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The Impact of Carbon Border Adjustment Mechanism (CBAM) on Companies in the EU: Analysis of Corporate Strategies in Internalizing Compliance to CBAM

by

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Abstract

The European Union's Carbon Border Adjustment Mechanism (CBAM) is a policy instrument which imposes tariffs on goods imported to the EU, aimed at tackling the global issue of climate change, particularly carbon emissions. CBAM seeks to impose a fair price on the carbon emitted during the production of carbon-intensive goods entering the EU. As this policy introduces additional costs and administrative burdens for importers, it poses significant challenges for companies with complex supply chains and organizational structures. Through several semi-structured interviews with people from the impacted industries, focusing on manufacturing companies involved in importing goods under the categories of iron, steel, and aluminium, this thesis explores how corporate companies are adapting their internal processes to meet CBAM requirements. Additionally, challenges in complying with CBAM are also addressed to investigate how the implementation of CBAM may impact the companies in the EU. The results of this study reveal that companies are generally adopting cross-functional collaboration in approaching CBAM compliance within their organization, optimizing internal resources for process efficiency. Nonetheless, many companies are still in the process of defining how they will integrate CBAM compliance process within their organizations and have not yet established permanent organizational structures, reflecting a cautious approach due to the evolving nature of CBAM and its ties to the broader EU regulatory framework. Furthermore, the implementation of CBAM presents operational challenges that could significantly impact EU manufacturing businesses, particularly in terms of how the companies strategize in sourcing their materials.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

BCA	:	Border Carbon Adjustment
CBAM	:	Carbon Border Adjustment Mechanism
CO2	:	Carbon Dioxide
COP	:	Conferences of the Parties
ETS	:	Emission Trading System
EU	:	European Union
GHG	:	Greenhouse Gas
NCA	:	National Competent Authorities
UNFCCC	:	United Nations Framework Convention on Climate Change
WCO	:	World Customs Organisation

Chapter 1: Introductions

1.1. Background

There has been growing attention among the global community regarding the importance of fighting climate change in the last few decades. Starting in 1992 at the Earth Summit in Rio de Janeiro, Brazil, the first global agreement to fight climate change is the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC sets out a framework for international cooperation to curb climate change, emphasizing that reducing greenhouse gas emissions is important in supporting the lives of our communities. It establishes annual conferences of the parties (COP) where countries discuss and negotiate further actions to address climate change. However, designing and approving effective and stable international climate agreements is proven to be challenging if we look back from historical examples like the 1997 Kyoto Protocol and the 2015 Paris Agreement (Rocchi, et al., 2018). The Kyoto Protocol faced issues with non-ratification by the United States, which is one of the biggest GHG emitters, and non-compliance by some signatory countries. Similarly, the Paris Agreement struggles with political difficulties and lacks a system of penalties for non-participants and non-fulfillers, making stable coalitions hard to achieve and expected emissions reductions minimal. From here, the free-rider problem arises as entities (countries, companies, or individuals) benefiting from global emissions reductions without contributing to mitigation efforts or without paying for their provision and it poses a significant obstacle to effective international climate policy (Nordhaus, 2015).

The European Union, as leader in climate action, sets ambitious targets for reducing greenhouse gas emissions and transitioning to a low-carbon economy by launching The European Green Deal in 2019 to effectively achieve net-zero emissions. The EU aims to cut greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels (European Commission, 2023). One of the crucial components of EU in achieving their ambitious GHG reduction goals is by implementing carbon pricing mechanism namely European Emissions Trading System (EU ETS). Under the EU ETS, companies are allocated a certain number of emission allowances, with each allowance representing the right to emit one tonne of CO_2 or its equivalent (European Commission, 2024a). If a company emits more than its allocated allowances, it must buy additional allowances or face fines and if a company emits less than its

allowances, it can sell the surplus allowances to other companies. This creates a financial incentive for companies to reduce their emissions. Nonetheless, as EU ETS only applicable regionally, some companies may find a loophole to avoid this policy. Instead of cutting off their global GHG emissions from their production activities, these companies could offshore their production facilities to countries which have less stringent climate policy or what we have known also as carbon leakage (Mörsdorf, 2022). Implementation of EU ETS, despite the low carbon price, has saved about 1.2 billion of tons CO_2 emissions between 2008 until 2016 which equals to 3.8% of carbon emissions relative to a world without carbon market over the observed years (Bayer & Aklin, 2020), but it was noted in the study that some of the carbon emission reduction ware achieved by moving the production plants outside the EU, which as mentioned previously is a form of carbon leakage. Considering that climate change is a global issue pose another challenge for the EU ETS itself, it cannot stand on its own to curb the climate change effects globally. In addressing the global warming externality, a uniform carbon price, agreed internationally and implemented nationally, could effectively motivate the global community to reduce their emissions as it ensures that all emitters pay for their contributions to climate change, reducing the incentive to *free-ride* (Weitzman, 2014).

The EU Carbon Border Adjustment Mechanism (CBAM), which came as part of the European Green Deal package, is a policy tool in a form of carbon pricing for goods imported to the European Union. CBAM is implemented alongside EU ETS to address the risk of carbon leakage as the result of the unilateral climate target in reducing carbon emission. Studies with ex-ante models show that carbon border adjustment mechanism can reduce carbon leakage to some extent (Branger & Quirion, 2014). In addition, EU also sees CBAM as a tool to encourage trading partners to adopt their own carbon pricing, and if done under close coordination with EU, could lead to international coordination on the use of carbon pricing mechanism (Pauw, et al., 2022). The European Commission brought forward a legislative proposal regarding Carbon Border Adjustment Mechanism in July 2021 which states that importers of iron and steel, cement, fertilisers, aluminium, and electricity are required to submit certificates accounting for the emissions incorporated in the imported goods (European Commission, 2021). Under this mechanism, importers of the aforementioned goods will be required to buy and surrender CBAM certificates corresponding to the carbon

price that would have been paid had the goods been produced under the EU's carbon pricing rules (EU ETS). This ensures that the cost of carbon is reflected in the price of products regardless of where they are produced, thus levelling the playing field between EU and non-EU producers (Pauw, et al., 2022).

1.2. Research Problem and Goal

Iron, steel, and aluminium are critical materials that are used across various manufacturing industries in the EU as they are used as key components in many manufacturing processes. Aside from introducing extra costs to import those materials, CBAM will also add extra administrative tasks to the importers to make sure their compliance with CBAM. In the implementation of CBAM, customs will be one of the authorities that enforced the regulation by collecting critical import data for the National Competent Authorities (NCA) and conducting border inspections. At the same time, the "declarants," or the entity responsible for ensuring compliance with the CBAM requirements, will also be dealing a lot with customs-related data, as CBAM reports will need them to include the type, quantity, and origin of goods entering the EU. These conditions make it reasonable for some companies to see CBAM as a matter related to trade compliance. However, as has been mentioned in the previous section, CBAM is fundamentally an environmental policy aimed at reducing carbon emissions and preventing carbon leakage, which also makes it a sustainability matter. In addition to that, CBAM reporting will need data on CO_2 emissions, which should be provided by the supplier or manufacturer of the imported goods itself, but often corporate companies buy the goods from a distributor instead of directly buying them from the producer, which may require the involvement of supply chain functions in the process. This condition added complexity to these corporate companies on how they could manage to be compliant with CBAM.

Multinational companies usually have quite a complex organizational structure to effectively manage their extensive operational matters across regions. To manage the operations, companies often organise their operations into a functional division that is responsible for specific business functions, for example, a finance division that oversees the company's finances, such as financial planning and risk management. To achieve compliance with CBAM, it may be necessary for a company to have or appoint a function within its organisation to oversee that every step in complying with

CBAM is done accordingly. However, given that CBAM has only been implemented, it is only normal that companies are still determining the most appropriate way on how they can organise themselves internally to ensure compliance. As they establish their best practices in addressing CBAM, they may encounter challenges that must be resolved to find the most effective compliance strategies.

Many studies, such as study by Mörsdorf (2022) in examining carbon leakage reduction, study by Monjon & Quirion (2011) in analysing EU competitiveness, and study by Bellora & Fontagne (2023) in analysing effectiveness of CBAM in combination with EU ETS, have been conducted to analyse the impact of Border Carbon Adjustment (BCA) implementation for EU. However, many of them are mostly focusing on environmental and economic impact of CBAM. This thesis aimed to tapped on the research gap in this topic by analysing impact of CBAM implementation to organizational setup of corporate companies towards its compliance given the complexity of their supply chain and organizational structure.

The main research goal of this thesis is to understand what is currently happening among EU manufacturing companies in light of CBAM implementation; specifically, it seeks to understand how corporate manufacturing companies in the EU are currently adapting their organisations in their effort to be compliant with CBAM. In addition, it will also explore the importance of compliance with CBAM, the extent of how CBAM is impacting their company's business, challenges faced by the company, as well as expected implications for the related business in the EU.

1.3. Research Questions

Based on the background that has been discussed in the previous section, the main research question was constructed for this thesis,

- How are the corporate companies within EU organizing themselves to make sure their compliance to CBAM?

To better compliment answering the main research question, below sub-research questions were also constructed,

1. How is CBAM functioning?
2. What kind of companies will be impacted by CBAM?
3. Why is compliance to CBAM important to corporate companies located in the EU?

4. What are the challenges faced by companies in in their effort to be compliant to CBAM?
5. What are the effects expected on a company located in the EU related to the implementation of CBAM?
6. What are the expected effects on the business climate in the EU from the introduction of CBAM?
7. What are the company views on the long-term prospect of CBAM as a regulation to encourages global decarbonization efforts?
8. To what extend have the companies planned to prepare for the prospect of having to pay higher carbon price for their imported goods in the future?

1.4. Thesis Structure

This thesis will consist of six chapters with structure details as below,

- Chapter 1: Introduction. Background of the thesis, as well as research questions and structure of the thesis. This part provides general overview about the primary research objectives of the thesis.
- Chapter 2: Literature review. This part provides basic and supplemental information about the thesis. It introduces EU Carbon Border Adjustment Mechanism implementation and governance and its expected impact. As CBAM is a regulation in which a company needs to adhere to, compliance to regulation is also discussed in this part to give more insight on the importance of compliance to a company. In addition, theory about cross-functional collaboration compliments the findings on how companies manage their compliance to CBAM.
- Chapter 3: Methodology. This part discusses about the case selection of this thesis, exploratory research as research design, qualitative research as research methodology, semi-structured interview as data gathering methods, and thematic analysis as techniques that is used to analyse the interview result.
- Chapter 4: Research findings. The result of the semi-structured interviews is presented to see the relevance of it to the theoretical framework of compliance to regulation and cross-functional collaboration approach. Important remarks from the interviewees are also presented to provide better understanding of the current implementation of CBAM in corporate environments.

- Chapter 5: Discussions. Research findings of the implementation of CBAM is discussed and analysed to answer the research questions.
- Chapter 6: Conclusion. Discussion from the research findings is summarised to answer each of the research questions.

Chapter 2: Literature Review

2.1. Carbon Border Adjustment Mechanism (CBAM)

2.1.1. Introduction

The EU's Carbon Border Adjustment Mechanism (CBAM) imposes carbon price for imported goods from non-EU countries, which production processes emit carbon intensively. For now, CBAM will only include goods under the category of iron and steel, cement, fertilisers, aluminium, and electricity in its scope but the EU commissions are planning to expand the scope to include all EU ETS products by 2030 (Deloitte, 2022). Aside from the basic materials mentioned previously, precursors such as iron ores and some downstream materials such as screws, bolts, and similar articles of iron and steel are included in CBAM (Oliver Wayman, 2023). Any companies or importers involved in importing CBAM impacted goods in which the total intrinsic value is more than €150 is subjected to this regulation (EU Taxation and Customs Union, 2024). Under this mechanism, EU importers are required to purchase and surrender carbon certificates reflecting the cost that would have been incurred if the goods were produced under EU ETS scheme (European Commission, 2021). Working alongside EU Emission Trading System (ETS), this mechanism ensures that imported products are subject to the same carbon costs as those produced within the EU, levelling playing field of carbon intensive industries in the EU to those outside the EU. However, if the non-EU producer can show that they have paid for the carbon emitted in the production process in the origin country, then carbon cost for the EU importers can be deducted (European Commission, 2021). The EU sees CBAM as a strategy to motivate its trading partners to implement their own carbon pricing systems, encouraging cleaner production practices globally (Pauw, et al., 2022). On top of that, CBAM is expected to generate more than US$9 billion a year from all targeted sectors by 2030, of which some part will be redistributed to low-income EU trading partners to incentivise their own decarbonisation initiatives (Belleti, et al., 2023).

2.1.2. Implementation and Governance

The implementation of CBAM consists of 2 phases. The transitional phase, which started in October 2023 to December 2025, and the full implementation phase, which will start on the 1st of January 2026 (Customs Administration of the Netherlands, n.d.). Currently CBAM is in its transitional phase, and importers are only required to submit a quarterly report that contains information about quantities of goods imported as well

as specifying the country of origin where the goods were produced, direct greenhouse gases embedded (and, if applicable, indirect greenhouse gas emissions embedded in their imported goods), and (if applicable) the carbon price that they have already paid in the country of origin (Deloitte, 2022). In the context of CBAM, direct emissions are emissions that was emitted on the production process of the goods such as emissions from the heating or cooling of the production process, whereas the indirect emissions are emissions from the production of electricity that was used in the goods' production process (Damsté, et al., 2024). Furthermore, in this phase, the importers are not yet obliged to buy and surrender the CBAM certificate and they are allowed to use the default emission value published by the EU commission in case of challenges in obtaining the emission data from the suppliers. The default emission values in CBAM refers to pre-determined carbon intensity value set for specific product which is impacted by CBAM. However, starting from 31st of July 2024 companies need to at least start to declare 80% the actual CO_2 emissions from their imported goods (Leclercq, 2024).

