

THE WORTH OF NATURE

UNPACKING CLIMATE RISK INTEGRATION AND THE BOUNDARIES OF CREDIT RISK MODELS

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Abstract

Amid the accelerating climate crisis and transition towards a low-carbon economy, financial institutions are under growing pressure to identify, measure, and manage climate risks. While risk management is a well-established area both within research and in practice, there remains an empirical gap in understanding how banks integrate climate risk into existing risk management practices. This thesis examines how a large Nordic bank integrates climate risk into their credit risk class assessment. Drawing on Boltanski and Thévenot's 'Orders of Worth' framework, together with insights from commensuration and quantification literature, we find that the integration of climate risk is shaped by the order of worth dominating the credit risk process. We argue that established risk models and credit professionals serve as 'qualified objects' and 'dominant actors' that define what risks are considered relevant and legitimate. While certain aspects of climate risks are "naturally integrated" into existing quantitative models, other aspects are separated into a distinct, qualitative analysis. This separation reveals both a quantitative and a temporal tension: climate risks that are qualitative and long-term are often excluded from final risk class decisions due to their incompatibility with existing tools and timeframes. By highlighting these dynamics, this thesis unpacks the underlying values that shape how a financial institution manages risks, especially in the context of a new, emerging risk.

Keywords:

Climate risk, Orders of Worth, Quantification, Commensuration, Enterprise Risk Management

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1. Introduction

“These risk models have been in place for a hundred years now. There have been many cycles of regulatory reviews – it is very clear how this world works. And then we come in with climate risks and they don't fit in that world.” – Head of ESG Risk

While climate issues, such as climate change, declining biodiversity, and deforestation, are commonly viewed as standing in direct conflict with economic expansion (Jackson, 2009) business enterprises are increasingly seen as the central institutions through which the value of the environment can be preserved (Nyberg & Wright, 2013). The idea that capital market actors and instruments can, and should, contribute to addressing social and environmental problems by integrating ESG concerns into investment decisions embodies the concept of ‘sustainable finance’ (Di Marco et al., 2023). Through addressing these concerns, the financial sector is expected to redirect capital towards the transition of a climate neutral economy (European Commission, 2024). This has led to initiatives emphasizing climate risk reporting, such as the Task Force on Climate-related Financial Disclosures (TCFD). Launched by the Financial Stability Board (FSB) in 2015, this initiative aimed to provide financial markets with the information needed to manage the near-term, and often disruptive, risks and opportunities of the low-carbon transition, thereby supporting financial stability (TCFD, 2017). As climate risks, including both physical and transition risks, are increasingly recognized as a new source of financial risk that is expected to grow in significance over time (EBA, 2025) regulatory bodies such as the European Central Bank (ECB), European Banking Authority (EBA) and the Basel Committee on Banking Supervision (BCBS) have increasingly required banks to assess their exposure, improve internal controls, and disclose how they mitigate climate risks (EBA, 2025; ECB, 2020; European Council, 2024). As a result, banks and other financial institutions face increasing pressure to systematically identify, measure, and manage climate risks by integrating these into their established risk management practices (Battiston et al., 2021).

Traditional risk management, however, is a deeply institutionalized practice, particularly within financial institutions. In response to corporate failures, financial crises, and environmental disasters, regulatory reforms have made risk management a central component of strategic decision-making, a practice now known as Enterprise Risk Management (ERM) (Power, 2007). However, following the 2008 global financial crisis, ERM has faced criticism for failing to anticipate and mitigate key risks (Power, 2009; Stulz, 2008). A central critique targets the financial sector’s long-standing reliance on quantitative, backward-looking models, which are claimed to constrain how actors perceive risk (Power, 2009) and to create systemic blind spots, leading to important risks being overlooked (Taleb, 2007). Despite this critique, ERM, particularly within banking, remains highly technical and model-driven, built on tools such as value-at-risk models, risk-adjusted capital measures, and structured reporting systems (Hall et al., 2015). Meanwhile, research increasingly shows that risk actors themselves play a crucial role in shaping how such ERM tools are interpreted and applied. This stream of research underscores the dynamic interplay between

tools and actors, showing how ERM practices evolve in response to organizational contexts, professional roles, and the communicability of risk tools (e.g., Hall et al., 2015; Mikes, 2009, 2011; Wahlström, 2009).

Although ERM practices have been widely studied, there is limited research on how climate-related risks are managed and integrated into financial institutions' traditional ERM systems. As a new type of risk, climate-related risks present unique challenges when it comes to their integration into established, quantification-heavy financial risk models, which are typically based on historical data, linear relationships, and short-term forecasts. Climate-related risks and their impacts are deeply uncertain and non-linear (Bolton et al., 2020; Svartzman et al., 2021), unfold over longer time horizons than traditional financial risks (Klein Jr. & Reilley, 2024; O'Dwyer & Unerman, 2020), and can affect the entire financial system in complex, self-reinforcing ways (Curcio et al., 2023). The absence of historical data on climate-related risks (EBA, 2025), further compounds these challenges, making it more difficult to model, quantify, and predict such risks (Svartzman et al., 2021). As a result, scholars warn that failing to accurately integrate climate risks into traditional frameworks could lead to 'green swan' events – rare but highly disruptive climate-related shocks with the potential to trigger the next financial crisis (Bolton et al., 2020). In light of these challenges, some scholars argue that the integration of climate risks will require a 'radical change of mentality' (Toma & Stefanelli, 2022) urging banks to rethink their entire understanding of what counts as risk and how risk should be managed (Bolton et al., 2020).

Despite the urgency to integrate climate-related risks and the call to rethink traditional ERM practices, there is still limited understanding of how this integration unfolds in practice. Most existing research focuses on high-level governance or sustainability reporting (e.g., Di Marco et al., 2023; Weber, 2012), leaving a gap in understanding how climate risks are actually embedded within everyday risk management tools and decision processes. While some studies explore the integration of sustainability into broader management control systems (e.g., Beusch et al., 2022; Gond et al., 2012), few studies have looked closely at how climate-related risks are meaningfully integrated into ERM practices, particularly in financial institutions.

Apart from this empirical gap, there is also a conceptual gap. While ERM research has made progress in showing how tools shape risk perceptions and how actors shape how and what risk tools are used, less attention has been paid to the underlying value systems that may mediate this recursive relationship. For instance, Mikes' (2009, 2011) concept of 'calculative culture' contributes to explaining how ERM practices are shaped by the broader context and the individuals within. She finds that banks have different calculative cultures, meaning that they have different degrees of enthusiasm or skepticism towards quantification and numbers, which leads to differing reliance on quantitative tools within their ERM systems. Hence, while the concept of calculative culture helps explain variances in ERM practices, it remains to be explored exactly what these cultures consist of, what influences them, and how they reflect deeper institutional logics and assumptions about what counts

as legitimate tools and in turn legitimate risks. As such, the concept ‘calculative culture’ is somewhat of a conceptual ‘black box’. Exploring potential underlying logics and values embedded in the concept is important for understanding how different calculative cultures take shape, gain legitimacy, and influence the ERM tools, practices, and perceptions that financial institutions prioritize. This is especially important in the context of integrating new risks into ERM systems, such as climate risks. Without a clear understanding of which values are at play, and how these values influence the selection of tools, methods, and definitions of risk, we lack the ability to critically assess how climate risks are integrated into ERM and to what extent they are meaningfully addressed. By unpacking the calculative cultures that underpin ERM, through an examination of the underlying values embedded in risk tools and practices, we can respond to Jarzabkowski et al.’s (2025) call for further research exploring the underlying values within risk tools, as well as Klein Jr. and Reilley’s (2024) call for a deeper understanding of the temporal dimensions embedded in ERM tools.

In light of this research gap, this thesis sets out to answer the following research question: *How are climate-related risks integrated into ERM practices within a large financial institution, and what role do underlying value systems play in shaping this process?*

To answer this question, we conduct an in-depth single case study, specifically exploring how a Nordic bank, hereafter referred to as ‘NordBank’ integrates climate risks into their traditional credit risk class assessment. As a large, systemically important institution with a well-established ERM system, NordBank offers a particularly compelling context for studying the integration of climate risk, a new and emerging risk category. We draw on Boltanski and Thévenot’s (1999, 2006) ‘Orders of Worth’ framework, complemented by insights from the literature on quantification and commensuration (e.g., Espeland & Stevens, 1998, 2008). Through this theoretical combination, we develop a conceptual apparatus for unpacking the black box of calculative cultures, revealing the complex interplay between tools, actors, and the value systems that underpin risk practices. By exploring how climate risks are integrated into the existing credit risk class assessment, we uncover how actors and tools draw on different value systems to justify which risks are deemed relevant and worth managing. Additionally, by incorporating literature on commensuration and quantification, we highlight how the credit risk classification process, which is in itself a process of commensuration, translates diverse information into a standardized measure, thereby legitimizing certain values while marginalizing others. We contribute to the literature on enterprise risk management (ERM) and sustainability integration by offering a more granular understanding of how underlying value shapes risk perceptions and ERM practices. In doing so, we also highlight how these value systems either facilitate or obscure the integration of emerging risks that demand organizational attention.

2. Literature and Theory

2.1. Previous Literature

2.1.1. Risk Management in Financial Institutions

Risk management began as a relatively narrow technical discipline used in specific fields, such as engineering and insurance (Power, 2007). However, since the mid-1990s, it has evolved into a broad, institutionalized framework permeating multiple sectors, including private corporations, hospitals, schools, and governments. This institutionalization has been fueled by events such as corporate scandals, financial crises, and environmental disasters, which have led to stricter regulations and an increased demand for structured risk oversight (Power, 2007). As a result, numerous regulations have been introduced, including frameworks such as the COSO (Committee of Sponsoring Organizations) framework, developed by associations in the accounting and finance sectors (Arena et al., 2010). These have framed risk management as a core component of corporate governance by linking it closely to internal management controls. This broader approach, now referred to as Enterprise Risk Management (ERM), involves managing risks across all functions of an organization, from finance and operations to compliance, strategy, and human resources, thereby integrating risk considerations into high-level strategic decision-making (Power, 2007).

Following the 2008 financial crisis, ERM became a widespread practice in financial institutions, not only leading to a discussion regarding the technical risk tools (e.g., Power 2009; Taleb, 2007), but also a growing body of field-based studies examining ERM as a dynamic, ongoing process (e.g., Arena et al., 2010; Mikes, 2009, 2011; Wahlström, 2009), highlighting the social aspects of ERM. In this line of research, scholars argue that risk is not just a technical issue but also a social one, shaped by the values, perceptions, and power dynamics of the individuals involved in designing and using risk tools. Thus, in our literature review, we focus on these two intertwined areas: the role of tools in risk management, and the actors and organizational contexts that influence how risk is understood and managed.

The Role of Tools in Enterprise Risk Management

A defining characteristic of risk management, especially within the banking sector, is its widespread reliance on tools and metrics such as value-at-risk models, risk-adjusted capital frameworks, and risk maps (Hall et al., 2015). The widespread use of metrics in managing and controlling risk has, however, been critiqued. Studies following the 2008 financial crisis have especially underscored the widespread failure of sophisticated quantitative risk management, showing how quantification practices can cause certain risks to be overlooked or underestimated. Even prior to the crisis, Taleb (2007) critiques the quantitative approach to risk management, arguing that nearly all financial risk models failed to predict so-called

‘black swans’ – events characterized by rarity, unexpectedness, and extreme impact, which can only be explained in hindsight, not in advance. Moreover, Power (2009) argues that the 2008 financial crisis was partly caused by flaws in the design of ERM. He argues that the crisis was not a result of individual errors but of the underlying knowledge frameworks and systems of thought that influenced decision-making. Rather than blaming senior executives of failed organizations, he argues that the focus should shift to the underlying “*architecture of concepts and assumptions*” (p. 849) that shaped their decisions, such as ERM systems. The design of ERM systems, Power (2009) argues, contributed to the crisis by promoting a narrow, metric-driven view of risk that ignored critical factors such as interconnectedness and organizational dynamics, ultimately causing a widespread failure of managerial and regulatory intelligence.

Power (2009) lays out three key flaws in the design of ERM, arguing that ERM through its reliance on single metrics and numbers often conceals conflicting perspectives within the organization and overlooks behavioral studies showing that risk decisions are influenced by framing and biases. He links this oversimplification of ERM to its roots in accounting and auditing, which has created a ‘logic of auditability’ that prioritizes formally managing risks through compliance and detailed documentation, rather than focusing on actual risk mitigation. This ‘box-checking’ (p. 852) causes risk management to become an excessive bureaucratic exercise, what he in previous work calls “*the risk management of everything*” (Power, 2004). As regulatory demands increase, organizations may prioritize managing perceptions of risk over addressing actual threats. Consequently, formal risk management practices are implemented on the basis of ensuring alignment with industry norms, regulations, and stakeholder expectations, instead of actually managing risks (Power, 2007). Moreover, this logic of auditability, stemming from the need for regulators to have visibility over financial institutions’ risk management, shapes not only the risk practices itself but also the understanding of risk altogether. The reliance on clear, rule-based guidelines reduces ambiguity and fosters a false sense of control (Power, 2009). Thus, he advocates for alternative approaches, such as stress-testing and scenario analysis. Referred to as the “*critical imagination of alternative futures*” (p. 852), these approaches challenge organizations to confront the limits of their knowledge by engaging with uncertainty and with the inherent difficulties of predicting the future. However, given that these approaches cannot be easily quantified or documented, regulators may struggle to assess them. As a result, these approaches might have to be translated into easily verifiable, documented procedures, which can end up defeating their very purpose (Power, 2009).

Others have echoed the need for assessing alternative futures and ‘what if’ scenarios, particularly when dealing with new or rare risks. For instance, Stulz (2008) argues that traditional risk measurement techniques, which rely on historical data, often fail when faced with such new or rare risks. For example, before the 2008 financial crisis, which was triggered by the subprime mortgage crisis, there was no historical experience of a major real estate crash combined with widespread mortgage-backed securities, making it difficult for risk managers to model potential losses accurately. Stulz (2008) argues that in such cases,

when there is no historical data, risk managers must instead rely on judgment, making risk management more subjective and political. He argues that, in these situations, “*statistical risk measurement reaches its limits and risk management changes from science to art*” (p. 43), highlighting the limits of risk models.

Providing a slightly more positive perspective towards quantitative financial models, Kaplan and Mikes (2016) argue that one should not abandon them completely, but rather rely less heavily upon them. They emphasize that risk measurement, unlike traditional measurement, attempts to quantify future events that have not yet occurred, and may never do so, making them inherently subjective. Despite criticism following past crises, they claim that quantitative models such as value-at-risk and sensitivity analyses are not solely to blame. In fact, empirical evidence shows that early warning signs were often available before past crises took place but were not acted upon due to behavioral biases and organizational barriers. Thus, the failure lies less in identifying risks and more in acting on them. Therefore, they argue that models are still valuable as they can trigger “*in-depth, analytical and rigorous discussions*” (p. 21) about the different types of risks that the organization faces. In a similar vein, Baud and Lallemand-Stempak (2024) argue that both quantitative tools and expert judgement are needed for effective risk management. While the increasing use of quantitative tools is often criticized, the authors argue that, when integrated with professional judgment and critical thinking, they can help organizations foster reflexivity – the ability to pause and critically evaluate one’s actions. Studying credit risk management within a French bank, through the lens of Boltanski (2011) framework on critique, the authors analyze the introduction of a new statistical method following Basel rules. While the intention of the new rules was to enhance transparency and accountability through financial calculations, it also disrupted the bank’s existing routine operations of professional judgment. As a result, tensions and conflicts arose between the new statistical methods and the traditional professional practices, which stimulated reflexivity. With the proper handling, Baud and Lallemand-Stempak (2024) thus argues that combining quantitative technologies with professional judgment can foster reflexivity, allowing organizations to critically evaluate their actions without stifling decision-making.

The Role of Actors in Enterprise Risk Management

The above strand of research highlights how risk tools shape ERM processes by influencing discussions, reflexivity, decisions and thereby the cognition of what counts as risk. Another strand focuses more on how the social processes shape ERM practices, examining how the organizational context and the actors involved influence the interpretation, adaptation, and legitimation of risk tools. Mikes (2009, 2011) examines how organizational cultures influence how ERM systems are designed and used, arguing that an organization’s internal culture and the personal preferences of risk managers shape the degree of quantification within ERM practices. Mikes (2009) builds on Power (2007) concept of calculative cultures, which distinguishes between ‘calculative idealism’ favoring analytical models, and ‘calculative pragmatism’ which takes a more skeptical view of quantification. Through field

studies of two banks, Mikes (2009) shows that an organization's distinct 'calculative culture' – its prevailing beliefs about the role of numbers and measurement – influences how ERM is designed and used. Her findings identify two dominant styles of ERM: 'ERM by the Numbers' reflecting a strong enthusiasm for risk quantification, treating risk mainly as something to be measured and controlled, and 'Holistic ERM' which adopts a more skeptical stance towards quantifying risk and instead seeks to integrate broader, strategic risks that may not be easily measurable (Mikes, 2009). Extending her earlier work, Mikes (2011) expands the notion of calculative cultures by using the concept of 'boundary work' – the strategic efforts of risk managers to define, defend, and shape risk management. She shows that depending on their calculative culture, here framed as 'quantitative enthusiasm' or 'quantitative skepticism', risk managers sought to expand their authority in different ways. Those driven by calculative enthusiasm pushed for expanding quantification and measurement-based control into new domains, while others, aligned with quantitative skepticism, were more cautious about using numbers and instead promoted the use of expert judgment, scenarios, and qualitative methods to understand and communicate emerging risks.

