University of Zurich[UZH]

War, Weapons and Sustainable Finance: A sin or a sustainable investment?

GEO 511 Master's Thesis

Author
Céline Andrée Küderli
15-920-051

Supervised by
Dr. Fritz-Julius Grafe

Faculty representative
Prof. Dr. Hanna Hilbrandt

30.09.2023
Department of Geography, University of Zurich

University of Zurich[UZH]

War, Weapons and Sustainable Finance

A sin or a sustainable investment?

GEO 511 Master's Thesis

Author

Céline Andrée Küderli

15-920-051

Supervised by

Dr. Fritz-Julius Grafe

Faculty representative

Prof. Dr. Hanna Hilbrandt

30.09.2023

Department of Geography, University of Zürich

Acknowledgements

With the completion of this master's thesis, I would like to formally thank my supervisor, Dr. Fritz-Julius Grafe for all of his support and constructive input during the course of my thesis. Furthermore, I would like to thank all members of the SOKU research group for their time and valuable feedback. Moreover, I would like to express my gratitude to all of my interview partners for taking the time and providing me with relevant insights and statements to back my research. Finally, special thanks go to my friends for constantly upholding my spirits, my sister for helping me structuring and proofreading my thesis, and last but not least my parents, who have both supported me in their own ways all my life.

Abstract

The proliferation of financialization, which is the increasing importance of financial motives, markets, actors and institutions in everyday life and international economies (Epstein 2005:3), has given rise to the concept of sustainable finance. In light of the climate change impacts that face international societies in an unprecedented scale and scope, sustainable finance poses as an approach that firstly aims at inducing a transformation of the current economy into a low-carbon, climate-resilient system and secondly, aspires at sourcing and appropriately allocating capital towards more sustainable efforts and development (Daugaard et al. 2022; Mawdsley 2018). This endeavor of course faces a myriad of challenges, not in the least in terms of its varying targets but also on an overarching political and systemic level, which leaves it prone to opportunistic behavior. In this respect, the invasion of the Ukraine in February 2022 and its aftermath has illuminated and accentuated a specific path through which the system is currently being exploited by its market actors. Financial industry professionals have created a trending narrative in the wake of the war, whereby they reframed weapons as sustainable investments seeing as they can contribute to defense in terms of democracy, securitization and the protection of human rights. However, this of course begs the question as to whether weapons can be considered sustainable finance instruments under the logic of the framework in light of the Ukraine crisis.

The aim of this thesis is to examine if, and if so, in what ways weapons can be regarded as sustainable investments as well as how sustainable finance can contribute to solving the overarching challenges humanity is faced with in the 21st century. To date, the realm of sustainable finance is still lined with heavy concept confusion, which has led to exploitation of the approach to further financial gains instead of fueling innovation and impact. The fact that ongoing geopolitical crises simultaneously induce a shift in values and priorities further undermines the potential sustainable endeavors within the financial industry could have on development. Therefore, this thesis aims to uncover the specific challenges of sustainable finance, especially in terms of greenwashing, the blame game and regulation, in order to be able to target and appropriately adapt them to future sustainable pathways.

Various theoretical frameworks are used to further this intention including reflections on financialization and the concepts of value, valuation and values. To support and build on the established literature, a mixed method approach is applied. On the one hand, RepRisk data is quantitatively analyzed to reveal connections between the Ukraine war, risk exposure and changing ratings of a specific sample of weapon companies. On the other hand, the resulting findings are then put into context through eleven qualitative expert interviews with different industry professionals.

Lastly, this thesis finds that weapons, regardless of their intention or use, should never be considered investments in terms of sustainable finance, seeing as they ultimately always have an inherent interest in conflict and therein constantly induce the destruction of human and environmental capital. Moreover, this revelation established that the loopholes and conceptual haziness within the sustainable finance approach need direct attention in order for future misuse to be prevented and instead be applied to real sustainable development. To this end, the thesis highlights sustainable finance’s most considerable challenges and offers insight in terms of potential remedies. In conclusion, the opportunities of sustainable finance as a whole remain considerable, both as a business case as well as a pathway to a more sustainable future.

Contents

Abbreviations

AG	«Aktiengesellschaft»
AI	Artificial Intelligence
AVIC	Aviation Industry Corporation of China
BAE	British Aerospace Electronic
BP	British Petroleum
CASC	China Aerospace Science and Technology Corporation
CEO	Chief Executive Officer
CFB	Central Finance Board of the Methodist Church
cit.	cited
CN	China
CO_2	Carbon Dioxide
Corp.	Corporation
COVID	Coronavirus Disease
DIB	Development Impact Bond
Dr.	Doctor
DS	Difference Score
E	Expert
e.g.	for example
Eds.	Editors
ESG	Environmental, Social and Governance
et al.	and others
etc.	et cetera
ETH	Eidgenössische Technische Hochschule
EU	European Union
FR	France
GB	Great Britan
GE	Germany
GHG	Greenhouse Gas Emissions
i.e.	that is
ibid	in the same place

ICBMs	Intercontinental Ballistic Missiles
IT	Italy
Ltd.	Limited company
NL	Netherlands
NORINCO	China North Industries Group Corporation
ODB	Offense-defense balance
PRI	Principles for Responsible Investment
RRI	RepRisk Index
RRR	RepRisk Rating
SCA	Sector-Country Average
SDG	Sustainable Development Goals
SE	Societas Europaea
SF	Sustainable Finance
SIPRI	Stockholm International Peace Research Institute
SLBMs	Submarine-Launched Ballistic Missiles
SOKU	Social and Cultural Geography
SRI	Socially Responsible Investing
SSF	Swiss Sustainable Finance
UN	United Nations
US	United States
vs.	versus
YTD	year to date

Figures & Tables

I. Introduction

The term "sin stock" typically refers to companies involved in industries and activities that are considered to be morally questionable or controversial and which capitalize the human vices (Blitz et al. 2017). Typically, sin stocks encompass the alcohol, tobacco and gambling industries (Hong et al. 2009). Normally, these sectors are viewed as having higher risk profiles and are therefore often excluded from socially responsible investment portfolios. Although, weapons manufacturing companies are not typically banned stocks, more recent research has begun to include the defense industry as a sin stock (Blitz et al. 2017; Sagbakken et al. 2022). Nonetheless, as of today there is no consensus in literature, whether or not weapons and the defense industry count as such, since this categorization strongly depends on varying factors such as societal norms, religious views or political developments like the current geopolitical crisis.

Additionally, it has been argued that there are considerable financial incentives tied to investing in sin. Fabozzi et al. (2008) have previously shown, that sin stock industries have outperformed the market in certain periods. Moreover, Hong et al. (2009) have argued that by holding sin stocks, investors attain additional returns, which translates to sin being a priced risk factor. However, such traditional investment approaches of performance prioritization have strongly contributed to the creation of both social and environmental problems in the past (Beslik et al. 2021). Therefore, it becomes increasingly important that ethical investing, which predominantly considers sustainability and environmental impact, takes precedence over the provision of financial returns in the future (ibid).

Generally speaking, defining sin is a value judgment rather than a scientific concept (Renneboog et al. 2011). Same goes for investment decisions. However, regardless of religious views, ethical norms and societal values, the defense industry has undoubtedly contributed to the extreme harm of societies in terms of death, displacement and other human rights abuses (Christensen 2015). In recognition of this correlation, more and more investors have in recent years applied a norms-based screening strategy for potential investments. Nonetheless, even clear exclusionist strategies of financial intermediaries do not necessarily lead to the consequent exclusion of defense stocks. At the end of the day, investment decisions still solely depend on investors' personal beliefs and investment criteria.

The freedom of decision making and lack of clear guidelines underline important challenges associated with sustainable finance. These include the lack of standardized sustainability metrics, the difficulty of assessing the long-term risks and opportunities associated with sustainable investments, and the potential trade-offs between financial returns and sustainability outcomes (Wiek et al. 2014; Rezende de Carvalho Ferreira et al. 2016). Furthermore, the financial sector has an ambivalent role in promoting sustainability (Wiek et al. 2014). On the one hand, the financial industry has the potential to drive sustainable development through the allocation of capital towards sustainable investments (ibid). On the other hand, it can and has directly contributed to environmental and social challenges through investments in unsustainable industries and practices, such as the defense industry, to further profit accumulation (ibid). All in all, investing in long-term responsible investments should be prioritized by all rational investors, not just because it pays off financially, but because it aligns finance with the broader objectives of society (Friede et al. 2015).

Failure to exclude weapon stocks in sustainable investing practices can have both negative financial and sustainability consequences. From a financial standpoint, companies that produce weapons may see increased demand for their products during times of conflict, which could lead to higher stock prices and profits (Chen et al. 2022). From a sustainability perspective, the production and use of weapons can have significant negative impacts on society, the environment and human rights. By investing in companies involved in the production of weapons, investors may be directly contributing to these negative impacts. Therefore, both the financial sector as well as the political landscape must find a way to incentivize a divestment from controversial companies, in order to ensure that investors more frequently choose to avoid sin stocks and therefore reduce the countless negative impacts of such industries (Wiek et al. 2014). By doing so, it would ultimately also further the goals and aims originally set forth by sustainable finance.

To further sustainable pathways and their prioritization, coordinated and collaborative action from various stakeholders is direly needed in order to strengthen the global response to the "grand challenge" facing the 21st century. Governments are thus under substantial pressure to provide leadership and appropriate policies to solve these problems. Luckily, the past few years have led to growing recognition and attention to these threats which has in turn catalyzed substantial capital flows toward sustainable development. Nevertheless, the required amounts to achieve the Sustainable Development Goals by 2030 are far from reached. Thus, to that end, environmental, social and governance (ESG) scores were introduced in order to meet the growing demand for sustainable finance investments and assure their alignment with transition pathways. (Daugaard et al. 2022)

In general, ESG scores are employed to evaluate individual companies according to their risk profiles in light of different global challenges (Daugaard et al. 2022). However, their significant variation suggests that there is not only a limited understanding and regulation of ESG issues but that there are also considerable barriers in terms of ESG improvements (ibid). Hence, such laxness has left the realm of sustainable finance prone to be freely exploited. Recently, for example, industry professionals have began spreading the narrative of reframing weapons as sustainable investments (Causevic et al. 2022). These claims were substantiated by arguing that in light of the war in the Ukraine, weapons considerably enhance the protection of democracy, territorial integrity as well as human rights (ibid). However, this account has to be met with considerable caution.

Therefore, this thesis raises the research question as to whether, and if so to what extent, weapons in terms of their production, intent and use can be considered sustainable finance investments, especially in light of the shifts and unrest stemming from the Ukraine war. To that end, not only must the progression of risk exposure and ESG rating changes of weapon companies be consulted, but also serious considerations about the values driving the perspectives of value within financialized social realities need to be conducted.

1. Aim

The aim of this thesis is, to highlight the currently still flawed mindset relating to sustainable finance. The lack of a standardized workable definition, especially in times of crisis, increases the influence of shifts in values. The Russian invasion of the Ukraine has led to a reduction in investor responsibility, especially in terms of sustainable investments (Dewinter-Schmitt et al. 2022). This underlines the importance of reinforcing sustainable investment guidelines and focusing on thorough due diligence regarding investments, particularly in the extent to which they contribute to sustainable impact endeavors (ibid). Ultimately, sustainable finance and its underlying products must start to align with societal objectives as well as environmental outcomes to achieve the goals of a net-zero transition (Caldecott et al. 2022). In order to uphold such promises to society and the environment, ESG integration no longer suffices and must therefore be backed up by real impact assessments and strategies that actively reduce social and environmental costs (Berk et al. 2021; Berg et al. 2022).

Most importantly, the financial industry must fundamentally change its investment behavior, whilst policy makers have to find ways to incentivize such behavior in order for investors to adhere to it, even in times of political duress. Therefore, this thesis seeks to highlight the need to consider the risks and direct consequences associated with any investment (Beslik et al. 2021). Furthermore, the importance of the financial industry in the promotion of sustainable endeavors and therefore the relevance of the collaboration between the financial sector, policymakers and civil society in promoting sustainability will be underlined (Wiek et al. 2014). Collective action, clearly defined frameworks and appropriate incentivization is the key to overcoming the challenges associated with integrating sustainability into the financial sector and paving the way to a more sustainable future (ibid).

2. Structure

To address this string of thought, my master thesis will comprise of the following elements. Firstly, the concept of financialization and the concomitant rise and relevance of sustainable finance with particular focus on the role and influence of values and ethical considerations within this development will be outlined. Secondly, the challenges of integrating sustainability considerations into the financial logics and the therein lying reasons for the divergence within ESG values will be reviewed. These findings will then be applied to the example of the defense industry, through a theoretical discussion of weapons as sustainable investments in terms of a complementary ESG and SDG framework. Thirdly, to demonstrate the systemic errors of sustainable investment thinking, RepRisk ratings of selected weapon stocks as well as their risk exposure over time and across geographies will be examined. Additionally, qualitative interviews with financial industry professionals such as asset managers, institutional investors, sustainability consultants and academic experts will be performed. These interviews will primarily target the different investors' current values-based stances towards weapon stocks as sustainable finance instruments in light of the ongoing war. A discussion of the results will draw on previously outlined theoretical concepts and will give way to a reframing of the underlying sustainable finance approach as well as potential future optimization suggestions. The thesis concludes by highlighting the sustainable finance's potential to deliver sustainable development as well as the need for geographers to find ways to capture and redirect capital streams of global financial systems towards sustainable endeavors with real impact.

II. Literature review and theoretical frameworks

1. Defining financialization

There is no doubt, that for a long time coming, finance has been actively shaping everyday life (Lai 2022). Among scholars, this process has come to be known as financialization, a concept with a myriad of interpretations. Not only does it encompass the steadily increasing importance of finance, its logics and practices throughout various aspects of economic, political and social life, but it also underscores a decisive shift in terms of how financial risks and futures are conceptualized and managed by society at large (Lai 2022). The accumulation of profits is achieved through leveraging financial channels of trade in capital markets rather than through commodity production in bank-based financial system (Knox-Hayes 2013). As a consequence, financialization has erected an inescapability of finance, that binds anything from state policy making to private households to its logic (Hall 2012).

However, the real essence of financialization lies in its ability to transform use value into exchange value. With the increasing influence of financial motives in domestic and international economies, financialization has moved the sourcing of profits away from the traditional route of commodity production and instead resorts to innovated financial logics of profitability. Therein, goods, assets and resources are transformed into capital, financial instruments and derivatives which were detached from their physical reality to capture future values that stimulate potential growth and further investments. In so doing, financial markets have found a way to effectively condense the space-time continuum where commodities exist, by reducing underlying but only potentially existing value into derivatives in order to boost economic transaction speed and accelerate profit accumulation. Consequently, financialization processes have detached understandings of value from their relation in space and time. (Knox-Hayes 2013)

Under the current economic ideology of neoliberalism that favors free-market capitalism, de-regulation and a reduction in government influence, two assumptions are relevant in this context. First, it must be considered that theoretically anything can be reduced to a metric of economic value, namely a price, to in turn be commensurate or exchangeable. Secondly, the privatization of all goods and services allows their exchange in a free market system. However, such processes have grave pitfalls. For instance, privatization dismisses the consideration and influence of a range of social attributes on valuation. Moreover, the price diminishes the underlying nature of value (and as we will see in the following chapters the value of nature as well). Therefore, financialization under neoliberalism not only removes space and time components but also reduces social norms and ideals to a series of economic metrics and assessments of profitability. (Knox-Hayes 2015)

Yet, despite this high level of abstraction finance accomplishes through the conversion of use to exchange value, it’s still tethered to real-world social situations through the underlying value commodification (Knox-Hayes 2013). In the long haul, the disparities between financial products and their actual resources can lead to severe value distortions (ibid). Additionally, real value ultimately lies in usage, whilst the emphasis on exchange value in today's economies only further skews our representation of value (ibid). Therefore, the creation and trade of value derivatives might amplify global connectedness and financial turnovers, however it equally raises the risk of system-wide disruptions and increases the vulnerability of the financial economy that can culminate in financial crises (Lai 2022). Hence, the key is understanding that at its core, value is always invariably linked to certain time and space realities and therefore situated in a specific physical and socio-materiality (Knox-Hayes 2013).

Thus, this thesis positions financialization as both a process and trend within the global political economy, that has an innate ability to convert tangible and intangible as well as use and exchange values into financial tools to accelerate commodification and profit accumulation (Knox-Hayes 2013). This might allow the capture of future value at any point in space-time, however, by standardizing the dematerialization of underlying value, a misrepresentation of the space and time under which capital gathers occurs (ibid). Furthermore, through increased exchange (value) finance essentially propels the speed of unsustainable production rates (ibid). Commodities, which traditionally held intrinsic value based on their physical attributes, are increasingly being valued for their financial benefits, which represents a shift in the value assessment paradigm from use-value to exchange-value (ibid). Ultimately, the translation into financial instruments and integration into the global financial system under financialization increases the risks of markets to the natural environment and social realities due to value distortions and space-time compressions.

2. Value in financialization

The ongoing prevalence and dominance of the paradigm of financialization highlights the need to thoroughly assert the different conceptions of value within this context. To this end, Knox-Hayes' (2013) thorough elaborations on the concept of value are outlined in the following. According to Bourguignon (2005 cit. in Knox-Hayes 2013) the typology of value is composed of three primary pillars:

(1) Measurement value, which relates to quantifying objects and processes in reality,

(2) economic value, which differentiates between use and exchange value and lastly,

(3) philosophical value, which points to an entity's intrinsic worth to individuals.

In line with the aims of this thesis, the role and relevance of economic value in financialization must be specifically examined. Moreover, particular attention is thereby awarded to the concept's spatial and temporal aspects.

In traditional economic theory, value is bifurcated into use value and exchange value. On the one hand, use value considers the utility of an object or good. Therefore, it grounds value in objective space and time as it is embedded in both the object and activity it encompasses. Consequently, use value depends on specific actors performing an equally specific activity at a determined location for a defined duration. Exchange value on the other hand, embodies the power to purchase a good, which liberates value in subjective space and time. In short, value either denotes an object's utility or its power to purchase other goods. (Knox-Hayes 2013)

The interplay between value, known as the use-exchange dichotomy, and its spatial-temporal dimension is often sidelined in academic analysis. However, an in-depth understanding of this interplay offers a holistic view of value concepts. That said, it is important to note, that the purpose of exchange value might be to liberate value, however, this alone does not guarantee that an actual use will occur, nor that value is in the end actually accrued. Exchange is subject to judgement and in turn future use. Therefore, exchange value represents a potential value rather than a realization of value. In other words, potential value is the benefit that is accrued from the future exchange of resources; however, this value can only be realized when there is also a benefit accrued from the use of said exchanged resource. As the connotation implies, the concept of value is a two-way street, whereby real value is only established when exchange also leads to use. (Knox-Hayes 2013)

By having examined the use-exchange dichotomy, space and time considerations are left to analyze. Use value, for one, is rooted in tangible space and time, inherently connected to an object and its intended use. Conversely, exchange value serves to navigate value across time and space, never being able to ensure eventual use and therein the realization of real value. For instance, a carbon credit might have a commonly disclosed value across various carbon markets and timeframes but its exchange does not necessarily equate to the reduction of carbon emissions. The same goes for labelled sustainable finance products, they might induce value in the form of profits through exchange but this does not ensure value in the form of impact. Thus, exchange value is a potentiality rather than an actualization and is contingent on future implementation decisions and utility. (Knox-Hayes 2013)

This duality of potential versus realized value is of considerable importance for this thesis. The differentiation between what kind of value is targeted has considerable influence on financialization and its policies, market mechanisms and instruments. For instance, consider a market where emissions are awarded value and companies are in turn subject to a predefined emission allowance. If emission credits are exchangeable, the perceived value of reducing emissions is instantly diminished as additional credits can be bought to counteract the emission allowance. Therefore, emission credits might have a potential value, but their use will define what kind of value is realized, namely, either an emissions reduction or a profit. This underscores that until utility is tangibly realized, either through use or exchange, value remains fluid and bound to perceptions and priorities of market actors. (Knox-Hayes 2013)

Here, the question arises as to what kind of value is targeted by different market actors seeing as use is neither defined nor preconditioned. In the example of carbon markets, only one of the usages furthers sustainability efforts, namely the use of carbon credits to mitigate emissions. As established above, exchange value is subjective and therefore dependent on personal judgment which can lead a distortion to the underlying value of the exchanged good. In addition, the use to which the exchange is applied to and thereby entrenches value, is also subject to specific intention. Therefore, how value is defined, converted or generated in terms of impact, is solely dependent on the respective market actor. (Knox-Hayes 2013)

Having established that the perception of value is dependent on the judgments and intentions of individual market actors leveraging the principles of financialization, the question left unanswered relates to how value and ultimately a specific impact is produced.

3. Valuation under financialization

Financialization under neoliberalism has prioritized to create value in form of profits generated through the exchange of instruments void of productivity (Knox-Hayes 2013). In this respect, Christophers (2010 cit. in Knox-Hayes 2013) has examined the concept of 'productive finance' as well the related 'banking dilemma'. Banks create financial instruments, such as derivatives of commodities or carbon emissions, which generate profits through global exchange without necessarily producing the underlying tangible good with an inherent use value (ibid). Such concepts underscore the paradox of being profitable without necessarily being productive, where value is stripped of functionality or purpose and left to be nothing more than a material and monetary concept (Knox-Hayes 2013). Most importantly however, value derived from such trades is meaningless in terms of a greater good (ibid).

Although banks, other financial institutions or market actors could choose otherwise, they often opt for profit accumulation without or instead of having an underlying impact by being inherently productive (Knox-Hayes 2013). Seeing as the definition of 'productivity' is therefore subjective and shaped by economic, political and societal constructs, its value is once again rendered dependent on individual perception (ibid). Therefore, depending on personal prioritization, both productivity and its designated value can vary dramatically (ibid). Hence, in order to incentivize and create real value, financialization has to change course, not because it is profitable but because a moral economy that recognizes societal value is needed (Knox-Hayes 2015). Therefore, the nature of value and valuation in a moral economy have to be considered (ibid).

The discourse on valuation would be incomplete without acknowledging the role and relevance of nature, especially in terms of its steadily increasing value. In the past, numerous interpretations of societal and environmental value were linked to intrinsic or instrumental concepts of value. Therefore, assigning monetary value to nature's abstract offerings poses various challenges. Essentially, the commodification of nature requires its translation from tangible, inherent value to an intangible, exchange value by abstracting assets from their spatial and temporal contexts. However, market prices can never fully reflect the social costs of production. Consequently, the inherent discord between the tangible essence of nature and the process of commodification prohibits natures complete and accurate privatization. (Knox-Hayes 2013)

This dichotomy underscores that nature can never fully be dissected from the context within which it exists. Furthermore, commodification requires shifting the environment from use value grounded in objective space and time to exchange value liberated in subjective space and time. This suggests that commodification under capitalism is “inherently anti-ecological” (Harvey 1996 cit. in Knox-Hayes 2013). Consequently, when nature is treated as a commodity, material contradictions arise. In turn, the underlying value of financializing nature must be reexamined. (Knox-Hayes 2013)

Problems of valuation

As discussed above, the portrayal of economic value on social and environmental problems is problematic on two accounts. Firstly, the value construct of neoliberalism is misaligned to social and environmental realities it is designed to reflect. Secondly, value constructs fail to fathom the spatial and temporal aspects of such issues. Thus, by reducing social values to economic value a range of social attributes are neglected and lost in such considerations. However, a moral economy should not compress values so that their only form of recognition is profitability through exchange but should instead give space for expression, consideration and realization of such values which in turn empowers governance beyond privatization and modernization mechanisms of neoliberalism. (Knox-Hayes 2015)

Following this line of argumentation, this deliberation can easily be traced back to the concepts of capitalism. In fact, it is one of capitalism’s core logics to convert use value into exchange value, namely capital. And in turn, said capital is put to use by investing further in order to realize more exchange value, namely profits. Hence, under capitalism as the dominating market mechanism, use is equated to profitability. Capital is therefore perceived as the only viable 'value-in-process', which implies that value remains tethered to investments and their productivity. (Knox-Hayes 2013)

Alternative modes of valuation

The widespread application of such logics highlights the need for a restructuring in terms of a more moral and value conscious economy. Furthermore, alternative modes of valuation, that unlike exchange value guarantee a specific future use and therefore further solutions to sustainability are required. Economic instruments must be adjusted to spatial and temporal dynamics of value and be additionally capable of recognizing and differentiating between forms of value. This change of course is needed not because it furthers future value but because it needs to understand the value of a moral economy. (Knox-Hayes 2015)

The above deduction has shown that financialization under neoliberalism and capitalism leads to a reinforced pursuit of value in terms of profits at the expense of real productivity and impact value. However, in a world marred with social and environmental challenges, the concept of value must move away from mere financial benefits and instead be aligned with sustainable endeavors that bring real value in terms of sustainable change. Furthermore, valuation has failed to take a very critical aspect into consideration, the social values and realities underlying such processes. Seeing as it was established that both the prioritization of value and valuation is at the mercy of market actors, what is left to do, is to decipher what it is that is valued and what is needed. In other words, how the values that shape judgments, intentions and decision-making processes shape future sustainable realities.

4. The need for sustainability in value

To date the financial sector still predominantly follows a diligent, reactive strategy of adaptation in terms of sustainable products, processes and development. Although, the industry responds strategically to client, shareholder and institutional pressures, it has been reluctant to impose proactive behavior towards sustainability. However, in light of growing public pressure, the financial sector is increasingly held responsible to contribute to sustainable development efforts and proactively demonstrate corporate citizenship (ibid). This for one has led to the rise of the concept of sustainable finance. (Weber 2014)

The complex linkages between financial, environmental and social spheres derive an uncertainty that can no longer be treated with orthodox financial logics such as short-termism and risk analyses. Instead, long-term perspectives have to be reconciled with ethical decision-making. Only then can a transition towards sustainable futures occur on the necessary scale to counter the challenges set forth by the current century. Therefore, the financial industry, among others, must confront the challenges ahead by reevaluating existing norms and conventions underlining capital flows and alter investment thinking in a way that allows channeling investments into sustainable endeavors and real impact. It is time to apply the lessons of the past to build new paths towards a sustainable future. (Clark et al. 2015)

5. Sustainable finance

5.1 The business case of sustainable finance

In light of growing sustainability awareness, the financial sector has first and foremost increased its focus on appropriately managing sustainability risks inherent to their business activities. This was mainly achieved by applying and integrating a sustainability assessment into the typical credit risk governance. Within the industry, there is growing consensus that environmental, social and governance (ESG) risks significantly influence the overall risk of any portfolio and must therefore be managed accordingly. In addition, subsequent approaches were launched to manage such outside-in risks. However, these strategies have to a large extent neglected to consider options which would include positive impacts on sustainable development. (Weber 2014)

To counter such shortcomings, different guidelines to sustainable finance were introduced. With the introduction of concepts such as socially responsible investing (SRI), financial institutions started to additionally employ inside-out strategies by strategically allocating assets into sustainable development efforts. Nevertheless, both outside-in and inside-out strategies ultimately aim at creating business opportunities and enhancing risk management, rather than inducing direct sustainability impacts. This is due to the fact, labeled sustainable assets do not underly any regulation and therefore do not guarantee value generation. Consequently, the financial industry's approach to sustainable investing focusses on the underlying business case of sustainability instead of sustainability's case of business. (Weber 2014)

There are exceptions of course, where the focus lies more on achieving non-financial impacts and less on seizing niche opportunities and managing risks through the integration of non-financial indicators. Examples include impact investing, which integrates ESG considerations into financial products and services, while simultaneously targeting a positive impact. In order to achieve such positive contributions for society and the environment, impact investing offers products and services, such as loans, investments, venture capital, and microfinance through social banks. However, due to its focus on institutional investors and long-termism, impact investing still plays a miniscule role in the financial industry. The question however remains as to why the conventional financial industry rails against accepting a more proactive role in the furtherance of sustainable endeavors through their products and services. (Weber 2014)

Historically, there is limited regulation and stakeholder pressure due to the workings of capitalism and neoliberalism in the financial sector in comparison to other industries. In this respect, many financial institutions are strongly entangled with clients and projects producing and undergoing unsustainable goods and activities. Furthermore, seeing as banks primarily are service providers, they are in many ways subject to executing and fulfilling the wishes of their customers. Therefore, their business conduct creates considerable indirect emissions, which the financial sector has been reluctant to report on. Consequently, financial institutions might have increased their involvement in sustainability-related services and projects, however, by continuing to finance harmful environmental or sustainable development all commitments to mitigate or adapt to climate change are overshadowed. (Weber 2014)

Nevertheless, the financial industry has a considerable potential to drive far-reaching achievements in the name of sustainable development. What is needed is a proactive but succinct sustainability strategy that considers both outside-in as well inside-out impact and adequately regulating labelled sustainability vehicles to ensure desired impact. Consequently, this thesis contributes to revealing the reasons as to why business as usual strategies within the financial industry are not only harmful but must be replaced with more altruistic approaches. Advancing understandings about the connection between the financial industry and sustainable development highlights the opportune position finance is in to further the case for sustainability. (Weber 2014)

5.2 Defining sustainable finance

Defining sustainable finance is not an easy task. As a matter of fact, to this day, an off-the-shelf definition of sustainable finance does not exist (Migliorelli 2021). Instead, financial institutions, governments and international organizations have created various definitions according to their underlying motivations, resulting in a sea of heterogeneous terminology (ibid). The European Union (2020), for example, defines sustainable finance as "the process of taking environmental, social and governance (ESG) considerations into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects". Although, several initiatives to streamline the sustainable finance market were launched at different levels of ambition, only little attention has been awarded to setting the very definition of sustainable finance straight (Migliorelli 2021). As long as there is room for diverging interpretations of the underlying concept, sustainable finance will be prone to risks of greenwashing and be exposed to opportunistic behavior of market actors.