Figure 1. EU CBAM Implementation Timeline (Belleti, et al., 2023)

On the 1st of January 2026, CBAM is anticipated to be fully implemented. By then, EU importers for goods which are covered by CBAM will have to already register themselves to their National Competent Authorities (NCA) as "authorised CBAM declarant" to be able to buy the CBAM certificates. Each year importers then should declare emissions embedded on their imports and surrender the certificates accordingly based on their declarations, reporting declarants may face penalties ranging between €10 and €50 per tonne of unreported carbon emissions (EU Taxation

and Customs Union, 2024). The certificates' pricing (€/tonne of CO_2) directly correlates to the fluctuating market rates for EU ETS allowances auctioned each week, by linking the CBAM certificate price directly to EU ETS allowances, the mechanism ensures imports face an equivalent carbon cost as domestic EU production, preventing competitive disadvantages (European Commission, 2021). The gradual rollout of the CBAM corresponds with the phasing out of free allowances allocated under the EU Emissions Trading System (ETS), aimed at facilitating the decarbonization of EU industry (European Commission, 2024).

In implementing CBAM, each member state has a designated National Competent Authority (NCA) whose main responsibility is to check the quality of the quarterly CBAM reports with the support of the European Commission, engage in a dialogue with reporting declarants when needed, and impose penalties when reporting declarants are not correctly complying with their obligations in submitting CBAM report (EU Taxation and Customs Union, 2024). Furthermore, member states' customs play a crucial role in the implementation and enforcement of CBAM at the border, ensuring compliance to the regulations upon goods entrance to the EU. During this transitional period, customs are required to notify importers of their obligations to submit a CBAM report based on the importer's customs declaration data (Customs Administration of the Netherlands, n.d.). Customs authorities then collect detailed data on imports, including the type, quantity, and origin of goods entering the EU, as this information is essential for verifying that importers have accurately reported the carbon emissions associated with their products (EU Taxation and Customs Union, 2024).

Figure 2. EU CBAM Process (ING, 2023)

Table 1. Summary of Responsibilities of Each Party Involved in CBAM (EU Taxation and Customs Union, 2024)

Importers	Customs	National Competent Authorities (NCA)	European Commissions
Submit CBAM declarations on quarterly basis	Inform importers for CBAM reporting obligations during transitional period	Supervise and enforce CBAM implementation	
Verify their declarations to third-party accredited verifier	Feed import data to the NCA and EU Commissions	Sell CBAM certificates on behalf of EU Commissions	
Surrender CBAM certificates accordingly (starting from Jan 2026)	Provide access to CBAM reporting site	Registration for CBAM declarants	Sell CBAM certificates
CBAM declarations record keeping		Impose penalties for non-complying importers	

2.1.3. Importing Companies' Obligations to Comply with CBAM

To understand how companies can strategize themselves in their compliance with CBAM, first we need to look at what kind of additional tasks the company is being subjected to under CBAM regulation. Summarising from various sources published by the EU Commission, its supporting regulatory body, and other supporting parties (European Commission, 2021; European Commission, 2024; EU Taxation and Customs Union, 2024; Circularise, 2023), to ensure compliance with CBAM, companies must follow a series of actions, which can be listed as below,

1. Familiarity to Regulation

   The first step that importers need to do to be compliant to CBAM is familiarize themselves with the regulation itself which includes understanding the specific requirements of the CBAM regulation, the scope of goods they are involved in, data set that they need, calculation methods, and deadlines.

2. Data Gathering

   To make sure they can fulfil the reporting obligation, companies must have the data sets which are required to be declared in the reporting such as quantities of goods imported, origin of goods, direct and indirect emissions of the goods.

In terms of quantities and origin of the goods, a company may already have this data because they are also used in customs declaration. However, direct emissions and indirect emissions are data that must come from the suppliers or manufacturers of the goods which means companies must reach out to them to obtain those data.

Accurate carbon emission accounting is also critical in fulfilling CBAM obligations as any incorrect declarations may lead to penalties from the NCA. Thus, companies must measure their carbon footprint from their imported goods by identifying sources of emissions in the production process of their imported goods, standardized methodologies for emissions calculations, and doing emission data verification by a third-party.

3. Declarations Submission

   After all data needed has been collected completely, companies must submit CBAM declarations to the National Competent Authorities (NCAs). However, prior to the submission the companies must make sure that the data sets are correctly compiled in the CBAM reporting format and then they must submit the declarations within the specified deadlines.

   In addition, depending on each member states, European Commission's CBAM Transition Registry website where companies can submit their CBAM declarations are managed via the customs portal (EU Taxation and Customs Union, 2024). Hence, the CBAM declarations might also need to be handled by someone who already has affinity with the portal.

4. Purchasing Certificates

   On top of the CBAM declarations submission, once CBAM fully implemented, importers will be required to buy and surrender the CBAM certificate. To be able to purchase the certificates, importers must make sure that they have registered themselves as "authorised CBAM declarant" to the National Competent Authorities (NCA).

5. Maintaining Detailed Records

   Importers must cooperate with EU authorities during compliance audits and inspections. Therefore, maintaining detailed records of their emissions data, verification reports, and CBAM certificates are important to make sure smooth process of audits and inspections.

2.1.4. Expected Outcome

In principle, a Carbon Border Adjustment Mechanism (CBAM) is seen as an efficient method for mitigating carbon leakage. Studies from Mörsdorf (2022) suggested that a narrow version of the EU carbon border adjustment will reduce the carbon leakage rate, which is defined as a ratio between domestic emission reductions and foreign emission increases, from 22% to around 14%. CBAM is also seen as a proper tool in mitigating the adverse effects on competitiveness caused by unilateral climate policies, which in this case is the EU ETS. Furthermore, studies with an ex-ante model from Branger & Quirion (2014) indicates that with a Border Carbon Adjustment (BCA), the range of carbon leakage rate reduces by 6 percentage points.

A study by Bellora & Fontagne (2023) shows that CBAM is effective in reducing carbon leakage and more effective than free allocation of allowances to trade export firms. In the study, they created three different scenarios in which CBAM is applied to all sectors covered by ETS while EU ETS free allowances are gradually phased out and replaced by CBAM. However, important notes were made in this study on how there must be a distinction between a level playing field for a carbon intensive sector and the levelling playing field for the downstream sector. The implementation of CBAM will most likely increase the price of carbon intensive products coming to the EU thus impacting downstream industries that use carbon-intensive products as inputs, as they will face higher prices for these inputs, regardless of whether they are sourced from within the EU or imported, due to the CBAM and removal of free allowances. Firms in the downstream industry outside the European Union may enjoy a comparative cost advantage, as they are potentially exempted from carbon pricing mechanisms on their inputs utilized in their domestic production processes. Furthermore, these non-EU entities can circumvent the Carbon Border Adjustment Mechanism by exporting finished goods to the European market, thereby evading the carbon adjustment levied on imports at the EU border.

A study by Monjon & Quirion (2011) examines the widely belief that Border Adjustment helps both in preserving EU domestic production and limiting the carbon leakage, but it is argued in the study while a Border Adjustment would effectively reduce leakage, there is also likely a decline in EU production of GHG-intensive product. However, another study by Zhong & Pei (2022) shows that although implementation of CBAM

might reduce competitiveness of EU due to rising production cost in the long run, it is estimated that the implementation of CBAM would increase EU output by 0.38 per cent while the output of rest of world decreased by 0.1 per cent when CBAM is set at $US100/tCO2e.

An article by Damsté, et al. (2024) mentioned that CBAM will affect both downstream products and finished goods as the phasing in of CBAM certificates combined with the phasing out of EU ETS free allowances may rise prices for CBAM goods in EU market. In the short term, this could create a shift in international trade with EU imports favouring lower-emission products to avoid CBAM costs. Initially, non-EU producers of high-emission goods might find opportunities in markets outside the EU that have less stringent carbon policies. However, the motivation to invest in decarbonizing technologies and gain a competitive edge in the EU's low-carbon market could encourage a global shift towards decarbonization.

2.2. Compliance to Regulation

Nowadays multinational companies are subjected to a wide array of international and local regulations due to the nature of their business in which they are operating in several countries in the world. Thus, the term compliance in corporate environment is no longer strange and it has become one of the norms of modern multinational business operations. In general, compliance is defined as “adherence by the regulated to rules and regulations laid down by those in authority” (Edwards & Wolfe, 2005). Compliance to regulation is important for any company because non-compliance can have a multifaceted impact for the companies themselves.

It is a common knowledge that failure to comply to a regulation can sometimes result in substantial legal sanctions which could disrupt the company’s financial performance, but non-compliance to regulation can also be damaging for company's reputation which can be also costly. According to study by Arjoon (2006) good reputation of a corporation is closely linked to stakeholder trust and customer loyalty. In the study by Karpoff, et al. (2005), it was also found that following the announcement of a company's violation to regulation, the company's stock price typically declines significantly, reflecting the investors’ concerns about the potential long-term impact on the company's reputation and future profitability. Furthermore, firms with a history of

non-compliance are likely to face increased scrutiny from the authorities which can result in more frequent audits or inspections (Scholz, 1991).

There are three motivations to compliance in the study of Winter & May (2001). They can be labelled as calculated, normative, and social motivations for compliance. Calculated motivation is fundamentally how one company or individual framed benefits and costs of compliance on which has higher net return to define whether they will be compliance or not. Normative compliance comes from the regulated entities' shared sense of moral obligation and their agreement with the significance of the regulation. Social motivation arises from the desire of regulated entities to gain the approval and respect from important individuals with whom they interact. These motivations are the bases for a company to realize their compliance with a regulation.

However, even with companies' motivation to comply with certain regulations, they may face several challenges in meeting regulatory requirements. The nature of regulation often being complex and ambiguous can make it difficult for companies to understand and comply with all requirements effectively (Black & Baldwin, 2010). Frequent changes in regulations can also pose significant challenges for companies as keeping up with regulatory updates and ensuring ongoing compliance requires continuous monitoring and adaptation, thus it is important to have robust compliance management systems in place (Coglianese & Nash, 2020). Compliance as an activity itself involves a process of analysing relevant regulations to make sure important regulations are identified and understood, making sure the process meets the requirements by setting up internal controls, and consistent process reviews as well as monitor to make sure the operations adhering to the regulations (Fiene, 2023). However, the process of becoming compliant to regulations often involves significant financial costs, including investments in compliance programs, staff training, technology, and third-party audits. Survey from (Thomson Reuters, 2023) indicates that the financial burden of compliance is a major challenge for companies, with many struggling to allocate sufficient resources to meet regulatory requirements.

CBAM adds a new layer of regulatory requirements for companies involved in international trading activities in the EU, specifically for those who import goods from non-EU trading partners. With the recent implementation, companies are still trying to navigate themselves in trying to be compliant with CBAM and the regulation itself will

be most likely to undergo several developments in the future. Therefore, if we refer to the literature, there may be challenges in complying with CBAM that could hinder companies to reach compliance. Furthermore, from this literature we can see that consequences for non-compliance to CBAM could be twofold. As mentioned in the previous section, non-compliance to CBAM will lead to certain fines which may affect the companies' financial and, in the era where the global society is more aware of sustainability issue, compliance to CBAM might have effects on the companies' reputation.

2.3. Cross-Functional Collaboration

As what has been mentioned in the previous section, compliance to CBAM is not only about submitting the report timely. Familiarity to the regulations, data gathering, the report submission, purchase of the certificate, and record keeping are series of action that companies need to do towards its compliance to CBAM. However, normally in a corporate environment, there is an organizational structure which defines how a job task is formally divided, grouped, and coordinated. One of the most common organizational structures in business is a functional organizational structure. In a functional structure, the organization is divided into separate departments with each focusing on specific functions to allow specialization which can give the organization a competitive advantage (Jones, 2013). As CBAM compliance involves series of actions with specific activities, cross-functional collaborations may be needed.

Cross-functional collaboration involves aligning diverse objectives of functional units by acknowledging their interdependence and the necessity to work together for the overall benefit of the organization (Olson, et al., 1995). In the context of regulation compliance, it involves integrating efforts across various departments to ensure a holistic approach to reach compliance. For CBAM compliance, collaboration among departments such as procurement, tax, and operations can be considered important for an accurate and efficient declaration process, which is a challenge considering the complex supply chain nature of a corporate companies. Cross-functional collaboration allows organizations to leverage diverse perspectives, skills, and expertise of their employees from each function to tackle complex challenges (Liu & Li, 2024).

However, cross-functional collaboration has its own challenges in its implementation. In many cases, each function in a company has differences in the way they

communicate, different terminologies, and priorities. There is also the common issue in many corporate companies that we called the ‘silos mentality’. The silos mentality occurs when functions or departments in a company operate in isolation from one another. In the study of Lawrence & Lorsch (1967), the silos mentality is described as the byproduct of differentiation of specialized departments or units where they develop their own culture, goals, and communication styles which lead to barriers in cooperation and information sharing within the organization. From the study of American Management Association, it was found that 83% of company executives recognize the existence of silos in their companies and 97% believe it has negative impact on their organization (Kwan, 2019). Silos create barriers to effective communication with the departments often withholding information from each other, leading to process delays, inefficiencies, and misunderstandings, thus effective communication is crucial to the success of the collaboration (Schaubroeck, et al., 2016). Communication style difference among corporate functions could also be one failure point in cross-functional collaboration as it could lead to miscommunication and conflicts (Cramton, 2001). On top of that, Different goals in each function in an organization result in different priorities for each function, this could make collaboration difficult and may also cause conflict in achieving the common goals, hence it is important to align the shared goals and creating shared vision on how to achieve the goals (Lawrence & Lorsch, 1967).