While Mikes (2009, 2011) demonstrates how calculative cultures and actors influence the degree of quantification within ERM practices, Wahlström (2009) provides insight into why actors may hold differing views on quantification in the first place. Through an examination of how professionals in Swedish banks perceived and responded to the implementation of Basel II – a regulation promoting advanced methods of measuring financial and operational risk – he finds that different professionals hold different perceptions of the new regulations emphasizing quantification. He argues that these different views "*appears to be a matter of employees' pre-existing frames of reference*" (Wahlström 2009, p. 65) – influenced by their professional backgrounds and beliefs about what is useful in their work. Arena et al. (2010) nuances this argument, suggesting that these perceptions are not static. Instead, they reveal how ERM practices are continuously shaped by organizational context and professional roles. More specifically, Arena et al. (2010) focuses their study on three key elements that influence ERM practices: how people think about risk ('risk rationalities'), who is responsible for managing it ('uncertainty experts'), and the tools used to control it ('technologies'). In doing so, they propose that individuals such as Chief Risk Officers (CROs), auditors, accountants, and risk specialists do more than simply apply formal ERM rules – they act as 'translators,' adapting ERM to fit local contexts and needs and are therefore not neutral. Similarly, Mikes and Kaplan (2015) also emphasizes the critical role of individuals in effective ERM, arguing that it ultimately depends less on the guiding framework than on the people who set up, coordinate, and contribute to risk management processes.

Building on the role of individuals in shaping ERM practices, Hall et al. (2015) explore the conditions under which risk managers and their tools gain traction in organizational decision-making. More specifically, they examine so-called 'toolmaking practices' within two UK-based banks – namely how risk managers adopt, deploy, and reconfigure tools –

and how these practices shape risk managers' influence on corporate decision-making. The study identifies two types of 'toolmaking experts': 'compliance experts' and 'engagement toolmakers'. Risk managers who operate as compliance experts develop tools primarily geared towards their own work and external audiences, often based on technical knowledge that others in the organization lack. These tools tend to be perceived as too abstract, formalized, or complex, hindering the expert from communicating and transferring their expertise and the content of these tools to other actors in the bank. As a result, actors with decision-making authority perceive the compliance expert and their tools as irrelevant for the decision-making. Hence, while these tools serve to meet regulatory requirements, they fail to influence other actors and actual business activity and decisions. In contrast, risk managers who operate as engaged toolmakers develop tools that manage to effectively communicate their knowledge to other organizational actors. However, the tools are developed in a way that still requires the risk managers to interpret their knowledge to the actors with decision-making authority, making both the risk managers and their tools part of the communicative process with business managers. In summary, Hall et al.'s (2015) findings show that it is the perceived relevance and communicability of tools that affect their influence on decision-making, and not solely their technical accuracy. Similarly, risk experts' influence stems not only from technical precision, but from their ability to translate expert knowledge into formats that decision-makers can understand and act upon.

Unlike the above studies, which emphasize the role of organizational culture, professional roles, and individual preferences, Mikes and Power (2024) zoom out to examine how the banking sector's dominant institutional logics shape not only internal ERM practices but also broader regulatory efforts. After the 2008 financial crisis, there were calls for structural changes to address conflicts of interest and risky business models. However, the reforms that followed mainly focused on improving culture and individual behavior within the already existing framework, rather than pursuing deeper structural change of business models. Mikes and Power (2024) argue that this redirection was a result of the banking sector's neoliberal belief in self-regulation, market discipline and rational decision-making. As a result, excessive risk-taking was reframed not as a systemic issue, but as individual misconduct, a framing that Power (2009) criticized. The authors show that financial institutions selectively interpreted external pressures in ways that aligned with their existing norms and structures, thereby avoiding deeper structural reform. As such, this study highlights how institutional history and sector-level logics shape the boundaries of how risk management is defined. It echoes and extends prior research (e.g., Arena et al., 2010; Hall et al., 2015; Mikes, 2011) by illustrating how influential actors shape ERM not only internally but also externally by shaping how ERM is framed and defined within regulatory environments.

In conclusion, previous literature highlights how Enterprise Risk Management (ERM) has traditionally relied on quantitative tools shaping how actors perceive and manage risk. At the same time, risk studies have also shown that the deployment, design, and degree of quantification of risk tools are shaped by organizational contexts and actors. Within this

dynamic, the growing need to integrate climate risks, which often are argued to differ in nature from traditional risks, raises questions about how such risks can be meaningfully addressed within these established, quantitative-based systems.

2.1.2. Climate Risk in Financial Institutions

Climate risks, including both physical and transition risks, are increasingly recognized for both introducing new sources of financial risk (Battiston et al., 2021; EBA, 2025), while also affecting all traditional categories of financial risk which institutions are exposed to (EBA, 2025). Moreover, these risks are expected to grow in significance over time (EBA, 2025), thus requiring institutions to assess how they are to be identified and managed (Battiston et al., 2021).

Physical risks arise from the direct effects of climate change, such as extreme weather events, rising sea levels, and long-term shifts in climate patterns. These events can disrupt production and supply chains, and damage physical infrastructure and assets, ultimately causing substantial losses to both households and enterprises (Huang et al., 2018). In turn, this can increase the likelihood of loan defaults which raises the credit risk for financial institutions (Wu et al., 2024). By contrast, transition risk stems from the need for society to shift towards a low carbon-economy. This shift is largely driven by the physical effects of climate change and involves new policies, regulations, and market demands (Battiston et al., 2021). As a result, companies – particularly those operating in carbon-intensive industries – may have to adapt their business models, thus introducing new types and levels of risk (EBA, 2025). If firms fail to adapt, they may become less competitive which, in turn, can translate to heightened default risk and potential credit losses for banks and investors (Huang et al., 2021).

Adding to this, climate related risks, similarly to other types of risks, are easily amplified by the interconnectedness of financial markets whereby losses in one part of the system can easily spread and potentially cause widespread systemic instability (Battiston et al., 2021; Curcio et al., 2023). As awareness grows, climate risks are therefore acknowledged not just as a new type of risk, but also as a new major source of systemic risk (Curcio et al., 2023; Wu et al., 2024) that could disrupt both national and global economic development and stability (Battiston et al., 2021), possibly leading to a systemic financial crisis (Bolton et al., 2020). Yet, integrating climate-related risks into traditional risk management systems is challenging due to the inherent nature of these risks. Both physical and transition risks arise from complex interactions between environmental, social, economic, and financial systems (Battiston et al., 2021; Bolton et al., 2020) leading to uncertain and non-linear effects that can play out across different time horizons (Bolton et al., 2020; EBA, 2025). As a result, these risks become difficult to model, quantify, and predict (Svartzman et al., 2021). Moreover, while traditional risk models rely on past events to predict future risks, no historical data exists for these types of risks (EBA, 2025). As such, traditional, backward-

looking models are ill-equipped to capture climate risks (Battiston et al., 2021) as they cannot accurately anticipate the shape and form they will take (Bolton et al., 2020).

Against this backdrop, institutions are becoming increasingly required to systematically identify, measure, and manage climate risks (Battiston et al., 2021). The need for banks to identify climate risks has been further emphasized by the growing view of the financial sector as a key player in the transition, seen as an essential actor in redirecting capital toward sustainable outcomes (European Commission, 2024). Since a successful reallocation relies on the availability and reliability of risk information, climate risk reporting has been formalized through key initiatives such as the Task Force on Climate-related Financial Disclosures (TCFD), launched by the Financial Stability Board (FSB) in 2015 (TCFD, 2017). The TCFD aimed to provide financial market actors with the information needed to assess and manage the near-term, and often disruptive, risks and opportunities of the low-carbon transition across sectors, thereby supporting financial stability (TCFD, 2017). Alongside these initiatives, regulatory bodies such as the European Banking Authority (EBA), the European Central Bank (ECB), and the Basel Committee on Banking Supervision (BCBS) have introduced guidelines and requirements urging banks to evaluate their climate risk exposure, strengthen internal controls, and disclose climate risk mitigation strategies (EBA, 2025; ECB, 2020; European Council, 2024). Whereas banks have historically been expected to engage with climate concerns within their internal operations, such as reducing their own emissions, they are now increasingly required to also consider climate concerns within their external operations, specifically addressing how their credit relationships impact climate risk. This reflects a shift that Toma & Stefanelli (2022) argues will demand a ‘radical change of mentality’, where bank managers and board members must use their expertise and tools in new, non-traditional ways. Others share this view, calling for an ‘epistemological break’ where there is a need to rethink how risk is understood and evaluated (Bolton et al., 2020). Similarly, O’Dwyer & Unerman (2020) argues that integrating climate-based risks into enterprise risk management systems could move the focus from ‘rule-based compliance’ to a broader approach that emphasizes the ‘critical management of alternative futures’ (Power, 2009), which is essential for addressing climate change risks (O’Dwyer & Unerman, 2020).

Although some studies have examined how climate integration operates across various organizational contexts, there is still limited empirical research on how financial institutions incorporate climate risks into their risk management frameworks, especially the credit risk framework. Despite increasing urgency and regulatory pressure, most existing research focuses on external reporting and compliance rather than internal integration. For example, Weber et al. (2008) surveyed 50 European banks and found that, in the banks’ credit granting process, environmental risks were occasionally considered during the credit rating phase, but the banks lacked tools for managing such risks in later phases, such as costing, pricing, monitoring, and work-out. Later on, Weber (2012) analyzed sustainability reports from Canadian financial institutions and found that while environmental risk management was acknowledged, disclosures were often vague and lacked actionable metrics. Moreover,

Di Marco et al. (2023) show that although institutions face increasing pressure to integrate climate risks through reporting frameworks such as the TCFD, they find that companies' TCFD reporting "*remains rather 'symbolic,' as opposed to substantive*" (p. 3044). While these studies provide valuable insights into early climate risk integration efforts, they also highlight a need to study how climate risks are integrated into risk frameworks and decision-making in practice. Given the complexities of integrating climate risks, there is a need to look beyond reporting to explore whether the integration of climate risks leads to meaningful change, rather than just fulfilling external requirements. To address this gap, we turn to the broader literature on sustainability integration in management control systems (MCS) to understand how these new forms of risk might be interpreted, negotiated, and operationalized in practice.

2.1.3. Integrating Sustainability into Management Control Systems

A growing body of research has explored how the integration of sustainability unfolds in practice, focusing on the organizational processes, systems, and behaviors that shape this integration. Although much of this literature does not explicitly address risk management or financial institutions, it offers valuable insights into tensions that may result from embedding sustainability into established management practices. Hence, these insights can shed light on potential conflicts involved in integrating climate risks into the technically driven credit risk frameworks within banks.

Management Control Systems (MCS) are tools used by organizations to monitor, guide, and improve various processes, including risk management. Gond et al. (2012) examines how management control systems (MCSs) and sustainability control systems (SCSs) contribute to the integration of sustainability within organizational strategy. They conceptualize integration as a socio-technical process involving cognitive, organizational, and technical dimensions. Technical integration involves methodological links between the SCSs and the regular MCSs such as a shared calculability infrastructure for gathering data across both systems. Without this integration, sustainability information is produced and used in isolation, leading to decision-making that is uninformed by the full spectrum of economic, ecological, and social data available within the organization. Organizational integration, in contrast, is seen as something that people actively create rather than something organizations inherently possess. It involves structuring the organization to facilitate operational-level integration, often through 'communities of practice' where individuals from different parts of the organization, using different systems, still are able to share common practices and knowledge. Finally, cognitive integration relates to the mental models, beliefs, and assumptions that individuals hold. Cognitive integration is achieved through the interaction of individuals with differing cognitive frames on sustainability, facilitating the exchange of knowledge and perspectives that ultimately leads to a shared understanding. This shared understanding, or "*common frame of reference*" is essential to overcoming cognitive boundaries that often hinder sustainability integration Gond et al. (2012, p. 210).

When SCSs are not integrated with MCSs in these three dimensions, they might not effectively influence decision-making, instead becoming disconnected and peripheral, functioning mainly as symbolic or legitimizing tools. This lack of integration creates what Gond et al. (2012) describe as “*two parallel worlds*” of MCSs and SCSs, where sustainability becomes marginalized. However, the authors also note that this parallelism creates a beneficial cognitive dissonance. While full integration may lead to excessive economic rationalization, meaning sustainability might be overly justified in purely economic terms, potentially overshadowing its other values, or bureaucratization, which could make sustainability management too rigid and control-focused, partial separation creates a tension between MCSs and SCSs. This tension can encourage critical thinking and innovation, helping to keep sustainability challenges visible and actively considered. As such, the tension between MCSs and SCSs can “*maintain actors’ awareness of the challenges inherent to sustainability strategy*” (Gond et al. 2012, p. 220).

Extending Gond et al.’s (2012) typology, Beusch et al., (2022) applies all four of Simon’s (1994) levers of control – diagnostic, interactive, beliefs, and boundary systems – to gain a fuller understanding of the integration process of SCSs into MCSs. The study shows that intensive dialogues between strategic and operational managers is crucial for achieving this integration as they help mitigate technical and organizational integration boundaries. Through intensive dialogue, the cognitive frames of different actors, such as strategic managers, who focus on long-term, holistic sustainability, and operational managers, who prioritize short-term profitability, could be reconciled, thus ensuring sustainability is not sidelined by short-term financial gains.

Crawford and Nilsson (2023) take on a Swedish perspective in exploring how four organizations integrate ESG risks into Enterprise Risk Management (ERM), arguing that due to the changing risk landscape, it is necessary to adapt and implement new risk management practices. Using Gond et al.’s (2012) three dimensions of integration as a theoretical framework, they find that long-term, slow to materialize and difficult to detect features of ESG risks makes them difficult to integrate on the technical dimension. In line with Beusch et al. (2022), they find that social processes, such as dialogue and discussions, are important in ESG integration as these improve cognitive integration. They hypothesize that this reliance on social processes stems from ESG risk management being less mature than traditional ERM. Given that ESG risks are hard to quantify, data is limited, and biases against the perceived importance of ESG work may exist, they argue that social processes become essential. As such, they call for further research, particularly in-depth case studies, to better understand actual ESG risk management practices.

As hinted by both Crawford and Nilsson (2023) and Beusch et al. (2022), Klein Jr. and Reilley (2024) highlight how ERM systems may struggle to integrate and account for ‘values at risk’ that are uncertain and unfold over long time horizons, such as environmental and social issues. They demonstrate how ERM, consisting of a variety of accounting tools and practices, embed multiple, sometimes conflicting, understandings of time

(‘temporalities’) which influences how risks are managed and perceived. Through their case study of a Brazilian conglomerate, they found that when different temporalities embedded in ERM conflicted, such as a short-term financial focus versus a more long-term reputational risk stemming from social and environmental issues, the former was prioritized. While these long-term risks were acknowledged, they did not fit into the risk committee’s existing short-term financial framework and were therefore deprioritized. Klein Jr. and Reilley (2024) argues that this type of prioritization of short-term risks is ‘rational’ within ERM, as ERM – despite advocating for greater attention to long-term risks – still frames these risks in terms of short-term financial stability (Power, 2009). As such, they conclude that integrating long-term sustainability concerns into ERM practices may remain superficial if they are framed within the same short-term, financial logic that governs the broader ERM system and the organization.

2.1.4. Research Gap

Despite the urgent need for banks to integrate climate risks and the complexities involved in adapting established ERM practices, there are few studies examining how this integration is done within a financial institution context. Existing studies have foremost taken a reporting focus (e.g., Di Marco et al., 2023; Weber, 2012; Weber et al., 2008), but there remains limited research on how this integration is done in practice. While insights can be drawn from the broader research area of sustainability integration into MCS (e.g., Beusch et al., 2022; Gond et al., 2012) and environmental risk integration into ERM frameworks of other contexts (Crawford & Nilsson, 2023; Klein Jr. & Reilley, 2024), there remains an empirical research gap examining how financial institutions, in practice, integrate climate risks into their existing ERM frameworks.