Following this line of thought, there is an urgent need for policy makers to clearly define sustainable finance. There are principally two reasons to prioritize this. Firstly, clarifying what precisely constitutes sustainable finance, its securities, products and services is crucial to maintain investor trust, foster investment and consolidate the market. Clarifying both the terminology and the concept's underlying logic will ensure that financial options genuinely reflect sustainability efforts and values, as well as prevent opportunistic behaviors stemming from information asymmetries and lack of transparency. Secondly, depending on the established framework for sustainable finance, there could be a gradual shift in investment strategies, with a preference for assets tied to sustainable assets and sectors. Therefore, a well-formulated definition would lead the way to a long-term transition of the financial market system. (Migliorelli 2021)

i Reviewing the sustainable finance landscape

For years, there has been an ongoing conversation regarding the repercussions of economic activities on the environment and society. Numerous suggestions have emerged to bridge finance and sustainability, such as incorporating environmental, social, and corporate governance (ESG) criteria into investment choices or furthering impact or socially responsible investing. The United Nations' 2030 Agenda and the Paris Climate Agreement have notably influenced further developments in this area, emphasizing the critical role of finance in achieving ambitious sustainability objectives. In the following, an overview of the current state of sustainable finance and its principal guidelines is outlined. This is done by reviewing two main layers of analysis, the broad policy context on the one hand and the specific frameworks developed within the industry on the other hand. (Migliorelli 2021)

ii The wider context of sustainable finance

The global society at large has solidified its dedication to fostering a sustainable and carbon-neutral economy through milestone agreements such as the Sustainable Development Goals (SDG) and the Paris Agreement. However, committing to this transformation simultaneously necessitates an unprecedented mobilization, accumulation and redirection of financial resources in the endeavor to finance the 17 SDGs and their targets until 2023. To this end, substantial policy measures have been initiated globally, aiming to channel a more significant portion of resources toward fulfilling sustainability objectives. The European Union's 'Green Deal', for example, builds on a specific 'Action Plan' which endeavors to direct private investments toward building an economy that is not only climate-neutral but also resource-efficient. Along these lines, it can be inferred that sustainable finance primarily encompasses the financial dynamics mobilized to induce value by realizing the SDGs. (Migliorelli 2021)

Figure 1 offers a graphic illustration of how policy interventions have categorized various elements of sustainable finance. Within this sphere, green finance, climate finance and SDG finance make up distinctive subdivisions of sustainable finance. Green finance refers to financial activities and investments aimed at supporting environmental and climate-centric SDG achievements, whilst climate finance is closely aligned with the objectives outlined in the Paris Agreement, majorly spotlighting efforts toward climate change mitigation and adaptation. Lastly, SDG finance encompasses all processes that gather financial resources to attain the objectives of the SDGs. This depiction illustrates sustainable finance's significance as an established element of the contemporary financial ecosystem, even though its full extent remains partially obscured. (Migliorelli 2021)

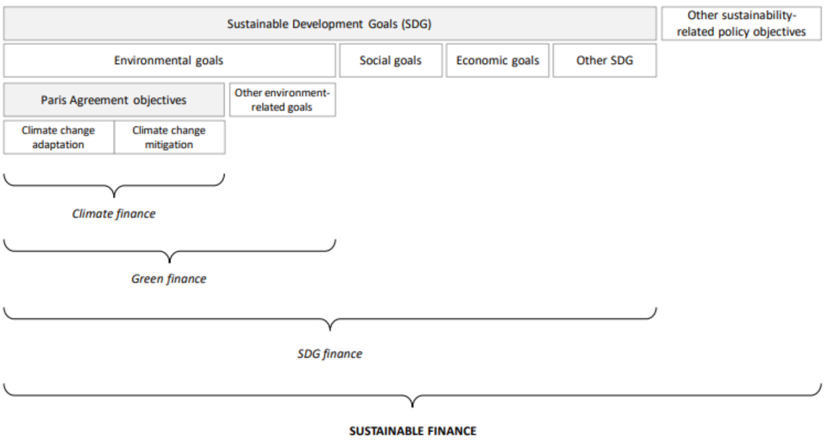

Figure 1: A classification of sustainable finance according to Migliorelli (2021)

iii The frameworks of sustainable finance

Over the years, the political and financial industry contributed to a series of frameworks that are presently fully incorporated in the broad landscape of sustainable finance. A paramount example of this is the integration of environmental, social and governance (ESG) factors into investment decision-making processes of financial entities, intermediaries and actors. The roots of the ESG movement lie on the one hand in faith-based investing and on the other hand in the civil rights, anti-war, and environmental campaigns of the 1960s and 70s. In recent years, ESG investing has been propelled by increasing investment risks posed by climate change and lax corporate governance. Accordingly, there is a rising demand for the disclosure of ESG considerations in order to enhance market transparency and guide investor decisions. (Migliorelli 2021)

Aside from ESG considerations, socially responsible investing has steadily gained traction within the financial sector, a trend anchored by the introduction of the voluntary UN-facilitated Principles for Responsible Investment (PRI). This framework furnishes a variety of strategies for assimilating ESG concerns into investment routines. Moreover, equity-based SRI activities aim at leveraging its power over shareholders to positively influence corporate behavior (Sparks 2001). The voluntary adherence to these guidelines by over half of the global institutional assets is a testament to the financial market's dedication to ESG parameters in investment deliberations (Migliorelli 2021). Yet, a clear set of regulatory guidelines and incentivizing policies would stimulate the pursuit of ESG on an even wider level (Daugaard et al. 2022).

Nonetheless, ESG and SRI only encapsulate a portion of the practices derived from the financial industry in the pursuit of sustainability (Migliorelli 2021). Another vital practice to note is impact investing, which denotes investments intended to yield positive, verifiable social and environmental impacts along with financial gains (ibid). This notion emphasizes the distinction and simultaneous existence of financial and non-financial outcomes, aspiring to expand the final investment horizon for market participants (ibid). Moreover, this practice can be described as a socially directed investment (SDI) which voluntarily accepts subnormal returns in turn for sustainable purposes and development (Sparks 2001). This ethical banking model features opportunities in both emerging and developed markets driven solely by the strategic aspirations of the investors (ibid).

iv A working definition of sustainable finance

Sustainable finance's significance has undeniably transformed over the last several years. Tracing back to its inception and its initial alignment with ESG concepts, sustainable finance primarily mandated the inclusion of sustainability facets in investment choices, with an emphasis on delineating associated risks. More recently, however, the perception of sustainable finance has evolved, transitioning towards facilitating the necessary funding and the provision of resources for a successful transformation of a society grounded in sustainability and a climate-neutral economy. This gradual evolution of the term offers an insight into the hastened uptake of sustainable finance strategies by financial entities in present times. (Migliorelli 2021)

In order to articulate a cohesive definition of sustainable finance, there are two interconnected aspects to be considered. Firstly, the specific, tangible dimensions of sustainability must be pinpointed, namely by defining what sustainability actually is. For readability purposes, such sustainability dimensions can broadly be described to encompass the SDGs and the Paris Agreement's key initiatives to determining the boundaries of sustainability. Secondly, one must examine the role each economic sector or activity plays in enhancing or achieving one or several sustainability dimensions, in order to decipher how sustainability can be attained. This, in turn, outlines the sectors deserving of sustainable financing. (Migliorelli 2021)

By addressing these two critical questions, a "workable definition of sustainable finance" can be framed to reflect the present industry and policy backdrop while simultaneously guiding theoretical and applied initiatives and practice (Migliorelli 2021:10). Thus, sustainable finance emerges as "finance to support sectors or activities that contribute to the achievement of, or to the improvement in, at least one of the relevant sustainability dimensions" (Migliorelli 2021:10). It must be stressed that this definition does not aim at reframing the term "finance", which is but an input to the equation, but instead accentuates the pivotal role finance assumes in fostering sustainability (ibid). Therefore, an appropriate workable definition for sustainable finance can here on out be subsumed by an alternate term: "finance for sustainability"(Migliorelli 2021:10).

This definition demands the initially proposed twofold exploration of key sustainability dimensions and the positive contributions of certain sectors and activities on said dimensions. Going forward, it is paramount that the formation of taxonomies follows the very same logic in order to identify sectors fit to receive sustainable financing. Within this framework, it therefore falls upon policymakers and academia to delineate the critical sustainability dimensions and identify the sectors and activities contributing positively to these dimensions. Furthermore, establishing comprehensive frameworks, guidelines and classification standards for sustainable financial instruments must be considered a collective responsibility of all stakeholders. Lastly, however, it is incumbent upon financial institutions to embed and mainstream sustainable finance deeply into their operations. (Migliorelli 2021)

It is important to note that a workable definition should accommodate flexibility to allow sustainable finance to evolve in line with advancements in scientific understanding and shifts in societal perspectives over space and time. While the core definition remains intact, policymakers must be prepared to navigate potential changes whilst keeping the central paradigm intact. This underscores a dynamic nature of sustainable finance which must be adaptable to the evolving understanding and priorities in the realm of sustainability. Ultimately, this raises the question as to how susceptible sustainable finance is to its challenges, change or crises.

5.3 Key challenges of sustainable finance

A well-crafted definition of sustainable finance is vital for the growth of the concept's market. Despite its importance, it entails significant challenges particularly regarding labels and taxonomies of sustainable finance or the lack there of.

i Reframing without additionality

The phenomenal growth in labelled sustainable finance products does not necessarily translate into an increased investment into genuinely sustainable sectors or activities. Instead, this trend seems to profit from niche opportunities in a still rather infant market, where rebranding or reframing schemes are not yet unraveled by market actors, policy makers or the system itself. However, this misalignment poses a double-edged risk: firstly, it can dampen the market's attractiveness as investors might discern a lack of tangible impact from their investments in labelled sustainable products; secondly, policymakers might misjudge the efficacy of their strategies if the surge in labelled sustainable finance products is misinterpreted and overemphasized. Mitigating this issue calls for increased non-financial disclosure requirements at the corporate level to establish an effective additionality dimension. In so doing, stakeholders are offered clear insights into how resources are genuinely steered towards fulfilling sustainability objectives. (Migliorelli 2021)

ii Greenwashing

With the burgeoning sustainable finance market comes the risk of financial entities resorting to deceptive marketing strategies, promoting a false image of sustainability, a phenomenon known as "greenwashing" or "sustainability washing." Initially emerging in the consumer goods industry, it encompasses a range of practices including misleading labels and advertisement that does not truthfully represent a product's actual characteristics to effectively benefit from the market demand of increased consumer awareness. The absence of universal definitions and standards exacerbates these issues in the sustainable finance market, allowing for varied interpretations, and therefore labels, of "sustainability." To counter this, there is an anticipated tightening of regulations surrounding the portrayal of the sustainability impact of financial products, paired with clearer delineation of sustainability dimensions and stricter disclosure requirements to bolster market trust. In turn, stricter labelling and disclosure standards would not only strengthen consumer trust but would also further the reliability of existing market structures. (Migliorelli 2021)

iii Heterogeneity of values and standards

The globalized nature of financial markets juxtaposed with the national or regional focus of sustainable finance initiatives has given rise to considerable differences in labels and operational standards across jurisdictions. For instance, the criteria for "green bonds" in China incorporate activities banned in European taxonomies, highlighting a clear disparity in values and operational approaches across geographies. To date, there have been little to no efforts spared to harmonize these different standards on an international level. This poses as a considerable risk for the financial system, seeing as the supply of available securities might have similar labels but ultimately do not meet the expected requirements, especially in terms of where the use of proceeds and therefore the impact occurs. This heterogeneity of values and standards, in turn, increases the difficulty of narrowing down the definition and aims of sustainable finance. (Migliorelli 2021)

Furthermore, this inconsistency could potentially deter investors from pursuing sustainable finance solutions and foster further uncertainty in a globalized financial market. Addressing the heterogeneity of values and standards requires a dual approach: initiating the international harmonization of financial labels and standards through existing networks and influential nodes of power, such as the international financial centers, and the global provision of transparent information on the varying standards to facilitate informed investment decision-making. The urgency for a robust transnational governance system in sustainable finance is evident. However, aligning local and regional values with broader global trends is easier said than done. Nonetheless, policymakers and academia must make such efforts if they wish to address the pressing issues of the 21st century appropriately. (Migliorelli 2021)

5.4 The importance of theoretical consistency

The journey towards realizing a sustainable society and a climate-neutral economy still faces many obstacles. Yet, in recent times, finance has ascended as a crucial catalyst, significantly influencing the trajectory and pace of this transformation. Within this setting, sustainable finance has materialized as a pivotal concept, to further the commitments in the pursuit of sustainability goals. However, the current state of the sustainable finance is still marred by a semblance of conceptual ambiguity, a consequence of a plethora of frameworks, definitions and standards that have been variously established across space and time, fragmenting the understanding of the core subject. This diversity has the potential to undermine the unified efforts of policy and industry circles. (Migliorelli 2021)

Therefore, reframing sustainable finance as “finance for sustainability” can succinctly encapsulate the market's existing complexity, setting both its theoretical articulation and practical application on the right path. It is imperative to ubiquitously introduce a definition of sustainable finance that distinctly identifies sustainability dimensions as well as the sectors or activities that substantively contribute to these dimensions. Consequently, establishing labels and taxonomies grounded in this rationale is vital to ensure transparency and therein capture the trust of market actors to foster a more focused approach to sustainable finance. Ultimately however market actors, their demand and behavior are the primary drivers of a successful transition. (Migliorelli 2021)

6. Values

Circling back to the point made earlier, notions of value and valuation processes depend on the decision-making of individuals, which are in turn guided by personal values and human ambition (Knox-Hayes 2021). Therefore, the values of market actors are pivotal in delineating what value is pursued and what impacts are in turn accrued. Furthermore, according to pitfalls of sustainable finance identified above, it underscores the importance of considering the array of underlying values in terms of sustainable decision-making. However, current frameworks to further sustainability efforts constantly neglect sociological realities, cultural aspects as well as the relevance of values. Therefore, the need to reevaluate values becomes evident.

This begs the question as to why values are relevant at all. There are three unequivocal reasons that legitimate their relevance in this context. First of all, the ongoing stride towards sustainability necessitates a change in human behavior. This can only be achieved when current values are thoroughly understood and evaluated. Secondly, once such individual values are grasped, they are vital predictors as well as effective levers to induce said necessary change in human behavior. Above all however, values generally guide personal judgments and respective actions and should therefore always be considered when individual decision-making directly contributes to the outcome of the greater strategy. (Knox-Hayes 2021)

The concept of sustainability embedded in sustainable finance is a constantly evolving process within the financial system as well as society and, therefore, is already immensely shaped by values. However, by the concept's appliance on a global scale, the eye for detail especially for specific space and time realities on local scales has been lost. Thus, existing policies need to be reevaluated, restructured and adjusted in order to reflect different considerations of values on different levels of scale, space and time. Only by grasping the nature and relevance of values can comprehensive sustainability strategies, practices and policies actually further sustainable endeavors. However, there is good reason to call this undertaking a Sisyphean task (Knox-Hayes 2021)

Nevertheless, this dilemma reveals an important research gap within sustainable finance literature. Since current frameworks have neglected the appropriate consideration of values, there is a need to further explore of the role of values in the decision-making processes and policies of sustainable finance. Therefore, in the consecutive chapters, the case of the Ukraine conflict and its influence on the financial industry's values in sustainable decision-making processes will be analyzed in terms of weapon investments.

III. Case Study

1. The Ukraine conflict

On the 24th of February 2022, Russia invaded the Ukraine. This event rattled the world and induced various reevaluation and reframing processes of the preexisting status quo. Naturally, the question of whether or not to provide the Ukraine with weapons in this time of crisis arose in the international political agenda. However, this is a complex and controversial issue with valid arguments from both sides of the political camp. On the one hand, it can be reasoned that providing weapons to Ukraine would strengthen the defense against Russian aggression and deter further incursions into Ukrainian territory (Christensen 2015). Furthermore, the provision of weapons can be viewed as moral obligation for allied states to aid in the defense of sovereignty, territorial integrity and the protection of human rights of a fellow country and its citizens (ibid). In contrast, it can be argued that the provision of arms could escalate the conflict and provoke a larger and longer lasting crisis between Russia and the West (ibid). To this day, many states have both provided and pledged various forms of assistance to the Ukraine, including weapons and military reinforcements as well as non-lethal aid such as financial, humanitarian and technical assistance (Causevic et al. 2022).

In addition to this political conundrum, the financial community has in recent months been reassessing the defense industry, their role in the war as well as their categorization within the realm of sustainable finance. Even prior to the war outbreak, weapons were culturally and geographically not unanimously considered "sin stocks" (Blitz et al. 2017; Fabozzi et al. 2008; Hong et al. 2009; Sagbakken et al. 2022). Weapons have always posed an ethical dilemma: most societies and religions might condemn mere violence, yet in turn also highly value the right to self-defense (Munson 2005). Although, social and environmental factors have taken precedence in investor decisions in recent years (Amel-Zadeh et al. 2018), the war in the Ukraine has shed new light on the framing of weapons in investment processes and therein the categorization and evaluation of sustainable investments. Suddenly, weapons seemed to be reframed as an entirely acceptable sustainable investment (Causevic et al. 2022).

As a consequence, the current unstable political landscape seems to have led not only to the reduction of sustainability's priority in investment behavior but also blurred the lines of the very definitions behind sustainable finance. Therefore, the crisis demonstrates the extent of instability that currently exists in the realm of sustainable finance. The debate around weapons is after all not the cause but the result of a flawed and deficient sustainable finance thinking (Causevic et al. 2022). This indicates that the market struggles to accurately assess underlying controversy, enabling a system wherein nuanced takes on sustainability are possible, which in turn can be exploited by performance hungry investors, especially in times of unrest where values and hence priorities shift (Berg et al. 2022). Ultimately, it seems as though the Ukraine conflict has set in motion a reversal of ethical prioritization in sustainable investments, which has led investment professionals to use such a dramatic geopolitical event as a legitimization mechanism to reframe controversial investments (Causevic et al. 2022).

Overall, the conflict in the Ukraine has sent a stir through the field of sustainable finance (Causevic et al. 2022). It not only challenges investors' views and classification of environmental, social and governance (ESG) principles but also scrutinizes what consequences these have on the practical application of sustainable investing practices (ibid). The question however remains, whether weapons are generally considered sustainable finance instruments at all.

2. Ethical crisis of investing

The term 'ethics' carries a potent emotional resonance, which invites a heightened degree of scrutiny or even criticism, especially when utilized in the sphere of financial investments. Usually, ethics is referred to as a synonym for the term moral, diverging from its philosophical context where it is positioned as the study of moral judgement and reason. Characterizing something as ethical brings with it an ensemble of altruistic principles, evoking notions of selflessness and adherence to a standardized code of conduct. Essentially, to categorize a behavior as ethical signifies a willingness to prioritize others' welfare above one's own, even at a personal detriment. Consequently, ethical investment is typically associated with the deliberate avoidance of certain ventures. However, this beckons the question of the true 'ethicality' of avoidance. Therefore, 'conscience investing' is perhaps a more fitting description for this approach, seeing as it focusses more on personal moral comfort than the broad umbrella of ethical practice. (Sparks 2001)

Nevertheless, investments under the guise of ethics are considered to be just another form of opportunistic niche innovation that widens both the choice and profit maximization opportunities for investors. Ironically, such loopholes are freely induced through the logic of capitalism, whereby stakeholders make use of novel market developments in the name of surplus revenues. Thus, although certain investors might have altruistic intentions, they ultimately have their values met by institutions who follow the sole motive of profitability and fail to share the ethical considerations of the investors. Considering the historical embeddedness of financial institutions in neoliberal capitalism, it is argued that any ethics currently to be found in retail finance can be derived from values-based investors. However, here the question resurfaces as to how and to what extent such values really follow ethical considerations and code of conduct. (Sparks 2001)

Considering sustainable finance practices and instruments as ethical can be disputed on two grounds. Firstly, as previously discussed, the concept of sustainable finance lacks a solid, commonly accepted definition as a whole and accordingly is short of a generally recognized code of ethics. In truth, within this globalized, mostly capitalist world of democracy and individualism, standardizing ethics across space and time is quite frankly unimaginable. Nevertheless, in terms of sustainable finance approaches, consistency is expected of ethics to ensure standard exclusion screens across the investment universe. Unfortunately, however, ethical criteria across the realm of sustainable finance are confused at the least and highly contradictory at the most. (Sparks 2001)

In a second instance, the use of ethics is contestable considering that current sustainable finance frameworks are at a loss in terms of altruism. Seeing as most efforts pursue profit maximization, they are simply incompatible with ethical values that can come at a cost to oneself. Interestingly enough it is mostly the underlying investors and their investment decision-making, which predominantly contribute ethics and values to finance. Financial institutions, as service providers to their clients, might meet their needs, but do so in an adaptive and profit maximizing manner. Therefore, most sustainable finance instruments provided by the industry show little explicit ethical awareness or altruistic behavior that induces a betterment for society or the environment at large. (Sparks 2001)

A reconsideration of values is needed at this point. Knox-Hayes (2021) subsumes values as concepts of beliefs that include desirable behaviors which transcend specific situations and contexts and can be converted into metrics to evaluate individual or group behavior. It is left to question, what values and to what degree they give way to sustainable outcomes. Because depending on which values are prioritized, either a short-term risk mitigation and growth or a long-term impact value strategy is pursued in investment. In a system, where individual decision-making is the key to making a difference ethical values-based judgments must be radically incentivized.

3. Weapons

To continue the question of the appropriateness of ethics in the context of financial investments, anything described as 'ethical' must entail certain heuristic principles, such as an investor integrity and behavior equipped with a set of standards applied in all areas of life as well as a responsibility in terms of 'stakeholding' towards others (Sparks 2001). Usually, such criteria are only consequently met by church or charity investors, as their specific underlying and transparent beliefs set forth strict codes of conducts that underline their consistent, altruistic and non-profit seeking behavior (ibid). The Methodist Church, for example, puts forth two essential aspects for ethical decision-making: a distinct set of principles as well as a deliberation forum to consider any practical application according to their Methodist beliefs (ibid). The term 'ethics' inherently implies normative propositions or actions undertaken with the aim to modify or constrain certain behavior (ibid). Therefore, it seems evident that considerations of ethics can further societies' quest to restrain from harmful investment behavior.

On the whole, to date, no generally accepted code of ethics exists in the current pluralistic society (Sparks 2001). Therefore, the question of the nature of 'ethics' remains (ibid). For example, few people in modern Western societies would object to alcohol or gambling activities or the need for the governments to build and maintain military defense capabilities (ibid). Nevertheless, such sectors are usually among the standardized exclusion criteria of ethical and sustainable finance solutions (ibid). Therefore, to elucidate ethical judgments made behind investment processes, the defense industry offers a myriad of controversy and therein valuable insight to the discussion on ethics.

Continuing with the example of the Methodist church, up until the early 1980s, a rather straightforward stance on the matter was held, whereby firms engaged in weapon manufacturing were deemed inappropriate for investment. In contrast, the supply of essentials such as food or clothing to military entities faced no such concerns. However, by the late 1980s, the proliferation of electronic components in military equipment had progressed dramatically. Consequently, a mere exclusion based on revenue directed towards the defense sector might inadvertently penalize electronics firms with marginal direct ties to defense activities. Recognizing these nuances, the church acknowledged the pressing need to refine its investment framework. (Sparks 2001)

In light of these revelations, the Central Finance Board of the Methodist Church (CFB) concurred that investments in firms with significant defense exposure should continue to be avoided. In addition, companies affiliated with the production of extremely contentious items, such as landmines, cluster bombs etc., were also directly excluded from investment considerations, irrespective of the revenue such firms generated. Nevertheless, the CFB was adamant that electronics firms should not be outrightly dismissed solely based on the potential military application of their products. Such gradual decision-making in terms of controversial investments has prevailed to this day. Most investments practices include certain screening processes in order to rule out unacceptable investments, however they usually maintain a 5% turnover exclusion limit, which still allows investments in sin stocks as long as the sales derived from banned substances are below a certain threshold. (Sparks 2001)

Furthermore, in 1997, further deliberations led to the introduction of two important additional principles (Sparks 2001). Firstly, a clear distinction was established between military equipment catering to defense forces of allied troops, versus those exported to oppressive regimes with questionable human rights records (ibid). In this respect, a gradation of ethics was introduced in terms of the expected defensive or offensive use of weapons. Secondly, the strategic orientation of a company was evaluated according to the manufacturer's intent to either escalate or diminish its defense affiliation in the foreseeable future (ibid). Here again, ethics was nuanced according to the purpose of the use and production of armaments.

3.1 Defense versus offense

According to the previous discussion, the distinction between defense versus offense seems to pivotally contribute to the ethical debate over weapons.