2.4. Knowledge Gap

The literature review presented in this chapter has provided theoretical background on the importance of compliance to regulation for a company and cross-functional collaboration as a mean that can support a company towards compliance to regulations, especially compliance to CBAM.

This chapter also discusses about CBAM as a regulation and the obligations it entails for impacted companies. In addition, the expected outcome of CBAM from previous studies is discussed in this chapter to provide better understanding on the reason EU pushed the implementation of CBAM. However, despite considerable amount of literature discussing CBAM, there are very few to almost none which discuss about challenges related to CBAM compliance for companies and its business implications have not been explored extensively due to its recent implementation. This thesis seeks to address the research gap by examining how CBAM affects compliance within

corporate manufacturing companies, considering the complexity their organizational structures.

Chapter 3: Methodology

3.1. Case Selection

This thesis is a small multiple-case study that focusses on manufacturing companies which are involved in importing CBAM goods under the categories of iron, steel, and aluminium. It aims to examine how multinational manufacturing companies in the EU are currently adapting their organisation in their effort to be compliant with CBAM. Despite the noble intent of CBAM towards a more sustainable future, it expectantly poses certain impacts on industry within the EU, specifically for those whose business revolves around importing the CBAM-impacted goods. The manufacturing industry is one of the most important components in the EU economy. In 2021, the manufacturing sector employed around 29.7 million people and generated more than €2.2 trillion of value added to the business economy, which translates to a 19% contribution to employment and 24% of EU business economy value added (Eurostat, 2024a). However, the EU manufacturing industry relies quite heavily on imports, as about two out of every three imported items being either raw materials or partially completed goods used in production processes with China and the US being the major suppliers of these intermediate goods (Eurostat, 2024b). As mentioned earlier, CBAM imposes an additional administration and price on importing iron, steel, and aluminium, and these materials are foundational to various manufacturing sectors because they provide essential components for numerous manufacturing processes. In that sense, CBAM implementation is expected to have implications for manufacturing businesses in the EU.

As CBAM is aimed at specific companies involved in specific commodities, specialised knowledge is needed to provide insight for this thesis. Therefore, a purposive sampling strategy is used in this thesis to attentively determine the participants of the interview. This sampling strategy involves identifying and selecting individuals or groups of individuals who have significant knowledge or experience related to the phenomenon being observed (Cresswell & Plano Clark, 2011). In identifying and selecting the interview participants, multiple criteria were made to make sure that the companies are appropriate for the case study. First, participants must be from a multinational manufacturing company in which one or more offices are operating in the EU. Second, the interview participants must be involved with the compliance of CBAM within their company. Third, the company must be involved in importing goods related to iron,

steel, and aluminium into the EU after CBAM implementation. Finally, the size of the company was also considered to ensure that the selected company possesses substantial strategic capabilities to give insight into how CBAM will impact their line of business.

3.2. Research Design

This thesis adopts an exploratory research design, which is particularly suited for studying new or complex subjects where data collection may be challenging (George, 2021). Given the recent implementation of CBAM and the limited past research on the topic, this approach is ideal for investigating the organizational strategies companies adopted to maintain compliance. The primary objective of this research design is to gain the most recent insight and deeper understanding of the intricate conditions of internalizing regulations within a corporate organization, as well as issues and business implications that might occur due to the implementation of CBAM. Furthermore, exploratory case studies are used to answer “how” and “why” questions (Yin, 2014), which is in line with the proposed main research questions of this thesis.

3.3. Research Approach

The chosen methodology for this thesis is qualitative. Revolving around gathering and analysing non-numerical data, qualitative studies can be used to better understand intricate details about a situation or to initiate a fresh research concept (Ugwu & Eze Val, 2023). Qualitative methods are also essential in capturing subjective experiences of the participants (Patton, 2002). Qualitative study is seen to allow this thesis to analyse companies’ strategy in complying with CBAM and further identify the issues and challenges faced by the companies that impacted their compliance with CBAM because it enables the study to capture detailed perspectives of individuals taking part in the compliance activities. The selected research method supports a flexible and iterative data collection process (Cresswell & Creswell, 2014), allowing this thesis to explore emerging issues and unexpected insights that might surface during the interview phase.

3.4. Data Collection Methodology

The data collection methodology used in this thesis is semi-structured interviews. Semi-structured interviews are in-depth interviews where respondents are required to respond to predetermined open-ended questions (Jamshed, 2014). The flexibility of

the interview method allows researchers to adjust their questions in response to the answers received, enabling them to investigate any emerging issues or topics that surface during the interviews.

Semi-structured interviews utilize a guide that outlines key questions or topics to be addressed by the interviewer, which typically includes a core question and several related questions (Saunders, et al., 2019). This guide helps ensure that interviews are systematic and comprehensive, allowing for effective use of time and maintaining focus on the desired objectives (Jamshed, 2014). Complete interview guideline for this thesis can be found in Annex A and Annex B.

Table 2. Interview Guidelines Overview

Theme	**Purpose**	**Question**
Compliance to CBAM	Understanding the importance of compliance to CBAM for the company	- What is the relative importance of CBAM compliance for the company (in terms of materials that are covered under the regulation)?
CBAM Obligations	Know the technicality of handling CBAM compliance from two sub process of the declarations which is data collection and report submission, what kind of issue they face, and solutions for the issue	- Which dataset the company need to make up CBAM declaration? - How does the company currently handle the CBAM reporting?
Organizing CBAM Compliance	Understanding the strategy of the company in their effort to be compliant to CBAM based on the tasks or actions that they need to do to reach compliance	- What/How is the current organizational setup in compliance with CBAM? - Reflecting on how the company handle CBAM reporting, what differentiate CBAM compliance to traditional trade compliance (e.g customs)?
Business Implications	Evaluating the impact of the implementation of CBAM to the company line of business	- From the point of view of your company, does CBAM have or could have any effects the business climate in EU in the future? (e.g business expansion or growth)

In this thesis, nine semi-structured interviews are conducted to gather the primary data. Nine of the interviews were conducted online via Microsoft Teams. To make sure that all the questions were covered, an interview guide was used. With the help of Professor Albert Veenstra, below participants of the interview were gathered,

Table 3. List of Interview Participants

Company	**Type of Business**	**Participants' Role**	**Involvement under CBAM**
A	Beverage producer	Regional Tax Manager	Importing product under the category of aluminium and steel, mainly kegs and cans and some materials for the maintenance of the breweries
B	Electronics Manufacturer	Senior Tax Manager	Importing product made from iron or steel and occasionally some products like fertilizers.
C	Electronics Manufacturer	Trade Compliance / Customs Manager	Importing products under category of iron and steel and aluminium
D	Electronics Manufacturer	Head of Global Trade Compliance	Importing products under category of iron and steel
E	Military equipment manufacturer	Customs compliance manager	Importing products under category of iron and steel, mostly screws and bolts
F	Project Company	Compliance Officer	Importing products under category iron and steel. Set of bolts, nuts, and some other equipment on board of vessel like cranes.
G	Semi-conductor Manufacturer	Managing Director of Global Transfer Pricing and International Taxes	Importing products under category of iron and steel
H	Semi-conductor Manufacturer	Tax Director	Importing products under category of iron and steel and aluminium
I	Water technology provider	Director of Trade Compliance	Importing products under category iron and steel, such as pump housing

During the interview session, the author also paid attention to research ethics. Prior recording and transcribing the interview, permission was requested from the participants. Eight out of nine interviews were recorded and transcribed and one interview was only transcribed. The anonymity of the interviewees was also ensured

at the beginning of the interview and the interview result will be used solely for this thesis purposes. The anonymity of the interviewees was also ensured at the beginning of the interview and the interview results will solely be used for this thesis purposes.

On top of semi-structured interviews as the primary data collection method, complementary documents are also analysed in this thesis to support the interview findings, specifically on the issues and challenges that the company faces in the implementation of CBAM. In documents analysis, reports, policies, and any other documents related to the research topic are analysed, evaluated, and systematically reviewed (Bowen, 2009). Combining interviews and document analysis allows data triangulations which could further validate and increase the study's credibility (Patton, 2002).

Table 4. List of Secondary Source

Source	Organization	Document Title	Year
L	International Chamber of Commerce	Open letter on the Carbon Border Adjustment Mechanism (CBAM)	2024
M	Business Europe	CBAM Implementation – A BusinessEurope Survey Lesson Learned From the 1st Reporting Period and Recommendations Going Forward	2024

3.5. Analysis Technique

This thesis uses thematic analysis as a technique in analysing the research findings because it allows the author to examine the data comprehensively by capturing a wide range of perspective from the companies in relation to internalizing their compliance to CBAM. In addition, thematic analysis is relatively easy to learn making it accessible for researchers with varying levels of experience in qualitative research (Terry, et al., 2017).

Thematic analysis is a method used for identifying, analysing, and reporting themes within data by organizing datasets (Braun & Clarke, 2006). It is one of the most widely used methods for analysing qualitative data (Kuckartz, 2019) and is used to interpret and extract meaning from qualitative data (Naeem, et al., 2023). In this thesis, the six-phase thematic analysis process was followed, according to the study of Braun & Clarke (2006).

Table 5. Thematic Analysis Phases (Braun & Clarke, 2006)

Phase	**Process**
Phase 1: Familiarization with Data	Reading transcription files to familiarize with the datasets
Phase 2: Generating Initial Codes	Identifying initial codes from important ideas from the datasets
Phase 3: Searching for Themes	Sorting and combining the codes to potential themes
Phase 4: Reviewing Themes	Refining candidate themes to ensure relevance to the research objective
Phase 5: Defining and Naming Themes	Establishing definitions of themes
Phase 6: Writing The Report	Writing cohesive narrative and final analysis for the research objective

The first phase began with collecting the video or sound recordings from the nine interviews that have been conducted. The recordings are organized in one folder by naming them according to the company name to make identification easier. Transcription of the conversations was already done along with the recording of the conversations using the transcription feature in Microsoft Teams. The transcription files are also organized in the same manner as the recordings. However, since the word-by-word accuracy of the transcription feature from Microsoft Teams is not entirely accurate, in this phase the transcription results were also corrected manually by listening to the recording and matching and correcting what is stated on the transcription. Finally, once all the transcription were corrected, the author read each transcription file to be familiar with the dataset. This phase helps in identifying initial codes and forming important ideas from each interview.

In the second phase, after familiarizing oneself with the data, an initial list of important and interesting ideas was made. From that list, initial codes were produced to identify features of the data which are interesting and related to the research objective. Starting from this point, Microsoft Excel was used to assign codes to the dataset to help with sorting the code for the next step.

In the third phase, once codes for each interview result have been generated the author has a list of different codes. In this phase, the codes were analysed and sorted into potential themes. The author chose to do manual mapping of the code where the name of each code and a brief description were written in separate paper, and from there began organizing the codes into potential theme. From there the iterative thinking process of the relationship between codes and themes begun. At the end of this process, the author has a collection of candidate themes along with their related codes and the extracts of data related to the codes to construct the overall story about the data.

In the fourth phase, the collection of themes was reviewed. An in-depth analysis of themes is performed to ensure they correspond with the fundamental nature of the data and their relevance to the study objectives. The objective of this phase is to bring together collections of themes that corelate to the organizational strategies of the companies in compliance with CBAM, as well as challenges and business impacts that it entails.

In the fifth phase, the author identified and further defined the themes that will be showcased in the analysis and examined the data within these themes. The author pinpointed the core nature of each theme and determined which part of the data each theme represents. Definitions were created for each emerging theme that represent the information inside the dataset. This phase is essential because it improves the clarity and coherence of the analysis, making it simpler for readers to understand the main arguments being made.

In the last phase, the identified themes were developed into an integrated and cohesive narrative. The narrative employs selected segments or extracts of the data to effectively showcase and support each theme. The presented narrative covers the company strategies for compliance with CBAM, considering their view on the importance of being compliant with the regulations as well as the obligations it entails as part of their compliance. In the end, the narrative is closed by discussing how the company’s strategy for compliance affects the company itself and its business.

Chapter 4: Research Findings

4.1. Motivation to CBAM Compliance

As mentioned in the literature review, motivations towards compliance are the basis for a company to realize their compliance with a regulation. From the interview results, despite the limited impact of CBAM to the overall import activities from the participants' company, they still regard CBAM as an important regulation to adhere to. Most of the interview participants see compliance with CBAM as part of their entities' shared sense of moral obligations, which is in line with the theory of compliance motivations from the study of (Winter & May, 2001).

"*As good corporate citizen we want to comply with our various new rules and regulations, including the CBAM reporting*." (Company G)

However, from the interviews, an interesting finding was noted. Three out of nine companies see the importance of complying with CBAM because of its correspondence with other regulations that are currently being implemented by the EU, such as the Russia sanctions and the future of the EU's Union Customs Code. This finding is emphasized by Company F and Company I in their statement below,

"*Interestingly, we see the interconnectedness of this regulation (CBAM) to how we are safeguarding ourselves from items that are sourced from sanctioned countries. For example, many steel products are also subject to sanctions, like Russian sanction and there where you can see this interconnectedness in terms of like you need to know more information about certain products. Per se, it's not the same exact information that you need for CBAM, but still the effort that we do is to prove that certain goods don't have the Russian origin materials.*" (Company F)

"*Because there is a broader view on compliance, also taking into consideration the draft of the future Union Customs Code, it is nevertheless as important as its compliance with general customs regulations and also export control regulations and sanctions regulations, because it all comes together at the end.* "(Company I)

4.2. Actions towards CBAM Compliance

In the literature review chapter, it was discussed that compliance with CBAM entails actions that need to be taken by the importers or companies. As CBAM is currently in its transitional phase, importers' obligations are limited to quarterly report submissions. Therefore, the questions asked to participants in relation to CBAM compliance were

mainly focused on CBAM reporting. To build the CBAM report, it was mentioned in the literature review that data collection needs to be done. It was concluded from the interview that the main data sets that the companies need to gather are the import data and the CO_2 emissions data. Company D highlighted that they need "*Import data which contains the HS code, shipment reports which contains quantities and the weight information, which is also part of the Customs declaration, but also you need to have net weight, for example, and that's not always available. We also need specific data elements like installation operator and emission values, and we don't have that data*". Import data is an important starting point in the creation of the CBAM report. HS code, or the Harmonised System code, is an international goods classification system developed by the World Customs Organization (WCO) containing around 5000 six-digit codes that precisely identify products (European Commission, n.d.). As CBAM is imposed on goods with specific HS codes, these codes that are present in the customs declarations can be used by the companies to filter and identify which items are impacted by CBAM as well as collect related information about the items. In addition, according to Company J, import data from the customs declarations is also a starting point for them to collect suppliers' data.