Additionally, prior research has highlighted the need to examine the consequences of risk management assemblages (Klein Jr. & Reilley, 2024). Given the role of tools, actors, and context in shaping ERM practices, it is important to understand what these factors constitute of and how they interact, especially when introducing new and complex risks such as climate risk. One way to do this is by exploring embedded dimensions within ERM systems that influence these factors and their interactions. Two important, but unexplored, dimensions identified in the literature are temporality (Klein Jr. & Reilley, 2024) and embedded values (Jarzabkowski et al., 2025).

First, recent studies have emphasized the need to examine how temporal aspects are embedded within ERM systems, especially as the short-term focus of many ERM systems can limit true integration of long-term sustainability risks (Crawford & Nilsson, 2023; Klein Jr. & Reilley, 2024). Research suggests that there is more to unpack about how tools, processes, and ideas within ERM reflect and shape different views of time and how this, in turn, affects their ability to address risks that unfold slowly and impact society and the environment over time (Klein Jr. & Reilley, 2024). Examining these embedded temporalities could contribute to a better understanding of the tensions and trade-offs

involved in managing risk (Klein Jr. & Reilley, 2024), and therefore, offer valuable insights into how climate risks are integrated and managed within ERM systems.

Secondly, previous research (e.g., Jarzabkowski et al., 2025) has made calls for a deeper investigation into the underlying, hidden values within risk metrics, as these metrics embed values that shape how actors identify what is at risk and how best to manage and control that risk (Lane & Quack, 1999). While this call is made to risk research in general, it may be especially important for climate risks, which are difficult to measure and involve values that are difficult to capture with numbers (Finch et al., 2017). This line of argument can be extended to Mikes (2009, 2011) research on ‘calculative cultures’, suggesting that the prevailing calculative culture shapes how risk tools are perceived, selected, and used. If metrics shape how people understand risk through the values they carry, then it also becomes important to understand calculative cultures that determine which metrics are chosen and how much trust is placed in them. Particularly in the context of climate risk integration, the dominant calculative culture – reflecting attitude towards quantification – may affect how well climate risks are acknowledged, legitimized, and incorporated into ERM systems, especially given that these risks are complex and difficult to quantify. Yet, the underlying value systems that shape calculative cultures remain underexplored. Thus, we extend Jarzabkowski et al. (2025) call for further research exploring the underlying values embedded within risk tools, to also include an exploration of the value systems that underpin and shape calculative cultures.

Our study responds to these research gaps by investigating how a Nordic bank integrates climate risk into its traditional credit risk class assessment. Through applying the explanatory lens of the ‘Orders of Worth’ framework (Boltanski & Thévenot, 1999, 2006), along with insights from the commensuration and quantification literature (e.g., Espeland & Stevens, 1998, 2008), we aim to uncover the value systems and temporal dimensions that underpin ERM practices and influence how climate risk is integrated.

2.2. Theoretical Framework

2.2.1. Orders of Worth

To answer our research question, we draw on Boltanski and Thévenot’s (1999, 2006) ‘Orders of Worth’ framework as it provides a powerful tool for analyzing how organizations navigate competing values, justify their decisions, and resolve tensions when multiple rationalities coexist (Jagd, 2011; Patriotta et al., 2011; Van Bommel, 2014). The Orders of Worth framework explains how people justify their actions based on different moral principles. In their original text ‘On Justification’ (2006¹), Boltanski and Thévenot argue that individuals are subject to an ‘imperative of justification’, meaning that actors must

¹ First published in French in 1991

constantly justify themselves. A person who criticizes another person must justify and provide legitimate reasons for their critique. Meanwhile, the person who is being criticized must justify and defend their actions. As such, justification can involve arguments, claims, or position statements that support a particular point of view, but it can also include criticism of an opposing view.

Within this framework, Boltanski and Thévenot (1999, 2006) outline six orders of justification, or ‘worth’, which are based on principles of worth found in political philosophy. Each order of worth is constructed on a singular basis of merit that acts as the sole standard for justifying what is valuable and just in society, rooted in a widely accepted idea of the common good. As such, each order provides its own criteria for evaluating the legitimacy of actions, objects, and actors within its particular vision of a just society. These orders are the market, industrial, civic, domestic, opinion, and inspired order. Through later empirical investigation, they also added a ‘green order’ (Lamont & Thévenot, 2000).

Adding to the framework, van Bommel (2014) describes that each order of worth consists of specific material, cognitive, and symbolic elements that help enact the specific logics of that order in practice. These elements include objects that carry meaning and legitimacy within a given order of worth. Such objects, often referred to as ‘qualified objects’, serve as tangible ‘proofs of worth’ and signals of the appropriate order of worth in a given situation (Annisette & Richardson, 2011; Boltanski & Thévenot, 1999). These objects help actors justify decisions and actions by indicating what is seen as legitimate within a specific order of worth. Examples of these include evaluation tools and calculation technologies, which integrate criteria of worth into practice and shape how actors justify and assess value (Finch et al., 2017). Table 1 in Appendix summarizes how, in each of these orders of worth, legitimacy is determined by specific people (who are seen as qualified to judge), specific objects (which serve as proof and signals of worth), and specific ways of evaluating and justifying actions.

In the market order of worth, competitiveness and profitability are key indicators of merit. In this order, justifications draw on market efficiency, economic value, and competitiveness as key standards for evaluating what is important and legitimate. This means that market justifications consider the worth of things in terms of price and emphasize a short-term perspective (Lamont & Thévenot, 2000). For instance, an individual can justify their actions by claiming that it will boost revenue, thereby basing their justification on market order values (Lamont & Thévenot, 2000). Whether an action can be claimed to support a market order of worth can be tested by, for instance, assessing whether the action enhances competitiveness (Nyberg & Wright, 2013). An example of a qualified object within the market order is the net present value calculation, which reflects the market’s orders emphasis on profitability within the present, as it discounts future cash flows back to present time (Finch et al., 2017).

The industrial order emphasizes productivity, efficiency, and scientific methods and has a longer time perspective compared to the market order (Boltanski & Thévenot, 1999). As the industrial order is closely tied to the production of material goods, legitimacy within this order is determined by competence, effectiveness, and the ability to produce measurable results (Jagd, 2011). As such, in the industrial order, experts are seen as worthy based on their technical competence and ability to optimize processes (Boltanski & Thévenot, 1999). That is, an argument or an action can be justified based on the industrial order if it can be supported by scientific expertise and evidence (Lamont & Thévenot, 2000). Instruments, or qualified objects that provide justifications within the industrial order can, for example, be technical evidence from modeling and statistical analysis (Lamont & Thévenot, 2000).

Within the civic order, worth is not determined by market forces or by efficiency arguments, but by the collective welfare of equal citizens. Here, the common good is assured when individuals move beyond their self-interest and instead act in favor of the general interest. Key objects that provide justification in this order include both immaterial elements like laws, rules, and procedures, and physical objects such as union offices and ballot boxes (Boltanski & Thévenot, 1999). Meanwhile, in the domestic order, worth is instead warranted by personal ties or local attachments. The evaluation criteria are thus based on tradition, individuals' characters – such as their trustworthiness, integrity, and reputation – and their proximity to a place or a matter. For instance, if a decision is justified on the basis of preserving a widely cherished way of life – one that is upheld in various ways by existing traditions – the decision is justified according to the domestic order of worth (Lamont & Thévenot, 2000). The opinion order of worth emphasizes the value of public opinion and fame. Here, worth is determined by the extent to which a cause or individual is recognized, celebrated, or supported by the public and media, often influencing decisions through public support or critique. Qualified objects within the opinion order are for instance tools that can generate public and media attention, such as newsletters, campaigns, and announcements (Lamont & Thévenot, 2000). The inspired order of worth represents yet another basis for justification. Within this order, actions and decisions are justified on the basis of inspiration, passion and emotion, in which the source of inspiration often stems from the creativity of a person, object, or action. The “proof” for inspiration justifications lies in displaying emotions or showing that one is moved, overwhelmed, or awed (Lamont & Thévenot, 2000).

Sometimes grouped together with the inspired order, the green order of worth emphasizes sustainability, the ecosystem and future generations (Finch et al., 2017; Thévenot et al., 2000). Within the other six orders, evaluations are centered around human interests, with humanity as the common reference point for determining value. As such, these orders consider actions or entities primarily in terms of their impact on people. Meanwhile, the green order can go even further than this, extending moral and political concerns to non-human entities such as rivers, animals, and ecosystems. Viewing nature as a subject of value encompasses both people-centered environmental justifications, and justifications that posit

nature as intrinsically worthy of care and consideration, beyond its utility to humans. An example that captures both dimensions is the health of an animal, which from the green order of worth is evaluated as meaningful in a moral sense, in that it signals a functioning natural ecosystem that benefits humanity, while also reflecting a deeper, value-laden attachment to nature itself (Thévenot et al., 2000). In developing the green order, Thévenot et al., (2000) found that nature was rarely referred to as having an intrinsic value in itself. Instead, it was often referred to within an evaluation based on non-environmental justifications and principles. For example, nature was viewed as a scarce economic resource which must be used efficiently (market and industrial justifications), as a public good in the form of, for instance, a national park (civic order of worth), or as something sacred and beautiful that should be preserved on the basis of the emotional or even spiritual experience people can have in the wilderness (inspirational order). In these examples, nature is considered and valued through other orders of worth, without being seen as inherently worthy in itself (Thévenot et al., 2000). As this cannot do full justice to nature's concerns, the 'green' order was developed (Finch et al., 2017).

While pragmatic sociology treats all orders of worth as equal in theory, in reality, some orders may be more influential than others (Patriotta et al., 2011). As described by Lamont and Thévenot (2000), critiques and justification are never presented in a 'cultural vacuum'. Rather, they happen in specific situations where some orders may be more relevant than others. As such, the legitimacy of an order depends partly on its resonance with the particular cultural and historical context. Additionally, the influence of an order can depend on authority and power dynamics. In certain fields, some actors hold more power than others, meaning their voices will be "louder" and carry more weight (Patriotta et al., 2011). Hence, while Boltanski Thévenot (1999) argue that everyone in a dispute is equally bound by an 'imperative of justification', meaning they must all equally justify their actions, Bénatouïl (1999) notes that some groups or individuals occupy 'dominant positions', allowing them to impose their perspectives more easily or even avoid the need for justifying their actions altogether. This is fundamentally a question of who has the power to make their interest appear natural and inevitable. While this paper does not attempt to resolve these debates about power, we consider how certain orders of worth become dominant and appear "natural" in contested settings.

Although the orders of worth framework applies to all social spheres, previous research has shown that the framework is especially useful in revealing the different competing or conflicting rationalities that are present within organizations (Jagd, 2011). Business enterprises offer a unique context for observing the tensions between various orders of worth, since enterprises are tasked with balancing multiple imperatives, often causing conflicts and compromises. Thévenot (2001) argues that businesses function as 'compromising machines', continuously mediating between competing logics to enable coordination and decision making. In today's business environment, climate can be considered as an increasingly institutionalized logic that companies, not the least banks,

have to consider alongside other logics. Although climate issues, mainly environmental ones such as climate change, declining biodiversity, and deforestation, are commonly argued to stand in direct conflict with economic expansion (Jackson, 2009), business enterprises are increasingly seen as the central institutions through which the value of the environment can be maintained (Nyberg & Wright, 2013). As such, climate concerns represent an additional imperative that organizations must balance alongside other, often conflicting priorities. Moreover, climate concerns are in themselves inherently pluralistic and conflicting. As such, research on grand challenges, that is, complex, large-scale, societal issues, are increasingly turning to the orders of worth framework to understand how organizations coordinate action in pluralistic environments (Cloutier et al., 2017). Since climate represents a paradigmatic grand challenge, requiring the alignment of multiple, often conflicting, rationalities, the framework provides a valuable theoretical lens for this study.

More specifically, the orders of worth framework has been widely applied in studies examining accounting, organizational legitimacy, and justification processes (Van Bommel, 2014). In particular, Annisette and Richardson (2011) argued that the framework provides a valuable tool for understanding how accounting practices are justified and critiqued. They called for more empirical research using this approach in organizational and financial contexts, highlighting its relevance for studying the legitimization of new decision-making criteria, such as climate considerations. Gray (2010) similarly highlights the limitations of conventional accounting frameworks, arguing that sustainability is a planetary systems concept that is often reduced to narrow organizational concerns, thereby failing to reflect its full ecological scope. This underscores the broader difficulty of making environmental values visible within dominant measurement tools. Skilling Tregidga (2019) builds upon this notion, using the orders of worth to “*examine how justifications of the status quo are stabilized not just by logical argumentation, but also by the material objects of contemporary accounting discourse and practice.*” (p. 2037). They argue that changes in business practices, such as changing existing practices of low pay for employees, require not just the cognitive acceptance of new ideas, but also changes in these material objects. This includes the acceptance of different regimes of measurement, such as different types of reporting, and a different, and wider, group of people recognized as ‘qualified’ and ‘authoritative’. Building upon the notion of these material objects, or ‘qualified objects’, as proofs and signals of existing dominant worth’s within a context, we complement the orders of worth framework with the theories on quantification and commensuration, as these often constitute an integral part of organizations accounting practices and tools, not the least in the context of credit risk class assessments.

2.2.2. Calculative Objects as Carriers of Worth

‘Commensuration’ is the process of transforming different qualities into a common metric (Espeland & Stevens, 1998), making it possible to compare things that are otherwise

qualitatively different. This enables standardized decision-making which ensures control and efficiency within organizations (Arjaliès & Bansal, 2018) and can therefore be connected to the industrial order of worth, where legitimacy is grounded in efficiency, productivity, and technical reliance (Boltanski & Thévenot, 2006). According to Espeland and Stevens (1998) the concepts ‘commensuration’ and ‘quantification’ are closely related, as “*most quantification can be understood as commensuration*” as both concepts creates relations between different entities through a common metric. Quantification is foremost seen as a separate phenomenon from commensuration when the things that are being linked to each other are already perceived to be rather similar (Espeland & Stevens, 1998). While quantification studies span across multiple disciplines (Mennicken & Espeland, 2019), the concept can broadly be defined as the “*production and communication of numbers*” (Espeland & Stevens, 2008, p. 407). Although quantification tends to be viewed as providing far superior knowledge (Espeland & Stevens, 1998, 2008; Unerman et al., 2018) and generate a higher degree of trust (Porter, 1995), the process of reducing multiple externalities into measurable metrics have often been argued to be subjective and negotiable (e.g., Puroila & Mäkelä, 2019). Tools such as risk metrics that have been developed through the processes of quantification and commensuration may make some aspects visible while hiding others, depending on whose values and knowledge are embedded in their design (Espeland & Stevens, 1998, 2008). As a result, these tools can marginalize alternative values that do not translate easily into numbers, and thereby influence what aspects are perceived as important (Espeland & Stevens, 2008). This is closely related to the idea of ‘qualified objects’, where evaluation tools carry the logic of a particular order of worth and therefore reflect a specific way of thinking about what is valuable. Given the potential consequences of commensuration and quantification, the usage of these processes in addressing environmental challenges has drawn critique (Finch et al., 2017). By attributing a monetary or quantitative value to nature, such as creating a carbon tax, the various complex qualities of nature are reduced into a single number, which risks creating an “*illusion of measurability and commensurability of the various complex sustainability issues*” (Puroila & Mäkelä, 2019, p. 1062). This risks excluding issues that are difficult to quantify (Puroila & Mäkelä, 2019) or that do not have any existing data (Mennicken & Espeland, 2019). The use and effects of commensuration and quantification is thus especially useful to examine within the context of climate risk integration into credit risk class processes.

In analyzing our findings, we apply the order of worth framework combined with insights from commensuration and quantification studies. This helps us identify which value logics are prioritized within the organization, and to understand how these logics shape both the structure and decision-making processes involved in integrating climate risks into the bank’s credit risk framework. Given that the credit risk class process itself is a form a commensuration, where diverse factors are translated into a single number, we find our combined theoretical lens especially useful when examining how underlying value systems shape the integration of climate risks into the traditional credit risk classification process.

3. Method

3.1. Research Design

This thesis explores how a large Nordic bank integrates climate risks into their credit risk classification process. To attain a comprehensive understanding of this research question, we adopt a qualitative single case study as the most suitable research design. In a fairly unexplored areas – such as the nexus of credit risk class assessment and climate risk – qualitative research is suitable as it enables openness to emergent themes and is appropriate when relevant quantitative data is limited (Eisenhardt, 1989). A qualitative approach also allows for rich, contextualized insights into how individuals and teams understand, interpret, and enact climate considerations in a highly regulated risk environment (Bazeley, 2013). Our choice to conduct an in-depth single-case study is further motivated by its capacity to generate theory through detailed empirical insights and contextual understanding (Dubois & Gadde, 2002), aligning with Eisenhardt and Graebner's (2007) view that single-case designs are especially valuable when investigating underexplored or context-specific phenomena.