Motivations of war

Competition among nations remains a persistent feature of global politics, stemming from the inherent self-reliance demanded by an anarchic international landscape devoid of consistent law enforcement. There are essentially two motivations for challenging the status quo: Firstly, the pursuit of security, where states aim to ensure their continued existence and welfare, and secondly, ambitions driven by greed and hubris, where states seek broader goals such as ideological supremacy, heightened prestige or the acquisition of more territory and resources. Therefore, worries over potential instability are essentially worries over the comparative efficiency of offense versus defense. Nevertheless, the likelihood of military confrontation and conflict rests on the one hand on the perceived feasibility of achieving political aims at acceptable costs through successful offensives and on the other hand on military capabilities, the context-specific ability to complete in a particular techno-geographical situation. (Blagden 2021)

Offense-defense balance

The "offense-defense balance" (ODB) in international relations theory refers to the relative ease of offense compared to defense under certain conditions. This balance is a key variable influencing decisions on war initiation and as a consequence has sparked broader debates in terms of international relations and security. Defensive realists, for one, believe that states can make meaningful distinctions between offensive and defensive stances and therefore assert that by adopting a defensive posture, states can signal benign intentions and reduce the potential for security dilemmas. Central to their argument is the idea that maintaining balanced power and avoiding unnecessary conflicts leads to better security outcomes in an anarchic international system. On the other hand, offensive realists argue that states will always strive to maximize their power due to inherent uncertainties about others' intentions. They contend that differentiating between offense and defense is moot, as states can easily repurpose military capabilities to serve various political ends. In their view, signaling benign intentions through military posture is ineffective and unreliable. Ultimately, however, both war causation and its extent depend on the offense–defense differentiation. (Blagden 2021)

The distinguishability of weapons

The categorization of weapons as either offensive or defensive has long been a point of debate, especially when considering missile defense systems. On a cursory glance, distinguishing between the two uses might seem straightforward, yet the distinction holds complex implications. Typically, there's a prevailing notion that weapons designed for offense differ from those intended for defense. However, when examining the missile defense mission within the US's national security strategy, for instance, it becomes evident that missile defenses can simultaneously enhance a state's offensive capabilities while simultaneously providing significant defensive depth. Both these roles can significantly contribute to the deterrence of conflicts, yet revealing the question as to how such weapons should be classified. (Kumar 2022)

Historical perspectives, especially from the Cold War era, indicate the various nuances of these offensive and defensive roles and classifications. While an initial strike targeting an adversary's force would be deemed offensive, a retaliatory strike might be seen as defensive. To elucidate, systems like Intercontinental Ballistic Missiles (ICBMs) possess both offensive (first-strike) and defensive (retaliatory second-strike) capabilities. In contrast, Submarine-Launched Ballistic Missiles (SLBMs), being a survivable retaliatory force, should be regarded primarily as defensive. Ultimately, these weapons, whether employed offensively or defensively, aim to deter adversaries. This duality in function allows even lesser-powered states to deter more powerful adversaries, essentially achieving defense through deterrence. (Kumar 2022)

Historically, attempts to distinctly define weapons as offensive or defensive have been fraught with challenges. The crux of this dilemma revolves around the intended military mission, the role ascribed to the defense system, and the desired outcome. These intricate considerations have led to challenges in clearly defining certain weapons as purely offensive or defensive instruments. Furthermore, differentiating between the two functions might be redundant as strategic goals can shift, making what's defensive in one context offensive in another. Nonetheless, it is now widely acknowledged that the role and objective assigned to a weapon ultimately dictate its classification. (Kumar 2022)

3.2 Conventional vs. controversial weapons

Aside from differentiation between the use of weapons, there seems to arise the need to distinguish between the different kinds of armaments. While democracies are generally accepted to have the right to use armed force in order to defend their national security and ensure peace, certain weapons can cause disproportionate suffering and pose risks long after a conflict has ended (SSF 2017). Therefore, when defining and excluding weapons in investment frameworks, it is commonly distinguished between conventional and controversial weapons. To date, an official definition for controversial weapons does not exist, seeing as different countries, governments and institutions have varied opinions on the subject (SSF 2017). However, in most cases, at least one of the following three characteristics apply to controversial weapons (SSF 2017):

1. Indiscrimination: The weapon does not distinguish between military and civilian targets.
2. Disproportionality: The weapon is excessively harmful relative to its anticipated military advantage, causing undue pain and significant suffering.
3. Illegality: The weapon's production and use are prohibited by international legal frameworks.

Controversial weapons that are the subject of extensive bans or restrictions by international agreements and include, among others, cluster munitions, anti-personnel mines, nuclear weapons as well as biological and chemical weapons. Other less frequently discussed weapons include blinding laser weapons, incendiary weapons that cause burns and weapons that use undetectable fragments. Many still regard these as controversial due to the potential long-term health damages they can inflict on both military personnel and civilians. (SSF 2017)

4. A framework for evaluating the ESG impacts of weapon stocks through SDGs

Corporations, society, politicians, regulators and governments are increasingly setting their focus on the sustainability of all human endeavors. Presently, large businesses and firms are expected to both comprehend the scope and scale of their environmental and social footprint as well as report on said activities and impacts through various ESG standards, frameworks, and metrics. However, the challenge is that despite the myriad of advanced disclosure tools and requirements, none of the existing ESG schemes at hand sufficiently encourage businesses to holistically assess and declare their sustainability related impacts. This in turn fosters scenarios where companies are simply not incentivized enough to properly evaluate and disclose their footprints. Ultimately, negative impacts are purposely not divulged and overlooked which underscored the urgency to harmonize, universalize and simplify ESG reporting. (Sætra 2021b)

To enhance transparency and facilitate a more detailed analysis of the impact and sustainability profile of companies, it is imperative to integrate insights derived from value and values concepts into ESG reporting procedures. To this end, the Sustainable Development Goals (SDGs) are consulted as they are indispensable for scrutinizing and classifying the potential advantages and drawbacks associated with sustainability. The SDGs encompass a broad variety of goals related to social justice, economic growth, health and work. Therefore, by evaluating which companies contribute to sustainable activities in terms of the SDGs, impacts of companies can easily be divulged. In this respect, the outlines of a framework for evaluating and disclosing ESG related impacts by using the SDGs is here presented, which helps make the analyses of impacts more structured, transparent and allows companies to draw on ethical considerations in such evaluations. (Sætra 2021b)

4.1 Tackling SDGs through ESG

Traditionally, the responsibility of ensuring development and environmental protection lies within the competence of the government. However, in today's dynamic socio-economic landscape, sustainability in both business and politics is increasingly channeled through the private sector, which is progressively taking up the mantle to achieve the Sustainable Development Goals (SDGs). These 17 interlinked goals offer a holistic approach to global human and societal development, anchoring on five key pillars: people, planet, prosperity, peace, and partnership. Moreover, modern stakeholders, be they investors, partners, or customers, now expect a level of responsibility that exceeds mere legal requirements. Consequently, sustainability is not just a mere “hygiene factor” in terms of compliance but also a valid avenue for strategic business growth, given that sustainable business models often confer competitive advantages. (Sætra 2021b)

Though the SDGs were not initially designed as an ESG reporting framework, they are rapidly gaining traction in this capacity. Leveraging SDGs in this context underscores the influence of investors and corporations in instigating change. The SDGs offer an enhanced ESG evaluation but don't aim to supplant currently existing frameworks. Therefore, the augmentation of SDGs with ESG methodologies should be strongly advocated, seeing as existing frameworks often concentrate on traditional economic endeavors, while the complementary approach allows the additional evaluation of impact. Furthermore, given that a primary objective of ESG reporting is to foster transparency and trust between stakeholders and enterprises, the SDGs offer a distinct advantage in this domain. (Sætra 2021b)

Figure 2: SDGs through the lens of ESG according to Sætra (2021b)

Furthermore, the alignment of the SDGs with the ESG dimensions (see Figure 2) does not solely serve as an analytical tool in order to understand the tangible impacts of companies but also as a bridge, translating academic research (on SDGs) into business realities (in terms of ESG dimensions). In addition to generally analyzing the benefits accrued by and externalities affecting companies, the framework enables corporations to evaluate their direct impacts in order to harness insights for sustainability analysis and reporting. Seeing as companies across various regions encounter diverse ESG disclosure demands, this framework presents a clear classification system that enables the disclosure of both risks (in terms of ESG) and impacts (in terms of SDGs) of companies. Therefore, it poses as a valuable instrument to yield in order to determine the sustainability of firm’s various corporate activities. (Sætra 2021b)

4.2 Tackling weapons through SDGs

In light of the Ukraine conflict, there is a burgeoning discourse on the nexus between weaponry and sustainable finance. However, little attention is awarded to the Sustainable Development Goals in this regard. ESG frameworks are generally designed for broad applications across industries to capture momentary snapshots of the risks of companies and enable generic comparisons between firms. While they provide a valuable foundation for a standardized financial evaluation of companies, they may not be sufficiently designed to exhibit all liabilities associated with weapons. In order to elucidate both beneficial and detrimental effects of weapons on sustainable progression, it seems salient to include SDGs in ESG considerations in order to transcend the boundaries of mere business-centric standards. The comprehensive nature of the SDGs offers a lens to scrutinize a vast array of ethical dilemmas, including the potential merits and pitfalls of weapons in terms of impact. Therefore, as corporation’s ESG disclosure journey is enriched by a materiality assessment achieved by mapping SDG influences, thereby encapsulating nuances that might be overlooked in standard reports. (Sætra 2021b)

Weapons are generally at odds with ethical discussions. The question remains whether weapons have a potential for positive impact. Therefore, both the sustainable application of weapons and their inherent sustainability need to be evaluated. In the following weapon companies are evaluated according to Sætra’s foundational framework to assess impacts in relation to the SDGs, focusing on direct and indirect impacts and categorizing effects on micro, meso and macro levels. This provides a nuanced understanding of weapons' broader implications, bridging the gap between the business-focused perspective and ethical concerns, suggesting that while weapons might have immediate positive effects, deeper analysis reveals some adverse impacts on individual levels and societal structures. (Sætra 2021b)

4.3 Outlining a conceptual framework

With their vast and audacious scope, the SDGs can best be described as aspirational targets. While they might appear almost unattainable, they are designed to ignite transformative and innovative strategies, pushing boundaries to usher in significant advancements. In this respect, Sætra (2021a) proposes a framework for evaluating impacts of companies on the Sustainable Development Goals. Sætra's intent is to harness this framework to assess the potential implications of weapons on sustainable growth. Given their precise nature and due to the fact, that they are uninhibited by pragmatic constraints, the SDGs represent assets rather than limitations in this analysis. In the following the framework is presented and applied to the example of weapon impacts on SDGs:

In a first instance, the framework distinguishes between **direct versus indirect impacts**. Direct effects are considered immediate impacts on a particular SDG. In terms of weapons, for instance, these could be the immediate consequences of weapon usage, such as fatalities, infrastructure destruction, and immediate geopolitical shifts. In contrast, indirect effects are considered cascading or secondary impacts wherein specific goals are affected, which in turn influences others. These are the longer-term, cascading consequences of weapons. For instance, the use of a weapon could trigger a refugee crisis (SDG 10: Reduced Inequalities), which in turn might strain resources and impact quality education (SDG 4) in regions affected by the refugee influx. (Sætra 2021a)

Next, the framework considers **different levels of analysis**, whereby a three-tiered approach to evaluate the influence on SDGs is adopted. Firstly, the micro level focuses on localized and individual impacts, such as how weapons affect civilians or soldiers in terms of individual traumas, physical and psychological injuries or the direct environmental harm caused by a specific weapon's deployment. Secondly, the meso level analyzes intermediate impacts, like the effects community structures, local economies, regional political dynamics, and the environment of a specific area or country. And finally, the macro level captures the broadest, overarching societal and global effects, such as international relations, global economic shifts, larger geopolitical alliances or enmities, and the planet's overall environmental health. (Sætra 2021a)

In addition, by recognizing the interconnectedness of the SDGs, the framework evaluates whether an impact on one goal leads to consequences for other goals. When considering weapons, it's essential to gauge if an impact in one region or on one community has **ripple effects** for other areas or global scenarios. For instance, a weaponized conflict in one region might disrupt global trade routes or inspire solidarity movements across other parts of the world. (Sætra 2021a)

Moreover, the framework emphasizes the relevance of a **contextual analysis**, hence, that weapons should not be analyzed in isolation. They are part of larger socio-political and economic systems and pose within them as powerful levers. For instance, the arms trade, geopolitical alliances and defense budgets can't be separated from the broader context of weapons. When evaluating the impact of weapons, it's essential to understand these interconnected realities, including defense industries, international treaties, and domestic political contexts. (Sætra 2021a)

In a last effort, to structure the analysis appropriately, a categorization of SDGs is put into effect based on the following aspects:

- The level of impact (micro, meso, macro): SDGs are grouped based on the intensity of weapon impact
- Whether weapons have primarily direct or indirect effects on the SDG.
- The presence or absence of clear and significant ripple effects: Recognizing the interconnectedness, whether any goal impacted by weapons has clear and significant ripple effects on other SDGs.

This framework offers a comprehensive and contextual analysis of weapons impacts on SDGs, considering the broader interrelations and potential cascading effects. It captures both the immediate and long-term implications of weapons into various societal domains. (Sætra 2021a)

4.4 Theoretical considerations of the impact of weapons on SDGs

In the context of weapons, there are potential impacts on all 17 SDGs. While some effects might be more discernable, such as for example the impact on SDG 16 which calls for peace, justice and strong institutions, correlations to other goals might not be so straight forward. Nevertheless, weapons can even have negative impacts on SDG 14, which advocates for sustainable life below water, as chemical weapons' residue, for example, can lead to contamination. Furthermore, there is an abundance of ripple effects to considered among them. Impacting one SDG can lead to cascading effects on many of the other goals. For instance, a direct impact on SDG 16, which furthers peace, justice and strong institutions, can indirectly affect nearly all other SDGs due to the multi-faceted nature of conflict. While some goals have more pronounced direct impacts, weapons and conflicts have far-reaching implications across the entire spectrum of the SDGs. (Sætra 2021a)

This thesis aims at critiquing and unraveling presently prominent reframing discourses, which advocate the potentially positive contribution of weapons in terms of the Ukraine war and in turn the on the SDGs. In so doing, it highlights the overemphasis on alleged positive effects while specifically stressing their considerable drawbacks. The critique hinges on three main points:

The analyses often lack depth, treating minor positive contributions on par with major negative repercussions. By contextualizing weapons and discerning its effects across micro, meso, and macro levels, one can truly grasp the holistic impact of weapons on the SDGs, particularly how seemingly positive outcomes like the increased defense capabilities may inadvertently result in drawbacks with regards to other levels, such as the destruction of livelihoods or the environment. Furthermore, the potential dual nature of weapons is too often sidestepped. For instance, while weapons might have been produced with a defensive use in mind, they can just as equally be applied in an offensive sense and harm countries, societies and individuals in its wake. Recognizing that the nature of weapons harbor both advantages and disadvantages demands a more intricate examination, rooted in the foundational intentions behind each SDG. Lastly, there is an overreliance on theoretical methodologies to discern the impact of weapons, sidelining profound empirical examinations. The interrelation between the SDGs and the broader socio-technological landscape in which weapons exist mandates a fusion of empirical and conceptual exploration. (Sætra 2021a)

In essence, to genuinely fathom the ramifications of weapons on the SDGs, a synergy of empirical research and profound theoretical inquiry, considering weapons' role in the larger socio-political tapestry, is indispensable. Therefore, it must be theoretically debated, whether or not and to what extent weapons are sin stocks. Analyzing the investments in weapons through the lens of ESG and SDG principles illuminates a plethora of concerns that suggest such assets may not align with such benchmarks.

Many financial institutions contend that investments in weapons directly contribute and bolster democracy, freedom, stability as well as human rights. Therefore, it is argued that by channeling funds into the defense sector, ESG performance is strengthened and fortified. Arguably, there is a certain merit to the notion that supplying arms to beleaguered countries is in accordance with the ethos of ESG, especially when the intention is to safeguard human rights. Furthermore, enhancing a war-torn country's defensive capabilities by providing them with weapons arguably boosts its national security and stability. (Causevic et al. 2022)

However, as discussed above, the nature of weaponry is multifaceted. Instruments of war designed for defense in one context might be repurposed offensively in another, in the latter context additionally contributing to increased human rights violations. This dual nature in turn underscores the inherent unpredictability of investments in armaments. The classification of a weapon—be it defensive or offensive and conventional or controversial—is not static but is heavily influenced by the inherent circumstances and the user's intent. Therefore, the repercussions of weapons are highly variable, making them a potential catalyst for unwarranted violence and devastation. (Causevic et al. 2022).

Therefore, Causevic et al. (2022) detail several compelling reasons against classifying weapons as viable sustainable finance investments. First and foremost, weapons are interlaced with said unpredictable usage discussed above. Despite any intended purpose, its actual function and utilization is often elusive and varies based on the user across space and time. Even if they are used for a defensive purpose, it doesn't necessarily guarantee that they are put to use according to the ESG principles. As long as the use of weapons and its impact depends on human intension under duress, they are an undeniable wild card that threaten all manners of sustainability. The final usage will determine the further extent to which investments in armaments have negative externalities and violate sustainable finance frameworks as well as aims. (Causevic et al. 2022)

Secondly, the arms industry itself is lined with opaque and nontransparent practices and corruption. Furthermore, the industry is thoroughly backed by a strong lobby and consequently lacks proper regulation. Only a tiny minority of companies disclose details with respect to the countries in which they conduct business and which policies or processes are used to assess and manage risk in their markets. Together these realities have allowed politicians, military leaders, corporate executives, and market intermediaries to conduct various non-transparent, corrupt transactions under the guise of national security-imposed secrecy. (Causevic et al. 2022)

Third, the use weapons has a strong negative impact on the environment. Besides the loss of human life and destruction of infrastructure, weapons can devastate huge areas of landscape and have long-lasting environmental consequences. Not to mention, the strain that any rebuilding efforts will have on the environment in the aftermath of the conflict. Furthermore, different chemicals which are part of the weapons arsenal or different substances used to manufacture the equipment can decimate ecosystems and emit toxic substances into the soil, air, and water that endanger flora and fauna in the long-term. (Causevic et al. 2022)

In a fourth instance, the arms industry manufacturing processes are resource- and emissions-intensive practices. The global defense industry currently contributes 2% to global carbon dioxide emissions, but if its growth continues alongside current projections, this share could rise to 25% by 2050 (Dimitrova et al. 2021). Also, pollution from dumped or abandoned weapons manufacturing waste contributes directly to the weapons industry's carbon footprint. Moreover, manufacturing weapons requires significant quantities of many different materials, including gold, magnesium, and titanium. Finally, it must be considered, that such commodities must be imported from abroad and were mined and extracted under detrimental conditions, which further increases the overall carbon footprint. (Causevic et al. 2022)

Lastly, the UN Universal Declaration of Human Rights states that all humans are born free and equal in their dignity and rights. Human rights are universal and applicable to all human beings. Weapons cause violations of human rights and societal fragmentation. And when it comes to the SDGs and ESG principles, weapons do not guarantee social inclusion and protection of health and well-being, access to essential services, and minimum income. Weapons instead cause harm to overall physical and mental health. Overall, conflicts and their involvement with weapons both directly and indirectly enhances poverty, hunger and gender inequality. Therefore, it can be concluded that weapons contribute to the deepening of most pressing social dilemmas of our time. (Causevic et al. 2022)

The deduction just performed has outlined that weapons cause harm to all pillars of the SDGs, namely in regard to people, planet, prosperity, peace, and partnership (Sætra 2021b). Moreover, the contextual analysis in the case of the Ukraine has provided proof of both direct and indirect effects that ripple along different levels of social and environmental spheres (Sætra 2021a). Nevertheless, the combination of neoliberal mentalities and conflicts eroding social cohesion seem to enable weapons to be considered as viable investments (Causevic et al. 2022). Yet, this puts profits over people and their well-being which increases social disparities (ibid). In summary, while arguments supporting the investment in weapons as a means to uphold democracy and ensure national security are valid, the disadvantages, particularly from an ESG and SDG perspective, are substantial (ibid). Issues ranging from environmental degradation, human rights violations to the broader societal impacts, underline the complexities and potential dangers of investing in the arms industry (ibid).

5. Research design

The above has underscored how the positive potential of weapons is repeatedly overstated, which is ignorant at best and deeply irresponsible at the worst. Furthermore, it was emphasized that weapons, their ethical implications and legitimized use must be rigorously evaluated at different levels and contexts. Although, weapons might have an isolated positive effect on deterrence of conflicts, they clearly counteract most SDG-induced effects. Neglecting these aspects may hinder us from recognizing the actual impact weapons have on the realm of sustainable finance. Nevertheless, if limited success can be awarded to weapons in terms of achieving SDGs, then under what circumstances can investments in weapons be considered sustainable investment tools that are supposed to further sustainable impact? (Sætra 2021a)

Caution must be exercised when assessing the such theoretical considerations. Instead, empirical research must be conducted to further underscore the sustainability case of weapons. Therefore, to evaluate weapons for what they really are, a quantitative analysis of fourteen global weapon producers will be performed in a first step which assesses their ESG risk exposure and respective rating changes in the wake of the Ukraine war. In a second step, eleven expert interviews are held in order to qualitatively attach reasonings to the quantitative findings.

IV. Methodology

1. Mixed methods approach

According to Hawthorne (2017) mixed-method research is a form of research where the researcher intentionally combines multiple methods in order to harness the added rigor of multiple approaches, while recognizing the limitations of using only one research method for data collection and analysis. Such combinations often allow the researcher to explore and uncover deeper meanings and understandings in the research, which would not be possible using only one method or approach (ibid). Therefore, this thesis combines quantitative and qualitative methods in order to combine different results and enhance the understandings of the underlying context.

Qualitative methods on the one hand are valued for the fact that they are subjective, inductive and allow context, meaning, and individual lived experiences to emerge from a research study. Hence, the data emerging from qualitative methods often allows the researcher to contextualize and understand geographic processes in a way that emphasizes the voices of individuals being researched, while demonstrating that all knowledge and individual experiences are socially constructed in a particular time and place. The qualitative method chosen in this respect is the expert interview, which was performed with eleven industry professionals. (Hawthorne 2017)

Quantitative methods, on the other hand, are valued for the fact that they are objective, deductive and allow for theories and hypotheses to be proposed, tested and analyzed. Thus, quantitative methods are often lauded for their objectivity, their likelihood for replication across geographic settings and their ability to generalize from a smaller sample to a larger population. The quantitative analysis undergone in this thesis are specific risk and controversy assessments of fourteen global weapons companies. (Hawthorne 2017)

Mixed-method researchers are faced with a serious challenge in their research design: determining the appropriate way to integrate data gained from qualitative and quantitative methods (Hawthorne 2017). Creswell and Plano Clark (2011 cit. in Hawthorne 2017) demonstrate three viable integration options for mixed methods, including: merging data, connecting data and embedding data. For this study the merging approach is chosen. Merging integrates the qualitative data gained from interviews with the numerical information captured from quantitative data (Hawthorne 2017). Merging is achieved by reporting the different types of data separately to inform both sets of data (ibid).

Mixed-method approaches are valued for their ability to combine the power of both qualitative and quantitative approaches to provide a more complex account of the issue, construct, process or phenomena being researched. Often mixed-method researchers celebrate the intentionality of choosing multiple research methods to draw out the strengths of multiple approaches. As many geographers move toward a more mixed-method approach, there is an increased recognition that the theoretical underpinnings of a researcher; the nature of the question(s) to be answered in the research; and the researcher's own personal background (i.e., positionality) inform the choice of methods and outcomes possible in a research study. (Hawthorne 2017)

In closing, it is important to recognize the intentionality of mixed-method scholars in designing studies with multiple methods and understand that all knowledge is socially constructed and situated within large debates about epistemology, ontology, and methodology. It is also prudent to stress that mixed-method scholars understand that qualitative and quantitative methods alone have value and provide different explanatory and descriptive powers in geographic research. The real power for mixed-method scholars, however, lies in combining the strengths of qualitative and quantitative methods to uncover hidden silences in the data and to provide a more complete understanding of the construct, process, or phenomena being studied in geographic research. (Hawthorne 2017)

2. Positionality

The subjectivity of observations is a significant limitation of qualitative-interpretative methods. Mattissek et al. (2013) refer to this as a considerable blind spot, seeing as the findings derived from qualitative methods are always subjective constructions of reality by the researcher. A quasi-objective reality construction does not exist, instead there is always a competition of a multitude of different and even contradictory perspectives (ibid). Thus, the personal prerequisites and resources of the researcher significantly influences the interpretation processes (ibid). Moreover, given that the applied qualitative methods are denied the representation of objective reality, it cannot be conclusively determined to what extent, for example, the statements of the experts in the interviews were shaped by possible strategic considerations (ibid). This point seems especially important for the critical self-reflection of the work. This central limitation must, therefore, be considered in light of my positionality, especially concerning the conclusions of this work.

In terms of my positionality, I am an outsider in various respects. Although I have closely followed and thoroughly researched the conflict in Ukraine, I am neither of Ukrainian descent, nor have I ever personally been affected by a violent geopolitical conflict. In turn, my knowledge and experience of weapons are little to none and previous to writing this thesis I had no knowledge of which companies are the global leaders of weapon production. Accordingly, my personal perspective might be blind to certain aspects of the research topic where someone with prior personal knowledge or involvement might be more attuned to. Additionally, from an academic and professional standpoint, I am neither a market actor within the financial system nor am I a policymaker or politician. The sole point of contact between the research project and my personal background is my accumulated experience from a completed internship in wealth management and my minor in Banking & Finance, where I specialized in sustainable finance. As a result, I was already somewhat familiar with the realities, structures and concepts that exist within the financial system. It's quite possible that this is why, during data collection, the contextual conditions and their interconnections quickly became the focus of my investigations.

3. Quantitative methods

The research design combines the theoretical framework with the research question (Flick 2015). Therefore, the quantitative approach aims at evaluating the effect of the Ukraine crisis on sustainability related issues of weapon companies. Seeing as accountability for sustainability becomes increasingly important, ESG considerations, especially shocks, are increasingly priced in (Zhang et al. 2022). Consequently, I expect to see the crisis reflected in company valuations.

3.1 Sample

To this end, this thesis analyses fourteen publicly listed weapon companies. These were selected from the SIPRI's (2021) list of top 100 arms-producing and military service companies in 2020 on the basis of largest size, geographical distribution, connections to the Ukraine war and availability of RepRisk data. The selected firms are listed in the following Table 1:

SIPRI Ranking 2020	Name	Headquarter	RepRisk Sector
1	Lockheed Martin	US	Aerospace and Defense
2	Raytheon Technologies	US	Aerospace and Defense
3	Boeing	US	Aerospace and Defense
4	Northrop Grumman	US	Aerospace and Defense
5	General Dynamics	US	Aerospace and Defense
6	BAE Systems	GB	Aerospace and Defense
7	NORINCO	CN	Aerospace and Defense
8	AVIC	CN	Aerospace and Defense
10	L3Harris Technologies	US	Aerospace and Defense
11	Airbus	NL	Aerospace and Defense
12	CASC	CN	Aerospace and Defense
13	Leonardo	IT	Aerospace and Defense
14	Thales	FR	Aerospace and Defense
27	Rheinmetall	GE	Aerospace and Defense

Table 1: A sample of 14 weapon companies and their 2020 SIPRI rankings

These firms are the largest weapon producers worldwide (SIPRI 2021). Although, no thorough list of all references found in news articles concerning the Ukraine war was made, most of them were or are connected to the crisis. This will be emphasized by the risk incidents uncovered by RepRisk, linking the companies to the war, at a later stage in this thesis. Furthermore, I arranged for the samples to have a specific geographical distribution across three continents. Therefore, there are XX US companies to represent America, three Chinese companies to represent Asia and five companies from Germany, France, Italy, Great Britain and the Netherlands to represent Europe.

Furthermore, the samples of data collected cover various periods around the invasion of the Ukraine in February 2022. The different periods selected range from prior to the start of the war and last until August 2023, when this research was collected. The wide range aims at unveiling the most comprehensible patterns in terms of the Ukraine war.