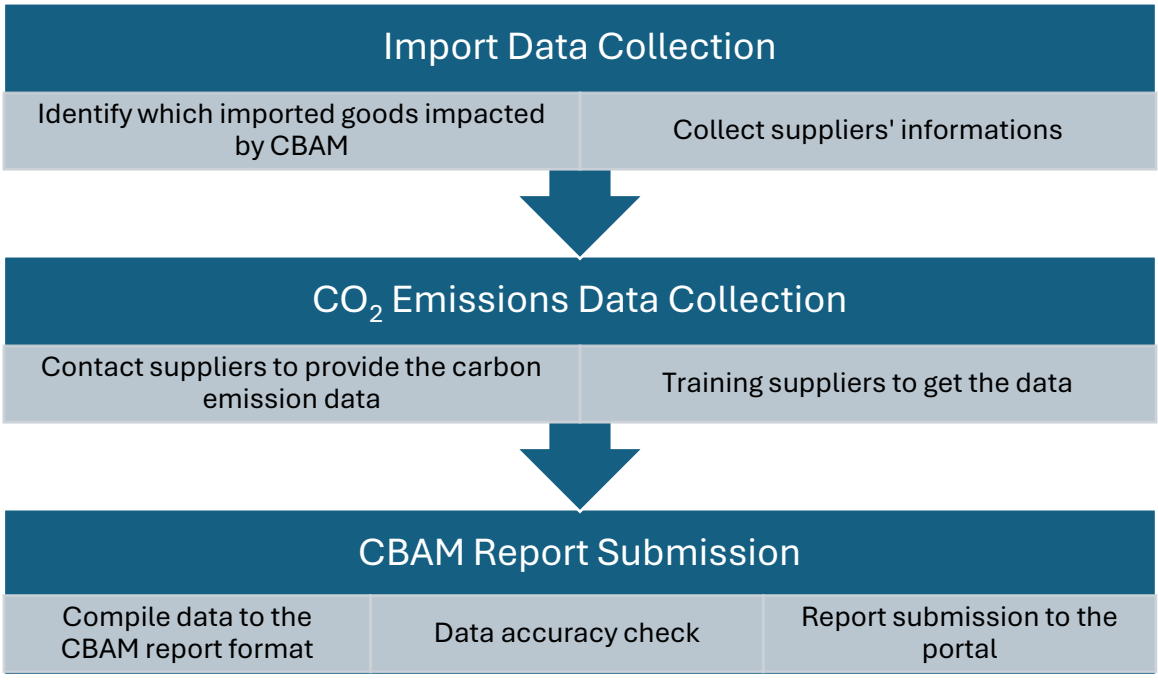

Figure 3. Summary of Actions Towards CBAM Compliance

Import Data Collection

For the first data set collection, which is the import data collection, the companies have different approaches depending on who submits their import declarations. Some that use brokers for their import declarations need to coordinate with their customs brokers as pointed out by Company G that "*since we don't declare the customs by ourselves, we engaged to the agents to get the data, and we will receive a report from the agent with information that we need for CBAM. We asked the agent to send the report monthly with the goods that declared and then basically based on this, we prepare our internal report*". Some who directly report the import declarations manually extract the data, as Company F mentioned "*We manually take the data out of the customs declarations*".

CO_2 Emissions Data Collection

As for the CO_2 emissions data, in the previous reporting periods, all companies that were interviewed are still relying on the default emission values published by the EU Commission. However, starting from the 31st of July 2024 companies will need to at least start to declare 80% the actual CO_2 emissions from the imported goods (Leclercq, 2024). To obtain this specific data, the companies are reaching out to their suppliers. Company C mentioned that "*we have the colleagues from global procurement in the team, they are chasing the operators (non-EU operators) to collect the emission data from them*". In collecting the emission data itself, most of these companies use the questionnaire template from the EU Commission as mentioned by Company F "*to obtain the CO_2 emission data, we had already reached out to the largest supplier with questionnaires from the EU Commission*" and some companies even took an extra effort to train their suppliers to get the data that they need as emphasized by Company D "*We are also collecting the EU Commission templates that has been sent to the suppliers and they (the supply chain team) are also training the suppliers to get the data*".

CBAM Report Submission

After data needed to report are extracted, the company needs to compile the data into a report with certain format and submit it to the CBAM declarant portal. Company F mentioned that "*The customs declarants are generating the data, so they're giving me lists of what has been imported and what has been subjected to CBAM. The Supply Chain Department would give me the data for which line items are going to be reported*

and Procurement would give me the data of which emissions belong to those line item. So, the trade compliance will kind of merge the data".

Prior to the report submission to the portal, a data accuracy check needs to be done to ensure the quality of the report. Although, from the interview the data accuracy check is currently still very limited to the items information that they provide because the report is still using the default value for the CO_2 emissions. In terms of the accuracy of the import data, the companies are either doing it manually or they already have a robust master data in place where they no longer need to check the accuracy of their import data.

"*Since we don't retrieve the data automatically, it's all manual. I go into the software of the customs declarations and retrieves the data from there. It should always match what we have declared on import*" (Company F)

"*We assume that the (import) data is correct because we have quite comprehensive database for the import data. As for CO_2 emissions data we are still using default value therefore we assume everything is correct as long as the HS code is correct*" (Company E)

In terms of the CO_2 emissions, some companies are still figuring out a way to organize a procedure to ensure the data accuracy because most of the companies are still focusing on how to get the data in complete manner or they have a third-party partner to help them perform sanity check on the data. After the data accuracy check has been done, the report submission can be done on the CBAM declarant portal.

"*At this moment, we are just at this stage that hopefully they (the suppliers) will provide the data, we are more focused just to make sure that the data is collected. The discussion that we have is we will add a contractual clause asking to basically to put the burden of data accuracy and completeness on the supplier. And then after that we will start moving to the next stage and trying to think about accuracy."* (Company G)

"*Third party (EY) helps us in doing the sanity check, but I also do cross-check to check that the parts that we reported we are actually importing it*" (Company D)

From here we start to see the collaboration among functions to reach compliance in the current CBAM transitional period. Functions performing the specific task differs in

each interviewed company depending on how the company structured their functions Differences in the setup will be addressed further in section 4.4.

4.3. Challenges in Action Taken to CBAM Compliance

From the interview results, the current heavy process that poses challenges to these companies is the collection of the CO_2 emissions of their imported goods from the suppliers in third countries as highlighted by Company E "*I would say the most challenging part comes because procurement need contact the suppliers to for the certain data*". Survey from Business Europe (2024) also mentioned the same about collecting emissions data from third-country suppliers. It was found that the challenges are multifaceted, hence the author categorizes the challenges into those that come from the supplier and the internal challenges that the companies face.

Supplier Challenges

There are two main reasons why collecting the data from the suppliers is challenging in this case. First many of these companies' suppliers are only the distributors, so they did not produce the goods, and the distributors need to reach out to the actual suppliers to get the data.

"*Our supply chain is really complex because this supplier, which is our prime supplier of screws and bolts, is kind of a distributor in the US. So, this distributor, the supplier is already saying if we have to do this, I don't think it's going to work because first of all, I am not producing anything, so they have to go to the actual producers.*" (Company E)

Second, if the suppliers are also the manufacturers, many times they don't have the data that is being asked for. Intriguing finding was noted, as can be seen from the statement of Company C below, that some of their suppliers even try to charge the company for collecting the emission data.

"*Also, some push back from the suppliers because they are not collecting the data that we asked so they don't have it. So, we have seen quotes from them that they want us to pay them to provide those data.*" (Company C)

In addition to the two main challenges, the complexity of the CO_2 emission data—both in obtaining and calculating it—also causes hesitation among suppliers to provide the data. There is also a case where the governments of the suppliers are also imposing

mandatory emission reporting, but the way the data is collected differs from how the EU wants the data to be presented.

"*We also received from the operators that did respond, we received many replies that they found this questionnaire too complicated to answer, and if they are required to enter the full questionnaire, it will simply take too much of the time and that's the second argument why they mentioned that they will not be able to answer what is being asked from them.*" (Company B)

"*In most countries there is certain emission reporting underway and for example in China there is mandatory emission reporting for industries, but there's a totally different basis and a totally different way of reporting and calculating those emissions (compared to CBAM). In no way you can break it down and reuse it and being done with the emission calculation template of the EU Commission. So, what these suppliers see is they need to do a totally independent new additional work of calculating*" (Company I)

Convincing suppliers to provide the data adds another challenge for the company because some of their suppliers may not primarily do business with European companies, and business with the EU might not be their biggest market. Thus, their hesitation in providing the data becomes understandable.

"*It's huge effort on their end then at least for us in our supply chain, we can say that we are not the single biggest customer of our suppliers and many of them don't have an extremely significant portion of their business with the European Union and if the supplier in China only makes less than 10% business with EU then they have little interest in investing too much effort, time and money into complying with a non-national regulations. So that's an additional challenge for us to convince the suppliers that our couple of million-dollar business should matter to them as well."* (Company I)

Nonetheless, even with many of these challenges faced by the importers in obtaining the CO_2 emissions data, the observed companies have yet to come up with concrete solutions on how they would overcome these problems. Some companies took extra effort by training and partnering with an external consulting firm to educate their suppliers on how to provide the data, some engaged with the higher management level of their suppliers to discuss how they can address this together, but others simply mentioned that they will stick to the default emissions value until they manage to obtain

the data or avoid importing CBAM goods from outside the EU. A survey from Business Europe (2024) shows that from the 1st reporting period of CBAM, 80% of respondents submitted their CBAM report using the default emission values issued by the EU Commission.

Internal Challenges

On top of the challenges coming from the supplier side, companies impacted by CBAM are also facing challenges from their internal organization also in terms of their data collection process. An internal issue that most of the companies face is the hesitance of assigned functions to take ownership of the data collection process, because, as we have seen in the previous section, contacting the suppliers comes with its own challenges. In addition, because CBAM has a considerably low *de minimis* threshold of €150, a significant number of transactions fall within the scope of CBAM, including low-volume trades like screws and bolts. This leads to disproportionately high compliance costs. Some companies, as well as the open letter issued by the International Chamber of Commerce (2024), highlighted that the effort and cost they need to put into obtaining the CBAM-related data are disproportionate to the amount of CBAM goods that they are importing.

"*The first issue that I have is to line up the people internally because I am not in contact with the suppliers. So, first of all, we have to get the procurement department, the right people in procurement to reach out to the suppliers and to get them to take some responsibility in it because they would like to have no responsibility*" (Company E)

"*The amount of effort that you put into it and the costs that that you put into it's not balanced with the purpose.*" (Company E)

Furthermore, depending on the specific business, the additional administrative task is also difficult for goods that these companies are not regularly importing. This issue is highlighted as well in the open letter issued by the International Chamber of Commerce (2024) and the interview participants. This issue could pose another challenge for the companies at the full implementation of CBAM where they needs to buy and surrender certificates, because in order to adhere to that the companies may need to forecast their CO_2 emissions from their imported foods to make sure they buy enough certificates to be surrendered.

"*It's like it's the minor thing, but on the other hand, it's basically this minor thing that might create troubles. We are in the offshore wind business and, for example, if the decision is made to procure huge pieces of the wind farm, let's say from the UK and we forget that there is CBAM, it will turn into big trouble. We are also a project base business of the company and so we are not buying the standard set of goods every time and it changes a lot. For us the portfolio of goods can differ so much, maybe this month it's not much but there might be a point where it can be big*." (Company F)

"*So, we do all the quarterly basis and data analysis of the imports that procurement knows about, and we informed the operating company saying OK according to us you have imported goods, and they should go to their customs brokers for the data. So, we prepared and data set for that as well. I think the risk that we have is that I cannot, at this moment, be fully sure that we cover all imports. So, we have different legal entities, for instance, in the Netherlands, and these legal entities could also import certain goods in small quantities. We have this commerce department and if they have a marketing activation and they need something, they might purchase 100K cans which we are not aware of*." (Company A)

4.4. Organizational Setup

From the interview results, there seems to be a consensus among the companies that they are all adopting cross-functional collaboration in reaching CBAM reporting compliance. Despite the same approach in complying with CBAM, the functions involved in each company differ slightly depending on task arrangements within the company itself. However, it was noticed that the involved departments have the same criteria for why they are involved in the process. As we can see in Section 4.2, there are multiple actions that the company needs to take to achieve CBAM reporting compliance: import data collection, CO_2 emissions data collection, and the CBAM report submission itself. Therefore, in this section, the thesis will present each function responsible for each task based on the three activity categories that have been created.