To further guide our inquiry, this thesis adopts an abductive approach, where empirical findings have continuously been tested against theory and theory has been updated to remain relevant to our findings (Dubois & Gadde, 2002). As our research area is relatively unexplored, the abductive approach was particularly important, letting new insights continuously unfold during interviews and document analysis. This method also enabled our theoretical lens to be responsive to empirical observations, rather than being rigidly applied.

The Case Organization

This study particularly focuses on the banking sector, where effective risk management is critical not only for individual institutions but also for broader economic stability (BCBS, 2024). Banks play a central part in the functioning of modern economies, acting as intermediaries that allocate capital, facilitate transactions, and manage financial risks on behalf of both individuals and other organizations (Mikes, 2006). Given banks' systemic importance, banks operate under strict regulatory frameworks, such as the Basel Accords, which impose requirements for capital reserves, liquidity, stress testing, and risk disclosures (BCBS, 2025). In addition to the banking sector providing a rich setting for studies on risk management, our specific case organization was chosen based on three main criteria: the bank had to (i) integrate climate considerations into its credit risk assessment process, (ii) allow access to interviews with personnel across various functions involved in the credit risk classification process (iii) preferably be classified as a systemically important bank in the Nordic region as risk management is crucial in this setting. The chosen case met all these

criteria and provided us with access to both senior and operational perspectives on climate integration in credit risk.

Scope Limitations

To maintain analytical feasibility, we have imposed some scope limitations on our study. First, while banks are exposed to a range of different risks – including market, liquidity, and operational risk (BCBS, 2025) – this study focuses exclusively on credit risk. This focus was supported by internal actors, who stated that, within NordBank, climate risk was estimated to only have a material impact on the bank’s credit risk.

We further limited the study by focusing exclusively on the process of determining a counterparty’s credit risk class, a central metric that informs risk-based decision-making, and by only looking at credit risks arising from lending to large corporations. Other key elements involved in credit risk assessment – such as exposure at default (the total loan amount), loss given default (the proportion expected to be lost after collateral), and loan-specific characteristics such as tenure – were deliberately excluded from our scope. This narrowed focus allows for a more detailed analysis of how climate risks are integrated into one of the key steps in credit evaluation.

3.2. Data Collection

Data collection for this study has primarily been carried out through a mix of in-depth interviews and document analysis, including both publicly available materials and internal documents. While interviews have served as our primary source of data, the document analysis, along with one key observation, has supported our interview findings and thus function as a valuable source of secondary data.

Primary Data

Our data collection has primarily been done through in-depth interviews with actors in various teams in NordBank. To understand how climate risk is integrated into the credit risk class process, we interviewed participants involved at each key stage – from the initial counterparty contact, through the evaluation and risk assessment phases, to the final credit committee decision. In total, we conducted 19 interviews with 16 individuals, each lasting between 40-84 minutes (average: 57 minutes), depending on the depth of the responses.

One interviewee assisted us in arranging the first three interviews. Following this, we adopted a snowball sampling approach in which we asked each participant if they could recommend us to other relevant actors in the bank. While this method allowed us to reach a variety of participants, it may also have induced the potential for an unwanted selection bias, for example, employees may recommend people with similar opinions as themselves (Emerson, 2015). To address this, we proactively contacted five additional actors outside of the chain referrals to make our data more nuanced and reliable. Table 2 in Appendix outlined detailed information on each interview.

All interviews were conducted in a semi-structured manner, using a pre-developed interview guide that steered the discussions while allowing for spontaneous follow-up questions and reflections. This approach was chosen as it is widely used in qualitative research and is particularly effective for gathering detailed insights about organizations (Lee & Humphrey, 2006). The guide was slightly tailored to reflect each interviewee's role and team, allowing participants to go beyond predefined questions and share personal experiences. This enriched our understanding of both organizational practices and individual perspectives. As later interviews were shaped by insights from earlier ones, the guide was continuously updated throughout the process. Initial interviews explored broad process understanding, while later ones focused on more critical and investigative themes. In line with our abductive methodology, we also started the interview phase with an open perspective on sustainability as a multidimensional concept. However, as the research progressed, it became clear that within the credit risk classification process, participants primarily focused on climate risks. Accordingly, our analysis primarily focuses on this dimension as well.

All interviews were conducted in either English or Swedish, depending on the interviewee's preference, thus eliminating the risk of language barriers affecting the answers in the interview. Given that a physical interview context is recommended for sensitive topics (Sturges & Hanrahan, 2004) whenever possible, we aimed to conduct interviews in person at Nordbank's main office. In total, 16 interviewees were conducted physically, while three were conducted virtually, primarily due to logistical constraints and interviewees' availability.

Both authors participated in all interviews, which allowed for immediate discussion and reflections of insights while also minimizing the risk for biases and misinterpretations of interviewees' answers (Bryman & Bell, 2015). With participant consent, all interviews were recorded and transcribed using an AI-based transcription tool. To ensure accuracy all transcripts were carefully cross-checked against the original audio recording. While the flexible format allowed for a more nuanced and contextualized understanding, it also introduced some variation between interviews. Yet, as all discussions centered on the same core process, meaningful comparisons across roles and teams were still possible. To foster openness and trust, participants were assured of anonymity and organizational confidentiality, both during initial outreach and at the start of each interview (Bryman & Bell, 2015).

Secondary Data

To complement our interviews, we have used several forms of secondary data. First, publicly available documents – such as NordBank's annual and sustainability reports – have been used to contextualize our findings, while also providing a broader understanding of the bank's strategic priorities, core objectives, and external communication. Second, regulatory reports and frameworks – specifically from the European Banking Authority (EBA) – have been consulted to better understand the regulatory landscape and guidelines potentially

shaping the integration of climate risk into various banking practices. Last, we have gained access to some internal documents, including model and process descriptions. These documents have mainly been valuable in helping us understand the technical details of the loan granting processes. Yet, for the sake of confidentiality, neither of the internal documents, nor the annual- and sustainability reports will be disclosed in the reference.

In addition to the above documents, we participated in an internal workshop, where a detailed presentation was given on one of the core models used for integrating climate considerations into the credit risk process. Like the internal documents, this session mainly offered insights into how these practices are operationalized, thus enriching our understanding of some key elements discussed in the interviews.

3.3. Data Analysis

In line with our abductive approach, data analysis followed an iterative process, moving continuously between the empirical data, previous literature, and potential theoretical perspectives. This allowed us to gradually refine our theoretical lens and our interview focus as new themes emerged. As such, data collection and data analysis have been conducted in parallel, where each has informed the other.

As mentioned in section 3.2, all interviews were transcribed using an AI-based tool and then cross-checked for accuracy by revisiting the original recordings. The process of carefully cross checking each interview helped us familiarize with the material and identify recurring themes early on, which guided both our analysis and subsequent interview focus. As the majority of interviews were conducted in Swedish, most quotes in this paper have been translated from Swedish to English. We aimed to translate all quotes as faithfully and directly as possible, striving to maintain the meaning behind certain Swedish expressions and not taking the quotes out of their context. To ensure the accuracy of our empirics, we have included at least one quote from each interview in the empirical findings.

When analyzing our interview data, we adopted a thematic approach. The approach is defined as a method for identifying, analyzing, and reporting themes within data, where a theme is *“something important about the data in relation to the research question and represents some level of patterned response or meaning from the data set.”* (Braun & Clarke, 2006 p. 80). While our flexible interviews allowed for some variation in responses, this thematic approach helped us identify consistent themes across interviews, thus providing a robust foundation for our conclusions. Our secondary data – gathered through internal documents, publicly available reports, and one internal workshop – has also enriched our understanding by helping us validate certain interview claims and clarifying technical descriptions. To further ensure the validity and plausibility of our interpretations, one of the common challenges within explanatory interpretive research (Lukka & Modell, 2010), we continuously engaged in reflective discussion following each interview and during the data collection process. From these discussions we were able to align our

understanding of the data and challenge preliminary conclusions, thus ensuring that our findings accurately reflect NordBank's risk practices.

Emic vs Etic Approach

When analyzing our interviews, we have also adopted an emic approach, in which we aimed to understand and represent how our interviewees themselves talk about and interpret ESG and climate-related risks. The emic perspective centers on the insiders' view by prioritizing interviewees own meanings instead of imposing external definitions (Given, 2008). As described in section 3.2, we initially approached all interviews with an open perspective on sustainability as a multidimensional concept. However, as interviews progressed, it became clear that participants primarily focused on climate-related risks although they often referred to these as ESG risks.

To better understand the ambiguity of how participants referred to ESG risks, we asked them to clarify what ESG risk meant in their role or context. In nearly all cases, they described risks related to climate, such as decarbonization, CO₂ emissions, stranded assets, or the transition to greener business models, as their primary concern when thinking about what ESG risks mean. Additionally, whenever unclear, we asked interviewees to clarify, in which many responded with statements such as: *"I talk about ESG risks, but mainly, I mean the environmental dimension"* or *"Well for me, ESG is about CO₂ emissions and stranded assets."* In several cases, it was also implicitly clear that references to ESG risks were actually focused on environmental or climate aspects. For instance, one interviewee said: *"The ESG aspect comes in both in terms of your environmental impact – through Scope 1, 2, and 3 emissions – and in how you plan to transition, including what that transition will cost you financially"*. Another interviewee said, *"...ESG risks, so transition and physical risks specifically."* These cases illustrate that although the term ESG was often used, the content of discussion often revolved around climate concerns. This use of terminology also reflects the internal language of the organization. For instance, the ESG credit team's main responsibility is to assess climate transition risks, yet the team is internally referred to as the *"ESG team."*

To stay true to our data, we have retained the original wording used by interviewees in all direct quotes. This means that in some cases, interviewees may refer to ESG risks although the conversation revolved around climate-related concerns. Unless explicitly stated otherwise, such references in quotes should be understood as pertaining to climate risks. Additionally, to avoid misinterpretations of our data, we excluded any quotes where it was unclear what part of ESG the interviewee was referring to, or where they explicitly addressed social or governance issues. To ensure this, all quotes have been carefully cross-checked with the original audio recordings to ensure they reflect the intended meaning of the interviewees.

4. Empirical Findings

4.1. NordBank and its Credit Risk Classification Process

The case company, referred to as NordBank, is a large, systemically important Nordic Bank. For the purpose of confidentiality, their operations will not be disclosed further.

The credit risk class is a numerical indicator that reflects the likelihood of a counterparty defaulting on its payment obligations. NordBank's credit risk class system² uses a numerical scale to assess this risk. The Client Department within NordBank holds the client contact and conducts an initial risk class assessment, together with other types of analyses of the profitability of the loan. If the loan is deemed attractive from a risk-adjusted profit perspective, it is presented to one of NordBank's Business Committees³ for approval, before the Credit Analysis Department conducts its own assessment.

The Credit Analysis Department is an independent unit within NordBank and consists of Credit Analysts with the main responsibility of conducting credit risk class assessments. This assessment combines both a quantitative financial analysis and a qualitative strategic business risk evaluation into a final credit risk class. Hence, this is a process of commensuration in which a diverse set of factors are translated into a single metric that guides decision making. This credit risk classification is done for all new customers, annually reviewed for existing customers, and in the case of significant events such as a major acquisition, it may be reassessed.

Within the Credit Analysis Department lies another team, called the ESG Credit team. While the Credit Analysis Department has existed for as long as the bank itself, the ESG Credit team has only existed for five years. This team consists of three ESG Analysts, mainly with sustainability backgrounds. While they handle various sustainability-related tasks, their main task is to conduct a so-called 'Climate Risk Assessment' (CRA), assessing the climate transition risks of counterparties operating in specific industries deemed material from a climate risk perspective. This CRA is done for new clients within this scope and reviewed every third year for existing counterparties. As noted in Section 3.3, interviewees often used NordBank's internal terminology, referring to climate risks as 'ESG risks.' To stay true to our data, some direct quotes entail references to 'ESG risk' when the conversation primarily concerned climate risks, including both physical and transition risks. Thus, unless otherwise specified, the use of 'ESG risks' in direct quotes should be understood to mean climate risks.

² Regulatory frameworks, such as Basel III, encourage banks to develop internal credit risk rating systems to reduce reliance on external assessments (EBA, 2021)

³ The business committee is a decision-making body that ensures potential deals comply with internal policies and offer an acceptable risk-adjusted return.

The CRA is conducted in parallel with the credit risk classification done by the regular Credit Analysts and is then attached as an appendix to their proposed credit risk class and corresponding analysis. Together, these are sent as a bundle to the Client Executives, who then sends these, together with their own recommended risk class, to one of the bank's Credit Committees, a decision-organ who decides upon the final risk class and the granting of the loan. These Credit Committees consist primarily of senior employees with extensive experience in various credit functions. Credit Analysts, Client Executives, and Committee members attend all credit decision meetings, and when a separate CRA has been done, ESG Credit Analysts are present as well. In certain cases, other participants are also present, including Senior Sustainability Experts ('Sustainability Experts') from NordBank's Sustainability Department. If deemed necessary, the credit decision can be escalated to other bodies, including a dedicated Sustainability Committee and/or a higher-level Credit Committee. The Sustainability Experts thus have dual roles within NordBank, both as sustainability experts within the Sustainability Department, as well as occasional participants of various committees, such as Credit Committees, Business Committees and Sustainability Committees. The credit risk class process is further governed by a higher CRO function, including Head of ESG Risk which is, amongst other things, responsible for developing internal guidelines on how to integrate climate risks.

4.2. Dominant Orders of Worth in NordBank

In this section, we elaborate on the orders of worth most frequently invoked in lending decisions at NordBank. As Lamont and Thévenot (2000) note, justifications are never presented in a 'cultural vacuum', rather they unfold in specific situations where certain orders of worth may be more relevant than others. As such, the legitimacy of an order of worth may depend on its resonance with the broader historical and institutional setting. In the banking context, past financial crises and subsequent regulation have historically based ERM practices on financial metrics and statistical analysis (Power, 2009; Mikes, 2011; Hall et al., 2015). Accordingly, the sector can be said to largely draw on the market and industrial orders, where worth is tied to economic value and scientific measurability.

At our case bank, these two orders – alongside the civic order – appear to dominate, with practices and perspectives emphasizing efficiency and standardization, profitability and competition, and responsibility to the public and regulators. For instance, NordBank describes its role in society as both a profit seeking enterprise and a pillar for financial stability, highlighting the need for profitability in supporting the broader economy and society (Annual Report, 2024). Additionally, interviewees frequently describe NordBank as *"the oil that fuels the engine"* and the banking system as *"the bloodstream of money in the country"*, pointing to a self-recognition of the bank's societal role. Yet, profit motives dominate, with interviewees often invoking NordBank's identity as a limited liability company, referencing its share price as an important indicator of performance, and highlighting the importance of meeting shareholders expectations. As Business

Committee/Sustainability Expert #1 put it: *“We are not an NGO. We have to deliver returns on the capital that our shareholders invest in this bank.”* Moreover, the Business Committee/Sustainability Expert #1 highlights the central role of numbers and metrics within the banking world, revealing evaluation criteria for the market order – which bases value on financial costs – and the industrial order – which bases value on measurements: *“The banking world – it’s all about numbers. Everything is CET1 ratio, return on equity – everything is measured in every possible way. Everything.”* Turning more specifically towards the credit risk class assessment, we find that the market and industrial orders of worth are dominant within this process as well. For instance, when asked about how competing concerns are weighted during credit decisions, Head of ESG Risk remarked that *“Financials, they play role A. So, if you don’t have good financials, you’re not going to be considered. So that’s the first priority, always.”* This sentiment was echoed by others, emphasizing the importance of *“repayment capacity”* and future *“cash flow generations”*.

While contextual factors influence what orders are present, the actors and tools involved also appear to play a significant role in preserving which orders remain dominant. In each order of worth, legitimacy is determined by specific people, who are seen as qualified to judge, and specific objects, often referred to as ‘qualified objects’, which serve as proof and signals of worth. In credit risk assessments, standardized and regulator-approved models act as such qualified objects, reflecting the industrial and market logics. As such, while primarily serving as facilitators for decision making, these tools also shape what kinds of knowledge are seen as valuable and legitimate within the bank. As described in section 4.1, the credit risk model consists of two main components that together determine the credit risk class. The first is a quantitative financial analysis which includes short-term evaluative factors such as debt levels, profitability, cash flows, and other financial indicators. As such, this component of the credit risk assessment naturally aligns with these two orders of worth. The second component is a qualitative business risk analysis, consisting of factors such as industry outlook, competitive positioning, peer comparisons, and more. While these factors are mostly qualitative, they are converted into quantitative metrics for use in the credit risk models through a structured scoring system. This practice of transforming qualitative business insights into numeric scores – a process of commensuration (Espeland & Stevens, 1998) – reflects an attempt to make these concerns more compatible with the dominant orders of worth as well.