3.2 Data

The risk data for the analysis was extracted from the RepRisk database, which was accessed through the University of Zürich's Wharton Interface. Due to the limitations of the university's subscription, not all RepRisk data was accessible. Therefore, certain adjustments had to be done. For example, as will be seen later on, SDG data was not available for all of the above selected weapon companies.

RepRisk AG is a risk metric and data provider that combines AI, machine learning and human intelligence to, among other things, detect ESG incidents (RepRisk 2022). RepRisk data enables a systematic flagging and monitoring of risks associated with listed and non-listed companies. Therefore, RepRisk's datasets enable the identification of companies that have been *exposed* to either ESG risks or business conduct. The approach, thereby, is to perform daily screens of over 100'000 public sources, such as print, online, social media or government and policy contributions in 23 languages. They make a point not to utilize self-disclosures, as such sources have been known to be at the mercy of greenwashing tendencies. Although, the reports collected are not specifically validated, RepRisk analysis perform regular reviews and quality checks of the information. Furthermore, the company lays particular focus on a transparent, rule-based and systematic way of identifying and assessing risk incidents. (RepRisk 2022)

As a consequence, RepRisk's data provides a reality-check in regard to the business conduct of companies around the world. The aim is not to provide an ESG rating, but instead to asses the material risks of such companies through an outside-in approach. For that purpose, RepRisk's research scope is comprised of 28 ESG Issues, which drive their research seeing as each risk incident screened is linked to at least one ESG issue. These ESG Issues, for instance, climate change and GHG emissions, human rights abuses, corruption and bribery or controversial products and services. In addition, they cover 73 Topic Tags, which are termed "hot topics" and build an extension to the 28 ESG Issues. Topic Tags are thematic and can be connected with multiple ESG Issues and include six weapon related topics: automatic and semi-automatic weapons, biological weapons, land mines, chemical weapons, nuclear weapons, cluster munitions. Overall, RepRisk's data covers 101 ESG risk factors that are in turn mapped to seven ESG frameworks such as the 17 SDGs or the UN Global Compact. By integrating such frameworks, RepRisk aims at assessing companies' ESG risk exposure through the lens of such global policy structures. Therefore, RepRisk data reveals companies who directly violate or harm and hinder the progress of frameworks. (RepRisk 2022)

Next, RepRisk's methodology is both issues- and event-driven, unlike other data providers which are usually company-driven. This equates to screens for ESG risk incidents to uncover the complete set of risks a company is exposed to. The data collected through screening is in turn reviewed by RepRisk's analysts, whereby each risk is rated according to its severity, reach (or influence) and novelty. Finally, the risk incident is quantified and converted into risk metrics. There are two kinds that RepRisk produces: the RepRisk Index (RRI) and the RepRisk Rating (RRR). The RRI quantifies the reputational ESG risk exposure and is calculated on the basis of the reach, frequency and timing of ESG risk incidents as well as the severity and novelty of the issues. The RRI aims to reveal companies that are newly exposed or were previously less exposed. Whenever a new risk incident is registered for a company, the RRI is recalibrated. The extent of the recalibration depends again on the severity, reach and novelty of the respective incident. However, if there is no new risk administered, the RRI decays over time, as there is no risk exposure. (RepRisk 2022)

In contrast, the RRR is a rating that enables a benchmarking as well as integration of both ESG and business conduct risk. Moreover, it facilitates a comparison between competitors within a company's sector and the integration of both ESG and business conduct risks into business practices. As per usual with ratings, it aims to solidify decision-making in terms of assessing a company's risk management, compliance, investment management and supplier risk. The RRR depends on company performance, its ESG incidents and its country-sector relationship. Therefore, the RRR is constructed on the basis of combining the company-specific ESG risk (the RRI) and the country-sector ESG risk in order to calibrate the overall ESG risk exposure of the company. (RepRisk 2022)

According to the unique datasets provided by RepRisk, the following analysis will be performed for the singled-out weapons stocks outlined above.

3.3 Evaluating risk exposure

Defense sector-country averages

In a first step, average country-sector RRIs were accessed via RepRisk. The sector considered is the defense sector and the countries selected correlate to the seven headquarter countries of the weapon stocks sample: the United States, China, Germany, France, Great Britain, Italy and the Netherlands. Next, the changes in the sector-country averages over the course of 2022 were calculated. This was done by subtracting the average country-sector RRI of a firm on the 1st of January 2022 from that of the 31st of December (see Table 2). Additionally, the overall average of the RRI sector-country averages for each company was calculated. Lastly, the progression of the average sector-country RRI for each country was displayed in Figure 3.

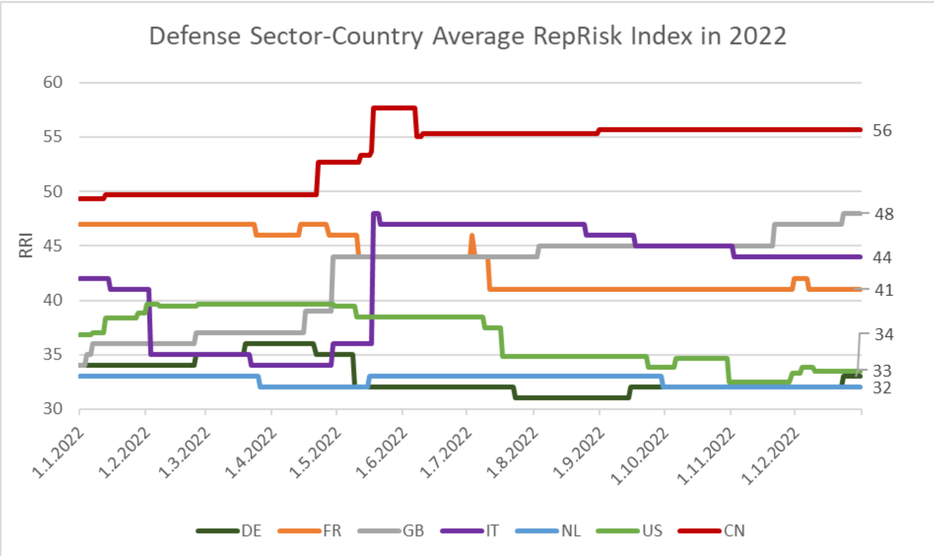

Figure 3: Defense Sector-Country Average RRI in 2022 across Europe, the US and China

Country	SCA RRI January 2022	SCA RRI December 2022	Sector-Country Average RRI Changes	Average SCA RRI
DE	34	33	-1	33
FR	47	41	-6	44
GB	34	48	14	42
IT	42	44	2	42
NL	33	32	-1	33
US	37	34	-3	37
CN	49	56	6	54

Table 2: Defense Sector-Country Average RRI and its movements across 2022

In order to identify the changes in risk exposure the RRI has to be understood and interpreted. The RepRisk Index (RRI) is a metric that captures the reputational risk exposure related to ESG issues for each company (RepRisk 2022). Therein, the RRI is not necessarily a reputation measurement, but is rather an indicator for a company's current ESG-related reputational risk and its evolution over time (ibid). In short, the RRI permits an assessment of ESG and reputational risks associated with a specific company on the basis of the reach, frequency and timing of risk incidents and the severity of the underlying issue (ibid). This enables a comparison between a company's risk exposure and that of its peers (ibid).

The RRI spans from 0 (lowest) to 100 (highest), whereby the range between 0-24 exhibits a low risk exposure, 25-49 a medium risk exposure, 50-59 a high risk exposure, 60-74 a very high risk exposure, and the region between 75-100 equates to an extremely high risk exposure. The RRI consists of an environmental, social and governance dimension, whereby the percentage awarded to each dimension is based on the number of 'E', 'S' and 'G' issues within the risk incidents of a company. Therefore, the RRI exemplifies the current level of media and stakeholder coverage of a company related to ESG issues. (RepRisk 2022)

In Figure 3, average sector-country RRIs are illustrated for the year 2022. Overall, what we see that China records the highest RRI with an average score of 54 for the year and 56 at the end of 2022. This places the sector-country average within a high risk exposure. The lowest risk exposure, which was held steadily within the year, was the RRI of the Netherlands. With an end-of-year score of 32, this still places the sector-country average in a medium risk. The European country-sector averages span from Netherland's score of 32 to Great Britain's score of 48, all of them being within a medium risk exposure. On average European countries therefore received an overall RRI of 39 and an end-of-year score of 39.6, which places them above the US sector-country average of 33 in December and its overall average RRI of 37.

When considering the sector-country average changes within 2022, several things must be addressed. The sector-country average changed most dramatically for Great Britain. A steady change in RRI of 14 was recorded for 2022, whereby the largest increase was documented in April. The Chinese RRI saw an overall yearly increase of 6. Specifically in the months of April and May a hike in RRI was identified, which stabilized in June. Same goes for Italy's RRI after it saw a decrease in February and dramatically increased in mid-May. France, on the other hand, managed to reduce its sector country average by 6 over the course of 2022. In addition, the US also decreased its RRI by 3 increments. In general, the trend seems to imply reductions of sector-country averages, whereby the average country-sector risk exposure mainly remained within a medium risk.

RRI trends of weapon companies

In a second step, all RRI data for the fourteen weapon companies was pulled from RepRisk for the entire year of 2022. Then, the year-to-date (YTD) changes of the RRI were calculated for each company by again subtracting the RRI on the 1st of January 2022 from the RRI on the 31st of December of the same year. In addition, the average 2022 RRI was calculated for each company (see Table 3). Furthermore, the progression of the RRI of all companies was illustrated in a graph to give an overview of general trends. However, due to the crowdedness of the results, it was decided to instead separate them. Instead, three graphs were assembled to depict the progression of the RRI of the weapon companies according to geographical distribution. Therefore, the Figure 4, 5 and 6 depict the RRI trends for US, Chinese and European companies for the year of 2022.

In order to be able to specifically analyze the RRI changes of the weapons companies in relation to Ukraine war involvements, all RepRisk risk incidents from February 2022 (time of the Ukraine invasion) through to August 2023 (time of data collection) were gathered for these companies. In turn, they were filtered to only include incidents related to the Ukraine. Overall, there were only ten incidents registered. Table 5 (for legibility reasons, see Appendix) lists these incidents by date, company involvement and count as well as severity and reach. Both reach and severity were ranked, whereby 1 equates to low and 3 equates to high severity and reach.

Company	**Headquarters**	**RRI January 2022**	**RRI December 2022**	**RRI YTD Change**	**Average RRI**
Rheinmetall	GE	24	25	1	26
Thales	FR	44	26	-18	34
BAE Systems	GB	24	27	3	25
Leonardo	IT	25	34	9	28
Airbus	NL	25	54	29	43
General Dynamics	US	33	20	-13	24
Raytheon Technologies	US	12	21	9	19
Northrop Grumman	US	17	20	3	22
L3Harris Technologies	US	23	18	-5	21
Lockheed Martin	US	21	25	4	25
Boeing	US	52	60	8	53
CASC	CN	11	17	6	12
AVIC	CN	25	18	-7	23
NORINCO	CN	24	19	-5	23

Table 3: RRI YTD changes and average RRI for the 14 weapon companies in 2022

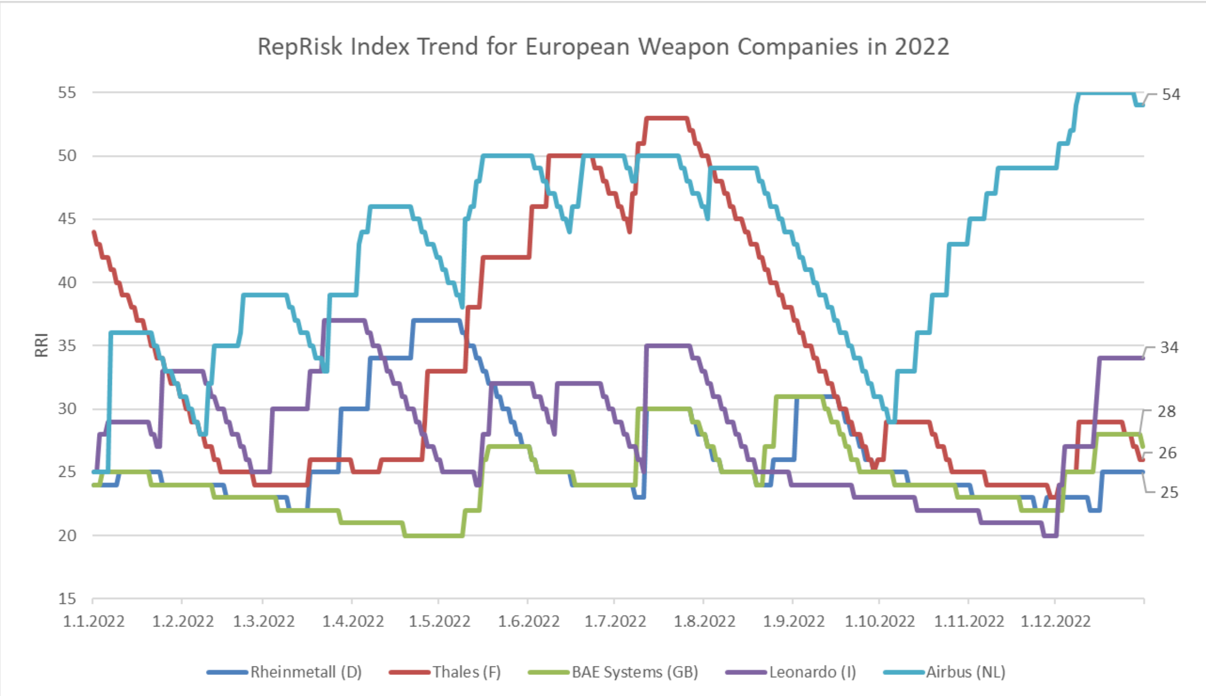

Figure 4: RepRisk Index trend for European weapon companies in 2022

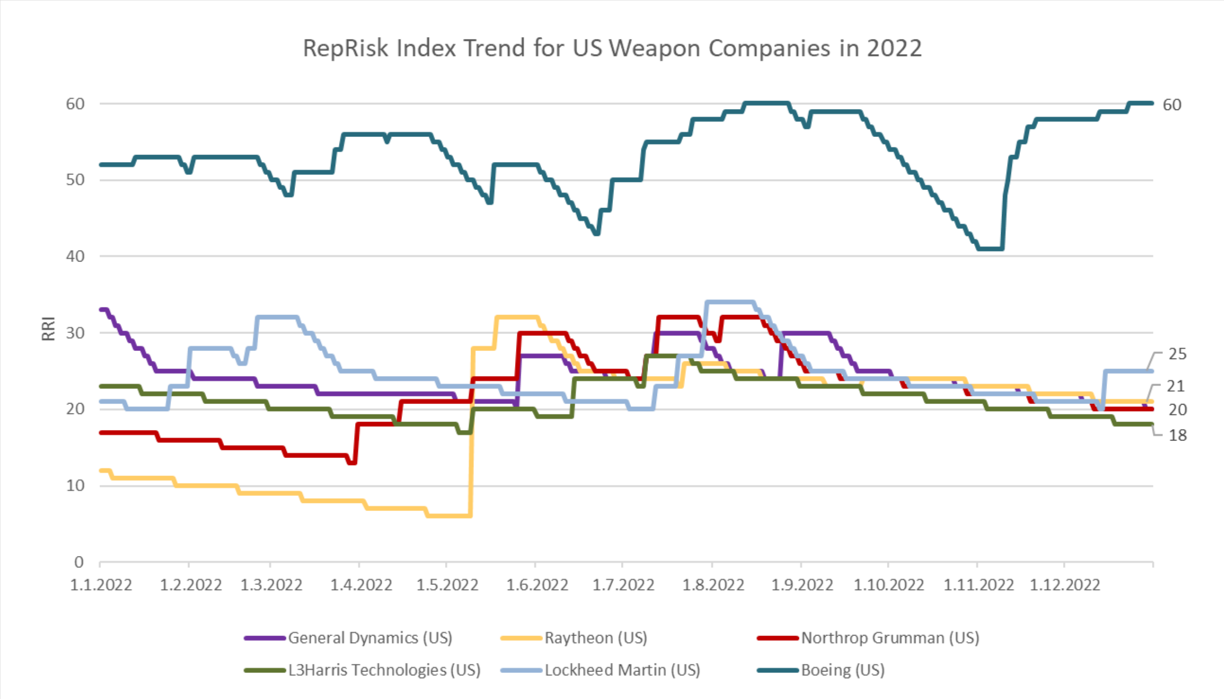

Figure 6: RepRisk Index trend for US weapon companies in 2022

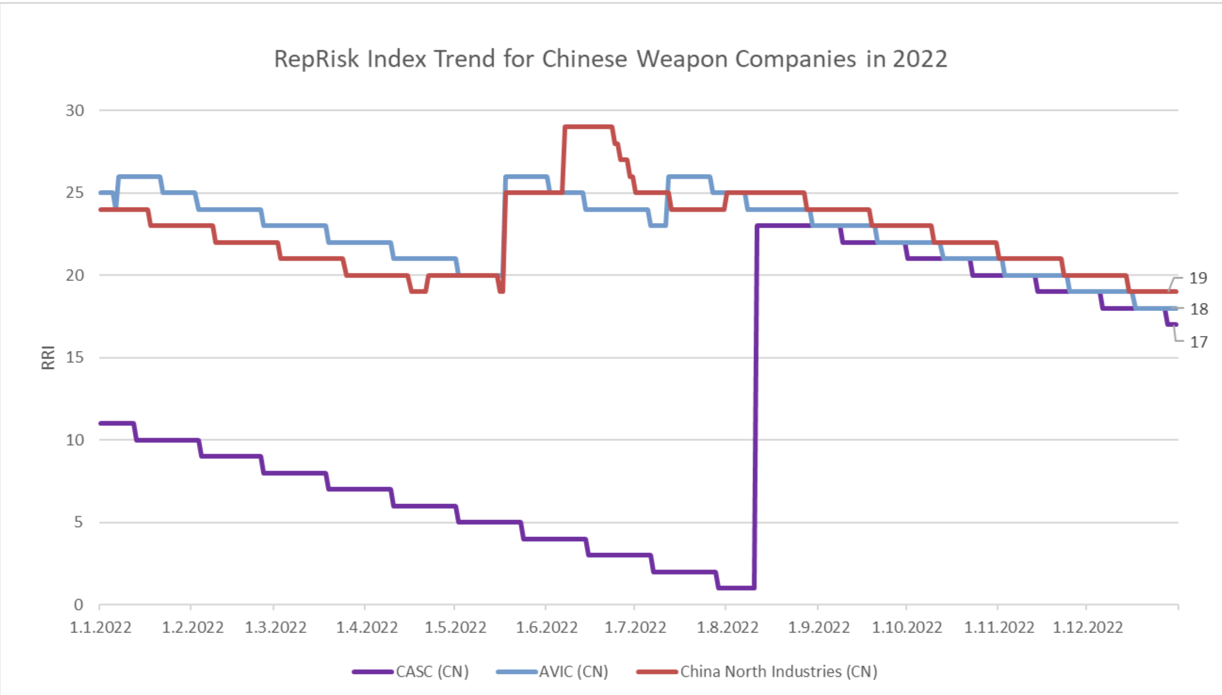

Figure 5: RepRisk Index trend for Chinese weapon companies in 2022

Several things catch the eye. First of all, the three Chinese weapon companies register rather low RRIs with end-of-year results of 17, 18 and 19. If this is compared to the Chinese sector country average of an RRI of 56, this implies that CASC, AVIC and NORINCO are well below the country-sector average. An interpretation could be, that therefore other Chinese weapon producers must have contributed to such a high average. However, this seems odd, seeing as the selected three companies are among largest Chinese weapon producers which most probably have the largest reach and influence. Nevertheless, the low RRIs of the three weapon companies equates to a lack of risk incidents registered and therefore could imply that no direct supply to or involvement with the Ukraine war (or any other armed conflict) occurred that would have raised an incident. This can be backed when considering the registered risk incidents, where none of the ten Ukraine incidents were linked to the three Chinese companies.

Most US companies also recorded low end-of-year RRIs around 18 to 25. One outlier, Boeing, was identified with a score of 60, implying a very high risk exposure. However, when consulting the risk incidents linked to the Ukraine only one is liked to the company. This leads to believe, that the high overall trend for Boeing in 2022 is not necessarily connected to its weapon exposure, but instead to its aerospace business and the risks within that sector. Together the remaining five US weapon companies, on the other hand, record a yearly overall average RRI of 22, which is a rather low risk exposure, especially in a year of global conflicts. However, General Dynamics decreased its RRI by 13 and L3Harris Technologies by 5 increments over the course of the year. The former was linked to three and the latter to two Ukraine risk incidents in 2022, where among other things they stand accused of allegedly selling weapons to states involved in armed conflict and human rights violations.

In Europe, Thales seems to have taken the biggest hit. It's RRI decreased by 18 increments over the course of the year. Although, overall, it's average RRI of 34 still qualifies as a medium risk exposure, its RRI progression hints at a turbulent year. Moreover, RepRisk flagged a direct involvement incident related to the Ukraine war in July 2022. Thales RRI visibly spikes in Figure 4 underlining the risk exposure response to the risk incident. In addition, it was Rheinmetall who faced the most flagged risk incidents, a total of 6 of the ten incidents identified. Nevertheless, its RRI changed only by one increment and at an average RRI of 26 it sets forth one of the lowest risk exposures. This seems to highlight that Rheinmetall's general exposure to weapons is already priced in and that it is therefore not perceived as a further risk. Rheinmetall's RRI did increase following the invasion in February, but seeing as there are no Ukraine related risk incidents at that time, the increased risk exposure in that term must have been related to other ESG issues.

In terms of risk incidents, an important point has to be made. Seeing as the defense and arms industry is very controversial due to its affiliations with corruption, bribery and its general lack of transparency, there is good reason to believe that many proceedings in the industry are simply not disclosed or uncovered and therefore not reported on. Nonetheless, RepRisk screens a variety of media sources and non-governmental organizations' efforts to uncover the opaque nature of the defense industry and progress is being made in this regard. Personally, however, I am of the opinion, that most deals, provisions and involvements were kept out of the public eye and therefore are not fully represented in the data analyzed above. Moreover, given the Ukraine crisis' huge media cover, it seems questionable as to why only ten incidents were flagged.

In conclusion, for the year 2022 average risk exposure for the considered weapon companies, irrespective of their geographical distribution, remained rather low. The yearly overall average of all companies yielded an RRI of 27, which equates to an at best weak medium risk exposure. This seems rather problematic, if not mildly upsetting, seeing as it would be expected that weapon companies, in light of the ongoing global conflicts, would endure a period of higher risk, especially in regard to their products' involvement in and furtherance of such wars.

3.4 Measuring rating changes

To measure rating changes of weapon companies in light of the Ukraine war, this thesis utilized the RepRisk Rating (RRR). The RRR is RepRisk's in-house risk metric that evaluates a firm's ESG related risk exposure (RepRisk 2022). It is a combination of firm's specific ESG risk exposure (the RepRisk Index (RRI) an indicator of ESG-related reputational risk) and the ESG risk exposure of the sectors and countries within which the firm has exposure to risks (ibid). The fact that RepRisk specifically integrates controversy data, makes their ratings especially interesting for my thesis, seeing as it can be expected that many controversies (that increase the risk of weapon companies) arise in the wake of the Ukraine war.

To measure the rating changes, the RRRs had to be converted into a 'Difference Score' (DS). The idea for the conversion was found in Zhang et al. (2022) and applied to this sample. The DS is calculated by subtracting the RRR(T+1) minus the RRR(T=0). However, the RRR is provided by RepRisk in a letter format, ranging from the highest score 'AAA', which in turn has the lowest ESG risk exposure, to the lowest score 'D,' which has the highest ESG risk exposure. Therefore, the RepRisk Rating had to be transformed into a numerical format. So, I transformed the letter ratings into a number format, whereby the lowest ESG risk (AAA) is associated with 1, the second lowest risk (AA) is associated with 2, until finally the highest ESG risk (D) is associated with 10.

In a next step, I calculated the DS for three different time periods in 2022: January to March, January to June and January to December. The first time period is relevant, because the invasion occurred in February 2022, therefore it marks the span just before and after the event. The second period is the half-year mark, where the market has probably finally priced in the events of February. And lastly, the rating change over the whole year of 2022 is evaluated.

When calculating the 'Difference Scores' a positive score (> 0) indicates a reduction in RRR, whilst a negative score (<0) implies an increased RRR. A reduction in RRR in turn means that the ESG reputation risk has increased, the opposite is true for an increase in RRR. In other words, when a firm's RRR score drops by 1, e.g., from 'AAA' to 'AA', then the DS will show a numeric value of +1, which means that the ESG risk exposure was increased by one increment. The overview of the 'Difference Scores' can be found in Table 4.

Overall, the RRR did not change dramatically. From the fourteen weapon companies, four of them (Airbus, Raytheon, Thales and CASC) did not show any rating changes over all three periods. The strongest change was recorded by L3Harris Technologies. Although there was no change in the rating between January and March or June, for the period to December the DS yielded a numeric value of -2. This equates to the decrease of the ESG risk exposure by two increments. Although, this could be considered a lot, it has to be underlined, that the ESG risk exposure scale provided by RepRisk consists of three layers within each severity. Simply put, it is possible that even though the risk exposure has decreased by two increments, the overall score still stays the same (e.g. two increments up from 'A' leads to an 'AAA' which is still only within the low ESG risk exposure overall score). By closely regarding the concrete case of L3Harris Technologies, its risk score increased from a 'B' in January to a 'BBB' in December, which means that overall L3Harris Technologies still has a medium ESG risk exposure, just a slightly better one.

Company	Headquarters	Jan-Mar	Jan-Jun	Jan-Dec
CASC	CN	0	0	0
Airbus	NL	0	0	0
General Dynamics	US	1	1	0
Thales	FR	0	0	0
Raytheon Technologies	US	0	0	0
BAE Systems	GB	0	1	0
Rheinmetall	DE	0	-1	0
Northrop Grumman	US	-1	0	0
Leonardo	IT	-1	0	0
AVIC	CN	0	1	1
NORINCO	CN	-1	1	1
L3Harris Technologies	US	0	0	-2
Lockheed Martin	US	0	0	-1
Boeing	US	0	-1	-1

Table 4: RRR Difference Scores for different time periods in 2022 for all 14 weapon companies

Next to L3Harris Technologies, Lockheed Martin and Boeing were also able to reduce their risk exposure over the entire year of 2022. Both of them reduced the risk exposure by one increment, but stayed within their overall risk exposure. Boeing moved from 'CC' to 'CCC' within high risk exposure by June already and Lockheed Martin moved from 'BB' to 'BBB' within medium risk exposure within the second half of the year. In contrast, China North Industries Corporation (NORINCO) and Aviation Industry Corporation of China (AVIC) seemed to have increased their risk by one increment both by June and by December 2022. Indeed, their ratings changed from 'BB' to 'B', which still only counts for a medium ESG risk exposure.

Aside from Boeing, NORINCO and AVIC, only three other companies showed rating changes in the period from January to June. Rheinmetall had an increase of its rating from 'BB' to 'BBB' and was able to hold its least strong medium ESG risk exposure until the end of the year. BAE Systems on the other hand, saw a reduction in ratings by one increment by June. Same goes for General Dynamics, although the change had already occurred by March. Both suffered a slip from 'BBB' to 'BB', but still remain a medium overall risk. Finally, three companies increased their ratings by one increment during the period between January and March. NORINCO from 'BB' to 'BBB', Leonardo from 'B' to 'BB' and interestingly Northrop Grumman from 'BBB' to 'A'. Therefore, Northrop Grumman was the only company that showed an overarching risk reduction from medium to low over the three periods.