Table 6. Summary of Departments Involved in CBAM Compliance

Role in CBAM	Collaboration Activity	Criteria of Involved Department
Import Data Collection	Filter HS code which are impacted by CBAM	Access to customs declarations record or in contact with customs brokers

Role in CBAM	Collaboration Activity	Criteria of Involved Department
	Collect CBAM goods' related information (gross weight, net weight, quantity. Etc)	
	Collect supplier's information	
CO_2 Emissions Data Collection	Collect embedded emission data	Own and manage the relationship with the suppliers
	Collect indirect emissions data	
	Training/guide supplier to provide data needed	
CBAM Report Submission	Data compilation to CBAM report format	Affinity with CBAM report, customs portal (Netherlands) and/or have authorization to access the CBAM reporting portal
	Submit report to CBAM portal	
	Data completeness check	

Import data collection is mainly done by the function that directly has access to the customs declarations submission or the function that deals with the customs brokers, because they are already familiar with the data and know where to look for the information. CO_2 data collection is mostly done by the function that has a direct relationship or connection with the suppliers, because in many instances, the company has multiple suppliers, and familiarity with the stakeholders makes the process more effective.

The interesting finding in this section is on the CBAM report submission. Currently, each EU member state has different procedures for how importers can submit these reports. In the Netherlands, companies typically assign the task to a function familiar with the customs environment, as the CBAM report must be submitted through the customs portal using customs specific credentials. However, in other EU member states, different procedures are in place, leading companies to assign CBAM report submissions to various functions depending on the legal entity. Below, in table 7, are examples of functions involved in the current CBAM compliance process, the complete results can be found in Annex C.

Table 7. Functions Collaboration in CBAM Compliance

CBAM Related Activity	Collaboration Activity	Department Involved		
		Company C	Company D	Company E
Import Data Collection	Filter HS code which are impacted by CBAM	- Tax - Supply Chain	- Trade Compliance	- Trade Compliance - Supply Chain
	Collect CBAM goods related information (gross weight, net weight, quantity. Etc)			
	Collect supplier's information			
CO2 Emissions Data Collection	Embedded emission data	- Supply Chain	-Procurement	-Procurement
	Indirect emissions data			
	Training/guide supplier to provide data needed			
CBAM Report Submission	Data compilation to CBAM report format	- Tax	- Tax (Netherlands) - each legal entity has different function involved	- Trade Compliance
	Submit report to CBAM portal			
	Data completeness check	- Third party - Legal		

An important note from the findings in this section is that, despite the current organizational setup being seen as sufficient work around in fulfilling the reporting obligations, most of the companies have yet to define permanent organizational solutions for complying with CBAM. They mostly want to see first how the regulations will develop in the future before defining their standard practices for complying with CBAM.

"*Given the current limited scope of CBAM, it is practical to integrate CBAM procedures into existing ones rather than creating separate processes, avoiding unnecessary complexity and paperwork. The approach should adapt as the regulation evolves and standard practices develop*." (Company E)

"*We also decided to do a step wise approach. Let's first focus on the first 3 reports, then look at the other reports where we need to move to the actual values and then*

we do it step by step because also we see that the legislation is still changing, and we don't want to work too much towards the end goal." (Company C)

4.5. Challenges in Current Organizational Setup

As mentioned in the literature review, there are challenges that can hinder the success of cross-functional collaboration for a firm in reaching certain goals. In this case study, it was found that the challenges the company faces in their effort to comply with CBAM reporting are a lack of resources, a lack of sense of responsibility in the involved functions, and differences in priority among each function.

"*No one wants to do it because as you can imagine it's another administrative burden within the huge number of different laws and regulations imposed on the companies. The departments are a bit overwhelmed about a lot of the different compliance regulations, specifically with the requirements for the data collection and specific data that doesn't belong to us, and we don't own it.*" (Company F)

"*Procurement doesn't feel very responsible. Maybe because they don't need to report it, so they don't see the urgency. I think for the future that could be a problem but also because it's a lot of work.*" (Company E)

"*Different priorities in each team. So, dependency, in terms of data supply, is one of the problems. For example, right now I'm actually waiting on that weight of some of the products, but that's the only element missing before I can complete the reporting*." (Company C)

Interestingly, five out of nine companies mentioned that they face no issues with their cross-functional collaboration. The author then asked further about what made the collaboration go smoothly in their case. Company A said that they make sure each assigned function has enough time allocated to work on their portion of CBAM compliance. Company B mentioned that collaboration went smoothly because they have a project manager overseeing the CBAM compliance process, whose main task is ensuring the process is done properly and meeting deadlines. Company D and H mentioned that they started the to identify the process early in the beginning, ensuring they identified stakeholders as well as ensuring all stakeholders understand the importance of the compliance. Company I also noted that proactively establishing a compliance council with cross-functional representation to address upcoming EU regulations, supported by insights from their government relations team in Brussels

and a risk-based approach in prioritizing their compliance, has created a common understanding within the company to support the implementation of each regulation passed by the Commission.

4.6. Business Implications

The implementation of CBAM by the European Union consequently has business implications. As mentioned in Sections 4.3 to 4.5, CBAM adds another layer of administrative tasks on top of the already accumulating regulations that the company must adhere to. Furthermore, the effort and challenges involved in complying with CBAM may be disproportionate to the actual volume of CBAM-regulated goods in the company's overall imports.

One of the most frequently mentioned business implications by the interview participants is that materials sourcing might shift to more regional sourcing, meaning companies might prefer to source materials regionally from the EU to avoid the administrative burden, specifically for companies where CBAM has only a limited impact on their imported materials. However, it was also highlighted by Company F and Company A that sourcing within the EU is, again, constrained by who can produce the goods better and cheaper, as well as the availability of the goods.

"*What I already see just to make a parallel with Brexit, at certain point where we saw we have suppliers in the UK, but from procurement just because they don't want to deal with any customs in terms of like it's getting bit too difficult for them to obtain the information required for customs formalities or like they don't want to be involved (in the customs process), then they (procurement) said we will stick to the EU. Bottom line, just to avoid the administrative burden, we might see diversion in the trade relation from extra-EU to within intra-EU but at the end of the day it depends on the product that you need because maybe some other companies (outside EU) can do it better.*" (Company F)

"*I can imagine that you want to see whether you can import your goods more from the EU but there's also question what is cheaper?... But it also depends on where availability of the goods, and so if everybody says we are importing from within the EU, but everybody's importing its cans from the EU, then there will not be enough production capacity in the EU to do that.*" (Company A)

The alternative to shifting material sourcing from EU manufacturers/suppliers is that companies source the materials from EU distributors. Company E particularly pointed out that this could help ease the administrative burden while still allowing them to source goods that are only available outside the EU, and it could also create business opportunities for EU-based importers.

"*Normally you would buy them (the materials) within the EU, but because we are military (manufacturer), we have military items that have to be compliant with certain standards and sometimes they are US standards. So, then we must import them, for example from the U.S....We considered shifting our import orders from a U.S. distributor to a German distributor, who acts as a central distributor for the EU, to avoid dealing with CBAM complexities…. This scenario could create business opportunities for EU-based importers and distributors who handle such responsibilities."* (Company E)

An intriguing finding in this part is that Company I mentioned they are considering moving their value creation outside the EU to produce more finished goods, so they don't fall under CBAM regulations, which may not be the expected outcome of the CBAM implementation. This will be discussed further in Chapter 5.

"*We might be looking at either moving value creation outside, the European Union in order to come more to finished products that don't fall under CBAM regulation, which will have a negative effect on the European economy*" (Company I)

4.7. Sentiment Towards CBAM on Carbon Leakage Reduction

The sentiments towards CBAM implementation in reducing carbon leakage and promoting global decarbonisation within the observed companies are mixed. Some companies have a positive yet cautious perspective towards CBAM, some are neutral about it, and some have a negative outlook.

Company E emphasized their positive viewpoint towards CBAM, as it raises awareness of green initiatives and eventually encourages other countries to adopt similar measures. However, government actions from trading partners are significant in preventing ongoing carbon leakage.

"*The foreign factories that supply our CBAM goods have little incentive to invest in green alternatives since they face no penalties for not providing emission data, as they*

are not subject to EU laws. We, as customers, also cannot penalize them because we rely on their products. Without these factories investing in greener initiatives, carbon leakage will persist. The only viable solution is for the governments of these countries to take action. At the very least, the EU ETS/CBAM policy is raising awareness and may encourage other countries to adopt similar measures, potentially preventing carbon leakage over time, although this process could be very lengthy." (Company E)

On the other hand, Company E also thinks that the way CBAM is being implemented is not thoroughly thought in terms of the threshold and Company F is a little unsure about the outlook of CBAM and sees it more as a burden. While companies might shift their production to the EU to minimize CBAM-related burdens and the market is likely to adjust, many companies may seek ways to avoid dealing with CBAM by moving their value creation outside the EU unless it directly affects their core products.

"*It feels like it's not very well thought through in terms of a size of companies. I can imagine if you were an importer of steel that it's OK, but for us it's a red tape. It's more policy and procedural rules that are not really adding to anything in my opinion. Because in my opinion, if you look at the number of emissions for those couple hundred of screws, I don't really see the relevance. They have this minimum on when you have to report it. So, if it's below €150, then you don't have to report it, but ours are expensive because they are compliant to specific industry standards. So it's difficult to stay below that small amount. I would have rather seen that they had kept it set below a certain emission level instead of a certain price*." (Company E)

"*I would say it's hard to define it because, for example, we buy stuff like fasteners, bolts and nuts, they're subject to CBAM. But if we buy them together like we buy this as a module of an equipment then it's a different thing under the classification subject to CBAM. I believe the market will adjust in terms of like the business, it will adjust to the relatives of CBAM, but to me now it feels a bit that companies will just try to find the solution how not to deal with it because honestly I see that there is so much burden and unless of course it's your core product that you really need.*" (Company F)

4.8. Plan in Facing Higher Carbon Price

Starting from January 2026, importers of CBAM goods will need to buy and surrender certificates in accordance with their CBAM reports, and that means importing CBAM goods from outside the EU will cost more. Simultaneously, the reduction of free

allowances under the EU ETS is expected to drive up carbon prices, leading to higher costs for CBAM certificates. With 2026 being less than two years away, companies may need a plan to resolve the issue of paying higher carbon prices for imported goods to minimize the impact on their business.

The interview results indicate that companies have yet to establish a concrete plan to address this arising issue. Currently, some companies see that the most straightforward plan is to pass any increasing costs of importing CBAM-related goods on to the customers. However, most companies are either still in the discussion phase or have decided to wait and see how the regulations evolve before making any decisions.

"*In the end of the day, as a business, what you would like to do is to pass on these costs to your client. We are considering how to set up that in such a contractual way that if there is change on the ETS market in terms of price or in terms of regulatory updates, we will not end up in the situations that we as the company have to absorb this without it passing to our clients.*" (Company G)

"*So we are looking at the carbon cost. What we expected from carbon costs, how they will develop? What does that do with our investments? Where do you invest? Where do you allocate your investments? Price setting, things like that, we are looking into that now. All the departments are looking at this and I think that this not something to share what the conclusion are (right now) or what the strategies are or what we want to do, but this issue is on the radar.*" (Company A)

"*I mean, yes, we would pay higher prices for imports. We would pay higher prices even for products manufactured in the EU. Based on that, we'll see how it goes.*" (Company J)

Chapter 5: Analysis and Discussions

5.1. Introduction

This chapter discusses the research objective mentioned in Chapter 1. The objective of this study is to explore the current responses of EU manufacturing companies to the implementation of CBAM, with a particular focus on understanding how corporate firms in the EU are adapting their organizational structures to achieve compliance with the new regulations. In this chapter, the relevance of the research findings (presented in the previous chapter) to the research questions is addressed. The way this thesis addresses the relevance of the findings to the research objective is by dividing the discussion into four topics that correlate to the research questions.

Section	Topic	Research Questions
5.2	Compliance to CBAM	Why is compliance to CBAM important to corporate companies located in the EU?
5.3	CBAM Obligations	How is CBAM functioning?
		What kind of companies will be impacted by CBAM?
		What are the challenges faced by companies in in their effort to be compliant to CBAM?
5.4	Organizing CBAM Compliance	**How are the corporate companies within EU organizing themselves to make sure their compliance to CBAM?**
		What are the effects expected on a company located in the EU related to the implementation of CBAM?
5.5	Business Implications	What are the expected effects on the business climate in the EU from the introduction of CBAM?
		What are the company views on the long-term prospect of CBAM as a regulation to encourages global decarbonization efforts?
		To what extend have the companies planned to prepare for the prospect of having to pay higher carbon price for their imported goods in the future?

First, this thesis discusses the importance of compliance with CBAM for companies in the EU. This is an important starting point that needs to be observed, their willingness to be compliant with CBAM. If the companies are not willing to be compliant with CBAM, then we can expect that no action will be taken by these companies to reach compliance.

Next, know that we know what motivates this company to be compliance to CBAM, this thesis will look at what kind of obligations CBAM entails for the importers. Also in this part, challenges for the companies that come from the obligations will be discussed.

From here, we can start to identify who in the company can execute the obligation and how they can do it. This section addresses the main research question *"How are the corporate companies within the EU organizing themselves to make sure their compliance to CBAM?*". In organizing CBAM compliance, this thesis discusses the approach that the companies took to be compliant with CBAM and how the approach or changes can affect the companies.

Finally, under the business implication section, this thesis discusses about how the additional task incur from CBAM compliance will impact how companies are doing their business. In addition, the companies' opinion towards CBAM and their plan in facing higher import cost will also be discussed in this section to complement the research findings.

5.2. Compliance to CBAM

The literature review highlighted that nowadays the global business environment is exposed to a wide array of international and local regulations, making compliance essential to avoid significant legal and financial consequences. The risks of being non-compliant to a regulation can be in a form of substantial penalties, reputational damage, and increased scrutiny from authorities, all of which can have long-lasting negative impacts on a business.

