transition to a greener economy as well as stop and prevent “greenwashing”.

It is impossible to say when sustainable finance will become the new norm. It is easy to understand mechanisms for supporting sustainability, but not so easy to act on them. Despite increasing pressures, the desire to hold on to the status quo is still deeply rooted in the risk-return mentality of the financial world. Transition to a more sustainable economy will happen (is already happening) gradually as it requires a breakdown of the old system and developing a new way of thinking for the long-term as opposed to the short-term. While the first goal might be reaching the SDGs by 2030, the end goal is creating a completely different culture, where it is not only about the individual gain, but for the common good. While I cannot provide a clear solution on how to best achieve this, as this is a large systemic problem, I can only hope that through education each individual could see the benefits of transition towards a more sustainable practice and do their part.

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## **APPENDIX**

## Appendix: Povzetek (Summary in Slovene language)

Magistrska naloga je osredotočena na predstavitev razvoja področja trajnostnih financ. Trajnostne finance, oziroma trajnostno vlaganje sta dokaj nova termina, čeprav je bila sama ideja uveljavljena že mnogo prej. Gre za vključevanje okoljskih, gospodarskih in družbenih izzivov v finančne odločitve (tako na področju investicij kot tudi posojil). Pomembna značilnost trajnostnih financ je, da je motiv za investicije zlasti dolgoročni pozitivni vpliv na družbo, in ne zgolj zagotavljanje kratkoročnega dobička.

Trajnostno financiranje je eden izmed pomembnejših korakov pri doseganju ciljev trajnostnega razvoja, ki so jih leta 2015 sprejeli Združeni narodi in naj bi bili doseženi do leta 2030. Investicije v projekte, ki naslavlja okoljske in družbene izzive, bi bistveno pripomoglo k hitrejšemu doseganju le-teh.

Začetki trajnostnih financ segajo v 18. in 19. stoletje. Takrat so pobudniki izhajali iz vrst metodistov, ki so zavračali podjetja, ki so se ukvarjala z igrami na srečo, tobakom in trgovino s sužnji. Povezavo z religijo pa je trajnostno financiranje izgubilo šele v 60-ih letih 20. stoletja. Za začetek trajnostnega financiranja, kot ga poznamo danes štejemo 70. leta prejšnjega stoletja, ki so bila v Združenih državah Amerike močno zaznamovana z nezadovoljstvom glede vojne v Vietnamu. Leta 1971 je bil ustanovljen prvi trajnostni vzajemni sklad imenovan PaxWorld (PAXWX). Do leta 1990 je bilo trajnostno investiranje predvsem povezano z aktivizmom, kot na primer v primeru apartheida v Južni Afriki. Jedrska nesreča v Černobilu pa je povzročila, da se je postopno začela dvigovati zavest o skrbi za okolje.

Leta 1990 je bil ustanovljen prvi indeks, ki je bil namenjen spremljanju uspešnosti trajnostnega investiranja *Domini 400 Social Index* (danes *MSCI KLD 400 Social Index*), ki izključuje podjetja, ki imajo negativen vpliv na okolje ali družbo. Največji "razcvet" pa so trajnostne finance doživele po letu 2000, ko je bilo sprejetih več pobud in standardov z namenom spodbujanja in regulacije na tem področju. Med pomembnejše sprejete pobude in dokumente štejemo Načela za odgovorno investiranje (*Principles for Responsible Investment* (2006)), eden najpomembnejših dokumentov za institucionalne vlagatelje, ki želijo v svoje investicijske odločitve vključiti okojske in družbene težave, Načela za zelene obveznice (*Green Bond Principles* (2014)), ki vključujejo smernice za razvoj trga zelenih obveznic, Cilji za trajnostni razvoj (2015) in Pariški podnebni sporazum (2015). Leta 2007 je Evropska investicijska banka izdala prvo zeleno obveznico na Luksemburški borzi, leto kasneje ji je sledila tudi Svetovna banka. Od leta 2016 pa se s področjem trajnostnih financ aktivno ukvarja tudi Evropska komisija, ki se zavzema za enotne standarde v EU glede zelenega investiranja in večjo regulacijo finančnih produktov, ki so označeni kot trajnostni. V ta namen je sestavila Taksonomijo EU, ki je stopila v veljavo julija 2020. Kljub temu, da

je bilo še v začetku leta 2020 veliko podjetji osredotočenih na okolje, se je to zaradi pandemije covid-19 pričelo spreminjati, saj so v ospredje prišli drugi družbeni problemi.

Zaradi povečane želje po investicijah v družbeno odgovorne in trajnostne finančne produkte je prišlo do potrebe po prepoznavanju le-teh. Tako se je na trgu pojavila množica ponudnikov ocen trajnosti (podobno kot bonitetne ocene). Največje deleže so prevzela že znana podjetja kot so S&P, Fitch in Moody's. Fitch in Moody's svoje ocene trajnosti vključujeta tudi v končne ocene kreditne sposobnosti, medtem ko S&P izda oceno neodvinso od ocene kreditne sposobnosti. Omeniti velja še MSCI in Sustainalytics. Slednje je podjetje, ki je v celot specializirano za področje svetovanja in analiz na področju trajnostnega poslovanja. MSCI pa je finančno podjetje znano po številnih borznih indeksih in analizah portfeljev.

Z vključevanjem trajnostnih vidikov v odločitve glede investicij je prišlo tako do potrebe po razkritju podatkov o trajnostnih aktivnostih. Tradicionalni finančni izkazi se osredotočajo na fizična finančna sredstva, zato je bilo potrebno razviti nova orodja. Najbolj konkretno rešitev ta trenutek predstavlja celovito poročanje ("integrated reporting"). Tu podjetja predstavijo kako njihove aktivnosti vplivajo na finančni, človeški, družbeni in naravni kapital. Leta 2019 je *Global Sustainable Investment Alliance* objavil podatke, ki kažejo, da je večina vlagateljev nezadovoljna s stanjem trajnostnega poročanja podjetji, ki trgujejo na borzi, saj jih večina meni, da so poročila premalo transparentna. Najpomembnejše avtoritete na področju postavljanja standardov in smernic za poročanje so *Task Force on Climate-related Financial Disclosures (TCFD)*, *Global Reporting Initiative (GRI)* in *Sustainable Accounting Standard Board (SASB)*. SASB in GRI se osredotočata na poročanje o vplivu na podnebje, družbo in upravljanje, v ta namen sta tudi razvila lastne prostovoljne standarde in smernice. Priporočila TCFD pa se nanašajo na poročanje o podnebni učinkovitosti.

Evropska komisija je prav tako dejavna na tem področju. Njena taksonomija je (vsaj za sedaj) osredotočena na poročanje o zmanjšanju podnebnih sprememb ali prilagoditvi na podnebne spremembe. V taksonomiji so opisani tehnični kriteriji zgolj za tiste gospodarske dejavnosti za katere obstaja domneva, da bodo imele največji pozitiven učinek na okoljske cilje Unije. Evropska komisija bo oblikovala tehnične kriterije tudi za aktivnosti in podjetja, ki imajo neposreden ali manj posreden vpliv na okolje. Uredba (EU) 2020/852 o vzpostavitvi okvira za spodbujanje trajnostnih naložb je stopila v veljavo julija 2020, dodatna zakonodaja bo sprejeta v letu 2021, prva poročila podjetij pa lahko pričakujemo v letu 2022.