Seeing as Northrop Grumman did not show an 'A' rating at the end of the year, there must have been another risk change between March and June. Although a more detailed evaluation of the rating changes would have been informative, it would have surpassed its effectiveness in the scope of this thesis. Furthermore, the three periods have given a broad overview of how the ratings have change over the course of 2022 and therefore the first year of the Ukraine crisis. Ultimately, only one company, namely General Dynamics, showed a reduction in rating over the January-March period, when the Ukraine was invaded by Russians. And, said reduction wasn't even a drastic one, seeing as it still kept a moderate 'BB' rating.

Moreover, it has to be mentioned, that the RepRisk Rating is based on specifically captured risk incidents of companies. Therefore, the changes are strongly dependent on whether controversy cases for these firms were recorded within this time frame. In terms of weapon companies, one has to remember that due to their tendency towards intransparency, bribery and corruption, some news might not have been registered by RepRisk. Furthermore, it is a question whether or not the controversy influences the ESG risk of the company itself. RepRisk's ESG considerations usually refer to companies' misdemeanors in terms of international regulatory guidelines and standards such as the Sustainable Development Goals and the UN Global Compact. It remains open as to what they consider as a misdemeanor of the company and as risk to the company. Lastly, they do not consider the direct impact the company has on society and the environment, but instead focus on rating the company, its processes and products. This, of course, especially in terms of weapons and in times of war is valuable insight that is missing from this analysis. (RepRisk 2022)

4. Qualitative Methods

Qualitative research aims at describing lived experiences 'from the inside', therefore from within the people and their actions (Flick et al. 2015). Moreover, qualitative work tries to further the "comprehensibility" of the answers, since statistical representativeness is not achieved (Mattissek et al. 2013). In so doing, it contributes to a better understanding of lived realities (Flick et al. 2015). Qualitative research can also deliver insight by identifying perspectives which deviate from the norm and can thus be used as a new source of knowledge (ibid). By openly analyzing the subject of inquiry, responses to questions in guided interviews often reveal a more concrete and vivid picture than would have been possible with a standardized survey (ibid). In this respect, expert interviews according to Mieg et al. (2005) were chosen as the qualitative method for this thesis.

4.1 Qualitative expert interviews

The term "expert" refers to a person, who has special knowledge on a subject which can be passed along on request and applied to solve a problem at hand (Gläser et al. 2009). Therefore, experts can either be members of a functional elite or people who have acquired expert knowledge through experience in performing a job related to the subject (ibid). Accordingly, any person who possesses knowledge relevant to the research subject is equipped to be an interview partner. As interview partners they are a source of specialized knowledge and social facts (ibid). In turn, expert interviews can be used to reconstruct and find explanations for social realities, situations or processes (ibid). In order to reconstruct such social facts, eleven interviews with industry professionals were held for this thesis.

4.2 Guided interviews

Guided interviews are useful to analyze everyday knowledge since they ascertain expert knowledge about the respective research field by capturing and analyzing subjective perspectives (Hopf 2015). Usually, the majority of questions are previously prepared and formulated in an unrestricted manner, in order for the interviewee to be able to answer as openly as possible (Gläser et al. 2009). Neither the wording nor the order of the questions are binding. This ensures flexibility during the interview by allowing changes in topic and exciting lines of thought to be addressed. The questions of the guided interviews are based on the subject of the thesis and aim to elicit the interviewee's attitudes, opinions and knowledge on the matter. During the course of the interviews several follow-up questions were asked in appropriate circumstances to obtain the most detailed answers and opinions. However, these questions were not prefabricated, as the requirement for further potential lines of questionings only become evident during the interviews itself.

In order to conduct a successful guided expert interview, the interviewee must be cooperative (Gläser et al. 2009). Since the interviewed person voluntarily takes on the role of the expert, by agreeing to an interview, only a trust-based interview climate is left to achieve to motivate the participant to provide as detailed narratives and assessments as possible (ibid). Aside from shortly outlining the thesis in the email sent to the participants, they were given a short introduction on the focus and aim of the thesis at the beginning of the interviews. I purposely avoided providing an interview guide or sending the questions in advance, as this tends to limit or distort the responses of interviewees.

When preparing the guided interviews, special focus was put on preparing factual questions which can access the relevant specific knowledge of the experts (Gläser et al. 2009). Therefore, questions regarding the experience, knowledge and background of the interviewees as well as their opinions and attitudes towards the topic at hand were asked. The questions were divided into five blocks, whereby the first and last blocks served as an introduction and a conclusion to the interviews. Furthermore, the blocks were arranged in such a manner that topics with related or similar content were posed one after the other. Depending on in which sector within the financial industry the interviewees were employed, the questions were slightly adjusted or expanded to be able to meet the full breath of the subject of the thesis.

Seeing as the start of the interview sets the scene for the whole interview, certain "ice breaker" questions were asked in the beginning (Gläser et al. 2009). These included questions regarding their academic and/or professional background as well as their experience in the realm of sustainable finance. Such questions can easily be answered by interviewees and contributed to warming up the interview process. In turn, the last interview question is also of great importance, as suitable closing questions enable the interviewee to mention aspects of the topic that have personal importance or weren't yet covered (Gläser et al. 2009). Therefore, in the closing remarks, it was left up to the interviewee to comment or contribute. The rest of the interview encompassed the topics discussed in the theory section. The full interview guide in included in the Appendix.

4.3 Sampling and access to interviewees

This master's thesis abstained from considering classical demographic dimensions, as the subject under study and its questions do not require a comparison by age, gender and origin (Flick 2015).

Moreover, numerical generalization is not an aim of this master thesis, so no conclusions can be made about a specific population (ibid). Of greater importance is the diversity of the respondents, which is characterized by the different roles and backgrounds of the professionals in the field of study (ibid). In order to obtain relevant information for the thesis, it is of great importance to interview experts who have an in-depth, sustainability-, weapon- and market-specific knowledge. The interview participants were therefore selected on the basis of their professional activity in the field of sustainable finance. I especially tried to ensure, that the different sectors within the financial industry were covered (e.g. banks, rating agencies, consultancies, academics etc.), as well as that both more senior as well as junior candidates were interviewed, as their opinions on sustainability usually differ quite extensively. Gender and ethnicity were not considered. In order to establish contact with the interviewees, a standardized e-mail was sent to each candidate which informed them about the topic of the master thesis, highlighted their role as an expert and inquired about a possible interview. A list of the eleven interviewees is included in the Appendix, whereby the experts were all anonymized and instead renamed to E1, E2, E3 etc. in chronological order of the interviews.

4.4 Conducting the expert interviews

The interviews all took place via the two online video conferencing platform Teams or Zoom. Interviewees were questioned at the very beginning of the interviews whether they would like their responses to be anonymized and whether the conversation could be recorded. Although the majority of the interviewees did not object to being quoted, some wished to receive the quoted extracts in advance to have them checked with their compliance departments or preferred to have their firms anonymized. Therefore, I decided, especially in terms of saving time, to anonymize all interview statements to prohibit any conclusions about individuals or their firms from being drawn. In contrast, all candidates luckily agreed to the recording of the interviews, which enabled the full transcriptions of the conversations. Notes would simply not have been sufficient to answer the research questions of this thesis (Gläser et al. 2009).

4.5 Qualitative content analysis

The series of interviews provided a set of raw data which needed to be analyzed. Most qualitative content analyses are time-consuming and require a high degree of accuracy in terms of transcription and evaluation by means of theoretical coding (Flick 2015). According to Mayring (2015), the main goal of qualitative content analysis is to systematically process the communication material by maintaining a systematic analysis of the content and not to jump to conclusions about results. That in mind, the Cockatoo transcription software was used for the conversion of the conversations whilst the MAXQDA program was used for coding the interviews.

The aim of transcription is to make interviews permanently available for scientific analysis and thus forms the basis of an interpretative evaluation (Mattissek et al. 2013). According to Gläser et al. (2009), interviews should be transcribed as exactly as possible. The disadvantage of an exact transcription is that it is extremely time-consuming. Accordingly, the Cockatoo software was used to upload and transcribe the interviews, mainly to save time. Since the interviews were specifically conducted in English, since the thesis is written in English, the transcriptions were executed quickly and only needed to be skimmed for errors. So far, there are no generally accepted rules for transcribing interviews. Therefore, for the purposes of legibility, I decided to transcribe the interviews in a compressed way, whereby no redundant features of speech such as pauses, intonations, laughter, throat clearing and the like were taken up in the transcripts. Otherwise, the transcripts followed the exact phrases of the interviewees, which includes repetitions and grammatical errors.

The qualitative content analysis considers the quality of text components within the answers collected (Gläser et al. 2009). According to Flick (2015), it is therefore considered helpful to form question-related priority lists that enable the selection and reduction of categories and therefore facilitating the management and ordering of categories within raw data. Furthermore, quantitative research methods produce data which is considerably shaped by the interviewees, which means that such data includes fuzzy information that is difficult to interpret, that is contradictory or is even irrelevant (Gläser et al. 2009). Therefore, whole sentences or entire sections of the transcript can be coded as irrelevant (ibid). The final result of coding the interviews is a system of codes that represent the content of the text (ibid). This enables analyses across all interviews, whereby comparisons or common occurrences of certain themes in the text can be identified (ibid). Hence, the formation of categories is an essential step in order to compare different transcripts in terms of content and to answer the research questions.

Since the interview questions were more or less the same in all interviews, it was possible to define initial general categories according to the question blocks before reading through the transcripts. Mayring (2015) argues the category formation of the codes should be continuous or inductive, therefore the categories were developed step by step from the analyzed material and reevaluated from time to time. Luckily, qualitative content analysis allows flexibility and furthers the revision of the category system in feedback loops during the analysis of the material (Mayring 2015). Consequently, the openness of qualitative methods which furthers the continuous development of a category system, finally detaches the content analysis from the transcript (Gläser et al. 2009). Instead, only the relevant information is coded, extracted and further processed separately from the original text (ibid). In the end, only the extracted content is the object of investigation in this thesis as they contain the answers the research question. An overview of the coding guide can be found in the Appendix.

4.6 Methodological discussion

Overall, the chosen mixed methods approach provided a certain breadth and depth to the thesis. Nevertheless, some aspects could have been improved. In terms of the qualitative interviews, I was dependent on the willingness of the approached interviewees themselves whether an actual interview could be secured. Many decided not to collaborate, seeing as the topic is quite controversial. Nevertheless, I was ultimately able to arrange eleven interviews. Unfortunately, investment funds in particular refrained from commenting. If the process were to be repeated, special emphasis would additionally be put on targeting funds. Moreover, I neglected a more specific targeting of experts in the sense, that a more even distribution across age, gender, position and sectors within the financial industry would have been more meaningful. Lastly, in retrospect, I should have interviewed a religion-based financial intermediary as well, since their perspective on values and ethics would have definitely been illuminating.

Furthermore, since I adapted the interview questions for each candidate specifically to their background and academic career, the combination of data sets was sometimes challenging. A more standardized interview guide, therefore, would have been helped. On the other hand, by customizing it to the expert, valuable insights were revealed that were not originally envisioned. Therefore, the final quality of the assertions was found to be satisfactory and provided useful findings in the sense that they were able to inform on real world realities of the financial industry. In addition, it was an advantage, that I held all interviews in English, since it preserved all nuances of the context within the given statements and spared me the time of having to translate them. Lastly, I found that the personal interviews were highly beneficial for my research project, especially in terms of the elaborations on personal values.

The quantitative analysis would have benefited from a further financial data source. It would have been interesting to see the relation between the financial performance of weapon companies in light of the Ukraine conflict and their risk assessments. This would have provided a further perspective to the discussion. Moreover, due to the fact that the University of Zürich does not have a full subscription for RepRisk data through the Wharton Interface, certain aspects of the companies' data could not be accessed. Lastly, if I would have conducted the analysis of the weapon companies prior to the interviews, comments from the interviewees on the findings could have been enlightening.

In conclusion, it should be noted that the University of Zürich and the Department of Geography provide a clear time schedule and content-related guidelines for theses. This results in additional methodological constraints in terms of more long-term and comprehensive research design.

V. Results

1. Revisiting sustainable finance

1.1 Definition dilemma and concept confusion

As established earlier in this thesis, the confusion involving the myriad of voluntary approaches and frameworks in terms of sustainable finance, enables market actors and institutions to exploit niches and loopholes in the system to further their own gains, usually the accumulation of profits instead of sustainable endeavors. Sustainable finance is defined by one expert as "the attempt to steer capital flows in a direction to mitigate and solve certain sustainability challenges on the long run" (E11), it is in turn rather a "long-term approach of integrating ESG factors into investing and financing" (E9) for another. Although these definitions might sound similar to laymen ears, one approach focusses on the use value of impact and change, while the other sees the value of the concept in a broader risk assessment, therefore an extension to exchange value. This highlights the underlying deviations within the concept of sustainable finance, especially in terms of the value, goals and impacts it should target.

As one expert states: "There's a lot of confusion because people do not differentiate very well. You have to ask the question, what is the original target of a sustainable investment strategy? However, there is never just one single target. There is a series of targets and there needs to be a differentiation from the one to the other. The confusion and controversy arise because one talks about A but means B or means A but talks about B" (E11). This begs the question as to how a concept can even exist without an unanimously agreed upon definition and aim(s). Yet, another expert is of the opinion that "among professionals in the realm of sustainability, we tend to use terminology quite vaguely because we know what we are talking about, therefore it can be generic, because we know while we talk, whenever we talk, what we mean. So, there's no need for precision" (E7). Ultimately, however, it must be distinctly underlined that "there is a huge difference between ESG considerations and impact. And that is one of the most relevant points to consider when talking about the details of sustainable finance and bout sustainability in general" (E2).

Furthermore, as one interview highlights, "sustainability is such a personal topic" (E6). This can be aligned with another argument made earlier, namely the relevance of personal values and their influence on market actors and decision-making processes. "It depends on your perspective, simply because many things are not black or white, they're not brown or green, and they're not good or bad" (E6). Ultimately, it is up to the values of the market actors because "it's the consumer who has the power" (E4). Therefore, it has been suggested that maybe "sustainability means nothing else than the prosperity of the next generation" (E10). "But today, sustainability seeks to sort of norm everything across history which leads to narrow-mindedness and a focus on Western thinking. This ultimately doesn't consider the whole picture nor reality" (E10). And it certainly neglects important underlying social realities and values.

If the consideration of values is neglected, then so is the notion of value. An important question raised by an interviewee is whether "finance in general and specifically investments in public markets can have a real-world impact at all" (E2). He exemplified this notion by underscoring that "the basic problem is that if you hold a Nestlé stock or I hold the Nestlé stock, Nestlé doesn't care. And if you hold 10 billion and I hold 10 billion, then Nestlé might care a little bit more. But they don't have more or less money due to that fact, right? And they won't stop allocating it towards making more profits instead of impacts." (E2). Furthermore, he questions the levers in place within the system, aimed to counter such movements. "Research shows we need to further engagement and push active ownership. And I agree, but honestly, it's been done out there and look at what it achieved. In the end it really depends. People have been engaging with Shell, BP and Total for 50 years. But they haven't moved a bit. Why should they? Profitability of coal, oil and gas is much, much, much higher than any other renewable energy. So, they're like, why should we budge, we're just going to milk that cow until it dies" (E2). This line of argumentation underscores the reality of neoliberalist, market-based capitalism, that is indeed very hard to break. It also seems to allude to a certain helplessness. There are ways to further and achieve impact, but, one thing is sure, they are not 'one-size-fits-all' solutions nor they will not transpire overnight.

A concept that sticks

To bolster attempts to further impact, there is a need for a solid framework and approach set in line by sustainable finance. "The whole topic of sustainable finance has grown so much that it is now a perfect combination of misaligned incentives" (E1). This must be reversed and set straight to follow a path of sustainable, transparently aligned values to further development. Because at the end, "sustainability is a lot more than just the environment or climate, it's a broad range of topics. All of which need immediate attention if the challenges of the 21st century want to be addressed appropriately" (E6). "The bottom line is, that if we really want to talk about sustainability, then it needs to be a concept of sustainable finance that holds, even when big crises happen that accrue a shift in societies" (E5). Lastly, it will come back to whom and where goods and services are sold and this is where the big change must and will happen (E4). "Otherwise, I struggle to see successful transformations, because, let's face it, business as usual has been going on for the last 50 years and it will continue as long as wealth can still be generated in this way" (E4).

Generally, however, there is a consensus in terms of the importance of sustainable finance. As one interviewee argues: "I think it's here to stay but we are in for a bumpy ride! I think the need for it [sustainable finance] is still clear and so it is becoming clear for a lot of the different stakeholders, for instance, asset managers or asset owners in the system. But there's a lot of strategic uncertainty in terms of regulation that is really challenging and for now at least the market doesn't have the right balance of information in order to reward the right companies in the long term yet" (E1). Nevertheless, "there is still much potential in the private markets because it needs capital which can strategically be conditioned to impact" (E2). Generally, it is established that "the only thing that can lead to a solution to the definition dilemma is transparency and actively stating what and why it's done. By being as transparent as possible, you not only enable investors to judge different approaches, but also positively affect them by presenting specific opinions as to what is considered sustainable" (E2). Lastly, "there are very few companies that produce sustainable solutions and there are even fewer companies that produce such sustainable solutions in a sustainable way. And sustainability should be about the holistic picture rather than just what and how it is produced. It needs to be about everything" (E6).

1.2 The pitfalls of sustainable finance

i ESG – Sustainable finance's favorite misconception

As established above, the realm of sustainable finance hosts a myriad of terms, definitions and goals. It doesn't help its case, that the concept of ESG, that built the fundament of sustainable finance is faced with equal challenges in this regard. As one expert puts it "ESG is a risk management framework that has come to kind of mean different things and been adapted in a variety of ways for purposes that it's not well suited for. Its origins are really narrow and simply deciphers whether a given company is handling its risks well" (E1). Others, however, claim that "ESG is a very broad topic and consists of three pillars for a really holistic view. These are the operational impact of companies, the controversies, a kind of the real-world check and then lastly the impact of the product and services of the companies" (E8). These contradictions highlight, that depending on the applicant, ESG can deliver anything from risk, impact to controversy.

However, Expert 1 makes a further valid point by providing a specific case where ESG considerations were applied:

"ESG at the moment only allows us to know a certain amount about a company, while the missing information is absolutely critical for understanding the company's value. So, to give you a good example or the most egregious example that we know, which is tobacco companies. Under an ESG framework, a **tobacco company** may have excellent governance, they may be entirely transparent about the harm that their products do to their consumers, they may have sustainable and organic farming practices and no pesticides. And so, they would get great ESG scores. But then you would be missing everything that we already know about tobacco products and their impact on their consumers, which is a death toll of about 8 million people per year, which is completely avoidable by simply abstaining from tobacco-related products." (E1)

This underscores, that ESG metrics can be very deceiving to say the least. It can be argued that this is due to the fact that "ESG is just a data set that we use to construct investment solutions to make investment decisions" (E11). The expert continues by explaining "how I play around with it is very much dependent of the targets that I have with my investments. The targets can be a purely financial orientation derived of opportunities and risks that I want to mitigate or opportunities that I want to seek. There ESG can provide you with a better set of information that allows an optimal way to make better investment decisions" (E11). Consequentially, depending on the aims of an investment approach and the values of the market actor actually applying the ESG framework, the resulting metric will differ.

Expert 9 points out that "we find an undecisive definition because we sort of are in the middle of an impact aligned approach and a financial view on ESG risks. So, you have to differentiate between this impact-oriented, double materiality view, or in other words what the impact of a company on the environment is and what is the effect from ESG risks on the company" (E9). But this differentiation is not easily made, especially considering how they are constructed in the first place. "ESG ratings are always a variable times a weight plus a variable times a weight etc. And therefore, in some sense, the ESG rating or the ESG rating agency is imposing its values on you. Depending on the ESG rating, one has to dig very deep to understand with which values the money is aligned with. But that should be the most critical decision, to ensure that they align with our values" (E5).

In theory, Expert 3 clarifies that "all activities have environmental, social, and governance components. And ESG is a way to score them and reveal the impacts of these activities" (E3). Furthermore, it is considered "clear that it's a risk indicator and that it helps monitoring the risk of the companies" (E8). So, it seems "there are always two sides to ESG. One is ESG related risks and the other is ESG related opportunities" (E10). Lastly, as Expert 8 underscores, "the best ESG ratings are those which transparently disclose which view and which values were considered" (E8).

Although there is much debate around the topic, Expert 7 points out that in the past "everything about shareholder value and externalities was either neglected or just dismissed. But today externalities are quantifiable and it's clear that the company is part of society and the environment" (E7). This quantification of externalities, or as previously described as the transformation of use to exchange value, goes hand in hand with the relevance of ESG frameworks. But, seeing as it is grounded in the commodification of nature or the transformation of social realities and use into exchange, it is deeply entrenched in processes that neglect questions of value in terms of values. And now that it's here, it seems to have contributed to an array of both advantages as well as disadvantages. But it is here to stay and therefore needs to be analyzed in terms of shortcomings and adjusted accordingly in order to uphold or contribute to value.

It is emphasized that "in the long term we can see certain correlations between a good governance of a company and a prosperity in the future. So, we see that ESG ratings have a certain financial materiality in regard to the long-term objective of sustainability" (E9). Therefore, Expert 9 argues that "it is still a valid long-term approach" (E9). Moreover, it is accentuated that "because a lot of money is moving into these, what one considers, sustainable stocks, they have kind of mechanically higher returns" (E5). However, as Expert 5 cautions "these are past realized returns and not expected returns" (E5), so there are different opinions about ESG's relation to performance in the future.

Nevertheless, it seems straightforward to say that "value is profit. It's a capitalist concept and along its logic there is no profit in the world that is suffering by being sustainable" (E3). To answer the question as to where the value lies within ESG, Expert 3 clarifies that "ESG is a way to quantify and estimate the investments and general activities of companies or individuals. And then it can be used as a way to guide investments. So, ESG might not directly be connected to value. But it can. It is what you do with the quantification that might lead to the generation of value" (E3).

Having indicated its value, Expert 2 additionally calls attention to the concept's impact. "ESG has an impact. It's a positive one but it is a fairly indirect and not very obvious one. ESG is mainly a financial or sustainability risk metric, with which the financial world tries to do good but obviously very often doesn't deliver. Therefore, if nothing else, ESG furthers awareness" (E2). Thereby, Expert 2 underscores, that although it is not always clear what ESG is supposed to be or deliver, it still has gained global traction and is in its various ways widely applied throughout different sectors and geographies. Thus, it underpins the effort the financial industry is making, even though the extent and impact of it can be debated.

As just insinuated, ESG also carries a lot of challenges with it. Therefore, many bump heads with the concept. Expert 10, for one, stresses that he struggles with "mixing up E, S and G" (E10). Moreover, he argues that "ESG, as an overall framework, stamps too many aspects at the same time, not considering the whole complexity behind the story line" (E10). Others second his distaste by underscoring that "the role of scores should not be overemphasized. Because for a big part, they either don't make a difference, or don't capture realities correctly. They are only helpful when screening or comparing companies at a first instance, to identify those companies you don't want to invest in and set exclusions" (E6).

In the end, it has been identified as a "buzzword that is sold as an investment" (E10). Furthermore, Expert 10 highlights that "the financial industry is the only industry that celebrates sustainability as innovation and they only do it in order to increase fees and having good marketing storylines to attract new assets" (E10), which seems to completely counteract the intentions of ESG. On a last, and completely different note, one expert notes that "a big pitfall of ESG is that it is very often reduced to CO_2. But not everything is about carbon" (E3). While this might be a gross assumption it, at least in terms of geographical literature, seems to be true. Most research found in geography does in fact focus on carbon markets and has previously neglected deeper insights into sustainable finance.

In conclusion, the expert interviews have therefore clarified that "when talking about ESG, often what we are looking at is the risks that can affect the performance of a company. At the same time, the company can have an impact on environment and on society. Now, those two things, ESG risks and the positive impact of the company are two very different things. One is how environment and society affects the company. The other is how the company affects the everything around it. So, in order to reduce the greenwashing trap, it must be clearly distinguished between those two things" (E7). Therefore, I agree with Expert 1 that "ESG is good for evaluating shareholder risk of certain types of financial products but it completely neglects overall stakeholder risk" or even impact. Moreover, I also second the notion that "the growth of the whole topic of ESG and sustainable finance has only led to a system of misaligned incentives" (E1).

"I think in general, the expectation for ESG scores is too high. Just because you get a high score doesn't mean you are good. In many cases, these ratings are relative ratings. So, they tell you if they are good or bad within your sector, which makes comparing between industries very difficult" (E6). "Furthermore, how is the investor to know what factors ESG looks at, is it risk or is it impact?" (E2). I believe, ESG has to be seen for what it really is, namely a financial risk assessment metric. And that is neither good nor bad, but maybe the fact that there is so much controversy in its regard points to a much more important use. Namely, that there might be a connection or link between risk and value (or impact).

ii Greenwashing

One challenge previously identified in regard to sustainable finance is greenwashing. The problem is that there is this huge demand for sustainable solutions, but at the same time, all of that massive demand is met with totally chaotic supply (E1). "All of the metrics across different providers were completely inconsistent. So, there was no way for investors to actually express a preference in the market. And there were a ton of people with a ton of different incentives trying to provide products that had insufficient evidence backing them. So, this made the perfect recipe for greenwashing" (E1). Expert 1 further argues, that as soon as you have a really high demand and uncertain supply, there's just so much gray area that people start to provide fake supply (ibid). Worst of all, consequently, the pendulum swings in the other direction because people lose faith in the solutions provided by the market and end up where we are today (ibid).

Expert 11 cleverly puts it as "an inconsistency between what you think, what you say, and what you do" (E11). Therefore, if an organization lacks a consistent strategy, then greenwashing risks arise (ibid). Moreover, greenwashing is furthered by "hiding the ethical or unethical positions in relation to sustainability strategies" (ibid). Nevertheless, the strategy that has to be formulated to counter greenwashing risks is not dependent on regulation (ibid). Instead, it should "clearly state your beliefs and convictions and explain why and how you are using frameworks, metrics or data to construct investment solutions. If you do not hide it but explain it, then you might still have reputational risks because there are always opposing opinions, but it won't be termed greenwashing" (E11).