According to Winter & May (2001), there are three primary motivations for compliance: calculated, normative, and social. While one might expect that compliance with CBAM would be driven by calculated motivations, given the legal penalties for unreported emissions, the research findings noted that a significant motivation to CBAM compliance from the companies being interviewed is coming from their shared sense of moral obligations (normative motivation) which mainly driven by the sense of duty and desire to do what is right according to their internal values and principles. However, it is important to note that this motivation may be biased, as the companies being observed in this thesis are only limitedly impacted by CBAM. Main driver for CBAM compliance may differ for companies which businesses are heavily impacted

by CBAM because then the financial stake for compliance is higher, non-compliance could pose them to higher penalties compared the companies being observed in this thesis.

On the other hand, the research finding also highlight that there are some companies which comply to CBAM but not based on the traditional motivations. Some companies see CBAM compliance as part of a bigger regulatory framework in the EU. This interconnectedness shows that of importance to CBAM compliance is not only about adhering to a single regulation but also about maintaining overall regulatory compliance and avoiding penalties across multiple regulations. By viewing CBAM within its broader context, the author thinks that the companies can streamline their compliance processes and address non-compliance issues across various regulations simultaneously. This perspective may also help companies avoid cumulative penalties from related regulations and drive the development of a robust compliance infrastructure that meets current obligations while anticipating and adapting to future regulatory changes.

In conclusion, the literature review and the research findings have emphasized the importance of compliance not only in the corporate environment but in the overall business domain. While the reasons for companies complying with CBAM vary, the findings indicate that the companies' perception of the importance to being compliant with CBAM are primarily driven by a normative sense of moral obligation, reflecting the companies' internal values and principles. However, it is important to recognize that this motivation may be influenced by the fact that CBAM has limited impact on the companies observed. Additionally, the findings that some companies view CBAM compliance as part of broader efforts to comply with other EU regulations highlight that the reason on why these companies want to be compliance with CBAM goes beyond the traditional motivation to compliance.

5.3. CBAM Obligations

5.3.1. Functions and Who is Impacted

The EU CBAM, as what has been discussed in the literature review, imposes carbon tariff on imported goods from outside EU corresponding to the carbon cost that would have been subjected to if the goods were produced within the EU. The carbon tariff will be represented by a certificate called CBAM certificates, which needs to be bought

and surrendered by the importers to the National Competent Authorities (NCA). With this mechanism, CBAM ensures that non-EU producers are subjected to comparable carbon costs as EU producers, who are subjected to EU ETS. This solution is also seen to discourage companies from relocating production to countries with less stringent carbon regulations to avoid the higher costs of carbon emissions within the EU.

In doing so, the EU set a *de minimis* value of €150 for goods to be imposed by CBAM to ensure that CBAM primarily applies to imports that have a more substantial economic and environmental impact. This means that any company involved in importing CBAM goods from outside the EU with a value exceeding €150 is subjected to CBAM. However, this also means that companies that import high-priced CBAM goods in small quantities will also be subjected to CBAM reporting and compliance requirements. As presented in Section 4.2, compliance with CBAM entails a set of obligations that companies need to adhere to, each of which may come with its own challenges. This could result in a significant administrative burden for companies that are only minimally impacted by CBAM, making the compliance process disproportionately costly and complex for low-quantity transactions that may not even have a significant economic or environmental impact.

With its mechanism, CBAM is also expected to encourage non-EU producers to adopt cleaner production practices. This way, in order to avoid paying higher carbon price, importers will choose a supplier or producer with a greener or more efficient production process, which indirectly pushes suppliers to adopt greener technology or methods of processing the goods. However, as noted in the findings in Section 4.3 on the challenges from suppliers, one of the key challenges is ensuring that EU businesses matter to them. The scale of business that EU companies have with these non-EU suppliers is an important factor that needs to be considered in achieving this goal. For example, if EU business is not significant to the suppliers, they may simply cut ties and focus on other companies that do not require them to bear the additional reporting burden. If this happens, the goal of encouraging cleaner production for non-EU suppliers could be difficult to achieve.

5.3.2. Challenges

Section 4.2 specifies the detailed steps that companies need to take to comply with CBAM. These actions are categorized into five actions: familiarizing themselves with the regulations, gathering data, submitting declarations, purchasing certificates, and keeping records of past declarations. However, because this thesis's main aim is to understand what is currently happening among EU manufacturing companies considering the recent CBAM implementation, it focuses primarily on the processes of data gathering and declaration submissions. According to the research findings, data gathering, especially CO_2 emissions data from third-party suppliers, is the most complex and time-consuming part. Challenges in obtaining CO_2 emissions data come not only from the suppliers' side but also from within the organization itself. A useful comparison is made in this section with customs compliance to further describe the complexity of data collection for CBAM. In both cases, companies follow a similar process: familiarizing themselves with the procedures, gathering data, and submitting declarations.

One of the primary challenges companies face in complying with CBAM is the difficulty in obtaining CO_2 emissions data from their third-country suppliers. As discussed in Section 4.3, the complexity of obtaining and calculating CO_2 emission data often leads to hesitance among suppliers to provide it. Furthermore, unlike customs compliance—where non-compliance from suppliers may have direct impacts on the trade and business operations for both sides—the incentives for complying with CBAM are lower for these suppliers. Suppliers outside the EU may not see immediate benefits or consequences from this regulation. If CBAM compliance is not critical to their business or if their trade with the EU is minimal, the incentive to fully comply is reduced, making CBAM less binding. Importers often have limited to no control over their third-country suppliers, making it more challenging to acquire the necessary data, which can only be provided by the suppliers or producers. If we compare the data used for customs declarations with what is needed for CBAM, we see that customs data—such as gross weight, value, and country of origin—is straightforward and quantifiable, it is clear how suppliers can provide the data. In contrast, CO_2 emissions data, which is required for CBAM declarations, is more complex and less tangible in terms of calculations.

To the best of the author's knowledge, there is currently no standardized carbon emissions accounting framework in the world. While there are established carbon

emissions accounting frameworks such as the GHG Protocol (Greenhouse Gas Protocol, n.d.) and ISO 14064 (ISO, 2018), variations across sectors, regions, and the scope of the emissions calculated still very much exist. As discussed in Section 4.3, this makes the data collection process for CO_2 emissions from third-country suppliers challenging. The lack of a globally standardized carbon emissions accounting framework may cause inconsistent data collected by suppliers. Variations in carbon emissions calculation and reporting methods across different regions and sectors can create discrepancies, making it difficult for companies to ensure that the data they report is accurate and compliant with CBAM requirements. Moreover, data required for customs purposes is usually linked to financial transactions between importers and suppliers. They are also usually already generated for other business purposes, such as invoicing and transport management. This makes customs data collection more efficient and aligned with the company's standard business operations, unlike CBAM, which introduces additional activities on top of regular operations for both importers and suppliers.

In addition to challenges from suppliers, companies impacted by CBAM also face internal organizational difficulties in CO_2 emissions data collection. Many companies struggle with getting assigned functions to take ownership of the data collection process because CBAM is not the only recent regulation passed by the EU Commission that impacts the companies being observed. There may be regulations that carry a higher risk of non-compliance compared to CBAM. This finding suggests that companies may perceive CBAM as having a lower compliance risk compared to other regulations since CBAM is only mildly impacting the companies observed in this thesis. However, seeing that some companies view CBAM as an interconnected element with other regulations within the EU regulatory framework, it may be useful for companies to integrate the CBAM process into their business processes to better prepare for future developments of CBAM.

Some companies also find that the effort and cost required to obtain CBAM-related data are disproportionate to the volume of CBAM goods they import. As mentioned in Section 5.3.1, CBAM could also apply to a company importing expensive CBAM goods in low quantities, which is the case for some companies observed for this thesis. However, some of these companies deal with very specific types of goods—such as goods with specific standards or patented goods—which can only be provided by a

limited number of suppliers, many of whom are non-EU suppliers. This makes alternative options, such as importing from within the EU, more difficult. This specific challenge emphasized that it may be necessary for these companies as industry stakeholders to have ongoing dialogue with the policymakers to further explore how to improve CBAM as a regulation to better accommodate businesses with specific needs.

Additionally, businesses that do not regularly import standard sets of goods, such as project-based companies, encounter difficulties in identifying CBAM-impacted goods, especially those imported in small or irregular quantities. Currently, this issue may not be significant for companies because their obligations are limited to reporting the CBAM goods they have imported. However, upon full implementation of CBAM, when certificates will also need to be surrendered in accordance with the amount of imported goods, this could become a significant issue. Companies will be required to surrender the necessary CBAM certificates by May 31 each year which cover the emissions from the previous calendar year (Damsté, et al., 2024) and they must maintain at least 80% of the necessary CBAM certificates in their accounts by the end of each quarter based on the emissions of goods imported since the beginning of the calendar year (Glowacki Law Firm, 2023). To manage this, companies will need to forecast the number of CBAM certificates they need to buy to ensure they purchase enough certificates in advance. However, the import irregularities may hinder them in creating accurate forecast for this purpose.

5.4. Organizing CBAM Compliance

5.4.1. Organizational Setup Towards CBAM Compliance

As the literature suggests, cross-functional collaboration entails aligning the diverse objectives of a company's functions for the benefit of the organization (Olson, et al., 1995). In this case of CBAM, cross-functional collaboration has proven useful in achieving compliance. The research findings in Section 4.4 indicate that companies are generally approaching CBAM compliance by adopting cross-functional collaborations. Although the specific functions involved in the process vary among companies, depending on their internal task arrangements, it was observed that the departments involved in each specific task share common criteria for their participation in the process. For instance, import data collection is typically managed by departments handling customs declarations, CO2 emissions data collection by those

managing supplier relationships, and CBAM report submission by departments familiar with customs procedures. These findings highlight that companies are customizing their compliance strategies to best utilize their internal resources by assigning different departments based on task-specific needs. At the same time, they emphasize the importance of each function's specific role in achieving efficiency in executing the tasks required for CBAM compliance. This approach is consistent with the view that cross-functional collaboration allows organizations to combine diverse perspectives and skills to tackle complex challenges effectively (Liu & Li, 2024).

In the literature review, it was also mentioned that several challenges in cross-functional collaboration can hinder its success, such as communication barriers, silo mentality, and conflicting priorities among departments (Lawrence & Lorsch, 1967; Kwan, 2019). While no apparent issues were found related to silo mentality and communication barriers, the challenges identified in collaboration towards CBAM compliance include a lack of resources, a lack of sense of responsibility, and differing priorities among functions, which evidently disturb the process of achieving CBAM compliance. However, this study also found that not all companies face issues in their collaborative efforts. These companies highlight the critical role of proactive preparation for upcoming regulations and the appointment of a project manager in ensuring smooth collaboration. By preparing in advance, companies can establish shared goals and determine how to achieve them, aligning all internal stakeholders with the set objectives. In addition, having a project manager ensures that there is someone within the company responsible for making sure that the internal stakeholders are committed to those goals.

Despite this collaborative approach, most companies have not yet established permanent organizational structures for CBAM compliance, preferring to adapt as regulations evolve. The interview participants mostly agree that further improvements are needed to achieve better efficiency. Companies are currently taking a step-by-step approach, integrating CBAM procedures into existing processes to avoid unnecessary complexity, while remaining flexible to future regulatory changes. The literature review emphasized that one of the challenges in complying with regulations is keeping up with frequent regulatory changes (Coglianese & Nash, 2020). Considering that CBAM was implemented less than a year ago, there is still a high possibility that the regulation

will change and evolve. In the author's opinion, this justifies the current approach that companies are taking to achieve CBAM compliance.

5.4.2. Impact to Companies in EU

Increased administrative burden: The additional set of activities that need to be done from the companies to reach compliance with CBAM adds an additional layer of administrative work for the company itself, specifically for the functions involved in the process. As different industries may require different approaches to compliance due to varying supply chain complexities and CBAM impact, companies may need to explore the best organizational setup they can use to approach CBAM compliance to ensure efficiency and effectiveness so that it does not disrupt their usual business process.

Resource allocation: In complying with CBAM, companies may also need to allocate significant resources to ensure compliance with CBAM, not only human resources to do the administrative job but also financial resources. In human resources allocation, companies must ensure that they have enough headcounts to do the current administrative work with their chosen organizational setup, as well as preparing for future administrative work because currently CBAM is only in its transitional phase, where compliance is only defined until the reporting obligations. Additionally, the companies need to also consider that CBAM is apparently not the only regulation that the company needs to adapt to; there are other regulations that may have as much or even more administrative work.

Moreover, upon full implementation of CBAM, buying and surrendering CBAM certificates may add another significant administrative work depending on the extent of how CBAM is impacting the companies' imported goods. In relation to buying the CBAM certificates, companies must also ensure that they have enough financial resources to buy the certificates. In addition, as mentioned in the research findings, companies are also arranging training for the suppliers as well as working together with external consulting parties to support their compliance with CBAM. Arranging these activities imposes companies on more additional costs, which means the companies must really prepare their financial resource planning towards CBAM compliance.

Supply chain restructuring: Referring to the challenges in complying with CBAM, the research findings emphasize that the main issue is the collection of CO_2 emissions data from suppliers and the extensive effort required to obtain this data. In response, companies might need to reconsider their supply chain strategies and make strategic adjustments to ensure they comply with CBAM or even avoid CBAM altogether to simplify their business processes. Companies may need to explore the implications of diversifying their supplier base to ensure they can access reliable CO_2 emissions data. As discussed in Section 4.6, some companies have diverted their material sourcing to within the EU to avoid challenges in obtaining CO_2 emissions data for CBAM. However, for companies dealing with specific goods with unique requirements, such adjustments may not be easily achieved due to limited sourcing options. This could also lead to higher costs if companies are forced to source from more expensive or less reliable suppliers to meet CBAM requirements.

Adaptability to regulatory changes: The research findings indicate that companies are cautious in their approach to CBAM, largely due to the expectation of future regulatory changes. As CBAM will most likely still undergo further development and is expected to expand in scope over time, companies need to be always aware of the regulatory changes and be agile enough to adapt to the changes to make sure their compliance with CBAM. Referring to the study of Coglianese & Nash (2020), the company may need to invest further in developing a robust compliance management system for continuous compliance, which may also be useful for CBAM. They may also need to consider how the future development of CBAM regulations might impact their operations.