The final decision-making in the credit risk classification process relies on expert judgment from both Credit Analysts, who suggest an initial risk classification, and Credit Committee members, who hold the final decision authority. As Senior Credit Analyst #1 explained, *“We apply expert judgment to assess whether the model’s results are reasonable, because the problem is that we use the same model for all industries, so it’s not always a perfect fit.”* However, the decisions are still heavily grounded in the underlying numbers presented by the models. As Business Committee/Sustainability Expert #1 noted: *“Every decision that’s made – whether strategic or customer-related – is measured. [...] They [Committee members and Credit Analysts] try to manage everything down to the smallest level using*

numbers, in order to make, what they believe, are the right decisions.” This reliance on expert judgment, combined with a focus on numbers, again reflects both an industrial order, where decisions are justified by expertise, and a market order, where financial outcomes drive evaluations.

4.3. Integration of Climate Risk

Thus far, it has been established that the market and industrial orders of worth dominate decision-making within NordBank’s credit risk process. This dominance raises important questions about how climate risks – being long-term, uncertain, and often difficult to quantify – are actually integrated into a process so deeply shaped by financial rationalities and efficiencies. As Head of ESG Risk noted:

“These risk models have been in place for a hundred years now. There have been many cycles of regulatory reviews – it is very clear how this world works. And then we come in with climate risk and it doesn’t fit in that world.”

Given this divergence between the nature of climate risks and the dominant orders of worth underpinning the credit risk assessment, we now turn to examine how climate concerns are integrated in practice. More specifically, we explore how established orders of worth shape which climate considerations are included (and which are marginalized) within NordBank’s credit risk classification process.

4.3.1. Climate Risk as a Natural Part of the Credit Risk Classification

The credit analysis consists of two core components: a financial assessment and a business risk analysis. A dominant view among credit professionals in NordBank is that climate risk is a natural component of the business risk and therefore is also “*naturally integrated*” into the credit risk class process. Consequently, among credit professionals, including Client Executives, climate is understood less as a distinct category, and more as an extension of the business risk.

This narrative rests on the belief that climate concerns can impact counterparty’s competitiveness, future cash flow and the viability of their business models. As Senior Credit Analyst #2 explained, “*...it becomes a pretty natural thing to integrate climate when you’re looking at the overall business risk.*” The Chair of Credit Committee #1 similarly noted that climate concerns enter the conversation “*as a natural part of the process*”, particularly when discussing business risk in the final decision making:

“At the end of the day, in nine out of ten cases, it comes down to how it [climate risk] affects the business model and, ultimately, how it impacts the cash flow analysis and our ability to recover the money we’re putting at risk. In that way, I would say these questions are very much integrated into the decision-making process.”

Chair of Credit Committee #2 echoed:

“It’s really about ESG in terms of a transition – how do we think the counterparty’s financial position will be affected over time? And that’s really what we focus on a lot in the Credit Committees. Much larger investments are needed to stay competitive in the long run. So if it’s a technology that works well today but might not in five years – and we’re giving a five-year loan – then it’s pretty important that we understand whether the company’s competitiveness will hold up.”

Among credit professionals, the underlying logic seems to be that climate risks are just like any other strategic business risks – such as outdated infrastructure, technological disruption, and regulatory exposure – and are therefore already reflected in the counterparty’s strategic risk profile. Moreover, many emphasized that climate concerns are, and have always been, part of assessing whether a firm’s business model is viable in a changing market. As Senior Credit Analyst #1 noted:

“We’ve actually always looked at these risks because they have an impact on our counterparties. [...] Maybe you now place more weight on the fact that, from a climate perspective, if you don’t transition, you can end up with a broken business model. But I mean, broken business models have always existed. If you were making horse carriages in 1900 or selling analog cameras in 1995 [...] and suddenly the iPhone arrived and now everyone has a camera in their pocket – same thing.”

Also, Global Head of Credit Analysis explained:

“Hardcore ESG, in terms of changing business models, is something we’ve always looked at. [...] It’s wrong to say that the financial industry is immature when it comes to taking ESG risks into account in lending, because that’s something we’ve always done. We’ve just called those risks different things over time.”

This highlights how climate is referred to not as a novel risk category but as something already absorbed into the tools, routines, and categories of traditional business risk. Consequently, the introduction of climate risks appears to not have resulted in any substantial changes in the way NordBank conducts their traditional credit analysis. As Client Executive #2 put it: *“Really, we think and act in pretty much the same way.”*

Hence, across interviews with credit professionals, the process of integrating climate risks was often described as straightforward and relatively unproblematic. For instance, when asking them whether they saw any challenges with integrating climate into the credit risk assessment, the Chair of Credit Committees #1 stated: *“I don’t really think so, because I see it as part of the analysis we do of the counterparty.”* Yet, this perceived ease seems to stem from the view of climate risk as a natural part of the overall credit risk assessment – a view that appears to incorporate only those climate risks that align with the existing tools and corresponding evaluative categories, such as business risk. In other words, climate is seen as “easy” to integrate primarily because only the aspects that are already legible within dominant frameworks – such as industry outlooks, competitive positioning, or foreseeable financial costs – are taken into account. These are the aspects that can be translated into the models, metrics, and narratives that hold legitimacy in the bank’s market and industrial orders of worth. As Global Head of Credit Analysis explained: *“For me, ESG is very much about the transformation of business models.”*

Indeed, some actors within NordBank seem to be critical toward the perception of climate risk as *“naturally integrated”*. For instance, Credit Committee/Sustainability Expert #2

stated that without a structured method to identify climate risks separately, they risk being overlooked:

“The challenge is separating exactly what is sustainability and what is not sustainability. [...] We’re essentially combining a lot of different risks, and then we make an overall assessment that results in a risk class – say, BBB+ or BBB or whatever. But it’s not really possible to see exactly what the specific components are that contributed to that risk class.”

This quote highlights the process of commensuration involved in determining a risk class, where multiple factors are reduced to a single number, potentially obscuring the underlying components and their relative significance. Credit Committee/Sustainability Expert #2 further stated:

“There’s always a risk of people thinking: ‘Well, this [climate risk] is integrated, it’s in everything, in strategies, and so on’. And ‘that’s fine, it’s always worked that way.’ But when you’re forced to really separate it, then I think you understand it on a different level – you become more aware. [...] There is a risk that if you’re handling it all together, with ESG risk as just one of many other risks, there’s a risk that you haven’t dug into it enough.”

Moreover, this concern seems to be shared by regulators who, according to Head of ESG Risk, are pushing for banks to demonstrate how climate risks specifically affect credit decisions. For instance, Credit Committee/Sustainability Expert #2 states that: “*...the regulators want us to demonstrate that we have taken it [climate risk] into account, and how much of an impact it has*”. However, given the perception that climate risk is naturally integrated, the increased regulatory pressure to isolate climate risk impacts is met with skepticism. For example, Head of ESG Credit commented on regulatory demands to specify climate’s effect on credit ratings:

“Our perception is that EBA really wants to understand: what’s the impact of ESG risk on the risk class of the customer? Is it one notch⁴ down, two notches? But for us, that’s impossible to say. If it’s automotive, decarbonization – how do you say this is ESG and not just the main corporate strategy? It’s not possible to detangle. But the regulator doesn’t understand that at this stage.”

More people highlight this criticism, claiming that climate risk is in fact inseparable from other forms of business and financial risk. For instance, the Chair of Credit Committee #2 stated: “*I don’t think you can clearly separate and say, ‘this is financial risk,’ ‘this is ESG risk,’ and ‘this is business risk’ – everything is interconnected.*” Global Head of Credit Analysis confirmed this as well, stating that “*There’s only one cash flow – it’s not like there’s one with ESG and one without*”. This view was also echoed by the ESG Analysts themselves, as Head of ESG Credit explained: “*There’s not one word with ESG and one word without ESG. It’s not possible [to separate]. It’s just the world we live in.*”

The above observations illustrate a reluctance to separate climate risks from traditional financial and business risks. The tendency to absorb climate risks under traditional risk

⁴ Notching refers to adjusting a credit risk class up or down by one or more levels on the numerical scale.

categories may reflect an effort to maintain the status quo and avoid disrupting established ways of working. Nevertheless, in response to the pressures for separating out climate risk, NordBank has taken steps toward formalizing and separating the assessment of climate risks. We now turn to a closer examination of this effort to separate climate risks, exploring how this process is carried out in practice, what it aims to achieve, and what tensions it reveals within the broader credit risk framework.

4.3.2. Separation of Climate Risk

A separate ESG team with a separate climate risk analysis – the CRA – was created a few years ago. The CRA is a qualitative document assessing a counterparty’s exposure to transition risks, including information about their transition strategy and targets, regulatory landscape, performance against regulatory targets, and more. As Head of ESG Credit explained, this spatial separation of climate risk into its own analysis and team was a response to increasing demands for documentation and traceability:

“...And almost five years ago now, they [Credit Analysis] realized that they have the need to have their own ESG experts. Not because they, from one day to another, realized that climate change is happening, but because there was an increased number of requests placed upon this department to report on how they integrate those risks [...] The reason was more about documenting than actually analyzing [climate risk]. Because again, if you are an automotive expert, you know about climate change...”

This separation serves to formalize climate risks’ role within the credit risk process and through that ensure its inclusion. As ESG Credit Analyst #2 added: *“I think there was a reason for creating a team like this — to make sure it [climate risk] doesn’t end up being overlooked, but rather that there’s someone who actually focuses on it.”* However, while this separation makes the climate risk integration more formalized, it also makes visible when and how climate risk information is integrated – and when it is not. Specifically, the separation exposes two deeper tensions between climate risk and traditional credit analysis, namely a quantification tension and a temporal tension.

The Quantification Tension

The first tension that the separation of climate risk highlights is that climate risk differs in nature from financial risks. Specifically, climate risk factors are seen as harder to quantify, often lacking historical data and clear metrics, which makes them difficult to integrate into the standard risk class models. As ESG Credit Analyst #2 put it:

“I think it’s difficult [to integrate] because when they [Credit Analysts] do their assessments they of course look at numbers. A lot of numbers. So they have it more black and white [...] We don’t really have that. So it becomes a bit hard to merge the two [...] It’s just hard to do the same kind of analysis that the Credit Analysts can do when we don’t have that much data to go on.”

Credit Committee/Sustainability Expert #2 explained that the lack of historical data was due to climate risks, unlike traditional financial risks, being *“risks that haven’t occurred yet.”* They elaborated:

“These [climate] risks haven’t materialized yet, so we don’t know. No one can say what the effects of global warming will be. We can say that it’s probably very unwise to finance ski resorts that aren’t located at very high altitudes, or those without reliable snow. But that’s a fairly obvious and clear example. But, how will this affect other industries?”

Credit Committee/Sustainability Expert #2 used biodiversity loss as another example for when the impacts of climate risk are unknown and unclear:

“Many industries depend on the ‘free services’ provided by insects and the entire fauna. But now that we’re losing many species globally, how will this affect us? When biodiversity declines, how will it impact different industries? You would probably think it affects agriculture and forestry, but it’s much broader than just that. How do we account for that in this kind of analysis? These are new areas we need to explore.”

The lack of historical data creates integration challenges as historical data is crucial for traditional credit risk analysis. According to the Head of ESG Risk, regulators require historical evidence showing that all parameters included in the credit risk model are correlated with defaults. Hence, without historical data linking climate risks to default rates, these factors cannot be integrated into existing models. As the Head of ESG Risk explained:

“We don’t know of any company that defaulted because of transition risk – or physical risk for that matter – in our region. And it’s the other way around more recently, that these companies that have been ahead in the transition, as we know Northvolt, have been defaulting. And the companies that are on the other spectrum, like oil and gas, there’s no defaults, like, no losses ever”.

These challenges have resulted in the separate Climate Risk Analysis (the CRA) becoming primarily qualitative. However, the qualitative nature of the CRA makes it difficult to incorporate into the financial credit risk class models. As Credit Analyst #3 explained: “*We don’t really have a part [in our risk class model] where we integrate it [the CRA] because it’s more qualitative*”. Additionally, some respondents suggested that the CRA does not impact the risk class model. As Senior Credit Analyst #1 pointed out: “*It’s separate. It doesn’t affect the financial and business risk scores. It’s something outside of that, which [Head of ESG Credit] has developed.*”

Due to the CRA’s incommensurability with the existing risk model and corresponding risk class, it becomes attached as an appendix rather than presented as a parallel document, signaling its supplementary role in the risk class analysis. Nevertheless, there are still instances where the CRA does get integrated into the financial credit risk model. ESG Credit Analyst #2 noted that, when their analysis includes quantifiable elements, like capital expenditures, it can be factored into the financial models:

“[The CRA] can be integrated into their financial analysis, for example, if we state that [the counterparty] will need to invest a certain amount of CAPEX, and if it’s something they’ll need to spend a lot on, and it’s their main expenditure, then of course it ends up in the financial part as well.”

That is, only the quantitative information from the CRA seems to be able to become integrated into the Credit Analyst’s model, as the model is designed for quantifiable, financial inputs. As such, the model used for assessing the credit risk class reflects the dominance of market and industrial orders of worth, which can only include calculable,

cost-linked information. Hence, what can be priced can be integrated into the models and is thereby viewed as legitimate and relevant.

Meanwhile, what cannot be priced or quantified, and thus cannot be easily integrated into existing models, is viewed as non-legitimate for credit risk assessment. Highlighting the domination of the market and industrial orders within this context, qualitative insights are frequently dismissed as vague or lacking legitimacy as they do not conform to the dominant orders and their associated qualified objects. Consequently, non-quantifiable dimensions of climate risk are not merely overlooked but actively devalued within the evaluative frameworks that shape financial decision-making. For instance, Business Committee/Sustainability Expert #1 argued that the CRA's connection to the credit risk remains "*far too unclear*", describing the CRA as "*way too qualitative*" and "*fluffy*." Business Committee/Sustainability Expert #1 emphasized the need to formalize climate risk impacts through calculable proxies, such as numbers or color codes, to render them legible within the logic of the existing models. As Business Committee/Sustainability Expert #1 stated:

"We really have to get to the point where [the CRA] is done quantitatively [...] ideally, you'd have a model where you can pull in data, so that you could say, a bit like you do with credit scoring: is this a high or low risk company? [...] because all this text... well, who cares?"

Similar frustrations to the qualitative nature of climate risks were voiced by ESG Credit Analyst #2, who noted that the current qualitative form weakens the analysis: "*It would definitely help if we could get some numbers, because right now it's difficult — it becomes very soft. [...] Because it doesn't really help if it's just fluff.*" Client Executives also seemed to share this view, with Client Executive #2 commenting on the CRA: "*...it's not very concrete. I actually don't think it's very concrete.*"

These frustrations around the qualitative nature of the CRA and the desire to quantify it underscores the prevailing authority of the industrial order, where measurability serves as the basis for legitimacy. In a context where market and industrial orders of worth shape what gains relevance, climate risk information needs to be adapted to align with these calculative norms to be considered meaningful. If it cannot be quantified, it will lack legitimacy according to the dominant evaluation criteria, underpinned by the qualified object (i.e., the risk class tool), and remain disregarded, even in cases when the information indicates significant risks. As the Sustainability Committee/Sustainability Expert #3 explained:

"Things like biodiversity loss haven't found any way into credit risk yet. But pharmaceutical companies, who are relying on detection of new substances in nature, will be affected by the mass extinctions happening in key biodiverse places in the world. We haven't quantified that but we have huge exposures in that sector in our credit portfolio. So why aren't we looking at biodiversity loss as being a massive problem for the bank in the future?"

The drive to quantify climate risks is often considered the only path to integrate these aspects into risk assessments. Even Head of ESG Risk, who is very familiar with the difficulties of quantification, suggested that this is the right way forward: "*with improving modelling*

capabilities, we hope to have a bit more numbers on it and say ‘because of ESG⁵ we expect that the credit loss could be x amount over the three years period.’” Moreover, as Business Committee/Sustainability Expert #1 remarked, “whoever cracks this will win the Nobel Prize in Economics within five years for their dissertation, cracking how to truly integrate and quantify sustainability risks”.

In conclusion, the spatial separation of climate risks into a separate team and a qualitative analysis has further highlighted its incompatibility with the traditional credit risk assessment and the qualified object that the risk class model makes out. This reveals a quantification tension, where climate risks only gain influence if they can be quantified to align with established qualified objects. As a result, actors push for quantifying climate risks as this seems to be the only way for it to gain legitimacy and influence.