The recent conflict in the Ukraine just further underscores the omnipresence of greenwashing traps. "Such major events [Ukraine war] raise points of discussion and questions on different levels that can start to reframe the views around sustainability. The question is, do you have it for the right reasons? The motivation of the discussion is important. Is the motivation really to have the argument about self-defense, which is a valid one, or is it a profit on the short term by raising the prices of weapon shares?" (E11). He points out how ethical fronts are put up in terms of the war, but hiding behind it are just purely financially opportunistic arguments (ibid). "If the fear of losing money because you're not able to invest in weapon companies makes you overthrow your own ethical strategies, then that would be greenwashing for me. We talk about ethics, but actually it's about money" (E11). Nevertheless, he stresses that it can be a valid argument to have weapons as defensive tools within our ethical code (ibid). However, if so, then we are not talking about

iii The Blame Game and the Silver Bullet

Expert 2 made a groundbreaking observation as to why the challenges in the realm of sustainability have a tendency not to solve themselves. He argues that there two ongoing and related discussions which are utterly unhelpful and counterproductive (ibid). The first one is, as he terms it, the 'blame game' (ibid). What this basically encompasses is, that various market actors move the blame away from themselves and towards others (ibid). Ultimately, no one finds blame in themselves and consequentially no one takes action:

"Usually, the narrative goes as follows: Companies claim there is no clear regulation so we can't act appropriately. When there is regulation, companies reject it and don't act. Then it's the turn of the politicians to act, but they claim the consumers and the companies don't want them to act. And lastly, the consumers complain that they don't have sustainable options, because the companies don't provide the right supply. So, it's a blame game that goes in full circles." (E2)

This raises the question of regulation in this blame game. He argues that "there are certain things which the economy, capitalism or other market economies can do much better, much faster and much more efficient. But on the other issues, you need regulations. But you also don't want a regulation that is not perfect" (E2). He continues in giving two eye-opening examples:

"The first one is the energy efficiency label of the European Union. They introduced it just to realize that the market develops, technology develops, the devices develop and there is again a need to adapt. So, for the consumer it is a nightmare. They went back to adjust the threshold but it left an even bigger mess for the consumer. And it's the same thing, with the European green taxonomy. It's very detailed and technical. But it has to be considered that what we think is green now, is probably not in five years. So, regulation has a lot of limitations. And the biggest limitation with regulation is that we're living in rich Western democratic countries and getting these regulations through is not easy. There's a reason why there is not just new regulation and there's a reason why there wasn't just a ban on coal, oil and gas. Why? Because it's a complex system. But this blame game is stupid. It's time everybody realized what responsibility and impact they have. People should work together, businesses, regulators, consumers and so forth, to finally move the whole system." (E2)

Furthermore, he emphasized, by extending the blame game logic, that the impact of the financial system is important, at least to a certain level, but it shouldn't be exaggerated (E2). In addition, he thereby underlined the importance of consumer power (ibid). "Nobody's going in and researching the power of consumers. And the reality is, again, it's a blame game. Many companies claim consumers don't want change. But that is just false. First of all, the market is always a reflection of supply and demand and the supply side is a huge lever. Second of all, nobody asked about an iPhone back in the day. And third of all, there are marketing departments stuffed with millions of billions to tell consumer what to buy and what not to buy. So, stop saying companies can't have an impact on what consumers want, because the reality is that most of the consumers don't really have an independent view anymore or never have. So, there's always an impact to be made. Everybody just needs to act on it and stop the excuses why not to act" (E2).

Then, he identifies a second shortcoming in the sustainability debate: the silver bullet (E2). The industry is obsessed with finding a solution that ticks all boxes (ibid). However, this completely disregards the advances that are currently being made, even if they don't hold all the answers. (ibid). "Solar energy is not 100% clean, but it's still 50,000 times better than fossil fuels. Sustainable investment is not entirely clean, it's not perfect, but it's moving and can move the system in the right direction if done properly. And in the end, it's the consumers and politics that can start the ball moving, because there is never an easy fix so let's stop excusing and start taking responsibility" (E2).

iv Regulation

Also, other conversations with the experts often turned to regulation. It is appreciated that much has been and is being done on the regulatory front. "When you look at sustainability reporting over the last 10 years, you can see it developed massively. The big companies, all of them, report in some way or another. Some do it better, some do less. But there is a clear movement, it is just a little bit too slow for many big problems like climate change, but it's definitely there. Now if better regulations come in, it's a full movement" (E2). Furthermore, regulation is said to bring a variety of benefits. "A clear regulation that doesn't allow loopholes will help make processes more consistent and align them to the right aims and impacts. Of course, furthering both incentivization and disciplinary action for those who don't comply with the regulation will also help" (E3). Other advantages mentioned include: "Generally it has the potential to regulate the jungle. When you think about the term sustainability, it can mean anything. So, if you invest in a sustainable fund, you really don't know what that means" **(**E8).

However, there are also many disadvantages to regulation, many of them in a financial sense. First of all, "regulation is tied to a lot of work and you need to consider if that is useful at the end for the investor" (E8). Especially, since "investment guidelines are defined by the client need. So, you don't want to have it all regulated, because then you take on performance responsibility, and the regulator usually doesn't understand anything about investments and performance responsibility" (E11). Furthermore, "it's so hard for them [banks] to really execute on the taxonomies set forth and to really implement all the steps into their products. So, it's a huge, huge task in an already messy system. I think there first needs certain regulatory boundaries on the definitions part because at the moment, we don't have a clear definition of sustainable investment which just leads to intransparency and then from there to greenwashing" (E9). Therefore, although recognition is afforded to the importance of integrating standards and the adaptation to regulation in the industry, the haziness of it all makes it hard to further progress.

In addition, reducing haziness and formulating regulation comes with a new set of challenges for policymakers and governments. Currently, industry professionals agree that after periods of neglect, policymakers are now "overdoing" it (E4). Moreover, many carry very liberal stances and believe that the market should evolve by itself (ibid). However, it can be argued, that this is what created the mess in the first place. "So, regulation I think it's a bit of a crucial point. I think there needs to be a certain regulation on definitions, on setting certain boundaries, but I think it can't be too specific. First, I don't think that it helps anything and it makes it very hard for the companies and for the asset managers and banks to make any business or have the flexibility to adjusting their business. And then the second thing is, Switzerland is not that big of a market in relation to the overall system to have a lever to instigate such change" (E9).

Nevertheless, as Expert 4 intuitively points out, "regulation prohibits companies from hiding behind their ratings. And that development is important because there is a need for transparency to have robust data which gives a good chance to make appropriate calls for judgement and decisions" (E4). Furthermore, he challenges companies to be more engaged and accountable (ibid). "Greenwashing is a big problem and it is important that the regulator but also the companies themselves look at it with more detail in the future. But, there's always a limit up until where regulation is effective. There needs to be a balance between regulation and altruistic recognition for the need to change" (E4). Therefore, Expert 1 concludes that regulation needs to be thoughtful, "because if it goes too far, it can focus on the wrong things. And if it regulates the wrong things, it will just increase the burden because people will try and circumvent the rules. So, regulation that is not done really carefully is actually counterproductive" (E1).

So, to conclude, "regulation in the realm of sustainability had one very positive effect over the past years. Everybody is very aware of the relevance of sustainable investments because they need to report on and follow certain guidelines. That is extremely positive. But the very, very negative effect is that the regulation is just not practicable, is not feasible, is too complex. It creates more questions than gives answers to be honest and hasn't solved anything about the confusion around the issue. Instead, it increased confusion and so therefore, the less regulation you have, the better it is in general" (E11). Or is it?

2. The relation to values and value

As argued above, the controversy around sustainable finance, especially around ESG, could point to its underlying misalignment with values. Moreover, that the misuse of the concepts might imply that there is a previously unexplored link to value in terms of impact. Seeing as the overarching aim of sustainable finance should be to induce sustainable development, this connection will be further explored in the following.

2.1 Values

i Growth and performance alignment

In terms of the relevance of values for sustainable finance, the interviews provided a variety of different insights. Interestingly, some stated that "you need to have a financial belief to act in a sustainable way" (E11). Moreover, it was established that "many institutional clients, like pension funds, have a legal obligation to act in a fiduciary way. So, they cannot, from a legal point of view, deliver less performance, but more sustainability. So, if sustainability does not perform, the topic breaks away" (E11). Therefore, a strong connection to financial growth and performance is established as a requirement for sustainable finance.

"There is a point of stakeholder value that is really critical and adds to the point about growth. I think that they are two competing models. One of them is that in theory, if growth is done well, then everyone grows. But the overall model of business competition is still a zero-sum framework. And that means that my growth comes at someone's expense. And that's a model that we haven't abandoned. And again, to the stakeholder value point, we haven't figured out how to change the model so that we're thinking about the overall pie and not just thinking about the zero-sum. So it's a huge challenge." (E1)

With this Expert 1 outlined one of the fundamental issues in terms of values and sustainable finance. It seems it currently can't quite be decoupled from a pursuit for growth and there is also no specific strategy in sight to incentivize a change in this regard.

ii Double morality and rating heterogeneity

In addition, it was previously established that "ESG rating heterogeneity is obvious in the present. If you look at ESG or sustainability ratings from different rating agencies they all differ. And they differ because the allocation to E, S, and G is different" (E11). But Expert 11 makes the point that "this allocation is different because the people that construct the ratings have a different perception about the relevance and the importance of E, S and G. And that is reflected in the rating" (E11). Therefore, he directly connects the person, the values, the rating (and its divergence). So, the ratings are highly subjective and personal. The choice of rating is in turn an investment decision, that reflects the preference in terms of impact. "So, if you ask 10 people in the room, what matters to you with regard to sustainability, you will have probably 10 different opinions. They might agree on climate change, but then disagree on how climate change really affects their lives and how you should in turn integrate it in sustainability frameworks and investments. So yes, personal values matter a lot with regard to sustainable investments, even if they are purely financial" (E11).

"The problem is that they mixed the different definitions of ESG considerations and sustainable finance and turned them around so that it adds up. That is for me clearly double morality" (E10). What Expert 10 means with this, is that there is still the tendency to specifically exploit the blurriness of the conceptual design and align it to financial incentives, but under the guise of sustainable finance frameworks. This furthers the risk of misuse and malintent. "The system is clearly politically abused, people suddenly raising their voice, just wanting to make noise to somehow win the next elections and profit from it. So, framing weapons as good is hypocritical but it is also a logical argument that we have to defend ourselves and democracy" (E10).

iii Shifting values

In times of unrest, be it in a personal or public sphere, certain shifts in focus are to be expected, especially in times of crises. "I think we can agree that the crisis, no matter which one, if it's a global financial crisis or the COVID crisis or now the Ukraine crisis just brings shifts and it's interesting to see what kinds of shifts they are. The shifts highlight where the biggest controversies and where the biggest gaps in the definitions are, where you can see how people use loopholes" (E9). This underscores not only the impact of crises but also highlights their influence on values and investment decisions. In that sense, “it's interesting to see where people draw the line. It's usually tied to what is normal in the culture and therefore based on biases. Probably you're more tolerant of countries from your own country” (E6).

The connection to a person’s culture and country seems natural. Moreover, this bond seems to be heightened by crises. A valuable input was gained form one interviewee in this regard. He, himself being a Ukrainian citizen, disclosed that he “changed from supporting environmental issues and protecting the rivers and animals to buying drones and helping the Ukraine military. But that's because it affects me and my family” (E3). So, in his case and in terms of the crisis in the Ukraine, his values shifted not only because the conflict draws overall attention but also because he was suddenly specifically affected by an overarching problem in the present.

“It's actually the event that is affecting the same values that I was supporting before. Because to me it's not a political discussion, but it's the actual destruction of the environment. So, in this context, I see myself supporting the Ukrainian army as a continuation of my previous values. Because in a way, stopping the conflict will stop the physical destruction of the environment and the people who live in this environment” (E3). This compelling statement implies in turn, that apart from inducing a shifting focus in terms of values, the crisis actually deepens previously exiting values and reinstates their relevance.

iv Regional preference variation

The interviews also often hinted at the regional differences of values, stemming from cultural and societal norms. “In general, we do see regional differences in sustainability preferences. So, in Europe, we see that most clients, there's one thing on their mind and its climate and nothing else matters. Whereas in the US, the social story of gender, diversity etc. is actually much bigger. In that sense, there are huge regional differences especially in terms of focus” (E6). Another seconded this view by highlighting differences even within neighboring European countries: “Exposure to nuclear power in Germany versus France is a classic example to highlight differences in cultural values. When it comes to nuclear power, Germans really don’t feel comfortable investing in it, whilst the French really don’t see any harm. This is of course not true for all of them, but it is a trend that can be seen” (E6). Furthermore, many also hinted at the growing importance of sustainable investing in developing and emerging counties. “We see a very fast-growing demand also on sustainable products in emerging markets, mainly in South America, but also Asia is coming in. They are clearly some of the most impacted countries. And I do think by enhancing their sustainable investing activities it will increase equality and reduce the exclusion of emerging markets or the third world from the finance industry” (E4). Interestingly, the Global South would have the most to gain from sustainable finance done right, not only in terms of inclusion into the global financial system but also in terms of the consequences of real impact alignment.

To conclude, the system, its markets and actors need to consider whether to “focus on personal or financial values” (E9). It has to be further considered which one of them or what connection can genuinely further sustainable development. Expert 1 claims that “there will be a market-based solution to this in the form of a combination of regulatory approaches and different corporate initiatives” (E1). However, “sustainable development will come at a price. You cannot continue to fool the society and especially not your investors and your clients" (E4). But, it's overwhelmingly clear that "the market doesn't yet have the right balance of information in order to reward the right approaches or companies in the long term. And I think that's really tricky, because to your point about value, if investors don't have the best tools to value companies, then how are they supposed to know what to invest in? I think it sounds like such a basic question, but the right information that's necessary to make those decisions isn't available" (E1).

v Relevance for investment decisions

In terms of sustainable investment decisions, "allocating to the leaders on sustainability subjects is the most vanilla way of thinking about sustainability" (E6). However, there are different targets to distinguish. "We have first the financial performance objective, a values alignment and we have a positive change" (E9). This would imply a simple recipe for sustainable investing; choosing sustainable role models with a specific target. This begs the question wherein lies the controversy. "I think the main controversy is the expectation management and the transparency. That is obviously still missing. Banks and other financial institutions need to communicate what the product is doing, but also on the other hand the client needs to inform himself what he wants. Clients more and more want this impact from their investments and align their portfolios with certain values. So, we clearly see that certain objectives are or can be executed by different strategies" (E9).

However, the problem is that "the reality is that investors normally react opportunistically. First, sustainability is pursued and it is abstained from investing into oil companies but then the share prices explodes and you miss performances. So, choices are reversed. It's quite an erratic change of these habits, that's why it is important that values don't change in crisis because it is a long-term process. It should be a value not a tactical decision on investments" (E10). Moreover, in the words of Expert 10, "what makes it really difficult, is that many of these topics are ideological. If the investor says he doesn't want to invest into tobacco, that's fine. That's his conviction, judgment and choice. As long as it's transparent and it is exactly explained what the rules are and why you have that conviction, then it's fine" (E10). Ultimately, decisions seem to be hinged on two things. "It depends on the client base and the target, if you are a private investor and have a short-term view, then you're more prone to adapt your values than you would in an institutional long-term view" (E8).

vi Duty to the client

"Overall, you still have a fiduciary duty towards the client to also make money for him" (E9). This extent of course depends on "the objective of the client. It has to be identified what types of investment would suit them. So, we try to help them understand the different risks and opportunities associated with that. And so, it's a lot about facilitating a discussion. It's about understanding what is important to the client and trying to understand what kind of solutions would fit their preferences" (E6). This underlines that financial intermediaries are still service providers with certain legal requirements. So, from that perspective it is "a vital interest to make returns out of your investments. But I think, especially for institutional clients, it's also very important to have ESG risks in mind for their portfolios" (E9).

vii Implications

At last, this has revealed an intricate web of relations between values and investment decisions. In the frame of this thesis, this calls attention to the role of crises in this regard. Specifically, the Ukraine crises. First of all, Expert 9 does identify that "the values of some asset managers change towards weapons. So, we see that some really reverse from their ban on weapons. But one thing is also clear, we still have this differentiation of conventional weapons and controversial weapons and I think that's really important" (E9). Moreover, it seems as though there is a trend to "stamp it as sustainable in order to profit from the increase of the share price. Everybody is buying weapons. That's an opportunistic and tactical investment decision, but not on an ESG-related value background, but on a profit-oriented background and rational" (E10). Therefore, Expert 9 highlights that there is a shift in mindset in light of the war, it's just not fundamentally clear what it is. Because some do see including weapons in a portfolio as an alignment with their values (ibid). But again, that is a question of which values and what value is pursued: use or exchange, impact or risk or sustainable development or financialization.

2.2 Value

In terms of sustainable finance, it is relevant to determine what the impact of the concept is or could be and therein what its value is. Expert 2 deepens this thought by clarifying, that when we talk about the value of the concept, we mean the impact that it has (E2). And this impact is in turn for many market actors the change that a company enables when it is invested in (E2, E6, E8). "So only when your investment, your money is making a difference, then there is an impact" (E6). But it is important to highlight that "just because you consider ESG dimensions, this alone does not create an impact. Impact is one step further" (E8).

i Differentiating impact

In this instance, it's important for you to differentiate between company impact and the investor impact (E9). This distinction is necessary especially in terms of what kind of impact wants to be addressed. One considers a company, its processes and its products and the other focusses on the values of investors (ibid). In addition, it is crucial to consider which impact can be directly addressed or attributed to yourself as an investor or just to the company (ibid). "Generally, investing for impact is happening more in private markets. Money is locked up for years which is one of the reasons why we feel more confident attributing those types of investments with impact, because it has a long-term horizon and thus the time to make impact" (E6).

Seeing as many investors have realized that ESG does not directly link to impact, but there is still an overarching goal to achieve a development, it begs the question how such a shift can be induced. Expert 9 simply calls for "clear measurement, more data and differentiation between investor impact and company impact" (E9). More specific approaches include engagement or active ownership strategies. Among others, Expert 6 emphasized the necessity to "put our money where our mouth is because the urgent sustainability challenges can't be fixed by not being involved with them" (E6).

Therefore, several things have to be fulfilled if impact is to be furthered by sustainable finance approaches. “We have to be more transparent about the objectives of certain financial products and ask ourselves if an overall impact is even possible. To a certain extent, impact can be done by engagement or by private market investments. But it's very hard for retail clients to invest in private markets. Therefore, at least for the investor impact, I think a crucial point is engagement” (E9). However, engagement strategies again are very much debated. It has to be considered what exclusion leads to and that is in a first instance divestment (ibid).

“Divestment is just a change of ownership in a stock. This probably drives the capital costs up for the unsustainable firm but at the end someone else buys them from the market. So, this doesn’t change much for the investor or his impact except for that he doesn’t hold unsustainable stocks anymore and is less diversified as a consequence” (E9). It is clear that the interviewee has a point by questioning the impact behind divestment. The same logic can be applied to investing for impact though.

“If you buy a company that produces wind turbines or you buy a company that produces electric vehicles, many consider that investor impact. But in reality, I'm buying shares from someone else and they get my money and that's it. The company didn't feel anything, nothing changed in the world. That's not impact, or at least not yet.” (E6)

“So, impact is really only when your money is making a measurable, verifiable and intentional difference” (E6). And the collection of experts has seen that “there is a shift in investor mindset that is driven by a certain values alignment” (E9). But it’s just not as simple as investing or divesting.

ii Misconceiving risk for impact

In many discussions around sustainable finance the terms ‘risk’ and ‘impact’ are firstly very randomly applied and secondly, variously spun to have different meanings. To clarify, if we talk about risk, we talk about a financial metric, used to analyze the extent to which a company could in the future suffer losses (E6). There are of course various kinds of risks, in terms of sustainable finance we refer to the specific risks attributed to the ESG dimensions (ibid). To summarize the combined risk exposure in terms of these dimensions in an ESG score or rating, that captures this combined risk, can be introduced (ibid). So, ESG is primarily a risk metric (ibid). Now, impact on the other hand, is when the concept of double materiality comes in (ibid). This means that not only the dimensions influencing an entity are considered, but also how the firm in turn influences the sustainability dimensions (ibid). This would be the company’s impact (ibid).

Ultimately, this begs the question(s), is there a link between the two, if so, what is it, and if not, could there be one. And in this sense, Expert 7 made a wonderful connection:

“Let me tell you where I believe the link between risk and impact is. So today, when you look at a company, you can look either at the operations of the company or at the products and services they produce. So usually when we talk about risk, we talk about the operations, and when you talk about the products and services, you talk about the positive or negative impact that they can have. So, there is this distance between the operation and the product and service. Now, within every company, there is a link between those two because if you have a company that doesn't have a good governance and doesn't care about how they produce the product, it's very difficult that they have a positive impact on society. This is the link. Similarly, when we talk about ESG engaging of a company on the "E", it for example, stimulates the company to having a better assessment of their climate risks. So, having that conversation will automatically create some thoughts on the greenhouse gas emission and the negative impact that they may have on it. So, there is a huge link between those two things. But the difference to me is the intentionality. So, on one side there is the intentionality of reducing risk, on the other side there is the intentionality of creating a positive impact. In both cases there is also the intentionality of making a good financial performance. So, in one case we are reducing the risk so that we don't risk the financial performance and in the other case we are making a positive impact in order to create financial performance in the long term." (E7)

What she doesn't consider here is whose intentionality matters. Or in other words, who or what is the driving force that can promote this process of reducing risk for impact. Then again, financial performance is awarded more weight than both risk or impact. This says as much about the realities of the financial system as it does about current sustainable finance. Nevertheless, the unexploited potential behind this link is huge and policymakers and governments would do well to consider this in more detail going forward.

3. Weapons: Policies, duality and sustainability

3.1 Financial policies and strategies

i Controversial versus conventional weapons

The variety of interviews has highlighted the differentiation made within the industry in terms of conventional and controversial weapons. So, on the one hand, there are "controversial weapons such as cluster bombs, chemical weapons, etc" (E7). On the other hand, "civilian firearms or military armaments are more conventional weapons" (E7). However, "the differentiation of conventional weapons and controversial weapons that we see, is really not a values alignment or values driven. It's driven by the Swiss law which quite clearly differentiates between controversial and conventional weapons and I think there you have to differentiate between what legally binding and your personal values. And depending on the country, the law differs and the question, of course, is a different one" (E9).

ii General policies

Nonetheless, most industry professionals attest to having "a blacklist regarding the weapon industry which is applied to every single sustainable investment solution" (E11). In all cases, policy sees a strict exclusion of controversial weapons. "In general, we have hard exclusions on any controversial weapon. And I think this is what every single bank will tell you. It's quite straightforward" (E6). In addition, most experts constitute that aside from controversial weapons, "all stocks commonly referred to as sin stocks so, thermal coal, oil and gas, gaming, adult entertainment and nuclear power are avoided and not invested in" (E8). However, it was also noted that "for conventional weapons a 5% revenue threshold is applied. So, if a company is making more than 5% revenues with conventional weapons, they're not eligible for our sustainable portfolios" (E8). Yet, theoretically, investments in conventional weapons below such threshold can be considered and are sometimes included in sustainable investment solutions.

iii Grey areas and limitations

The questioning in terms of investment policies regarding weapons obviously quickly showed a large interminableness, especially in terms of companies that are to some extent involved in the value chain of weapon production or consist of several product segments, where one is related to weapons. "There is a grey zone that is now [in light of the Ukraine conflict] in the center of the debate. What is to be done with the companies that are involved in the production of specific parts of weapons further down along the value chain, like Boeing and Airbus for example? If you're strict, you would say they're involved, so we don't invest. But how do you determine your own strictness and what would it mean from tomorrow on, that we would only will fly with airplanes from Pilatus and Embraer? And this is the tricky part. What is reality and where do we set the limit?" (E10).

These questions raise valid points in regard to policy measures. The aim should be to "exclude everything that has to do with weapons, or as close as you can get at least. Conventional weapons included jets, tanks, guns, rifles, of which many are used in daily use like police business or hunting. But to be consistent is to exclude them as well. So ultimately, as so often in terms of sustainability, it's always the question how far down the value chain you go and where you set the limitations" (E2). However, setting limitations is limited as well. In theory they are more easily set, but implementing them in reality is not an easy task. Especially, considering transparency issues and daily realities.

Therefore, certain leniency in terms of policy is maybe the only sensible thing to do. "We have slightly more acceptance with things like military contracting or small arms, firearms or maybe hunting weapons. So, we generally say it's sensible as long as you have less than 5% of your revenues coming from those types of products. Reasons for such tolerance are, that full exclusion is just very hard. Many companies have either indirect or very minuscule exposure to such conventional weapons. For example, in some Wal-Marts in the US you can buy guns. But this accounts for a very, very tiny part of the revenues that Walmart generates, and therefore we don't think that it makes sense to exclude the whole organization on that account. Or take Richemont, one of Switzerland's the biggest companies. Most portfolios in Switzerland will probably have exposure to Richemont, which in turn has less than 0.1 percent of its revenues coming from hunting guns. So, the exposure is there, in very minimal revenue terms, but it's there. And it's a tradeoff" (E6).

Furthermore, many investors actually look for controversy or sin stocks. Although, "there are by default eight different types of exclusions from sustainable portfolios: tobacco, alcohol, adult entertainment, controversial weapons, nuclear power, genetically modified organisms, thermal coal, and gambling" (E6), some clients specifically ask for an exposure to these sectors. "Reasons behind holding sin stocks is simple. They have higher risk and therefore higher return. Even more, they actually depend on adverse events, so they do even better when a war like the Ukraine crisis happens" (E5). But, in the end, "it very much depends on the people and their backgrounds if they want to invest in sin stocks and in which ones. And so, we'll tailor investments according to their values" (E6).

iv Policy after crisis

There was an overall consensus, that the policies of financial institutions in regard to weapons have not changed in the aftermath of the Ukraine war. “Generally, we do not invest in weapons, because we do not think that investing in weapons is a responsible investment. And our policy has not changed with the war in the Ukraine” (E7). This is further supported by others: “Our investment policy remained as it is. Companies that are in the production of controversial weapons are excluded. That's the rule and this will remain. The Ukraine conflict has not changed that” (E10). Luckily, the overall ruling therefore underpinned that “policy should remain fixed on its targets and especially shouldn’t waver when there is war, not from a sustainability perspective at least” (E8).

However, it was agreed, that there has been a tendency or a trend by some within the financial system to change investment-decision making processes in terms of weapons. “There are certain investors who want to invest in these companies because it increases profits or because it is somehow aligned with their values. And if it’s a valid argument to them, we don't see ourselves as an organization that tells others how to invest. It is still a choice by the investor, by the client” (E9). Nevertheless, it was argued that “those investors or those financial institutions that have weak policies or weak frameworks that lack long-termism were the only ones that were willing to change strategy. So, it’s a signal of how much has been invested in building a long-term vision for lasting impact. And I think it is even more interesting how the topic of defense versus offence can be allied to confirm a long-term versus short-term vision” (E7).

v Ethical considerations

“If you want to solve the weapon question regulate ethics. But of course, you cannot and you do not want to regulate ethics. Ethics is highly philosophical. There's no right or wrong. There's no black or white. But there's an exchange of opinions” (E11). This implies that there probably is no way to fully regulate investments in terms of weapons. However, it highlights the relevance of the ethical discussion and therefore the awareness on the topic. “It’s common sense not to invest into weapons because they harm human rights. But this is only one side of the coin because we still need them. If you say no to weapons, there is no police, no control, no army and when there is an attack, there are no weapons to defend our children” (E10). There is just not that one right answer or solution.

Stances on weapons differ across culture, space and time. An example is provided by Expert 7 in terms of geographies: “I think we have very different perspectives on weapons in Europe versus the US, for example, simply because of the civilian firearms debate” (E7). Expert 11 on the other hand makes a point of varied affectedness over time: “It’s my opinion that it's probably not the best way to end war by fueling the weapon industry. But then again that's my point of view and it can always be challenged. And even more, it’s my view now, you never know how it changes when you are personally afflicted or involved. Because if you do not have weapons, you're an easy target" (E11). And then its again up to values: “To me why most investors are probably worried about weapons is their illegal market. Or that they will end up in some civil war in Africa and innocent people will die” (E5).

But, at least in terms of sustainability, one ethical consideration in terms of weapons is just not ignorable. “If you think about it, the producers of weapons must always be interested in war. Then they are consequentially always also factoring in the killing of human beings. And it doesn't matter if a human being is Ukrainian or Russian, it's still a human being" (E7). In consequence, it is argued that "when we think about sustainable goals, products that are literally designed to kill other human beings clearly don't factor into that equation very strongly. It is just unfortunate, that at the same time, our evidence base also shows that there are peripheral benefits to the defensive industry overall in terms of security, innovation and technology" (E1).