Long-term organizational setting: From the research findings, cross-functional collaboration serves as a sufficient means to comply with the current CBAM reporting requirements. However, as the implementation of CBAM progresses, additional actions and administrative work may be required. Depending on the extent of how major CBAM impacted the companies, they may need to consider or prepare a more permanent organizational setup to ensure ongoing CBAM compliance, such as establishing dedicated CBAM compliance teams, integrating CBAM compliance into broader corporate sustainability initiatives, or even outsourcing CBAM compliance activities to third-party service providers.

5.5. Business Implications

5.5.1. Impact to EU Business

The implementation of CBAM by the European Union is expected to have significant business implications, primarily because it adds another layer of administrative tasks to the existing regulatory burden faced by companies in the EU. The most frequently mentioned business implication in this study is the potential shift towards more regional sourcing within the EU. Companies may prefer to source materials from within the EU to avoid the administrative complexities associated with CBAM, particularly when dealing with non-specific goods in small quantities from non-EU suppliers. This shift could strengthen intra-EU trade and possibly boost the EU economy, but it may also cause scarcity for high-demand materials. As highlighted by Company A in the findings, if many companies simultaneously move to source materials from within the EU, this could lead to supply shortages and increased costs due to limited production capacity. Furthermore, while this regional shift could simplify the CBAM compliance process by effectively avoiding it, it may also limit companies' ability to source the most cost-effective materials, depending on the specific needs of their production processes.

Another potential effect on the business climate is the creation of new opportunities for EU-based distributors and importers. As companies look for ways to simplify their CBAM compliance, EU distributors could seize this opportunity to expand their businesses and broaden their customer profiles. For example, Company E's possible strategy of shifting from direct imports from the U.S. to sourcing through an EU-based distributor illustrates how businesses might adapt to the new regulations by leveraging intermediaries within the EU to alleviate the compliance burden.

However, the findings noted a concerning potential outcome, as mentioned by Company I, which is the possibility of companies moving value creation outside the EU to avoid CBAM altogether by importing more finished products into the EU. On a large scale, this could result in a reduction in EU-based manufacturing and have a negative impact on the EU economy. This outcome is also the opposite of the intended goal of CBAM, which is to encourage cleaner global production. It could create global trade imbalances and undermine the EU's efforts to lead in global environmental standards.

5.5.2. Outlook for CBAM

The views of companies on the long-term prospects of CBAM as a regulation to encourage global decarbonization are varied, reflecting a mix of optimism and concerns about its implementation. Some companies see CBAM as a positive regulatory framework that can help encourage global decarbonization, but they believe it needs to be sustained by effective implementation and international cooperation. The success of CBAM in the long term will likely depend on how well it can address the concerns raised by the business community in the EU and on the EU governments' efforts to influence other countries on the importance of decarbonizing industries.

Conversely, the complexity of these regulations as applied to different businesses leads some companies to view CBAM more as an administrative burden than a meaningful driver of global decarbonization. The threshold for reporting, based on price rather than emission levels, can be seen as inconsistent with the goal of reducing emissions. This finding highlights the concern that, instead of driving change in decarbonization, CBAM may lead companies to strategize ways to avoid compliance, which could undermine the regulation's goals.

5.5.3. Company’s Future Plan on Increasing Carbon Price

The findings indicate that companies understand the upcoming challenge of the reduction of free allowances under the EU ETS, which will drive up the carbon price and result in higher costs for imported goods due to the implementation of CBAM. However, most companies have not yet established concrete plans to mitigate these costs or have not foreseen this challenge as something that needs immediate discussion.

The findings highlight that some companies, like Company G, are considering passing the price increase on to their customers. However, this approach carries risks such as potential customer pushback or even a loss of competitive advantage in terms of price. Meanwhile, some companies are choosing to wait and see how the regulation evolves before deciding on any measures to mitigate this challenge.

The lack of concrete plans to address the challenge of higher import costs suggests that companies might be inclined to take reactive measures rather than proactive ones, considering the nature of CBAM as a new regulation that is still subject to improvement and development. However, companies may need to consider that

delaying decisions while waiting for more regulatory clarity could result in hurried management strategies that may not be as effective or well-integrated into the company's long-term plans.

Overall, while companies are aware of the challenges that may arise from the increase in carbon prices, many have yet to move beyond preliminary discussions in addressing this issue. The extent to which companies have prepared for the increasing price of carbon is currently limited, with a few considering passing costs to customers, while most remain in a wait-and-see mode. To avoid being caught unprepared, companies may need to start developing and implementing strategies to handle these potential cost increases, ensuring they stay competitive as regulations change.

5.6. Limitations and Further Research

This study offers insight into how companies approach the CBAM compliance process within their organizations and how its implementation may impact them. However, there are limitations that need to be acknowledged. First, as the implementation of CBAM is still in its transitional phase, the compliance process observed in this study is not yet the full compliance process. This study only covers the compliance process up to the reporting of CBAM declarations; therefore, the results on how companies organize themselves and the challenges they face may not comprehensively cover the entire CBAM compliance process. Moreover, the interview participants are from companies that deal with specific goods, and CBAM has only a limited impact on them, which may introduce bias into the interview results. Second, this study is based on the current CBAM regulations, which are subject to change over time based on feedback from businesses across the EU. If significant changes are made to CBAM stipulations, parts of this study could become irrelevant in the future.

Further research could seek to identify best practices for companies in internalizing CBAM compliance by exploring how companies approach CBAM compliance upon its full implementation, focusing on the strategic, operational, and/or technological adjustments that companies might need to make. Additionally, further research could involve more companies with varying degrees of CBAM impact to make the study more comprehensive and holistic.

Chapter 6: Conclusion

The recent implementation of the Carbon Border Adjustment Mechanism (CBAM) has stirred up industries in the EU over the past year. As CBAM introduces a new layer to the EU regulatory framework that manufacturing companies must comply with, corporate entities are adjusting their organizations to internalize the CBAM compliance process. This thesis has explored how corporate companies within the EU are internally organizing their compliance with CBAM.

This thesis first examines the importance of CBAM compliance for EU companies, focusing on their willingness to comply with the first sub-research question “Why is compliance to CBAM important to corporate companies located in the EU?”. Generally, the companies’ motivation to comply with CBAM is largely driven by normative motivation, which is basically a sense of moral obligation that aligns with their internal values. Some companies also see the importance of complying with CBAM as part of a broader strategy to align with other EU regulations.

Next, we try to understand, “*How is CBAM functioning?*” and “*What kind of companies are impacted by CBAM?*” to build the case study. CBAM is basically an EU regulation that imposes a carbon tariff on several imported goods from outside the EU whose production emits intensive carbon. Any companies involved in importing the aforementioned goods whose value exceeds €150 will be subjected to this regulation. Currently, this regulation requires companies to submit CBAM declarations, detailing the embedded CO_2 emissions in their imported goods. In the future, they will be also required to buy and surrender the CBAM certificate corresponding to the amount of their declared embedded carbon emissions. From understanding how CBAM functions, we identify that there are five actions that companies need to take towards CBAM compliance—familiarity with regulations, data gathering, declarations submission, purchasing and surrender certificates, and maintaining details records—which, in a corporate company setting, may need to be done by different functions that handle specific tasks.

However, the interview results prove that the process of being compliant with CBAM is not easy. In response to the sub-research question, "*What are the challenges faced by companies in their effort to be compliant to CBAM?*", it was discovered that the primary obstacle to compliance with CBAM is the data gathering process, particularly

regarding CO_2 emission data. This challenge arises not only from the supplier side, but also from within the companies themselves. Challenges from the supplier side are mostly about how the suppliers do not have the data that are being asked for CBAM (either the suppliers are only a distributor, or they simply don't have the data) and the is the issue with the complexity of the data that are being asked which cause some hesitance from the suppliers to provide the data. While the internal challenges of the companies are about how the cost and effort exerted in obtaining the data are disproportionate to the amount of the goods impacted by CBAM and difficulties in identifying non-regular imported goods.

To answer the main research question of this study, "*How are corporate companies within the EU organizing themselves to ensure compliance with CBAM?*", it can be concluded that companies in the EU are generally adopting cross-functional collaboration in their efforts to comply with CBAM, optimizing their internal resources to make the process more efficient. However, the findings indicate that many companies are still in the early stages of integrating CBAM compliance into their business operations and have yet to establish long-term or permanent organizational structures. This reflects a cautious approach by companies in dealing with CBAM, considering the evolving nature of the newly implemented regulation and its interconnection with the broader regulatory framework of the European Union.

The implementation of CBAM poses several challenges for companies, specifically in adding administrative tasks for the companies' function. The next sub-research question, "*What are the effects expected on a company located in the EU related to the implementation of CBAM?*" identified the impact of CBAM to these companies. This thesis noted that on top of the additional administrative burden for the company, CBAM may affect companies by pushing them to be more strategic with their resource allocation, supply chain structure, and adaptability to regulatory changes, and the companies may also need to start thinking about how they can address CBAM with a more permanent organization structure.

As the implementation of CBAM poses several challenges for companies' operations, the next sub-research question addresses "*What are the expected effects on the business climate in the EU from the introduction of CBAM?*". It was concluded the business climate in the EU is expected to be significantly impacted, particularly in

terms of shifting material sourcing strategies within manufacturing companies where it is expected that companies will tend to source more materials from within the EU. Companies may need to strategically prepare for the upcoming full implementation of CBAM to ensure it does not disrupt their business in the future.

Answering the seventh sub-research question, "*What are the company views on the long-term prospect of CBAM as a regulation to encourage global decarbonization efforts?*" most of the companies have a positive opinion about CBAM, although they have some notes about how it could be better implemented and how the global decarbonization is also dependent on the trading partners. Finally, the last sub-research question, "*To what extent have the companies planned to prepare for the prospect of having to pay a higher carbon price for their imported goods in the future?*" provides us a little preview of how the company plans to face CBAM in the future. Overall, while companies recognize the challenges posed by rising carbon prices, many have not progressed beyond initial discussions to address the issue. Plans for facing the possibility of the increasing import costs remain limited, with some companies considering passing the costs to customers, while most adopt a wait-and-see approach.

As CBAM is still in its transitional phase, with significant changes potentially occurring in the future, this study provides a preliminary understanding on how companies approach CBAM compliance within their organizations. Further research could identify best practices for internalizing CBAM compliance by examining how companies adapt to its full implementation, particularly in terms of the strategic, operational, and/or technological adjustments required to ensure compliance.

References

Arjoon, S., 2006. Striking a Balance Between Rulesand Principles-based Approachesfor Effective Governance:A Risks-based Approach. *Journal of Business Ethics,* Volume 68, pp. 53-82.

Bayer, P. & Aklin, M., 2020. The European Union Emissions Trading SystemreducedCO2emissions despite low prices. *PNAS,* 117(16).

Belleti, E., Han, N. & Pérez, I., 2023. *Playing by new rules: How the CBAM will change the world.* [Online]
Available at: https://www.woodmac.com/horizons/how-the-cbam-will-change-the-world/
[Accessed 07 07 2024].

Bellora, C. & Fontagne, L., 2023. EU in search of a Carbon Border Adjustment Mechanism. *Energy Economics,* Volume 123.

Black, J. & Baldwin, R., 2010. Really responsive risk-based regulation. *Law & Policy,* 32(2), pp. 181-213.

Bowen, G. A., 2009. Document analysis as a qualitative research method. *Qualitative Research Journal,* 9(2), pp. 27-40.

Branger, F. & Quirion, P., 2014. Would border carbon adjustments prevent carbon leakage and heavy industry competitiveness losses? Insights from a meta-analysis of recent economic studies. *Ecological Economics,* Volume 99, pp. 29-39.

Braun, V. & Clarke, V., 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology,* 3(2), pp. 77-101.

Business Europe, 2024. *Carbon Border Adjustment Mechanism (CBAM) implementation - a BusinessEurope survey.* [Online]
Available at: https://www.businesseurope.eu/publications/carbon-border-adjustment-mechanism-cbam-implementation-businesseurope-survey
[Accessed 01 08 2024].

Coglianese, C. & Nash, J., 2020. Compliance Management Systems: Do They Make a Difference?. In: *Cambridge Handbook of Compliance.* D. Daniel Sokol & Benjamin van Rooij eds., Cambridge University Press, Forthcoming ed. Cambridge: Cambridge University Press.

Cramton, C. D., 2001. The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration. *Organization Science,* 12(3), pp. 346-371.

Cresswell, J. & Creswell, J., 2014. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* 5th ed. California: SAGE Publications.

Cresswell, J. W. & Plano Clark, V., 2011. *Designing and conducting mixed method research.* 2nd ed. s.l.:Thousand Oaks.

Customs Administration of the Netherlands, n.d. *Carbon Border Adjustment Mechanism (CBAM).* [Online]
Available at: https://www.belastingdienst.nl/wps/wcm/connect/en/customs/content/carbon-border-adjustment-mechanism-cbam#:~:text=What%20phases%20are%20involved%20in,from%201%20January%202026

%20onwards)
[Accessed 23 07 2024].

Damsté, C., Banks, J. & Prepscius, J., 2024. *The EU Carbon Border Adjustment Mechanism (CBAM): Implications for supply chains.* [Online] Available at: https://www.pwc.com/gx/en/services/tax/esg-tax/cbam-supply-chain-imperatives.html#:~:text=The%20CBAM%20currently%20covers%20the,in%20of%20CBAM%20in%202034.
[Accessed 31 05 2024].

Deloitte, 2022. *EU Carbon Border Adjustment Mechanism (CBAM).* [Online] Available at: https://www2.deloitte.com/nl/nl/pages/tax/articles/eu-carbon-border-adjustment-mechanism-cbam.html
[Accessed 23 07 2024].