The Temporal Tension

When separating climate risks into a specific team and analysis, a fundamental temporal misalignment also becomes apparent. The credit risk analysis typically takes a 3-5 year horizon, reflecting the usual length of loans. As Credit Analyst #4 explained, “*Our time horizon is the maturity of our financing. So, if we issue a loan with a five-year tenor, then we need to understand the company's ability to repay over the next five years. That's the rule of thumb.*” However, this short-term perspective is difficult to reconcile with climate risks long-term implications, creating a temporal tension. This temporal tension is primarily acknowledged by individuals with sustainability backgrounds. For instance, Credit Committee/Sustainability Expert #2 explained:

“It [the credit risk procedure] is very established. But climate risks are a different type of risk – they’re long-term risks. [...] When you look at many companies from a five-year perspective, you conclude that this [climate risk] isn’t a risk that appears likely to materialize [within this time frame] – and that’s probably correct. But if you take a 10-, 20-, or 30-year perspective, then there will be several risks relating to climate that will materialize. But that’s a bit too far ahead in the future for most of us to really think about.”

This was echoed by Business Committee/Sustainability Expert #1:

“The challenge is that the time horizon when transition risks are likely to materialize doesn’t match the usual time horizon for credit analysis. Credit analysis is usually done with a 3–5 year outlook, because that’s where you have some kind of visibility, and that often matches the duration of the loans we give to a company. [...] But it’s something entirely different when it comes to transition risks. They could show up tomorrow, say due to some major regulation – though that’s usually a small risk – or they could emerge in 10–12 years. And then the question is, how do you incorporate that longer time horizon into the work and risk measurements we have today? [...] That’s what makes it so difficult.”

As a Business Committee/Sustainability Expert #1 explained, climate risks, such as transition risks, are uncertain both in timing and impact, as they often unfold over long time

⁵ Speaking about ESG as a wider concept beyond just climate risk

horizons. Because loans are typically short-term, long-term risks are often deemed irrelevant to credit risk class analysis – even though it remains uncertain when they might materialize – and are therefore excluded. As Sustainability Committee/Sustainability Expert #3 noted, *“I would say we probably only integrate the very short-term risks properly.”* Similarly, Client Executive #1 admitted that long-term climate risks, such as flooding, are excluded and never will become accounted for: *“We will never really be able to include [flooding] in our analysis. So it’s actually not considered”*. Even when long-term climate risks are acknowledged as relevant for creditworthiness, they remain separated from the credit risk assessment. As Client Executive #1 illustrated:

“Take a refinery, for example – about a year or a year and a half ago, they were practically printing money because diesel spreads were high [...] If we look toward 2050 and they haven’t transitioned – or don’t even have plans to – then from a long-term counterparty risk perspective, it’s a disaster. But over the next ten years, they might have a perfectly decent ability to recover and perform. [...] From a strategic business perspective, this isn’t a type of company we want to work with in the long run. But purely from a credit risk perspective, they could still be quite strong right now.”

This separation was further highlighted by Credit Analyst #3:

“For example, for [Fast Fashion Company AB], we recognize that the transition would be a problematic thing and that this can affect their credit risk, but then we say ‘this will be notched by less than one’, so this means that it won’t move the risk class, but we just indicate that this is something that we have to look out for in the future.”

In these cases, long-term climate risks are acknowledged as important for credit risk, but rather than being integrated into the short-term risk class assessment, they are treated as concerns for the distant future and thus deferred and excluded. As such, they are not excluded because they are irrelevant to credit risk, but because their impacts extend beyond the time frame considered by the actors and the standard credit models. The Global Head of Credit Analysis explained that short-term opportunities are often prioritized because long-term risks are seen as too distant:

“When it comes to truly distant risks, with companies that we know will have to transform, no one really knows how it will work out, no one really cares yet – because there are closer, easier opportunities to seize, so to speak, in this entire transformation process. These [companies with distant risks] we might still be able to finance for a while longer.”

Additionally, the Head of ESG Risk implied that the short-term structure of the loan durations seems to be a common criterion for justifying the exclusion of long-term climate risks from credit assessments: *“ESG risks often have a long-term perspective. But then if the term of the loan is four years, then people say, ‘maybe it’s not a problem for now, we’ll think about this in four years.’”* Because these standardized models are shaped by short-term loan structures, climate risks become disconnected from the qualified objects – the tools and metrics that define legitimate risk. The reliance on qualified objects to justify exclusion is further highlighted by Business Committee/Sustainability Expert #1, who, when asked why a longer time frame is not incorporated into their analysis, replied: *“Because the model only spans three to five years.”* Since these qualified objects are designed to legitimize only short-term risks, it becomes difficult, if not impossible, for long-

term, uncertain risks to be recognized as relevant and become integrated. The short-term nature of the models, driven by the loan durations, shapes analysts' focus on what is deemed relevant for credit risk. Moreover, as the Head of ESG Risk explained, shifting to a long-term perspective is met with skepticism because it disrupts the status quo:

"It's not very conventional, all of this ESG⁶. It's very much long-term forward-looking. We don't do that ever. Like 10 years plus, we don't have any processes that run for that long. [...] But [climate risk] requires us to think outside the box, and that's why some credit risk experts, who have been doing this forever, are quite skeptical, because it doesn't fit the status quo."

Business Committee/Sustainability Expert #1, who has an extensive background as a Credit Analyst, echoed this reluctance to changing time frame and altering models and practices:

"It's uncomfortable for a credit analyst to step outside their comfort zone, such as making a forecast beyond three to five years. Taking a position on something that is much farther ahead is much more uncertain. [...] And looking back – if I were still working as a Credit Analyst today and someone told me, 'You need to start looking 10–15 years ahead,' I would've said, 'But I don't have a crystal ball – I have no idea what things will look like then.'"

Moreover, Client Executive #1 explained: *"The further ahead you look, the more assumptions will be needed, and the larger the deviations will be from our forecasts. So, it becomes very difficult that far ahead."* This reluctance to shift toward a long-term perspective reflects a desire to preserve the short-term market order, where value is tied to immediate financial performance. Additionally, incorporating such longer-term risks is viewed as introducing greater uncertainty and undermining the reliability of models and assessments. While this short-term emphasis opposes the industrial's long-term perspective, it nevertheless aligns with the industrial order's emphasis on technical certainty, standardization, and reliable assessment tools. The desire to preserve status quo was further highlighted by Business Committee/Sustainability Expert #1, who argued that credit professionals are skeptical about documenting long-term climate risks because it may require them to actually assess and integrate risks far beyond their typical time frame:

"I think that people are a bit afraid that if there's any type of documentation somewhere within the bank stating that 'today the company has a risk class equivalent to triple-B minus (BBB-), but if the company fails to manage the risks we see here, we foresee that their credit rating will probably worsen in 10-15 years by 2 notches' [...] Then, people are probably worried that this information will gain traction and that Financial Supervisory authorities will say 'well, you need to factor in this risk already in your current risk classes.' So that's also a factor in why there's some caution internally about putting too much on paper."

Hence, actors appear committed to maintaining the short-term dominant order and status quo. Integrating long-term climate risks would necessitate changes to existing models and perspectives, a shift that many are reluctant to make. Instead of adapting risk models to incorporate long-term climate risks, the analysis of climate risks has been adjusted to fit within the short-term framework of these models, thus reinforcing the current market order

⁶ Speaking about ESG as a wider concept beyond climate risk

of worth. This pressure to conform to the established temporal framework is evident in the experiences of ESG Credit Analysts, who are expected to align their analyses with the limited time horizons inherent in the credit process, even when those time frames do not align with the nature of the risks being assessed. As the Head of ESG Risk explained:

“On the one hand, we have to do a deep-dive analysis [of climate risk], but at the same time, our main internal customer – the Credit Committee – is not necessarily interested, because they are only interested in a certain time horizon that is quite limited.”

Although ESG Credit Analysts are tasked with conducting comprehensive, long-term analyses of climate risks, their analysis often defaults to a five-year window to fit the timeframe recognized within the credit processes. As ESG Credit Analyst #2 reflected:

“A big part of the challenge [with integrating climate risks] is that these risks often lie further ahead in time – they might become material in 10 or 15 years. But right now, we mostly look at a 5-year perspective when doing our analyses. So, at the moment, it’s difficult to say what will happen in 10 years – that’s a bit too far ahead.”

In summary, the separation of climate analysis into a distinct team underscores a temporal tension between the long-term nature of climate risks and the short-term models used in credit risk assessment. While actors previously claimed to integrate climate risks seamlessly into credit analysis, this separation reveals that long-term climate risks are often excluded or deferred to avoid challenging the short-term market order. Even when climate risks are acknowledged as potentially relevant to the credit risk, they are not integrated into current financial decisions or credit classifications, unless they have an immediate impact on the counterparty’s financial position. Instead, they are treated as future concerns, preserving the short-term perspective of credit risk analysis. To avoid altering the status quo and broadening the scope of creditworthiness to include long-term climate risks, analysts justify the exclusion of these risks by using established models and tools that prioritize short-term financial perspectives.

4.4. The Implications of Orders of Worth

4.4.1. The Worth of Nature

Built on principles of calculability, financial materiality, and short-term comparability, the tools that structure the credit risk process reflect the market and industrial orders of worth. However, as shown in the above observations, these tools serve not only as technical instruments guiding the analysis, but also as ‘qualified objects’ that define what counts as legitimate risk. In other words, not only do they assess and calculate risk, but they also justify decisions and confer legitimacy within these prevailing orders of worth. Risks that cannot be quantified, or linked to short-term financial impacts are thus excluded, not because they are deemed irrelevant, but because they lack commensurability with the dominant logics of evaluation. As noted by Business Committee/Sustainability Expert #1: *“[Financial numbers] are what people know best. It’s where there’s more historical data, and it’s what they’re used to making decisions based on.”* Hence, climate risks – often

qualitative, long-term, and uncertain – may struggle to gain enough legitimacy to influence final credit decisions as their characteristics do not fit within the dominant evaluation criteria, formalized within the credit models. Even when climate risks are said to be “*naturally integrated*” into credit assessments, this often means that only the climate factors that can be clearly linked to short-term financial performance are considered. In this way, the tools create analytical blind spots, whereby climate concerns that cannot be measured or monetized are excluded.

Paradoxically, attempts to increase the visibility of climate risks, by assigning it to a separate team and analysis, seem to further marginalize its influence. Although this separation reveals two underlying tensions between climate risks and traditional credit risk models – the quantification tension and the temporal tension – these highlight just how poorly climate risks fit within qualified objects (i.e., credit risk models) that prove what risks are legitimate. As such, rather than challenging the dominant frame, this separation enables actors to lean on the authority of qualified objects to justify the exclusion of climate risks. For instance, even when climate risks are flagged as important, they can be disregarded based on favorable financial characteristics. As Credit Analyst #4 explained:

“Sometimes they [the ESG Credit Analyst] might come and say, ‘this parameter carries a lot of weight for us. We find it problematic for this company.’ And I can respond, ‘Good point, I hadn’t realized this was such a serious issue.’ Or I might say, ‘Yes, I see that, but their market position is so strong that even if they were to run into trouble because of this [climate] risk, I still don’t think we need to change the overall credit assessment.’”

While credit risk models provide the formal basis for assessments, final credit decisions ultimately rests on the expert judgement of actors with decision making authority. According to Boltanski and Thévenot (1999) everyone in a dispute must equally justify their actions. However, Bénatouil (1999) notes that some groups or individuals occupy ‘dominant positions’, allowing them to impose their perspectives more easily or even bypass the need for justifying their actions altogether. Our empirical findings reveal that climate risks are not only incompatible with the qualified objects used as basis for the risk class assessment, but also with the cognitive evaluation frames of the actors holding such ‘dominant positions’ – which we will term ‘dominant actors’. Consequently, these actors can shape credit decisions with little resistance as they have the institutional power to make their interest appear natural and inevitable.

The actors present at the Credit Committees are trusted with the decision-making power and tend to share a background in finance and economics. Their expertise is calibrated to interpret and act upon financial indicators, historical trends, and measurable performance data. As Business Committee/Sustainability Expert #1 explained, the Credit Committees are “*purely financial*”. As they put it: “*They [credit committee members] struggle to understand how [climate related risks] will impact the financial position [...] They have a hard time with it. For them, everything must be financial.*” They concluded: “*You need to express [climate risks] in a more quantitative view within the frame that we are used to.*” Therefore, even when climate risks are presented, they are often disregarded because the

decision-makers lack the necessary expertise to interpret them. As a result, meaningful engagement with climate risks is prevented. As ESG Credit Analyst #2 highlighted:

“Many of those sitting in committees are very knowledgeable about finance. They understand that language. But when we present in a committee, there might not be anyone with [sustainability] background to challenge what we are saying, which can be a bit unfortunate. [...] I’m sure they understand it, but they might not have an opinion on it themselves, so to speak.”

This absence of discussion reflects a broader lack of pluralism in evaluative logics. Climate risk considerations, which often rely on qualitative and long-term perspectives, are less legible within the dominant market order. As the same expert notes, even when climate issues are understood in principle, the absence of climate risk knowledge prevents them from being properly considered:

“There tends to be more discussions around the financial aspect. Because that's the area where everyone has their expertise. So, they read [the CRA] and absorb it, I think. [...] But I don't think they have the basic knowledge to challenge it or offer an alternative perspective. Or to disagree.”

Thus, climate concerns are present – but not contested, deepened, or meaningfully integrated. In fact, there seems to be a shared perception amongst the actors of the credit process that climate issues cannot be interpreted in different ways and therefore are not subject to discussion. As Client Executive #1 stated:

“When it comes to sustainability and climate work, it's a bit difficult to have differing views [...] We can't really think that there's less risk of flooding at [the counterparty's] factory than the credit analysts think, if we take a simple example.”

Further, Chair of Credit Committee #1 claimed that climate risks already are “*deeply integrated*” into credit assessments, reflecting an understanding of climate risks as procedural rather than analytical:

“You have to remember that ESG is deeply integrated into our ‘regular’ – if you like to call it that – credit analysis. So it's not the case that if there isn't an ESG analyst present, it isn't addressed. Instead, ESG has been considered in some way in every single decision. [...] I think it should be seen as, in most cases, that we can make the assessment without involving the ESG analysts. It might be an ESG-related issue that has already been discussed 20 times before, and we know where we stand on it.”

This shows how climate issues are often treated as a secondary concern – relevant but not central to the decision-making process. Climate risk's secondary role was also echoed by the Global Head of Credit Analysis, explaining how Credit Analysts tend to prioritize climate concerns:

“I think not having separate ESG Credit Analysts would actually feel better. It would feel better because it would feel like everything was in the hands of the regular Credit Analysts. But sometimes, people tend to be a bit lazy and maybe not dive into things that they don't perceive as absolutely crucial to them right now. So, this small team [the ESG Credit team] helps us explore issues that might not be the absolute most important, but they could be. [...] You might think these issues will always be number ten on your priority list, and so you don't spend much time considering it further. But it could theoretically rise in interest and become more relevant to cash flows as time goes by, and as you learn more about the subject. [...] You have limited time to spend on each

analysis, and of course, you focus on what's important from your perspective today. AI might be all-knowing, but definitely not each individual analyst.”

The Head of ESG Credit similarly observed that climate considerations are often reduced to compliance checks or binary judgments (i.e., aligned with internal policies or not), with little room for nuance:

“I was involved in another case or transaction about a potentially new customer [...] and the only thing that the Credit Committee was interested in from an ESG perspective was: is the target in line with our policies, are they no worse than the peers... And I was like, ‘this is not an incentive to go in depth’, I understand that from a credit perspective, that's what matters to them [...] They want to make sure that the company will be able to repay the loan, that we feel comfortable with the credit risk. And I agree that in most of the cases, we do not need to go into the nitty gritty details if we just want to make these assessments. But then I just wonder why are we placed into this department? I don't know.”

This illustrates how climate risk integration is treated as a compliance exercise, rather than something that can meaningfully inform credit risk class decisions. The narrow framing of climate risk discourages deeper inquiry and reduces it to a confirmatory checkbox, considered relevant only to the extent that it does not disrupt the financial analysis. That is, climate risk is expected to contribute, but not to intervene. This marginalization seems to stem from a deeper epistemic issue: climate concerns, being qualitative and interpretive, lack the formalized equivalence needed to be recognized within market and industrial orders of worth. As a result, climate risks struggle to enter decision-making as legitimate concerns. Sustainability Committee/Sustainability Expert #3 highlighted how this marginalization is also present in the exclusion of ESG Credit Analysts into the main decision-making meetings:

“The idea [with the ESG Credit Team] I think is good. But, um, how do I say this in a good way. Let's look at who are the decision makers within the bank. Do they respect the advice they're given by [Head of ESG Credit] and their team? It doesn't seem like it. [...] The norms of who we listen to in the bank are not [Head of ESG Credit] and their team. We don't take them seriously. Nobody takes them seriously. [Head of ESG Credit] is never in the room. They're never in the room. They're not invited to [sustainability risk committees]. They're not invited to these things.”