3.2 Legitimizing defense

A lot apparently rests on the distinction between defense and offense. This is ironic, seeing as the differentiation can barely even be made. "The general argument is that weapons are used for defense. Therefore, defending your sovereignty, defending your territory, that should be valid. But we find that many conflicts are not as black and white as maybe the current war. I think Europe and the US at least have a clear view of the Ukraine crisis but for many other conflicts, it's not as clear. And then there is the question about national security, so whose security?" (E6). It doesn't help the situation that "before, or during times of peace, weapons are bad, but during war, they're the one thing that can save quite a lot of people. That's always a flip. And realistically, both is true" (E2). Therefore, it is interesting that the case of defense is so easily accepted and weapons are in turn so simply legitimized.

So, it's a fact that "weapons can be used offensively as well as defensively. And in the case of Ukraine, it is defense and they have the right to defend themselves" (E7). But, it all comes down to intent. "Distinguishing between defense and offense is very complicated because the same companies that produce the defense also produce the offense. So, it becomes, a question of materiality. Which is more material for that company, the offense model or the defense model. Companies that produce the weapons for the Ukraine are the same companies that produce the same weapons that are used by Saudi Arabia in Yemen. So how do you distinguish? This doesn't allow for a clear cut, especially because this blur is fostered by intransparency. Often those companies do not have clear policies. So, a distinction between defense and offence can't be materially made" (E7).

There is a further aspect that the interviewees have pointed out in this debate. "It's a valid point which says that people have the right to defend themselves, but actually the right to defend themselves is something that comes from the public, not the private. So, it is in the public space where the debate should happen and where the governance needs to be built for that. It's definitely not a problem meant to be solved by the private and so responsible investors should not be interested into entering the conversation" (E7). Indeed, Expert 10 adds to this by emphasizing that "from a defense perspective we need weapons. This need is a reality and to be solved by politics and governments. But it is not linked to sustainability, because in this sense, sustainability is to make the world more functional and better place. So here you have a philosophical limit" (E10).

Lastly, one interviewee alluded to an interesting distinction in terms of language and culture in this controversy. "Let's consider the wording. In English it's the defense industry. And in German, it's the "Waffenindustrie" or "Rüstungsindustrie". Therefore, in English it refers to defense and the need to defend our democracies. In German it suggests an attack. Just by comparing language terms it highlights the relevance of culture and how stances towards weapons are therefore maybe influenced. Just the name might shape the perception and then the use" (E5). This comparison highlights once again the relevance of cultures and in turn values imposed on societies, as such notions have the influence to shape the actions and therefore the consequences of such dilemmas.

i Consequences of crises on ESG ratings

In terms of the Ukraine crisis, it could be imagined that weapon companies' sustainability ratings suffered losses in the process, seeing as their products directly further the conflict and lead to both environmental destruction and human casualties. However, the experts seemed to disagree and instead speculated that "the ratings did not change because they are largely based on a quantitative ESG data layer. And in terms of the Ukraine war, these companies didn't change from an environmental, social, and governance point of view. That kind of rating should be fairly stable and shouldn't be overruled with an ethical, fundamental, qualitative view. It's in the end a quantitative rating" (E11). Moreover, Expert 10 argued "I don't see why the ratings would have changed. That weapons are harmful and go against many SDGs is reality. So, this was the reality already before the war. The objective of the weapon is to kill people, so this is should already be prized in" (E10).

These findings correlate with the quantitative assessments previously made. Furthermore, general issues with ratings were hereby underscored. "We don't think that there is just one third-party data or rating that can cover the full range of information that we need. But we also do not believe in mixing equals and pairs. Because mixing those different levels of raw data into one score automatically means reducing and losing information" (E7). So, in order to see the consequences of the crisis, it is argued to "create a so-called materiality mapping". But then you have to define material to what. So, is it material to financial performance, material to risk monitoring, material for positive impact, it becomes very complicated. So, we prefer not to have a score, especially when you want to uncover the real-life consequences of companies and their products" (E7).

ii Fourth scope emissions

In the discussion, Expert 5 identified a completely new angle in terms of the sustainability consequences of the crisis. "There is something that hasn't been considered yet. It is the emissions that arise through rebuilding what is destroyed. In terms of the war, we talk a lot about the human death toll, the environmental destruction and the long-term geopolitical consequences. But what is very inherent to war is what lies in its wake. And it could be considered as a fourth scope in terms of emissions. Importantly so, because in war these figures can be just mind blowing. So, a further weapon impact is identified next to their potential for destruction. And through this impact that they have by destroying infrastructure, they again can never be sustainable investments" (E5). She even links it back to her previous game-theoretical assumptions and argues that it could all be prohibited "if you're so armed that a war doesn't happen and then you're also saving so much CO_2 emissions" (E5). Such consequences for the environment remain part of the weapon-risk equation, even if they are legitimized from a defense point of view.

3.3 The sustainability case of weapons

“The debate over weapons is such a slippery slope” (E1). Expert 8 argues that “weapons are always weapons. It doesn't matter what they were set out to be or do. Whether they defend or attack, at the end weapons are always controversial” (E8). The argument that is being made, is that under defensive circumstances weapon production, distribution and use is legitimate (E6). However, it is very difficult to draw the line and earmark weapons for the sole purpose of defense (ibid). “At the end of the day weapons are used for harming people and harming people is a violation of human rights” (E4). Moreover, Expert 1 argues that “there's no scenario under which weapons have a positive impact, especially socially, that's one of the areas that is abundantly clear. The SDGs clearly state to reduce global deaths from all causes. You cannot reduce war-related deaths if you're increasing the production of weapons. It cannot be done”. This is seconded by Expert 11 stating that “if you have a sustainability mindset, then on the social side, you should seek a vision of the world which decreases the chances of war, limits the chances of escalations and therefore the whole weapon industry should not be part of the future energy mix” (E11).

Nevertheless, in light of the Ukraine crisis, it is safe to say, that the Ukrainians are or were under attack. “So, if the Ukraine needs weapons to defend its own territory, that is a legitimate claim. But if those weapons are then used to enter Russian territory, what then? I think everyone still is on the same side of what we think about this war. But once you start going on the offense, and that will eventually happen, maybe not in the Ukraine but these weapons will be redistributed, then suddenly it's a very different conversation” (E6). And this is where the legitimization ends. But, as Expert 4 emphasizes: “Just as I think there are still some non-green industries, such as oil, that are very much needed but not necessarily sustainable, there will be a need for armies and defense in this world. Because as we have seen, there is always a threat and a chance for a war” (E4). Yet, this doesn’t mean that it’s sustainable.

Expert 1 continues to explain:

“During a conflict, defense stocks are obviously going to do better. Their stocks are going to go up in value. So, the obvious thing to do is just to buy those stocks. But, to my mind, if you do it you should do it for financial reasons, and just say you are doing it for financial reasons. I think the idea of saying, well, weapons, if they're used by the right people, are good weapons as opposed to bad weapons is just hypocritical and doesn’t fundamentally change the fact that they're designed to kill other people. So, from a moral perspective it makes absolutely no sense at all. So, I think in many ways, this trend to invest in weapons was taking advantage of a couple of different things at the same time, including this kind of haziness around ESG and sustainable finance. But investing in weapons for sustainable reasons strikes me as one that really should have been a no-brainer from the outset.” (E1)

Furthermore, “a weapons company does not necessarily contribute to environmental, social or good governance goals, so how could they be ESG compliant investments? Instead, a weapons company produces certain tools that can be used by all sides. It can be used to promote the democracy or to promote better social conditions, but very often the products are used to suppress” (E3). Expert 7 seconds this and highlights “if you do not have a good governance, it's very difficult to have positive impact. And in a lot of cases, companies involved in weapons participate in bribery and corruption that is linked to intransparency. So, if you couple the fact that it is very difficult to distinguish between defense and offense and lacking governance, it becomes quite difficult to be a responsible investor in terms of weapons. Especially because a responsible investor is an ambassador of transparency and good governance" (E7).

Still, many of the experts interviewed do acknowledge both sides of the coin. And it is indeed problematic to fundamentally challenge the argument of defense and security (E4). Or that to some extent conflicts and wars will always be prevalent, because it seems to be in humanity's nature to fight each other for a certain gain (E11). Expert 5 also brings the discussion back to the game theoretical discussion about credible threat. The argument, that equal global arming could be an equilibrium-preserving method, that fosters peace and could save human lives has a valid ring to it (ibid). But she also gathers that "we are already in a situation where there is conflict and some are more armed than others. And by having a country that is being attacked, more arms might save lives. But if you consider the EU definition of sustainability, weapons will never fulfill it. It's never going to be sustainable because it harms others and the other objectives. Especially in a sense of an investment. If you invest in weapons, you have an interest in conflict and in someone having a conflict with someone else" (E5). So maybe, the world would be better place without weapons in it (E4).

Interestingly, in discussion around legitimizing weapons as sustainable investments, Expert 10 instead asked: "What could make weapons a sustainable investment and to what opportunities could weapons contribute?". This brings up a relevant ethical discussion and to date he hasn't yet identified a single potentially positive aspect as to why weapons should be produced (ibid). "An opportunity for weapons? I don't see that honestly. So, they can also never be a sustainable investment" (E10). Maybe, he argues "if you can use the weapon technology to produce something else, like a rocket, it could contribute to the transition of the weapon industry. But I think the product itself [the weapon] is something evil and that's reality" (E10).

Expert 1 also explored the defense industry aside from the weapons itself:

"The interesting thing is that for the defense industry, there is always this mixture between the obvious negative impacts of conflict and the use of weapons in those conflicts or the negative environmental impacts of jet engines that go into fighter planes etc. The other piece of it, however, is that the academic research shows that there's a ton of economic growth that's associated with the defense industry. They employ a huge number of people that are active in the economy. And then there are a huge number of things that, from a research and development perspective, originate in the defense industry which then become consumer products that benefit the world in a lot of different ways. So, weirdly enough, the defense industry could have a balance of things that is not as straight forward as it seems. So, maybe don't throw out the baby with the bathwater, because essentially, the defense industry has a lot of positives as an industry. It's just that its products are designed for a very specific purpose, and that is not a sustainable one. It is this combination of a sustainable economic profile on the one hand, and an unsustainable kind of moral and human profile on the other, that's really tricky." (E1)

I think Expert 2 brings this discussion to a clear and succinct point:

"I see both sides, I see the case of defense, but weapons can't be sustainable investments. And there's only one reason for that. Weapons are used for killing. You can argue that some weapons are for sports like hunting, but at the end, killing is basically the whole idea behind weapons. Of course, it's also absolutely fair to argue that weapons are there for defense. You need them, the police need weapons for upholding order and so forth. That's all fair and nice. But nevertheless, if you now have a company which produces weapons, it always, always has an inherent interest in conflict, because then you can sell more weapons. Now, the big problem, which is barely discussed is, should it be an investment? And the answer to that is no. Because in an investment, you want to invest in companies which do good and grow. And a weapon company grows if there is a lot of killing. And if so, the bottom line is, a weapons company should be fully state-owned and that's it. So that's my personal hard truth about weapon investments, it just shouldn't be there in public and it shouldn't be an investable choice." (E2)

It has been thoroughly established that "there is a lot of grey area. And, it's extremely difficult for a company that produces weapons to be responsible because it depends on a production of weapons only for the case of defense" (E7). I think it is safe to say, that this promise can never really be delivered on. Weapons always have a dual nature (E7). "Basically, by investing in them, you are hoping for also a conflict, because you want your investments go up. And that's the very simple but at the end full truth about investing in weapons producers. Even if it is for defending a country, which is a totally fair claim, you still always have an interest in selling more weapons" (E2). And as a consequence, a responsible investor should never consider investing in weapons in terms of sustainable development, even under the guise of defense (E7). However, whether weapons are considered a sustainable investment is really a question of values alignment (E9). As Expert 9 puts it: "It really depends on the values of the investor. I think we cannot just say, okay, this is a sustainable investment or not". Nonetheless, the expert interviews here performed unanimously confirmed that, at least for those questioned, weapons are not currently, nor will they be in the future, considered a sustainable finance instrument. Weapons just don't further sustainable developments.

VI. Discussions

1. Perspectives on the weapon dilemma

The debate over the sustainability of weapons hinges on their dualistic nature. Many experts argue that regardless of the context—be it defense or offense—weapons are fundamentally designed for harm, thereby contravening principles of human rights and sustainable development. Expert discussions underline that while weapons might be legitimized in specific situations, such as a nation defending its territory, the overarching objective of weapons is contrary to the Sustainable Development Goals (SDGs) that advocate for a reduction in global deaths. Furthermore, the weapon industry's intrinsic link to conflicts, given that an escalation leads to higher sales and profitability, makes it counterintuitive to label such investments as sustainable. Even the defense industry, while contributing significantly to economic growth and pioneering R&D that benefits society, cannot escape the moral quandary of its primary products.

Experts highlight the multifaceted dilemma of weapon investments. They emphasize that while weapons may serve purposes like defense and upholding order, investing in weapon companies inherently supports conflict and war, given the nature of the product. The overarching consensus among experts is that sustainable finance cannot ethically align with the weapons industry. Such companies potentially benefit from global unrest, leading to increased sales and higher stock values.

Moreover, given their product's inherent purpose—harming or killing—the idea of weapon companies aligning with the broader goals of sustainable development is contested. To answer the research question posed at the beginning of this thesis, the inherent contradiction between the objectives of sustainable investment and the essence of weapons makes them unsuitable as instruments for sustainable finance.

Nationalization: a means to an end?

Turning the discussion towards possible solutions for the weapon dilemma begs different questions. It was established that the defense versus offense predicament should always be a public instead of a private debate. Consequently, it was argued that the same logic should hold for weapon production (E2). The discussion belongs in the parliaments of this world and the weapon producing companies in the hands of the state. Weapons should never be eligible for private investments because they should not be tied to profit. Because profits from weapons are directly linked to war, conflicts, destruction and killings. Private institutions will always have a pressure for performance and in terms of weapons this directly relates to hoping for more conflicts to be able to sell more weapons. Therefore, Expert 2 makes a compelling argument by suggesting, converting weapon companies to fully state-owned entities, seeing as questions of defense and the army are already matters of the state and the public. This would render weapon companies to their only viable purpose, namely to deliver on national security strategies. And this task is quite obviously state business, not private business.

Credible threat

This line of reasoning sheds light on another even more brutally controversial stance towards weapons. Expert 5 examined the game-theoretical concept of the credible threat as an imagined solution of the weapon dilemma. In short, this entails arming every country with the same extent of weapons. The aim is that every nation is armed to such a magnitude that they all pose as a threat to each other. In this respect investing in and distributing weapons might even foster peace. Expert 5 argues that “it's like the arms race in the Cold War or drug legalization, where when you increase weaponization or legalize drugs, you reduce the use, because you take away all the illegal activity behind it” (E5). Therefore, from a game theoretical perspective, the Ukraine might not have been attacked if they had more weapons to begin with. In this sense, having weapons would actually inhibit conflict. But, ultimately, a heavily armed world poses a completely new geopolitical risk, which begs the question which political conundrum is the greater evil in the end.

It seems impertinent not to underscore the shortcomings of these proposals. Firstly, there is a huge weapon lobby at work, which would make a full nationalization of weapon companies a very tedious affair. Secondly, solving the weapons dilemma by producing and distributing more weapons can hardly be augmented well enough that the democracies of the world would see enough substantial reason behind it. Therefore, it seems more prudent to suggest that the solutions must rather rest on international relations and peace efforts in a public field and on engagement and active ownership advances in the private sphere. Nonetheless, the entangled and controversial nature of the debate surrounding weapons have highlighted that they should be treated with caution, especially because they cannot be simply solved through policy or legislation endeavors. Therefore, the financial industry would do well to abstain from mindless reframing efforts in terms of weapons in the future and instead focus on furthering sustainable development by allocating capital to good causes.

2. Relevance for geography

The growing relevance of finance in economic and political arenas presents a window of opportunity for economic geographic analysis to reveal prominent connections between the financial, economic, social, cultural and the political spheres (Knox-Hayes 2013). Especially notable in terms of financialization, and as highlighted in this thesis, is the rising influence of new financial market mechanisms determined to combat sustainability challenges (ibid). One of the most prominent examples of such efforts are carbon markets which aim at reducing global emissions by commodifying, pricing and trading negative externalities, in this case greenhouse gases (ibid). Financial geography has already set its efforts on examining carbon markets, but has neglected wider analyses of sustainable finance mechanisms. Investigating such market opportunities can provide a broader understanding of the evolving financial market landscape under financialization as well as offer a lens into how value transfers work within financial systems, especially concerning space and time dimensions (Knox-Hayes 2013).

Carbon markets are the poster child of this new era of finance (Knox-Hayes 2013). However, they also uncover as well as underline the financial industry's failure to price externalities (Knox-Hayes 2015). Such markets operate on the principle of assigning a financial value to carbon emission allowances, a future value, which facilitates a trading system of these allowances in the form of carbon credits (Knox-Hayes 2013). The aim is to economically leverage market mechanisms to reduce sustainable problems, in this case greenhouse gas emissions (ibid). Yet, although these markets may aim at creating commodities out of unsustainable externalities or activities to instigate a change in behavior and further sustainable impact, they are ultimately just financial assets that can be traded for profit (ibid). Inputs as to how this duality of value, that this thesis has shown to underline the sustainable finance sector, could potentially be avoided or countered have yet to be provided by geographers.

Nonetheless, new forms of sustainable finance or capitalism have to a certain extent enabled the mitigation of negative externalities or channeled capital towards development efforts through a market-based approach with financial incentives. Thus, such endeavors hold considerable opportunities to drive sustainable intentions and have therefore been generally asserted as valuable. However, in order to genuinely further sustainable endeavors, they must be properly addressed and evaluated in terms of their underlying realities. For example, the current focus on exchange value over use value fuels the pursuit of profit rather than a commitment to environmental sustainability (Knox-Hayes 2013). This is a direct consequence of the prioritization of a specific value based on a set of values. By commodifying underlying hypothetical value under orthodox financial logics, the risks and vulnerabilities of the system as a whole are increased instead of furthering the reduction of unsustainable production. Ultimately, this cap-and-trade system of emission markets has highlighted how economic geography needs to contribute to genuinely understanding the values-based rationale in order to properly incentivize sustainable path prioritization.

Economic modernization seconds the argumentation that current environmental and social problems arise due to the failure to appropriately price externalities and highlights the need to reexamine the process of transforming environmental and social equity into financial tools of exchange value (Knox-Hayes 2015). In so doing, economic modernization argues that the solution is a mere technocratic matter that simply requires a proper adaptation to orthodox economic theory and existing realities within the system (ibid). Hence, ecological modernization removes an environmental or socio-political issue from the realm of political discourse and recasts it in new and improved economic terms (ibid). While this dynamic exemplifies the core assumptions about value embedded in economics, it does not specify as to how value is to be reexamined and reframed, especially in terms of new approaches provided by sustainable finance. In addition, scenarios must be considered and established where value can be directly linked to impact.

By applying assumptions of neoliberalism to environmental and social issues, a privatization of rights to society and the environment transpires, which enables their exchange in a market system. In other words, neoliberalism standardizes social norms and values to a series of economic pricing metrics, whereby values are weighted according to perceived profitability. Thus, values and the demand to have them fulfilled are simply reduced to an exchange value. While this is problematic from an ethical standpoint, this approach furthermore fails to acknowledge that current economies produce at rates which the natural environment cannot accommodate. Academic and political initiatives have, to date, focused on adequately pricing externalities in markets and therefore only underscored the core logic of value through exchange. However, instead, economic geographers could focus on limiting production, maybe even by leveraging sustainable finance towards such aims (Knox-Hayes 2015).

Geographical literature has previously been known to be very critical of the financialization of both environmental and social conservation as well as sustainable solutions (Lai 2022). In this respect, financialization is considered by many to be a tool to enhance financial and political gains rather than benefiting and addressing environmental and social issues (ibid). Furthermore, with the increasing influence of financial markets, money is no longer efficiently allocated into profitable and risk averse ventures in the real economy, but instead is increasingly invested in a variety of financial instruments (ibid). However, scholars have indicated that such trends not only increase the individual's risk exposure to the financial system but also simultaneously enhances the vulnerability of the global economy towards financial crises (ibid). This thesis has additionally shown that the opposite is true, namely that crises are specifically exploited by market actors to enhance performances.

Moreover, the research herein performed has delved into how financialization alters value(s) conceptions and thereby impacts the management of natural resources and societal issues. Specifically, the discrepancies in value representations are argued to render policies aimed at conserving resources less effective, or even counterproductive. Ironically, while these financialized market-based solutions try to retrospectively attribute value to undervalued resources, they might actually reduce the environmental value even further. Central to this discussion is relational economic geography, which offers insights into the intricate web of the economic actions by all involved stakeholders and their localized effects (Knox-Hayes 2013). By analyzing the structures of evolving sustainable finance systems, this research underscores that markets might sometimes detach financial products from their real-world contexts. Therefore, what is left to do, for geographers, is to analyze specific localized effects related to cultures and geographies in order to provide more successful approaches to applying finance to development.

3. Financialization and sustainable development

Geographers, such as David Harvey, have contributed strongly to the analysis of financialization or the search for 'spatial-temporal fix[es] for the crisis tendencies of Anglo-American capitalism' (French et al., 2011: 800), but research has since deepened, diversified and been applied to other disciplines and practice (Mawdsley 2018). Nevertheless, the study of financialization has been acknowledged to be particularly anchored in the core of the Global North (ibid). There is therefore a need to widen the lens and incorporate global perspectives within the theorization of financialization in order to reframe it at an appropriate geographical scale that goes beyond global financial centers (ibid). Seeing as financialization is simply a 'later stage' of capitalism, which is (re)produced and enabled through neoliberal ideologies, the concept can be placed within or across development geography, as it has targeted the impacts and practices of neoliberal globalization (ibid). However, among international development scholars there is a growing concern regarding the extent to which financialization progresses within and across development programs and partnerships (ibid).

With the increase of financialization, the nexus between finance and development deepened considerably (Mawdsley 2018). In this respect, all kinds of different development institutions have recently begun to (re-)center private sector-induced economic growth within their ideologies, policies and practices (ibid). Within mainstream development agendas, furthering financial sector growth for poorer and peripheral countries and incorporating their growing economies and companies into global financial circuits is considered necessary to advance the development as well as the maturity of such markets, in order to increase their attractiveness to global capital flows (ibid). Therefore, international development is constantly in the pursuit of building partnerships with various financial actors and intermediaries to establish novel circuits of financial investment to further their cause (ibid). Ultimately, development institutions actively provide a material basis for market development through financialization, whereby sustainable finance instruments in particular seem to be the preferred means to an end (ibid).

In order to achieve such integration into global financial circuits, there are two viable paths to pursue in terms of financialization. On the one hand, mundane objects and services must be transformed into financial assets for speculation (Mawdsley 2018). This, however, is previously argued not a simple task. The conversion of the agribusiness sector (use value) into an asset class (exchange value), for example, requires the commodification and pricing of agricultural risk in order to enable financial speculation (ibid). This might ultimately create the potential for new revenue streams that support coping with climate stress, however these financial instruments also deepen the vulnerability of underlying stakeholders rather than mitigate against negative externalities (ibid). Therefore, by applying finance to development initiatives, strategies managing the risk to capital, that go hand in hand with the integration into global financial systems, must be considered (ibid).

On the other hand, the old model of foreign aid must be superseded by new forms of finance to draw in the required capital to achieve global development goals (Mawdsley 2018). Thereby, development agencies are considered the financial intermediaries to negotiate win-win scenarios for a new era of development through securitized finance (ibid). Examples include 'Development Impact Bonds' (DIB), which exemplify the creation of a new (sustainable) financial market which unlocks private financial flows, while providing specific development interventions (ibid). However, once again there are considerable challenges to note, as the creation of such novel instruments entails a significant complexity of the underlying commodification process, very considerable risk, especially in terms of speculation, and partnerships with a variety of non-traditional development partners that are not usually known for their commitment to poverty reduction and the like (ibid). Consequently, development institutions might mitigate risks, yet primarily those of the investors aimed at risk mitigation for capital, and not those of the countries, communities or individuals at risk (ibid).

In light of financialization, a democratization of capital has occurred, previously excluded societies, companies and countries have been actively integrated into global financial circuits and international development efforts have made use of financial instruments and practices to reconfigure risky frontiers as profitable investments (Mawdsley 2018). Among other things, this has drastically accelerated and deepened the financialization-development nexus and additionally furthered a financialization-as-development logic (ibid). However, the conversion and commodification of the 'mundane' into tradeable investments requires work as it is a far cry from a simple endeavor (ibid). Nevertheless, I argue that combining financial geographical research with sustainable finance tools and endeavors might considerably proliferate global development approaches.

The intricate interplay between financialization and development underscores the profound transformation of how resources are mobilized, allocated, and utilized in the pursuit of global progress. As underscored by the works of geographers and scholars, there is an undeniable gravitation towards embedding financial strategies within development programs. In that respect, development institutions increasingly facilitate capital market growth, the creation of new asset classes and the de-risking of investment in 'frontier' markets (Mawdsley 2018). While this integration offers untapped potentials, especially through the inclusion of previously marginalized sectors and players into the global financial landscape, it is also replete with complexities. It has to be considered that 'peripheral financialization' is neither a linear nor uncontested process (Becker et al. 2010 cit. in Mawdsley 2018).

Sustainable finance, in this milieu, emerges as a beacon of hope. The growing emphasis on sustainability principles within finance offers a bridge between the divergent worlds of profit-driven financial instruments and the lofty, altruistic objectives of development. Instruments like Development Impact Bonds, while innovative, illustrate the vast promise of melding financial ingenuity with development goals. By aligning investment returns with measurable development outcomes, these instruments can usher in a new paradigm where capital doesn't just seek a specific yield but also tangible societal betterment.

However, this rosy picture is not without its thorns. As mentioned within this thesis, the integration of development goals within the financial realm introduces layers of complexity. The commodification of development objectives, such as transforming agricultural sectors into tradeable assets, not only demands intricate financial engineering but also grapples with ethical conundrums. When profit motives intersect with developmental objectives, there's a palpable risk of sidelining the needs of the vulnerable, placing capital returns over human betterment. Nevertheless, development geography has much to contribute by critically investigating of, theorizing and informing action on 'global' financialization (Mawdsley 2018).

Therefore, the road ahead necessitates a delicate balancing act. The promise of sustainable finance in accelerating development efforts cannot be understated. Yet, as we embark on this journey, a vigilant and continuous reassessment is paramount. Ensuring that the tools of finance genuinely serve the broader objectives of development, rather than just amplifying capital returns, is a challenge that the global community must rise to meet. Only then can the marriage of finance and development truly usher in an era of sustainable and equitable progress.

4. Sustainable finance's high-modernist mistakes

Unfortunately, if this thesis has highlighted one thing, then it is the pitfalls and challenges that still circumvent the realm of sustainable finance. Nevertheless, what can be said, without a doubt, is that the approach has been misused by certain actors within the financial industry in order to frame investments in an opportunistic way, thereby undermining the concept and its goals as a whole. How and why this was done, was previously argued. Thus, it remains to be addressed as to why the approach as a whole has yet been unsuccessfully applied to sustainable development efforts. Of course, this again, is closely linked to the concept's underlying inconsistencies, which does little to further the financial industry's trust in it being an approach to be taken seriously. Therefore, I argue that sustainable finance has failed to be applied to sustainable endeavors altogether, due to similar pitfalls lining and constituting its definition, as those identified in high-modernist approaches.