Edwards, J. & Wolfe, S., 2005. Compliance: A review. *Journal of Financial Regulation and Compliance,* 13(1), pp. 28-59.

EU Taxation and Customs Union, 2024. *Questions and Answers - Taxation and Customs Union.* [Online] Available at: https://taxation-customs.ec.europa.eu/system/files/2023-12/Questions%20and%20Answers_Carbon%20Border%20Adjustment%20Mechanism%20%28CBAM%29.pdf
[Accessed 20 06 2024].

European Commission, 2021. *Carbon Border Adjustment Mechanism: Questions and Answers.* [Online] Available at: https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661
[Accessed 24 06 2024].

European Commission, 2023. *European Climate Law.* [Online] Available at: https://climate.ec.europa.eu/eu-action/european-climate-law_en
[Accessed 27 02 2024].

European Commission, 2024a. *What is the EU ETS?.* [Online] Available at: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets/what-eu-ets_en
[Accessed 28 04 2024].

European Commission, 2024. *Carbon Border Adjustment Mechanism.* [Online] Available at: https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en#cbam
[Accessed 29 05 2024].

European Commission, n.d. *Harmonised System.* [Online] Available at: https://trade.ec.europa.eu/access-to-markets/en/content/harmonised-system-0
[Accessed 27 08 2024].

Eurostat, 2024a. *Businesses in the manufacturing sector.* [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Businesses_in_the_manufacturing_sector#Structural_profile
[Accessed 29 06 2024].

Eurostat, 2024b. *International trade in Goods.* [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_in_goods
[Accessed 29 06 2024].

Fiene, R., 2023. *Importance of the Theory of Regulatory Compliance.* [Online] Available at: https://medium.com/@rickfiene/importance-of-the-theory-of-regulatory-compliance-8335b3a5fbc
[Accessed 19 07 2024].

George, T., 2021. *Exploratory Research | Definition, Guide, & Examples.* [Online] Available at: https://www.scribbr.com/methodology/exploratory-research/
[Accessed 2024 07 28].

Glowacki Law Firm, 2023. *CBAM certificates.* [Online] Available at: https://emissions-euets.com/cbam-certificates
[Accessed 18 8 2024].

Greenhouse Gas Protocol , n.d. *About Us.* [Online] Available at: https://ghgprotocol.org/about-us#:~:text=Greenhouse%20Gas%20Protocol%20provides%20standards,and%20manage%20climate%2Dwarming%20emissions.
[Accessed 18 8 2024].

ING, 2023. *How the EU's carbon border tax will affect the global metals trade.* [Online] Available at: https://www.ing.com/Newsroom/News/How-the-EUs-carbon-border-tax-will-affect-the-global-metals-trade.htm
[Accessed 11 02 2024].

International Chamber of Commerce, 2024. *Open letter on the Carbon Border Adjustment Mechanism (CBAM).* [Online] Available at: https://iccwbo.org/news-publications/statement-letters/open-letter-on-the-carbon-border-adjustment-mechanism-cbam/
[Accessed 23 06 2024].

ISO, 2018. *ISO 14064-1:2018.* [Online] Available at: https://www.iso.org/standard/66453.html
[Accessed 18 8 2024].

Jamshed, S., 2014. Qualitative research method-interviewing and observation. *J Basic Clin Pharm,* Volume 5, p. 87–88.

Jones, G. R., 2013. Designing Organizational Structure: Specialization and Coordination. In: *Organizational Theory, Design, and Change.* Essex: Pearson Education, pp. 170-197.

Karpoff, J. M., Lott, J. R. & Wehrly, E. W., 2005. The Reputational Penalties for Environmental Violations: Empirical Evidence. *Journal of Law and Economics,* Volume 68, pp. 653-675.

Kuckartz, U., 2019. Qualitative Text Analysis: A Systematic Approach. In: G. Kaiser & N. Presmeg, eds. *Compendium for Early Career Researchers in Mathematics Education.* Cham: Springer Open, pp. 181-197.

Kwan, K., 2019. *Breaking Down Silo Mentality: Strategies for Enhanced Team Collaboration.* [Online]
Available at: https://deepimpactonline.com/silo-mentality/
[Accessed 04 07 2024].

Lawrence, P. R. & Lorsch, J. W., 1967. Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly,* 12(1), pp. 1-47.

Leclercq, J., 2024. *EU's CBAM: What do you need to do before July 2024 to avoid penalties for non-compliance?.* [Online]
Available at: https://www.dnv.com/supplychain/thought-leadership/eus-cbam-what-do-you-need-to-do-before-july-2024-to-avoid-penalties-for-non-compliance/#:~:text=EU%20importers%20of%20products%20impacted,manufacturers%20from%2031%20July%202024.
[Accessed 08 06 2024].

Liu, C. & Li, C., 2024. Driving Innovation Through Knowledge Transfer and Cross-Functional Collaboration: Strategies for Enhancing Organizational Performance in a Competitive Environment. *Journal of Economic and Business Studies,* 6(1).

Monjon, S. & Quirion, P., 2011. A border adjustment for the EU ETS: reconciling WTO rules and capacity to tackle carbon leakage. *Climate Policy,* 11(5), pp. 1212-1225.

Mörsdorf, G., 2022. A simple fix for carbon leakage? Assessing the environmental effectiveness of the EU carbon border adjustment. *Energy Policy,* Volume 161.

Naeem, M., Ozuem, W., Howell, K. & Ranfagni, S., 2023. A Step-by-Step Process of Thematic Analysis to Develop a Conceptual Model in Qualitative Research. *International Journal of Qualitative Methods,* Volume 22.

Nordhaus, W., 2015. Climate Clubs: Overcoming Free-riding in International Climate Policy. *American Economic Review,* 105(4), pp. 1339-1370.

Oliver Wayman, 2023. *CARBON BORDER ADJUSTMENT MECHANISM (CBAM).* [Online]
Available at: https://www.oliverwyman.com/our-expertise/solutions/3d-carbon-accounting/insights/carbon-border-adjustment-mechanism.html
[Accessed 28 07 2024].

Olson, E., Walker, O. & Ruekert, R., 1995. Organizing for effective new product development: The moderating role of product innovativeness. *Journal of Marketing,* 59(1), pp. 48-62.

Patton, M. Q., 2002. *Qualitative Research & Evaluation Methods: Integrating Theory and Practice.* 3rd ed. Thousand Oaks: Sage Publications.

Pauw, P., van Schaik, L. & Cretti, G., 2022. *The CBAM Effect: how the world is responding to the EU's new climate stick,* s.l.: Clingendael.

Rocchi, P., Serrano, M., Roca, J. & Arto, I., 2018. Border Carbon Adjustments Based on Avoided Emissions: Addressing the. *Ecological Economics,* Issue 145, pp. 126-136.

Saunders, M., Lewis, P. & Thornhill, A., 2019. *Research Method for Business Student.* 8th ed. s.l.:Pearson.

Schaubroeck, R., Tarczewski, F. H. & Theunissen, R., 2016. *Making collaboration across functions a reality.* [Online] Available at: https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/making-collaboration-across-functions-a-reality#/ [Accessed 04 07 2024].

Scholz, J. T., 1991. Cooperative Regulatory Enforcement and the Politics of Administrative Effectiveness. *The American Political Science Review ,* 85(1), pp. 115-136.

Terry, G., Hayfield, N., Clarke, V. & Braun, V., 2017. Thematic analysis. In: C. Willig & W. S. Rogers, eds. *The SAGE Handbook of Qualitative Research in Psychology.* London: Sage Publications, pp. 17-37.

Thomson Reuters, 2023. *2023 Cost of Compliance Report: Regulatory burden poses operational challenges for compliance officers.* [Online] Available at: https://www.thomsonreuters.com/en-us/posts/investigation-fraud-and-risk/2023-cost-of-compliance-report/ [Accessed 24 07 2024].

Ugwu, C. N. & Eze Val, H., 2023. Qualitative Research. *Journal of Computer and Applied Sciences,* 8(1), pp. 20-35.

Weitzman, M. L., 2014. Can Negotiating a Uniform Carbon Price Help to Internalize the Global Warming Externality?. *Journal of the Association of Environmental and Resource Economists,* Volume 1, pp. 29-49.

Winter, S. C. & May, p. J., 2001. Motivation for Compliance with Environmental Regulations. *Journal of Policy Analysis and Management,* 20(4), pp. 675-698.

Yin, R. K., 2014. How to Know Whether and When to Use the Case. In: *Case Study Research: Design and Methods.* Thousand Oaks: SAGE.

Zhong, J. & Pei, J., 2022. Beggar thy neighbor? On the competitiveness and welfare impacts of the EU's proposed carbon border adjustment mechanism. *Energy Policy,* Volume 162.

Annex A

No.	**Action**	**Items**
1	Introduction	Appreciate the time that they make
		Name
		Student at EUR doing master thesis
		General outline of the thesis
2	General Information	Asking permission to record
		Interview participants details will be kept anonymous in the thesis
		Interview structure: 60 minute and semi-structured
3	Introduction	Please, could you give me a brief introduction of yourself, title, role, and primary responsibilities?
4	Main Interview	**See word document (Annex B)**
5	Closing	Is there anything that you want to ask?
		Are there any points that you want to elaborate further regarding CBAM that you think is important?
		Can I approach you if I have follow-up questions?
		Thank you for your time and your insight about CBAM. I can share the insights of this study with you if desired. I will also share the transcript/excerpt of this interview for verification.

Annex B

Interview Questions

1. What is the relative importance of CBAM compliance for the company (in terms of materials that are covered under the regulation?
    - What is percentage of CBAM impacted goods compared to total import? / Is CBAM impacting majority of goods or materials that you imported?
    - If the CBAM impacted goods are very small, does compliance to CBAM still important for the company?
2. Before the enforcement of CBAM, which department is responsible for the trade compliance?
3. Which data set the company need to make up CBAM declaration? (e.g product data, customs data) do you also extract data from customs declarations for CBAM reporting?
    - What actions or steps the company needs to do to gather data needed for CBAM reporting? And who does the data collection?
    - Can you please describe the specific challenges in collecting the data set needed for the make-up of the declaration?
    - How does the company handle the issues encountered in the data collection process?
4. How does the company currently handle the CBAM reporting/declaration?
    - Which department has primary responsibility for the reporting/declaration? Why?
    - Which other department involved in the report creation? Is there any particular reason that department needs to be involved?
    - How does the company ensure the data accuracy for the declaration?
    - Who is responsible in ensuring the data accuracy of the declaration?
5. What/How is the current organizational setup in CBAM compliance? (e.g department that focuses on CBAM, cross-functional collaboration)
    - What are the issues encountered in the current organizational setup?
    - How does to company deals with the issue? (If no issue, how does the company ensure the smoothness of the collaboration?)
    - Do you see the current setup as a robust solution in handling the reporting? Please elaborate your answer (please ask also about the CBAM certificate purchase)
6. Reflecting on how the company handle CBAM reporting, what differentiate CBAM compliance to traditional trade compliance (e.g customs)?
    - As a company, do you consider CBAM compliance as part of a trade compliance or other types of compliance (e.g sustainability)?
7. From the point of view of your company, does CBAM have or could have any effects the business climate in EU in the future? (e.g business expansion or growth, competitiveness)
8. The long-term plan for CBAM is related to the gradual reduction of EU ETS free allowances overtime. This approach was seen to encourages global decarbonization efforts and helps prevent carbon leakage. As a company, do you think this policy will work in the long run to actually prevent carbon leakage?
9. The reduction of free allocation of allowances under EU ETS is expected to drive the carbon price up, which also mean increasing price of CBAM certificate. Has the company thought about the plan to resolve this issue of paying higher carbon price for the imported goods? If yes, could you please help to elaborate more about the plan?

Annex C

Table 8. Departments Involved in CBAM Compliance Process (1)

CBAM Related Activity	Data/Collaboration Activity	Department Involved				
		Company A	**Company B**	**Company C**	**Company D**	**Company E**
Import Data Collection	Filter HS code which are impacted by CBAM	Tax	- Transportation - Trade Compliance	- Tax - Supply Chain	- Trade Compliance	- Trade Compliance - Supply Chain
	Collect CBAM goods related information (gross weight, net weight, quantity. Etc)					
	Collect supplier's information					
CO2 Emissions Data Collection	Embedded emission data	- Procurement - Facility Maintenance	-Procurement	- Supply Chain	-Procurement	-Procurement
	Indirect emissions data					
	Training/guide supplier to provide data needed					
CBAM Report Submission	Data compilation to CBAM report format	- Tax (Netherlands) - Procurement - each legal entity has different function involved	- Tax (Netherlands) - each legal entity has different function involved	- Tax	- Tax (Netherlands) - each legal entity has different function involved	- Trade Compliance
	Submit report to CBAM portal					
	Data completeness check			- Third party - Legal		

Table 9. Departments Involved in CBAM Compliance Process (2)

CBAM Related Activity	Data/Collaboration Activity	Department Involved			
		Company F	**Company G**	**Company H**	**Company I**
Import Data Collection	Filter HS code which are impacted by CBAM	- Trade Compliance	(not mentioned)	- Planning and Delivery - Finance	-Trade Compliance
	Collect CBAM goods related information (gross weight, net weight, quantity. Etc)				
	Collect supplier's information				
CO2 Emissions Data Collection	Embedded emission data	- Supply Chain	(not mentioned)	- Procurement	- Procurement
	Indirect emissions data				
	Training/guide supplier to provide data needed				
CBAM Report Submission	Data compilation to CBAM report format	- Trade Compliance	- Trade Compliance	- Tax and Customs	- each legal entity has different function involved
	Submit report to CBAM portal		- Tax		
	Data completeness check		- Third Party		- Third Party