Sustainability Committee/Sustainability Expert #3 further explained:

“...[the Credit Committee members] don't see the value of those [CRA] assessments because risk mitigation or impact mitigation is not really their core. So they don't see the role that it plays. [...] If they can see a clear link between something that they recognize as being a risk and those aspects then I think they would take note of it.”

Since the ESG Credit team are seen as non-financial or secondary players, their insights are excluded – not only from the credit models, but from the very meetings where judgments are made. Operating within the industrial and market logics, decision-makers prioritize calculable, cost-linked risks, rendering climate concerns largely invisible unless translated into familiar financial terms. Moreover, the dominance of the market and industrial orders seem to influence even ESG Credit Analysts – those one might expect to challenge this logic. In trying to gain influence within the credit classification context, they often push for more quantification and shorten their analysis to a five-year time horizon, thus allowing

climate concerns to fit existing qualified objects and gain legitimacy. In this way, they adapt to the dominant evaluative criterion, showing just how strong the prevailing orders of worth are as they constrain the justifications available to all participants.

This way of adapting climate risks to fit within the dominant orders of worth appears not only logical but also necessary. As Sustainability Committee/Sustainability Expert #3 explained, this quantitative-oriented view of climate risk is even codified in regulation: *“ESG risk has got to have a quantifiable impact on financial profitability to be determined as a material risk. That's the definition according to the EBA.”* Moreover, Global Head of Credit Analysis explained that the market and industrial order is not only driven and preserved by actors and tools within the bank, but also outside the bank:

“[Financial Supervisory authorities] monitor the financial sector and simply want to ensure that we’ve accounted for all the risks. [...] They would prefer there to be as few qualitative assessments as possible – they want measurability because they don’t trust people like me, for example. They don’t believe we are capable of making sound judgments.”

Given the broader institutional contexts through which NordBank operates, adapting climate risks to the dominant market and industrial orders – making them measurable, financially material, and short-term – is not just pragmatic: it is required. From this perspective, translating climate risks into current metrics and financial models is the only way to legitimize its integration into, not only NordBank, but also outside it.

4.4.2. Rethinking Risk Management in the Light of Climate Risks

Despite the widely held perception, both within and outside the bank, to fit climate risk into existing dominant logics and risk models, several voices raise concerns about the consequences of reshaping climate risk information to fit into the current dominant orders, and question whether they should be fit into the existing models at all. As Head of ESG Credit explained: *“I understand that people want to have numbers – indicators – it just facilitates understanding. But sometimes when it's not perfect science, I think it's also a bit risky to put a number or an indicator because it might just show you one reality and hide some other aspects.”* Head of ESG Credit illustrated this with an example of a time when they were doing a CRA and evaluating a counterparty’s transition plans:

“[The counterparty] was showing how they were planning to reduce their exposure to coal. And then we realized, looking at the numbers, that this was just a natural depletion of the mines. It’s not that they proactively did anything – it was just a natural decline.”

In other words, the numbers gave an impression of a low-carbon transition that in fact did not reflect an active transition. Head of ESG Credit added, *“At the end of the day, if you really want to understand what is at stake, you can’t expect to have just one number.”* This highlights a resistance against commensuration, where multiple qualities are transformed into a single number (Espeland and Stevens, 1998). The resistance against commensuration was further echoed by the Chair of the Credit Committee #1, who also cautioned against reducing climate risk complexity to a single number: *“I don’t think you should try to boil*

things down to a number. I don't think that is the right way to go. Because the only thing you can be certain of is that it won't be accurate." These statements reflect an alternative perspective to the dominant orders of worth, as they question whether adopting climate risks fit within the dominant orders and current processes of commensuration is truly the right way to integrate them.

Other voices went even further, not just criticizing the adaptation of climate risks to existing credit risk methods rooted in the dominant market and industrial orders, but calling for a fundamental rethink of how credit risk itself is understood and assessed. They suggest that the challenge is not merely about obtaining better data, lengthening the horizons of the credit models, or improving quantification, but about acknowledging that the current models are not designed to account for the types of risks climate risks represent. As Business Committee/Sustainability Expert #1 put it, alternative approaches to risk assessment might be required: *"...maybe not doing a cash flow calculation 15 years out, because we know that would be rubbish – but by thinking in other terms."*

Sustainability Committee/Sustainability Expert #3 builds on this perspective by arguing that adapting climate risks to dominant orders ultimately fails to capture their full scope, precisely because these orders do not reflect the evaluative criteria needed to assess such risks. As Sustainability Committee/Sustainability Expert #3 explained: *"ESG risk is dealt with as a standard risk. But the risk models that we have for ESG risk don't represent the full, actual risk of those things because they're only placing the financial value on it."* As such, future-oriented risks, such as biodiversity loss, become sidelined because they cannot be linked to short-term financial value:

"If we kill off all of the species today, we can't have any of these things that could have been [...] We can't see what could be because we don't put a value on the unknown. We only value what we know based on historical perspectives. And that's probably all wrong. Because the value of the undiscovered is unfathomable. [...] so credit risk in itself is never going to assess the future risk of losing something. Because we don't put a price on all the different aspects in society that we could gain through having it."

The disconnect between climate risks and financial outcomes highlights significant limitations with current credit risk models, as these models are not designed to recognize or value societal and environmental risks that fall outside conventional financial logic – even when these risks are real, significant, and potentially devastating. As Sustainability Committee/Sustainability Expert #3 pointed out: *"[Quantifying climate risk] is logical for a bank, but what it shows in sort of black and white is that financial valuation doesn't work for ESG risk. Because ESG risk is not just about finance. ESG risk is about all of the other things to society."*

Hence, this way of thinking reveals not only a critique against the dominant evaluation criteria that only value – and hence makes visible – what can be priced and measured, but also points to other types of justification criteria that can, and should, be drawn upon when making credit risk assessments. Valuing the future and the unknown, for instance, can be seen as assigning worth to the ecosystem and the future itself, aligning with a green order

of worth. Similarly, the call to evaluate climate risk integration based on its societal relevance reflects the civic order of worth. Given the bank's institutional and regulatory context, it appears logical for NordBank to draw on the market and industrial order. However, what this highlights is that the qualified objects – the tools used for assessing value and risks which rely upon these orders – are not designed to account for evaluation criteria within other orders.

Together, this perspective points to a rethinking of the concept of credit risk and the tools used to assess risk and thereby value. It highlights that these need to allow for a broader, more pluralistic understanding of value and risk, recognizing that not all meaningful risks can be transformed into prices or measures. The integration of climate risks thus causes and reveals important tensions as it challenges the adequacy of a market and industrial worth, which values everything with short-term financial and measurable implications and disregards everything else. In this light, climate risk might not just be a new risk category – it may be the catalyst for a new way of seeing and evaluating risk altogether.

5. Discussion

5.1. Unpacking the Black Box of Calculative Culture

By examining the integration of climate risk – a new risk category – into the established risk tools and practices at NordBank, we add a nuance to the broader literature’s view that tools shape how actors perceive and engage with risk (e.g., Baud & Lallemand-Stempak, 2024; Kaplan & Mikes, 2016; Power, 2009), and that actors and the context shape the tools and practices employed (e.g., Arena et al., 2010; Hall et al., 2015; Mikes, 2011). Drawing on the Orders of Worth framework, complemented by theories on commensuration and quantification, we reveal the values embedded in risk tools and demonstrate that the tools influence on actors is contingent on their alignment with the context’s dominant orders of worth. We also suggest that the actors’ ability to shape tools and ERM practices is contingent on their alignment with the underlying value systems. Thus, through our theoretical framework, we unpack both Mikes (2009, 2011) concept of ‘calculative culture’, and respond to Jarzabkowski et al.’s (2025) call to uncover hidden values in metrics and tools. We do this by turning the lens towards the underlying values that shape how ERM works at NordBank. Specifically, we examine the underlying values embedded within NordBank’s culture, tools, and actors.

Our examination of how climate risks are integrated into NordBank’s existing credit risk class process reveals a calculative culture that Mikes (2009, 2011) might describe as a culture of ‘quantitative enthusiasm’. This enthusiasm towards quantification is evident in several ways in our empirics. Firstly, it is evident in actors’ reliance on the quantitative risk class model. Secondly, it is reflected in how the qualitative CRA is dismissed as vague and how it is seldom discussed in credit committees. Thirdly, it is also reflected in the widely held belief that climate risks must be quantified in order to be integrated into the credit risk classification process. Moreover, by applying the Orders of Worth framework, we nuance our understanding of this calculative culture by uncovering the underlying values embedded in its perceptions and tools. We find that the calculative culture is shaped by the market and industrial orders of worth, reflected in the risk class tool’s short-term, standardized, and quantitative characteristics. Given that this tool reflects these dominant orders of worth, we argue that it serves as a ‘qualified object’, granting legitimacy to information that aligns with these values. In other words, the tool guides what information is considered relevant for the risk class assessment, and what information is not. Consequently, quantifiable financial data can easily be integrated into the tool and is therefore perceived as legitimate, relevant information.

This guiding function of the qualified object is evident in the way many of the credit professionals view climate risk integration. Despite the fact that climate risks lack historical data, are long-term, and difficult to quantify (EBA, 2025; Svartzman et al., 2021), many credit professionals perceive these risks as easily integrated into the existing risk class tool.

For instance, they frequently refer to climate risks as a “*naturally integrated*” component of traditional business risks, and as something they have “*always looked at*”. This view of climate risk, as something easily integrated, reveals how the tool narrows actors’ perception of these risks to entail only those factors that fit into the existing risk model and expert judgement, such as future costs and broken business models. Other climate risks, such as biodiversity losses, that are long-term, uncertain, and difficult to quantify, are not easily integrated and do not appear to be present in the minds of the credit professionals. Therefore, it seems that only the types of climate risks that fit the value systems, i.e., the orders of worth, underpinning this qualified object are made visible and considered relevant. Hard-to-quantify, long-term climate risks that do not fit the value systems remain invisible, excluded from both analysis and the cognitive frame of credit professionals. That is, actors, guided by the tool’s embedded evaluation criteria, may – consciously or unconsciously – disregard hard-to-integrate climate risks simply because they are not easily integrated into the model. As such, the risk class model, by reflecting the market and industrial orders that legitimize quantifiable information, shapes actors’ perceptions of risk, including climate risks. This contributes to the presence of the ‘quantitative enthusiasm’ culture because the model prioritizes risks that can be measured in financial terms, reinforcing a mindset that values information that can be transformed to numbers through a process of commensuration (Espeland & Stevens, 1998). We thus show how qualified objects within the risk class process shape actors’ values and perceptions of risk, and in turn influence the calculative culture.

Despite the dominance of the market and industrial orders of worth, present in both legitimized risk tools (‘qualified objects’) and in many actors’ perceptions of risk, there are certain actors who seem to hold a different perception. These individuals express what Mikes (2009, 2011) might describe as ‘quantitative skepticism’. They challenge the assumption that climate risks should be integrated into existing models through quantification and commensuration alone. Instead, they argue that a true integration of climate risk requires alternative forms of assessment that go beyond numbers. For instance, these actors – foremost Sustainability Experts – expressed that one should “*think in other terms*”, arguing that the current risk models do not “*represent the full, actual risk*” of climate risk, because “*they’re only placing the financial value on it*”. Also, the model’s inability to value the future unknowns were criticized: “*We can’t see what could be because we don’t put a value on the unknown*”. Additionally, through our theoretical framework, we can deepen our understanding of these perceptions by uncovering the underlying values that guide their thinking. These values directly challenge the dominant market and industrial orders and reflect a completely different set of value systems rooted in other orders of worth. For instance, the green order of worth is evident in the recognition that current risk tools fail to represent the “*full actual risk*” of climate change, as they fail to value and incorporate the risks of losing future unknowns, such as the unknown value of future ecosystems.

Nonetheless, the embedded values of these actors, some of which even reflect values from other orders of worth, do not seem to influence the calculative culture or the risk tools. We

suggest that this is because actors within NordBank do not hold equal power in shaping the development of such calculative cultures. Some actors occupy ‘dominant positions’, specifically those with decision making authority in credit risk classification processes. These individuals are often senior, financially trained credit professionals, whose expertise and cognitive frame naturally aligns with the dominant market-industrial orders. Consequently, this alignment, along with their institutional authority, allows them to uphold the current calculative culture and embedded value systems.

Even with the emergence of a new risk category and subsequent tool – the Climate Risk Assessment (CRA) – the calculative culture at NordBank remains largely unchanged. While the intention of this new tool and ESG Credit team is to increase visibility of climate risks, the opposite seems to happen. We can understand this through Hall et al.’s (2015) distinction between ‘compliance experts’ and ‘engagement toolmakers’. Although the CRA is a structurally acknowledged risk tool, it rarely affects actual credit decisions. We concur Hall et al.’s 2015 arguments, showing that this disconnection of the CRA partly stems from an inherent knowledge gap whereby the CRA is grounded in a type of expertise that senior credit professionals do not share, making its content difficult to interpret and act upon. This is evident in the lack of meaningful discussions around the CRA in Credit Committees. Yet, through the lens of our theoretical framework, we add an important nuance to Hall et al.’s (2015) analysis. We suggest that the CRA’s exclusion is not only due to a misalignment of expertise but also to an incompatibility between the CRA and the dominant value systems in the organization. Specifically, the CRA’s qualitative, text-based format and its long-term, often non-financial framing of risk conflict with the industrial and market logics that dominate credit assessment. As a result, many credit professionals refer to it as “*far too unclear*” or “*fluffy*”, not merely because they lack the expertise to engage with it, but because its format and content do not align with what is normally considered legitimate or actionable information in credit decisions. Additionally, since the CRA cannot be directly integrated into existing credit risk models, it is instead attached as an appendix rather than a parallel document. This reinforces the perception that the CRA provides only supplementary rather than integral information, making it effectively sidelined in credit decisions.

Consequently, while climate risk has been formally integrated into a new assessment tool, this tool fails to become recognized as a qualified object because it does not align with the conventional evaluative criteria within the bank’s underlying market and industrial orders of worth. Consequently, this new tool cannot prove legitimacy and its content is often overlooked in credit decisions, leaving established models, practices, and discussions within Credit Committees largely unchanged. Ultimately, this lack of legitimacy, and the corresponding inability of ESG Credit Analysts to influence credit decisions, aligns with Hall et al.’s (2015) notion of ‘compliance experts’ and Power’s (2007, 2009) concept of the ‘logic of auditability’, in which risk management becomes more about symbolic compliance than about shaping actual decisions. While the introduction of the CRA reveals underlying tensions and could, in theory, open space for reflexivity through discussions of how risks

should be viewed and managed (e.g., Baud & Lallemand-Stempak, 2024), this potential remains unrealized at NordBank. Instead, alternative perspectives, calling for a reevaluation of existing credit models (Sustainability Experts), new tools (CRA), and new types of expertise (ESG Credit team) are easily dismissed as they do not conform to the dominant orders of worth and are therefore not seen as legitimate or decision relevant. While previous literature argues that the discursive nature of climate risks will provoke a fundamental shift in how risk is understood and managed (Bolton et al., 2020; Toma & Stefanelli, 2022), our empirics show that such alternative perspectives, tools, and expertise fail to shift how risk is perceived and managed, leaving the calculative culture and ERM practices largely unchanged. While this inertia might reflect bank's ability to adjust to regulatory pressures in selective ways to avoid having to alter their existing norms and structures (Mikes & Power, 2024), it might also reflect a paradox. Supervisory authorities and regulators require auditability, quantification, and short-term documentation in order to monitor the banks' climate risk integration efforts. The result is a paradox, where this 'logic of auditability' (Power, 2009) may unintentionally reinforce the very calculative practices and cultures that hinder proper climate risk integration. These regulatory demands may thus stifle the deeper rethinking needed for meaningful climate risk integration and, as Power (2009) warns, potentially cause an illusion of control rather than a meaningful engagement with uncertainty and alternative futures.