The concept of high-modernism as a development approach has gained worldwide attention as a means to fundamentally improve the conditions of society and the natural environment (Regassa & Korf 2018; Scott 1998). However, dominant critiques argue that high-modernist development approaches entail unintended, negative externalities and ultimately fail at achieving their goals of improvement (Scott 1998). According to Scott (1998) and Regassa & Korf (2018), this failure can be traced back to inadequate understandings of social realities which in turn lead to rejection and resistance against implementation. I argue that the top-down, elitist high-modernist approach shares both the aim but also the similar flaws and weaknesses with the concept of sustainable finance, which tries at financializing social and environmental challenges by pricing externalities (Knox-Hayes 2013; Knox-Hayes 2015). Just as high modernism, sustainable finance might have good intentions but instead has overlooked fatal flaws that inflict its rejection and a lack of trust in the concept.

There are generally four points worthwhile to be mentioned in this line of argumentation. Firstly, high modernism, just as sustainable finance, imagines a re-engineering of society as well as nature (Scott 1998). However, Scott (1998) argues that high-modernism's aim to deploy state-power in order to control and reorder both society and environment in the name of future improvement, is nothing more than utopianism. The same goes for sustainable finance, which makes the case for market-based solutions to social and environmental challenges (Migliorelli 2021; Weber 2014). Despite or precisely because of this authoritarian nature, there is an inability to control the implementation on a whole as well as the outcome of developed strategies, ending in unfulfilled promises regarding improvements (Scott 1998). As such, the outcomes of such schemes may substantially differ from what was originally imagined (ibid). Carbon markets, the poster child of sustainable finance, represents a great example in this case.

Secondly, another highly criticized feature of high modernism's authoritarian nature of such schemes is its characteristic, unquestioned faith in scientific knowledge. Same goes for sustainable finance which is closely linked to the logics of orthodox economic theory and neoliberalist capitalism (Knox-

Hayes 2013; Knox-Hayes 2015). This leads to the "tendency to disallow other competing sources of judgement" (Scott 1998: 93). Thereby, both high-modernism and sustainable finance simultaneously disguise and exclude different, 'non-scientific' views of micro and meso-level knowledge to instead develop strategies according to the "bureaucratic intelligentia" (Scott 1998:96). Hence, through this denial of other forms of knowledge, the resulting strategies are highly authoritarian on a normative level. It also highlights, how it enables financial elites to exploit the concept of sustainable finance by instead applying it to profit accumulating efforts and ultimately getting away with it.

In a third instance, high-modernism's sole focus on expert knowledge leads to strong simplification of complex social realities due to its exclusive scientific and technical character (Scott 1998). Thereby, the technocratic manner of financialization and commodification applied to sustainability challenges was meant to simplify economic valuation and exchange value (Knox-Hayes 2013; Knox-Hayes 2015). Accordingly, sustainable finance's whole aim is to simplify the commodification of social and environmental realities (ibid). However, a lot is lost with simplification, especially in terms of differentiating between value, be it use, exchange or impact, and the relevance of values in constituting such decisions (Knox-Hayes 2013; Knox-Hayes 2015; Knox-Hayes et al. 2021). Thus, through simplification, social and environmental realities might be reordered and made legible (Scott 1998), but the concrete quantification for the use in financial markets was not thoroughly thought through. Therefore, high-modernist as well as sustainable investment approaches also have an authoritarian character on a technical level.

Finally, when regarding implementations of high-modernism, its coercive, hegemonic nature is entrenched through large-scale, non-participatory, top-down social and environmental re-engineering strategies (Scott 1998). In comparison, sustainable finance strategies are implemented on a global level within a large-scale financial system backed by states and regulation. However, the employment and success of such strategies are dependent on the political, socio-economic situation and the specific culture (Scott 1998). Therefore, a central element for such strategies is "the unrestrained use of power of the modern state as an instrument for achieving these designs" (Scott 1998: 88). Furthermore, Scott (1998: 89) argues that "a weakened or prostrate civil society that lacks the capacity to resist these plans" is a vital prerequisite for the implementation of top-down implementation. Ultimately, the utopian vision of high-modernism, as well as sustainable finance, fails if governments, policymakers and financial elites have no commitment to tackling the challenges of the 21st century affecting society and if in turn society has no capacity to accept or contribute to such interventions (Scott 1998: 89).

As analyzed above, it is high modernism's authoritarian nature and unwavering belief in established knowledges and logics which simultaneously promote abstract, simplified and often false representation of social and environmental realities, that lead to the final divergence between its aim and outcome. Hence, high-modernist approaches fail as local contexts and values are neglected to be considered. Therefore, I argue that sustainable finance is destined to suffer the same fate as long as it dismisses its underlying authoritarian nature and continues to ignore the role of values in its processes and policies. Just as high modernism, sustainable finance must ultimately find a way to actively include diverse situation and location specific knowledges in its underlying frameworks. Moreover, geography scholars would do well to further examine these relationships in the future and providing states, policy makers as well as market actors guidance to navigating the challenges within sustainable finance.

VII. Conclusion

The realm of sustainable finance is rife with definitional ambiguity and varied interpretations. On the one hand, some experts define it as an effort to channel capital towards long-term sustainable solutions, while others view it as an integration of environmental, social and governance factors into investment strategies. This lack of consensus has opened doors for market entities to exploit the vagueness and prioritize profit over sustainability. Furthermore, the multiplicity of targets and goals within sustainable strategies further exacerbates the confusion. It is therefore of upmost importance to consider the different perspectives on value and the variety of values influencing the endeavors targeted through sustainable finance.

In addition, sustainable finance is often mischaracterized in terms of impact. In essence, the value of sustainable finance is its potential to enhance and promote positive impact. Seeing as considerations of ESG issues doesn't equate to impact, it is thus essential to differentiate between the impact a company has through its operations and products and the impact brought about by investor values. Despite the emphasis on sustainable finance's potential, financial performance often overshadows impact considerations. This dichotomy underscores the challenges of the current financial system. It becomes evident that to harness sustainable finance's true potential, a more refined approach that balances financial performance with genuine sustainable outcomes is necessary.

This thesis has further highlighted the role and relevance of crises, which have profound effects on values and investment decisions. Times of unrest often expose loopholes in definitions and frameworks, allowing stakeholders to manipulate systems for opportunistic gains. The ongoing Ukraine crisis, for example, highlights how events can prompt a shift in values – from sustainability demand on markets to a focus on defense, security and especially profits. Furthermore, the conflict has underscored how weapons were purposely reframed as sustainable investment instruments in order to circumvent exclusion guidelines and profit from increasing weapon stock performances. This brings attention to how fast values-based sustainability endeavors can be abandoned for profit accumulation. This deviation again underscores the necessity for a more specific values-based and crises-robust approach to sustainable finance.

In terms of the weapons dilemma, a general consensus within the financial industry was established regarding the necessity to exclude weapons from the realm of sustainable investment. Most professionals have a "blacklist" related to the weapons industry, with clear guidelines that exclude most weapons from the investment universe. And luckily, most exclusion practices have not shifted or been altered in the wake of the Ukraine crisis. Nonetheless, weapons are still irrevocably entangled in an array of ethical controversies which makes complex decision-making processes unavoidable. On the one hand, there's a recognition of the harm weapons can inflict on human rights. On the other, there's an understanding of their necessity for defense, policing and security. This dichotomy is further complicated by cultural perspectives and the ever-present distinction (or lack thereof) between defense and offense in weapon use. Consequently, the aftermath of events, certainly further fueled discussions around the ethics, implications and realities of sustainable investing.

However, the topic of weapon sustainability can at least be laid to rest. In a first instance, weapons are universally recognized as instruments of harm, irrespective of their intended purpose. Even if weapons are designated for defense, their dual nature and the industry surrounding them make it almost impossible to ensure they're used strictly for protective means. Seeing as weapons are subjected to the intent of their user, it cannot be ruled out that the same weapons will eventually be deployed for aggression. Moreover, weapons have the capability to harm the SDGs in all instances and have considerable negative impacts on all ESG dimensions. Therefore, weapons always pose as an incalculable risk to humanity, the environment and sustainable progression.

Another contentious point revolves around the financial and investment facet of the weapons industry. While defense stocks might surge during conflicts and offer tempting investment opportunities, the moral implications of such investments are profound. The weapons industry invariably benefits from conflict, and by investing in it, one indirectly supports the perpetuation of conflicts. Moreover, the presence of a weapon manufacturing entity in the investment landscape indicates an implicit hope for escalated conflicts to boost investment returns. This presents an ethical dilemma: Can weapons ever be considered a sustainable investment? The consensus within the scope of this thesis strongly leans toward the negative. Despite potential economic benefits derived from the defense industry, the primary product—weapons—is innately unsustainable, designed for harm.

The fact that the financial industry even had the audacity to justify investments in weapons by claiming they were ESG-aligned in terms of the Ukraine war is baffling. Having discussed the extent to which this argumentation must be false, it remains to be considered as to why this trend developed in the first place. The necessity to do so evades me completely. Along the lines of orthodox economic theory, weapon stocks will obviously perform well during war. If investors therefore want to invest in weapons to multiply their investment sums, then I would argue that there is nothing wrong with that. Any reasonable investor has a certain interest in seizing opportunities to increase their wealth. However, it becomes problematic once the actual aim behind the investment is concealed and is instead disguised as a sustainability endeavor. This flat-out lie not only contributes to making an already blurry market even less transparent and ultimately undoes all efforts towards shaping sustainable approaches in which investors can put their trust.

In the end, such actions of not irrelevant actors in the global financial system are disappointing to say the least, as the world was finally accepting its role to take action and build pathways to a sustainable future. Nevertheless, they are on the other hand eye opening and have the distinct advantage of pointing to the exact shortcomings of previous efforts and endeavors. In many ways this debate around the war, weapons and investing practices has therefore directly accentuated where the real challenges in the system still lie. Only when the faults are successfully uncovered, addressed and adapted progression can be achieved. Therefore, the most relevant uncovered challenges must hereafter be explicitly made reference to.

Arguably, the most pivotal challenge in sustainable finance identified in this thesis is greenwashing which is rooted in the inconsistencies within the market. As the demand for sustainable solutions skyrockets, the supply is chaotic and often misleading. Various metrics provided by different sources show little coherence, making it difficult for investors to make informed decisions. Consequently, the blurred lines between genuine sustainable solutions and ill-intentioned offerings lead to greenwashing. A lack of transparency and concealed ethical stances exacerbate the issue further. It was underscored that global events, such as the conflict in Ukraine, bring to light the myriad ways in which ethical concerns can be manipulated for financial gains, further cementing the problem of greenwashing and concept confusion.

In addition, a previously neglected cycle of blame was identified within the scope of this thesis and sheds light on two interconnected yet counterproductive behaviors in the sustainable world: the blame game and the search for a silver bullet. The blame game sees different market players deflecting responsibility, creating a never-ending loop of inaction. Amidst this, regulations themselves come with their own set of complexities and challenges, often requiring frequent revisions to remain relevant. Yet, while the financial sector's influence is undeniable, the true power lies with consumers. Sadly, the market's obsession with finding a single, encompassing solution or a 'silver bullet' often overshadows incremental progress. Sustainable solutions, though not perfect, are steps in the right direction and require collective action and responsibility.

The topic of regulation in sustainable finance is a recurring theme and will continue to be of upmost importance in the future. On the one hand, there's clear evidence of progress in sustainability reporting over the past decade, pointing to a broader shift in industry sentiment. Regulations, when done right, can enforce consistency and transparency, ensuring firms work towards genuine sustainability. However, many attempts at reframing previously incomplete and vague regulations have now rendered them too intricate, burdensome and sometimes even counterproductive. The key is to strike a balance between fostering transparency and allowing flexibility. While regulation has certainly heightened awareness and initiated action in sustainable investments, its complexity and practicability remain subjects of debate.

Despite the challenges, the significance of sustainable finance remains undebatable. Most agree that it's a concept here to stay but anticipate hurdles, especially given regulatory uncertainties and informational imbalances in the market. The potential for change lies significantly in private markets, where capital can be conditioned for impact. Ultimately, the answer to the definitional quagmire might be transparency. By clearly stating intentions and being open about sustainable endeavors, companies can guide investors while setting a gold standard. True sustainability isn't just about carbon or production methods; it's about a holistic approach that considers every facet of operation and impact.

1. Outlook

Sustainable finance is at a crossroads. As the global community becomes increasingly aware of the imperatives of climate change, social justice and governance, financial institutions and investors are recalibrating their strategies to align with these pressing concerns. The integration of ESG factors into investment decisions, once viewed as a peripheral consideration, is now becoming central to value creation and risk management. Moreover, the weapon sustainability debate underscores the complexities and ethical challenges inherent in this transition. Regulatory bodies are expected to play a pivotal role in this shift, ensuring transparency, accountability and adherence to globally recognized standards. The confluence of investor demand, regulatory oversight and societal pressure signals a promising future where finance doesn't merely seek profit but strives for a broader, lasting impact. As this master's thesis has explored, the journey is fraught with complexities, but the horizon offers a vision of finance that is truly in service of a sustainable and equitable world. Let’s just hope the financial industry finally makes the most of it.

VIII. Literature

Amel-Zadeh, A. & Serafeim, G. (2018): Why and how investors use ESG information: Evidence from a global survey. *Financial Analysts Journal*, 74(3), 87–103.

Berg, F., Kölbel, J. F. & Rigobon, R. (2022): Aggregate Confusion: The Divergence of ESG Ratings. *Review of Finance*, 26(6), 1315–1344.

Berk, J. B. & van Binsbergen, J. H. (2021): The Impact of Impact Investing. Stanford University Graduate School of Business Research Paper, No. 3981.

Beslik, S. & Karim, S. (2021): Where the Money Tree Grows: Invest Climate-Smart and Get Rich. Seattle, WA: Amazon Publishing.

Blagden, D. (2021): When Does Competition Become Conflict? Technology, Geography, and the Offense-Defense Balance. *Journal of Global Security Studies*, 6(4).

Blitz, D. & Fabozzi, F. J. (2017): Sin stocks revisited: Resolving the sin stock anomaly. *Journal of Portfolio Management,* 44(1), 105-111.

Caldecott, B., Clark, A., Harnett, E., Koskelo, K., Wilson, C., & Liu, F. (2022): Sustainable Finance and Transmission Mechanisms to the Real Economy, 4214(22), 1–53.

Causevic, A., Beslik, S., & Causevic, S. (2022): Quo vadis sustainable finance: why defensive weapons should never be classified as an ESG investment. *Journal of Sustainable Finance and Investment*, 1–9.

Chen, L., Chen, Y., & Zhang, C. (2022): Sustainable Investing During the War in Ukraine. *SSRN Electronic Journal*.

Christensen, J. (2015): Weapons, security, and oppression: A normative study of international arms transfers. *Journal of Political Philosophy*, 23(1), 23–39.

Daugaard, D. & Ding, A. (2022): Global Drivers for ESG Performance: The Body of Knowledge, *Sustainability*, 14(4).

Epstein, G.A. (ed.) (2005): Financialization and the World Economy. Cheltenham: Edward Elgar.

European Union (2020): Overview of sustainable finance. URL: https://finance.ec.europa.eu/sustainable-finance/overview-sustainable-finance_en [as in: 2020; accessed in: June 2023].

DeWinter-Schmitt, R., Jones, S. & Stazinski, R. (2022): Missing in Action? Investor Responses to the War in Ukraine. *Business and Human Rights Journal*, 7(3), 487-493.

Fabozzi, F. J., Ma, K. C. & Oliphant, B. J. (2008): Sin Stock Returns. *The Journal of Portfolio Management* 35(1), 82-94.

Flick, U. (2015): Triangulation in der qualitativen Forschung. In: U. Flick, E. von Kardorff & I. Steinke (Eds.), *Qualitative Forschung. Ein Handbuch*, 309-318. Reinbeck bei Hamburg: Rowohlt Taschenbuch Verlag.

Flick, U., von Kardorff, E. & Steinke, I. (2015): Was ist qualitative Forschung? Einleitung und Überblick. In: U. Flick, E. von Kardorff & I. Steinke (Eds.), *Qualitative Forschung. Ein Handbuch*, 13-29. Reinbeck bei Hamburg: Rowohlt Taschenbuch Verlag.

French S., Leyshon A. & Wainwright T. (2011): Financializing space, spacing financialization. *Progress in Human Geography,* 35(6), 798–819.

Friede, G., Busch, T. & Bassen, A. (2015): ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, 5(4), 210-233.

Gläser, J. & Laudel, G. (2009): Experteninterviews und qualitative Inhaltsanalyse, 3rd Edition, Wiesbaden: VS Verlag für Sozialwissenschaft.

Clark, G., Hachigian, H., McGill, S., Molinari, C. & Wojcik, D. (2015): Addressing the Challenges of Transformation through Sustainable Investment. In:Tessa Hebb, James Hawley, Andreas Hoepner, Agnes Neher (Eds.), *The Routledge Handbook of Responsible Investment*: Routledge.

Hall, S. (2012): Geographies of money and finance II: Financialization and financial subjects. *Progress in Human Geography*, 36(3), 403–411.

Hawthorne, T. L. (2017): Mixed-Method Approaches. In: D. Richardson, N. Castree, M.F. Goodchild, A. Kobayashi, W. Liu and R.A. Marston (Eds.), *International Encyclopedia of Geography: People, the Earth, Environment and Technology*: John Wiley & Sons, Ltd.

Heeb, F., Kölbel, J., Paetzold, F., & Zeisberger, S. (2022): Do Investors Care About Impact? *SSRN Electronic Journal*.

Hong, H., & Kacperczyk, M. (2009): The price of sin: The effects of social norms on markets. *Journal of Financial Economics*, 93(1), 15–36.

Hopf, C. (2015): Qualitative Interviews – ein Überblick*. In: U. Flick, E. von Kardorff & I. Steinke (Eds.), *Qualitative Forschung. Ein Handbuch*, 349-360. Reinbeck bei Hamburg: Rowohlt Taschenbuch Verlag.

Knox-Hayes, J. (2013): The spatial and temporal dynamics of value in financialization: Analysis of the infrastructure of carbon markets. *Geoforum*, 50, 117–128.

Knox-Hayes, J. (2015): Towards a moral socio-environmental economy: A reconsideration of values. *Geoforum*, 65, 297–300.

Knox-Hayes, J., Chandra, S., & Chun, J. (2021): The role of values in shaping sustainable development perspectives and outcomes: A case study of Iceland. *Sustainable Development*, 29(2), 363–377.

Kumar, A. V. (2022): How Can Missile Defences Affect Nuclear Deterrence? An Offence-Defence Theoretical Perspective. *Strategic Analysis*, 46(1), 35–52.

Lai, K. P. Y. (2022): Financial Geography. In: Douglas Richardson, Noel Castree, Michael F. Goodchild, Audrey Kobayashi, Weidong Liu and Richard A. Marston (Eds.) *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*.

Mattissek, A., Pfaffenbach, C. & Reuber, P. (2013): Methoden der empirischen Humangeographie. Braunschweig: Westermann.

Mawdsley, E. (2018): Development geography II: Financialization. *Progress in Human Geography*, 42(2), 264–274.

Mayring, P. (2015): Qualitative Inhaltsanalyse. In: U. Flick, E. von Kardorff & I. Steinke (Eds.), *Qualitative Forschung. Ein Handbuch*, 468-475. Reinbeck bei Hamburg: Rowohlt Taschenbuch Verlag.

Mieg, H. A. & Näf, M. (2005): Experteninterviews. Skript, Institut für Mensch-Umwelt-Systeme (HES), ETH Zürich, Zürich: ETH Zürich.

Migliorelli, M. (2021): What do we mean by sustainable finance? Assessing existing frameworks and policy risks. *Sustainability*, 13(2), 1–17.

Munson, H. (2005): Religion and violence. *Religion*, 35(4), 223–246.

Regassa, A. & Korf, B. (2018): Post-imperial Statecraft: High modernism and the politics of land dispossession in Ethiopia's pastoral frontier. *Journal of Eastern African Studies,* 12(4), 613-631.

Renneboog, L., Ter Horst, J. & Zhang, C. (2011): Is ethical money financially smart? Nonfinancial attributes and money flows of socially responsible investment funds. *Journal of Financial Intermediation*, 20(4), 562-588.

RepRisk (2022): RepRisk Methodology Overview. URL: https://www.reprisk.com/news-research/resources/methodology [as in: April 2022; accessed in: June 2022].

Rezende de Carvalho Ferreira, M. C., Kimura, H., Sobreiro, V. A. & de Moraes Barboza, F. L. (2016): A Systematic Review of Literature About Finance and Sustainability. *Journal of Sustainable Finance & Investment*, 6(2), 112–147.

Sætra, H. S. (2021a): A Framework for Evaluating and Disclosing the ESG Related Impacts of AI with the SDGs. *Sustainability*, 13(15).

Sætra, H. S. (2021b): AI in Context and the Sustainable Development Goals: Factoring in the Unsustainability of the Sociotechnical System. *Sustainability*, 13(4).

Sagbakken, S. T. & Zhang, D. (2022): European sin stocks. *Journal of Asset Management*, 23, 1- 18.

Scott, J. (1998): Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed. New Haven: Yale University Press.

SIPRI (2021): The SIPRI Top 100 Arms-Producing and Military Services Companies, 2020. URL: https://www.sipri.org/sites/default/files/2021-12/fs_2112_top_100_2020.pdf [as in: December 2021; accessed in June 2023].

Sparkes, R. (2001): Ethical investment: whose ethics, which investment? *Business Ethics: A European Review*, 10(3), 194–205.

Swiss Sustainable Finance (2017): Ausschluss kontroverser Waffen. URL: https://www.sustainablefinance.ch/upload/cms/user/SSF_A4_Factsheet_01_d_v03.pdf [as in: November 2017; accessed in: August 2023].

Weber, O. (2014): The financial sector's impact on sustainable development. *Journal of Sustainable Finance and Investment*, 4(1), 1–8.

Wiek, A. & Weber, O. (2014): Sustainability Challenges and the Ambivalent Role of the Financial Sector. *Journal of Sustainable Finance & Investment,* 4(1), 9–20.

Zhang, Q. & Wong, J. B. (2022): ESG reputational risks and board monitoring committees. *Finance Research Letters*, 50.

IX. Appendix

RepRisk Risk Incidents Overview

Date	Affected Country	Companies Involved	Company Involvement Count	Reach	Severity	Risk Incident Summary
03.05.2023	Ukraine	Lockheed Martin, Rheinmetall	2	1	1	Undersea Defense Technology accused of supporting Rheinmetall and other participants in greenwashing and glorifying militarization. The Underwater weapon systems reportedly cause substantial marine contamination and pollutants released during the war in Ukraine
26.04.2023	Ukraine	Thales	1	2	2	Thales Australia's Hawkei and Bushmaster protected mobility defense vehicles are reportedly being supplied and used in Ukraine's war against Russia.
08.03.2023	Ukraine	Rheinmetall	1	1	2	Criticisms against Rheinmetall for planning to a sell a tank factory to Ukraine that will not help Ukraine with its current situation but only increase profits for Rheinmetall
25.01.2023	Ukraine	Rheinmetall	1	3	1	Germany reportedly delivers Rheinmetall and Krauss-Maffei Wegmann manufactured tanks and ammunition to Slovakia and Ukraine amid ongoing war in Ukraine
18.01.2023	Ukraine	Airbus	1	2	2	Airbus' Super Puma helicopter crash in Ukraine reportedly kills 14 people in January 2023 amid criticisms of model being unreliable
15.12.2022	Ukraine	Thales, Northrop Grumman, Lockheed Martin, Leonardo, L3Harris Technologies, General Dynamics, Boeing	7	1	1	Involvement in the production of nuclear weapons and the maintenance of nuclear arsenals in the US, France, China, and elsewhere.
02.09.2022	Ukraine	Rheinmetall	1	2	1	Rheinmetall, Krauss-Maffei Wegmann, and other companies criticized for alleged involvement in providing weapons being used in the war in Ukraine
25.08.2022	Ukraine	General Dynamics, Rheinmetall	2	1	1	Galika and other Swiss companies accused of exporting machine tools to Russian conglomerates manufacturing weapons applied by Russian military during Ukraine war

Table 5: RepRisk Ukraine risk incidents overview, February 2022-August 2023

Interview Guide

Disclosure agreements:

- Would you like to stay anonymous or may I quote you in my thesis?
- May I record this interview for the purpose of my master's thesis and my personal academic use?

Personal questions:

- Could you please briefly provide an overview of your personal background and your previous experience with sustainable finance?
- What is "Sustainable Investing" for you personally?

Sustainable Finance:

- How is ESG relevant for sustainable investing?
- Why is there so much controversy regarding ESG?
- It has been argued that when it comes to assessing value, ESG cannot deliver as it is a risk metric. What are your thoughts on this?
- How do you get from ESG to sustainable value creation or impact? Ultimately, how do you evaluate the value of sustainable investments?
- How (and to what extent) do personal values and ethics influence sustainable finance?

Weapons & Ukraine war:

- What is [specific firm company]'s stance towards weapons?
- Would you say they are sin stocks in terms of ESG?
- In your personal opinion, can weapons ever be considered sustainable investments?
- How has the Ukraine conflict influenced sustainable finance?
- How do crises in general influence values and ethics of investors and industry professionals**?**
- How has the crisis influenced the evaluation of weapon companies in terms of ESG?
- Why do you think so many industry professionals have used the Ukraine conflict as an excuse to tamper with ESG scores? What is their motivation behind it?
- How can you ensure that value shifts don't deter the aims of sustainable investing in the future?

Conclusion:

- Based on your expertise, what key insights or future recommendations would you offer investors or policymakers?
- Is there anything you would like to add that hasn't been covered yet?
- Do you have any recommendations for me regarding other experts I could contact for an interview?

Interviews

Experts	Institution	Function	Date	Time	Duration
E1	Impact Data Provider	CEO	26.7.23	15:00	43 min
E2	Digital Sustainability Bank	Head of SDG Impact Rating	27.7.23	10:00	1h 10 min
E3	Sustainability Consultancy	Senior Consultant	28.7.23	10:00	38 min
E4	ESG Data and Rating Provider	Head of Key Account Management	28.7.23	14:00	51 min
E5	Swiss University	Sustainable Finance Professor	28.7.23	15:15	1h 30 min
E6	Largest Swiss Bank	Sustainable and Impact Investing Analyst	7.8.23	14:00	53 min
E7	Swiss Private Bank	Head of Responsible Investing	7.8.23	15:00	49 min
E8	Private Bank	ESG Analyst	9.8.23	10:00	30 min
E9	Swiss Association for Sustainable Finance	Senior Project Manager	10.8.23	9:00	40 min
E10	Swiss Private Bank	Head of Corporate Sustainability	22.8.23	16:00	53 min
E11	State-owned Bank	Head of Equities & Themes, Deputy Head of Asset Management	23.8.23	10:00	42 min

Coding Guide

Codesystem

- governance
  - policy
  - regulation
- crisis
  - Other crises
  - Influence on weapon policy
  - Ukraine crisis
- value
  - Impact
  - Growth/performance/risk
  - Link: Risk and Impact
  - Externalities
- values
  - Corporate
  - Financial
  - Environmental
  - Social/cultural
- sustainable finance
  - Preference
  - Transparency
  - Definition
  - Investment process
- ESG
  - Controversy
  - Value
  - Values
  - Materiality
  - Data
  - Risk
  - Data
  - Risk
  - Sustainability
- Weapons
  - ESG
  - Crisis
  - Values
  - public vs private
  - Weapons SI?
  - Intransparency
  - Offense vs Defense
  - Investing policy
  - Definition

Personal Declaration

I hereby declare that the submitted Thesis is the result of my own, independent work. All external sources are explicitly acknowledged in the Thesis

Céline Küderli

Zürich, 30. September 2023