In sum, we address the research gap calling for empirical studies on how climate risks are integrated into financial institutions' ERM systems. By applying our theoretical framework, we also shed light on the conceptual 'black box' of calculative cultures. In doing so, we find that the calculative culture in NordBank is shaped by a recursive relationship between the actors involved in credit risk processes and the tools used to support decision-making. In other words, actors design and use tools, but these tools also influence how actors identify, evaluate, and legitimize information. We suggest that both actors and tools are grounded in and conditioned by the same underlying value systems, in this case the market order of worth, valuing competition and short-term financial performance, and industrial orders of worth, valuing standardization, expertise and technical reliability. In turn, these value systems set the evaluative criteria that determine legitimacy, such as measurable short-term risks, financial returns, or model-based outputs. As a result, tools and actors that meet these criteria, such as the traditional credit risk class model and Credit Committee members with decision-making authority, emerge as 'qualified objects' and 'dominant actors' which gain legitimacy within this context. In contrast, tools and actors that do not fit these criteria, such as the CRA which is qualitative and forward-looking, or the ESG Credit Analysts who bring broader environmental perspectives, struggle to gain relevance. Consequently, even when a new risk emerges, like climate risk, these tools and actors remain outside the recursive relationship and cannot meaningfully affect core decision-making processes.

5.2. Extending the Dimensions of Integration

Our study also contributes to the broader research on sustainability integration into management control systems (MCS). In line with Gond et al. (2012) and Beusch et al. (2022), we concur that a lack of cognitive integration and interactive discussions hinder full integration of climate risk at NordBank. Although climate is organizationally and technically acknowledged within the credit risk process (e.g., through a dedicated team and a specific climate analysis), there is a lack of discussion of climate risks. In turn, this limits its cognitive integration and influence on the credit risk class decisions. Moreover, through our theoretical framework, we extend the cognitive integration dimension. While Gond et al. (2012) and Beusch et al. (2022) primarily focus on interpersonal cognitive differences between individual actors, we build on this by arguing that true climate risk integration not only depends on the alignment of different individuals' mental modes. Instead, our findings show that climate risks often fail to influence decisions, not because actors cognitively disagree on their importance, but because these risks cannot be translated into the types of evidence the underlying value systems – namely, the market and industrial orders – accept as valid. In other words, cognitive misalignment is not merely about misalignment between individuals; it is also about whether actors' perceptions and judgments align with the institutionalized values that define what counts as legitimate within the specific context.

Our final contribution lies in adding a temporal dimension to the sustainability integration literature. While Gond et al. (2012) identifies three forms of integration – technical, organizational, and cognitive – as prerequisites for effective sustainability integration, our findings point to a fourth, previously overlooked dimension, namely the temporal integration. In line with Klein Jr. and Reilley (2024), we find that climate risks, which typically unfold over longer and more uncertain time frames, are often overlooked, not because they are irrelevant but because they do not fit within the short (3-5 year) time frame that traditional credit risk models are intended to evaluate. We argue that without this fourth dimension, even MCS in which sustainability is technically, organizationally, and cognitively integrated may continue to prioritize short-term concerns and fail to account for long-term sustainability risks. Importantly, our findings show that this temporal challenge is not just a technical issue, rather, it reflects a fundamental misalignment between the time horizons that different types of risks operate on and the temporal assumptions embedded in ERM and credit risk models. Hence, even if sustainability data is technically integrated into tools and practices, risks with long-term or uncertain time horizons may still be overlooked, both because the tools are designed around short-term assessments and because decision-makers' cognitive frames are shaped by short-term logics, limiting their ability to recognize or prioritize such risks. In other words, temporal integration is about when actors and systems (i.e., the tools and practices) consider those risks relevant and worth acting on. By introducing a new integration dimension, we thus highlight an additional barrier, namely the dominant short-term view embedded in financial tools and logics, that may hinder true climate risk integration.

6. Conclusion

Amid the accelerating climate crisis, banks and other financial institutions are under growing pressure to systematically identify, measure, and manage climate-related risks by integrating them into existing risk management frameworks (Battiston et al., 2021). While ERM in financial institutions has been widely studied, there is an empirical gap concerning how climate risks are integrated into traditional ERM systems in practice. In parallel, we suggest that there is a conceptual gap in understanding the underlying value systems and temporal dimensions embedded within the calculative cultures that shape how ERM is enacted across different institutional settings (Klein Jr. & Reilley, 2024; Mikes, 2009).

This thesis seeks to explore how a large Nordic bank integrates climate risks into its traditional credit risk classification process. Drawing on 19 in-depth interviews combined with the theoretical lens of Orders of Worth (Boltanski & Thévenot, 1999, 2006), and insights from the commensuration and quantification literature (Espeland & Stevens, 1998, 2008; Mennicken & Espeland, 2019), we show that the climate risk integration is shaped by the dominant market and industrial orders of worth. This dominance stems both from the banking sector's historical focus on financial metrics and statistical analyses, and from the tools and actors involved in the credit risk assessment and decision making. Within this context, climate risks are integrated, or perceived to be integrated, in two ways. First, many credit professionals argue that climate risks are "*naturally integrated*" through the strategic business risk component of existing credit models. However, we reveal that only climate risks that can be translated into familiar evaluation criteria, such as competitive positioning or foreseeable financial costs, are considered decision-relevant, while those risks that fall outside of this frame are easily overlooked. Second, due to regulatory pressure, NordBank has formalized a specific Climate Risk Assessment (CRA) through a separate ESG Credit Team. This structural separation reveals two underlying tensions: a quantification tension between the qualitative nature of climate risks and the quantitative emphasis of existing tools, and a temporal tension between the long-term, uncertain character of climate risks and the short-term horizon of traditional credit models. Consequently, climate risks that cannot be translated into financial impacts, or those with long-term implications, are overlooked, as these cannot be integrated into existing risk models without undermining model reliability.

Ultimately, we suggest that NordBank's credit tools do more than just assess risks and inform decisions, they also serve as qualified objects that reflect legitimacy within the dominant market and industrial orders. As such, risks that cannot be translated into short term financial impacts are excluded, not necessarily because they are irrelevant, but because they cannot be commensurated into dominant evaluative frameworks. Yet, we suggest that this exclusion is not just technical but also social and actor dependent. Actors with decision making authority often lack the evaluative capacity to meaningfully engage with, or interpret, climate related risks in credit decisions. Meanwhile, ESG Credit Analysts, who

do not conform to conventional, legitimized professional norms, lack institutional authority to alter credit decisions and may even be excluded from decision forums. Consequently, climate risks become peripheral. While they are acknowledged in principle, the absence of plural evaluative perspectives and the established qualified objects and their underlying orders of worth prevent them from shaping how risk is perceived, evaluated, or managed in practice.

This study contributes to two strands of literature. First, we extend the Enterprise Risk Management (ERM) literature by unpacking how underlying value systems shape calculative cultures, thereby nuancing Mikes' (2009, 2011) concept. We suggest that calculative cultures emerge from a recursive relationship between actors and tools, both conditioned by shared value systems, i.e., orders of worth, that define what is considered legitimate. Second, we contribute to the sustainability integration literature, by introducing a temporal dimension and nuancing the cognitive dimension of Gond et al.'s (2012) integration framework.

Nevertheless, our study is not without limitations. First, our study is based on a single case, a Nordic Bank, which may limit the generalizability of our findings. Although our study offers detailed insights into how climate risks are integrated in this specific organizational setting, the results may not reflect practices in other banks, countries, or industries where regulatory environments, organizational contexts, and underlying value systems may differ. A second limitation stems from the interpretive approach of our study. As researchers, our pre-existing frames and interest in sustainability may have influenced our framing of our questions, as well as the responses we received and how we interpreted these responses. Finally, because this study was conducted within a limited time frame, our findings only capture a snapshot of climate risk integrations at a specific point in time. Given that ESG, specifically climate risk, regulations and industry standards are rapidly changing (EBA, 2025), our study may overlook future shifts in risk practices that could reshape how climate risks are integrated.

We urge future research to explore how climate risks are integrated into traditional risk frameworks across a range of empirical settings in order to draw broader, more general conclusions. One such avenue could be to examine banks operating in other regional contexts that may be more or less prone to certain climate risks, such as physical risks, to explore how environmental conditions shape integration. Similarly, future research could extend the scope beyond climate risk to look at other dimensions of ESG, such as social or governance issues, or extend the scope beyond the credit risk classification process to investigate integration efforts within other areas of ERM. We also call for a deeper examination of the concept of calculative cultures (Mikes, 2009, 2011). Examining how climate risks are integrated within other institutional contexts governed by alternative calculative cultures or orders of worth could enrich our understanding of the institutional conditions necessary for meaningful integration.

7. References

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8. Appendix

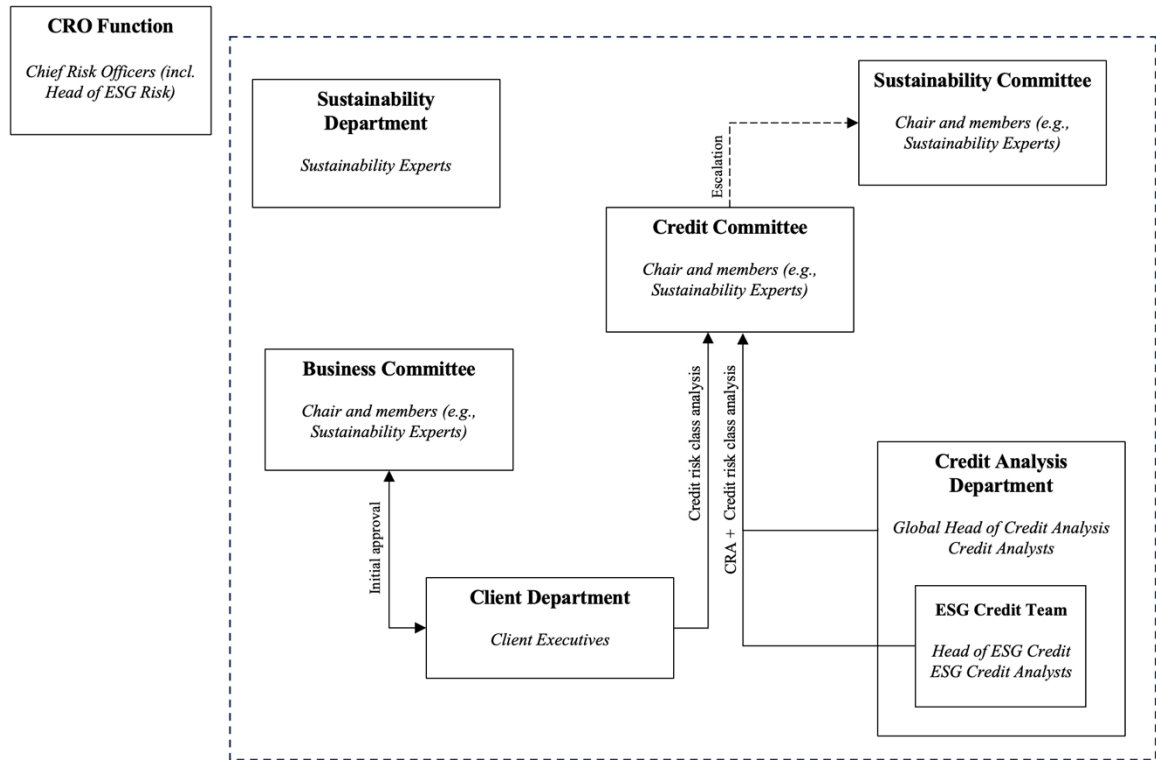
Table 1. Orders of Worth (sources: Boltanski and Thévenot, 1999; Thévenot et al, 2000)

	Market	Industrial	Civic	Domestic	Inspired	Opinion	Green
Mode of evaluation	Price, cost	Productivity, efficiency	Collective welfare	Reputation, loyalty, tradition	Inspiration, creativity, grace	Renown, fame	Environmental friendliness
Test	Competitiveness	Reliability, planning	Equality, solidarity	Trustworthiness	Passion, enthusiasm	Popularity, recognition	Sustainability, renewability
Form of proof	Monetary	Statistic measurement	Demonstration of a just cause	Anecdotal, oral	Emotional involvement, myths	Public support	Ecological
Qualified objects	Market goods and services	Projects, methods, plans, investments	Rules, regulations, rights, policies	Rank, title, manner	The sublime	Media, brand, interviews	Environment
Qualified human beings	Consumer, trader, seller	Engineers, professionals, experts	Collective persons and officials	Authority, boss, leader	Visionaries, creative beings	Celebrity, spokespersons, PR agents	Environmentalists
Elementary relation	Exchange	Functional	Solidarity	Trust	Passion	Recognition	Ecological

Table 2. List of Interviews

Interview	Role	Time	Date	Location
1	ESG Credit Analyst #1	59 min	2025-02-06	Physically
2	Head of ESG Risk	42 min	2025-02-13	Physically
3	Business Committee/Sustainability Expert #1	57 min	2025-02-17	Teams
4	Head of ESG Credit	51 min	2025-02-20	Physically
5	Credit Analyst #3	45 min	2025-02-27	Physically
6	Chair of Credit Committee #1	40 min	2025-02-27	Teams
7	Head of ESG Risk	1h	2025-03-04	Physically
8	Senior Credit Analyst #1	1h 5 min	2025-03-04	Physically
9	Senior Credit Analyst #2	59 min	2025-03-10	Teams
10	ESG Credit Analyst #1	57 min	2025-03-20	Physically
11	ESG Credit Analyst #2	1h 1 min	2025-03-20	Physically
12	Credit Committee/Sustainability Expert #2	1h 23 min	2025-03-24	Physically
13	Client Executive #1	50 min	2025-03-26	Physically
14	Client Executive #2	1h	2025-03-31	Physically
15	Sustainability Committee/Sustainability Expert #3	54 min	2025-03-31	Physically
16	Business Committee/Sustainability Expert #1	1h 24 min	2025-04-02	Physically
17	Chair of Credit Committee #2	57 min	2025-04-04	Physically
18	Credit Analyst #4	49 min	2025-04-23	Physically
19	Global Head of Credit Analysis	58 min	2025-04-28	Physically

Table 3. The Credit Risk Class Process



Interview Guide

Disclaimer: Since the interviews (i) were conducted in a semi-structured manner and (ii) the interview guide was adapted based on the interviewee's position within NordBank – this guide is not a perfect representation of all interviews but provides a rough idea of the questions asked.

Formalities

Introducing the aim of the study and the research question.

Ensuring anonymity, GDPR form, recording permission

Example Questions

Background:

- What is your job title? Could you tell us a bit about your daily tasks?
- How is your team organized and what is your role in the team? What is the role of your team in the organization overall?
- How long have you worked in your current position? What is your background within the organization or financial industry?

Credit risk classification process:

- Can you outline the steps typically involved in your risk evaluation process?
- What types of information are most important when assessing risk?
- Who participates in credit risk decision-making committees?
- What are some of the key challenges or points of disagreement in your assessments?

Climate Risk Integration:

- What does sustainability mean for you personally?
- How does the bank define sustainability risk, and specifically climate risk?
- How does climate risk relate to your area of work or decision-making?
- Is climate risk considered in your analysis? How do you analyze climate information? What is the purpose of analyzing climate information?
- If climate risk factors are analyzed, what role does the climate risk analysis have, relative to the financial analysis?
- In what contexts is it easiest or hardest to incorporate climate risk considerations?
- Are there examples where financial and climate risk priorities have conflicted? Are there any cases where climate risks caused internal debate or reevaluation?
- How often does climate risk become a central focus in credit committee discussions? Could you give an example of when climate risk has significantly influenced a credit decision?
- What do you see as the biggest challenges in integrating climate risks into credit risk frameworks?
- How do you think the role of climate risk, and ESG risk more broadly, in banking will evolve in the coming years?

AI Disclaimer

In the process of writing this thesis, AI tools have been used in a carefully considered manner. AI has not been used to write or generate content, nor to collect or analyze data. Instead, AI tools have been used as supporting functions to (i) transcribe interviews, and (ii) improve language quality.

We have used ChatGPT 4.0 to improve the clarity and readability of certain paragraphs. The tool was only used to improve language quality based on text that was originally written by us. Example prompts include: *"Can you help us rephrase this sentence for clarity?"* or *"Can you suggest synonyms to avoid repetition?"*. All content has originally been produced by the authors and AI has only been applied in the final stages to improve clarity. Additionally, we are aware of the risk of AI "hallucination", where outputs may include misleading information. To mitigate this risk, all AI-generated suggestions have been critically reviewed to match the authors original meanings.

For transcriptions of interviews, we have also used Klang AI, a Swedish AI service designed for audio transcription. According to Klang AI's publicly available data handling principles they (i) follow all data protection laws, and are strictly bound by the EU to follow GDPR, (ii) data is encrypted during both storage and transfer phases, and (iii) it does not share any data with third parties or use it for external model training. Additionally, we recognize the importance of data security and have therefore only used Klang AI for audio transcriptions. We also recognise the risk for "hallucination" within the transcription process. As such, all transcripts have been carefully cross-checked against the original audio recording to ensure accuracy.

Overall, we do not consider AI to have directly increased the quality of this thesis. However, the use of AI tools have contributed to workflow efficiency, which has ultimately enabled us to spend more time on collaborative reflection and analysis. As such, we deem AI to have indirectly contributed to the quality of this thesis.