Financial risks and risk management in the banking sector during uncertain period

Nordea Bank Abp

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Tiivistelmä

Vuonna 2020 COVID19-pandemian puhkeaminen pakotti instituutiot, kuten maat ja yritykset, sopeutumaan uusiin toimintaympäristöihin. Kaksi vuotta vuoden 2020 jälkeen Euroopassa, Ukrainassa, Venäjän federaatio aloitti täysimittaisen hyökkäyssodan. Nämä tapahtumat ovat muuttaneet geopoliittista ja taloudellista ilmapiiriä niin Euroopassa kuin maailmanlaajuisestikin. Näiden tapahtumien vuoksi tutkija näki tarpeelliseksi tutkia, miten Pohjois-Euroopan suurin pankki, Nordea Bank Abp, oli ottanut huomioon muuttuneen toimintaympäristön riskienhallintapolitiikassaan.

Kirjailijan tavoitteena oli tutkia, mitä riskejä Nordea Bank Abp tunnisti epävakaana ajanjaksona 2020-2022 ja miten se hallitsi näitä riskejä. Kirjailija halusi selvittää, vaikuttivatko COVID19-pandemia ja sota Ukrainassa Nordean suojauspolitiikkaan, jotta Nordea selviäisi mahdollisimman hyvin haastavina ja epävarmoina aikoina.

Tutkimus suoritettiin lähes kokonaan hyödyntäen laadullista tietoa Nordean raporteista, jotka käsittelivät sen pääoman ja riskienhallintaa vuosina 2020-2022. Joitakin määrällisiä tietoja käytettiin myös tulosten täydentämiseksi.

Nordean julkaisemat tiedot osoittivat, että vuosien 2020-2022 aikana tunnistetut riskityypit ja niiden hallintamenetelmät säilyivät pääosin samoina. Pankki toi esille COVID19-pandemian useita kertoja, mutta Euroopan sotaan viitattiin vain vähän pankin pääoman ja riskienhallinnan raportissa vuodelta 2022.

Nordean julkaisemat tiedot viittasivat useisiin erilaisiin tunnistettuihin riskityyppeihin ja suojautumismenetelmiin, joissa ajoittain esiintyi samankaltaisuuksia tutkijan laatiman kirjallisuuskatsauksen kanssa. Lisäksi tiedot viittasivat siihen, että COVID19-pandemialla oli merkittävä vaikutus Nordean riskienhallintaan vuodesta 2020 eteenpäin. Kuitenkin huolimatta siitä, että pankki sijaitsee lähellä imperialistista entistä Neuvostovaltaa, joka pyrkii liittämään eurooppalaisen maan, Nordealla ei ole ollut merkittäviä konkreettisia vaikutuksia riskienhallinnassaan Ukrainan sodan vuoksi, vaikkakin pankki on tuonut sodan olemassaolon esille.

Avainsanat (asiasanat)

Taloudellinen riski, Riskienhallinta, Nordea Bank Abp, COVID19-pandemia, Pankkisektori, Luottoriski

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Abstract

In 2020, the outbreak of COVID19-pandemic forced institutions, such as countries and corporations, to adapt to new operating circumstances. Two years after 2020, a war broke out in Europe, Ukraine, unprovokedly started by the Russian federation, which changed not only geopolitical and economic atmosphere in Europe but also worldwide. Due to these events, the author saw it necessary to investigate, how has the biggest bank of Northern Europe, Nordea Bank Abp, considered a changed atmosphere it has been operating in related to its risk management policy.

The objectives for the author were to examine, what risks did Nordea Bank Abp recognize during unstable period of time 2020-2022 and how did it manage the risks. The author wanted to see whether the COVID19-pandemic and the war in Ukraine made Nordea to adjust their hedging policy in order to survive as well as possible given the challenging, uncertain times.

The research was conducted almost fully utilizing qualitative information, given the nature of information provided by Nordea in its Capital and Risk Management Reports from the years 2020-2022. Although, some quantitative data was also utilized to supplement the results.

The information provided by Nordea showed that during the years 2020-2022, the recognized risk types and the methods of managing remained mostly identical. COVID19-pandemic was brought up multiple times by the bank, but the war in Europe was discussed only a little during the bank's Capital and Risk Management Report 2022.

The information provided by Nordea showed multiple different recognized risk types and hedging methods, which from time-to-time beared resemblance to the author's literature review. Also, the information suggested that the COVID19-pandemic significantly influenced Nordea's risk management onwards 2020. However, despite being situated near an imperialistic, post-Soviet state attempting to annex a European country, Nordea has not had substantial tangible effects linked to its risk management due to the war in Ukraine, while the bank still has addressed the war.

Keywords/tags (subjects)

Financial risk, Risk management, Nordea Bank Abp, COVID19-pandemic, Banking sector, Credit Risk

Miscellaneous (Confidential information)

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1 Introduction

From 2020 the world has seen unprecedented and unfortunate events. It all began with the emergence of the COVID-19 pandemic. The pandemic first surfaced in 2020 and continues to exert its influence even as we approach the year 2024. Then, on 24th of February 2022, the Russian Federation started a full-scale war of aggression against Ukraine, a sovereign nation in Europe. These kinds of events have obviously had implications on, for instance, global economy and geopolitical atmosphere and have prompted nations and organizations to adapt, collaborate, and reassess their strategies in the face of these unprecedented disruptions.

With 594,844 million euros in assets in 2022 (Annual report, 2022), Nordea Bank Abp is the biggest private banking institution of northern Europe. Nordea is headquartered in Helsinki, Finland and Finland has the longest border with the Russian Federation of any EU-member states (Manenkov & Grits, 2023). Considering the COVID-19 pandemic mentioned earlier and that Nordea's headquarters is located right next to an aggressive, imperial country, it goes without saying that Nordea has been forced to assess the risks these events possess to its business. This thesis' purpose is to analyze risks that affected Nordea, Nordea's risk management tools, and hedging policy during 2020-2022.

1.1 Motivation for research

The motivation for the author to base the bachelor's thesis on the subjects of financial risks and financial risk management in the banking sector stems from the fact that e.g., the COVID19-pandemic is something that the world has not seen before during the modern times. This transformative event might have caused issues globally for indefinite period of time, most definitely resulting to the banking sector taking actions in their everyday operations and proactively considering issues they have not needed before, for instance unprecedented risks emerging from the pandemic.

The reason I chose Nordea Bank Abp as the object of my research transpires from the facts addressed above; its geographical location and the geopolitical atmosphere it operates in and since it is the biggest private bank of the northern Europe. Additionally, I have been Nordea's customer ever since I was legally able to both obtain a debit card and access to online bank services, so it is intriguing to analyze my personal banking service provider.

1.2 About Nordea Bank Abp

According to Nordea (n.d.), Nordea Bank Abp's (commonly known as Nordea) history can be traced back to 1820, when originally the first of the four banks merged to become Nordea, was founded in Copenhagen, Denmark. Nordea Bank operates in four countries in the Northern Europe; Norway, Finland, Sweden, and Denmark (n.d.). In 2001, Nordea was established by a merger of four Nordic banks; Unibank, Merita Bank, Kreditkassen and Nordbanken (n.d.)

The organization operates in four different fields of business: asset & wealth management, business banking, personal banking and large corporates and institutions, with the biggest field of business being personal banking in terms of quantity of employees and earnings (Who we are, n.d.). From a societal point of view, Nordea (n.d.) has stated that the three main areas they are focusing on are building financial wellbeing, enabling entrepreneurship, and increasing social belonging.

1.3 Structure of thesis

A figure, assembled by the author, depicting the structure of the thesis is the following:

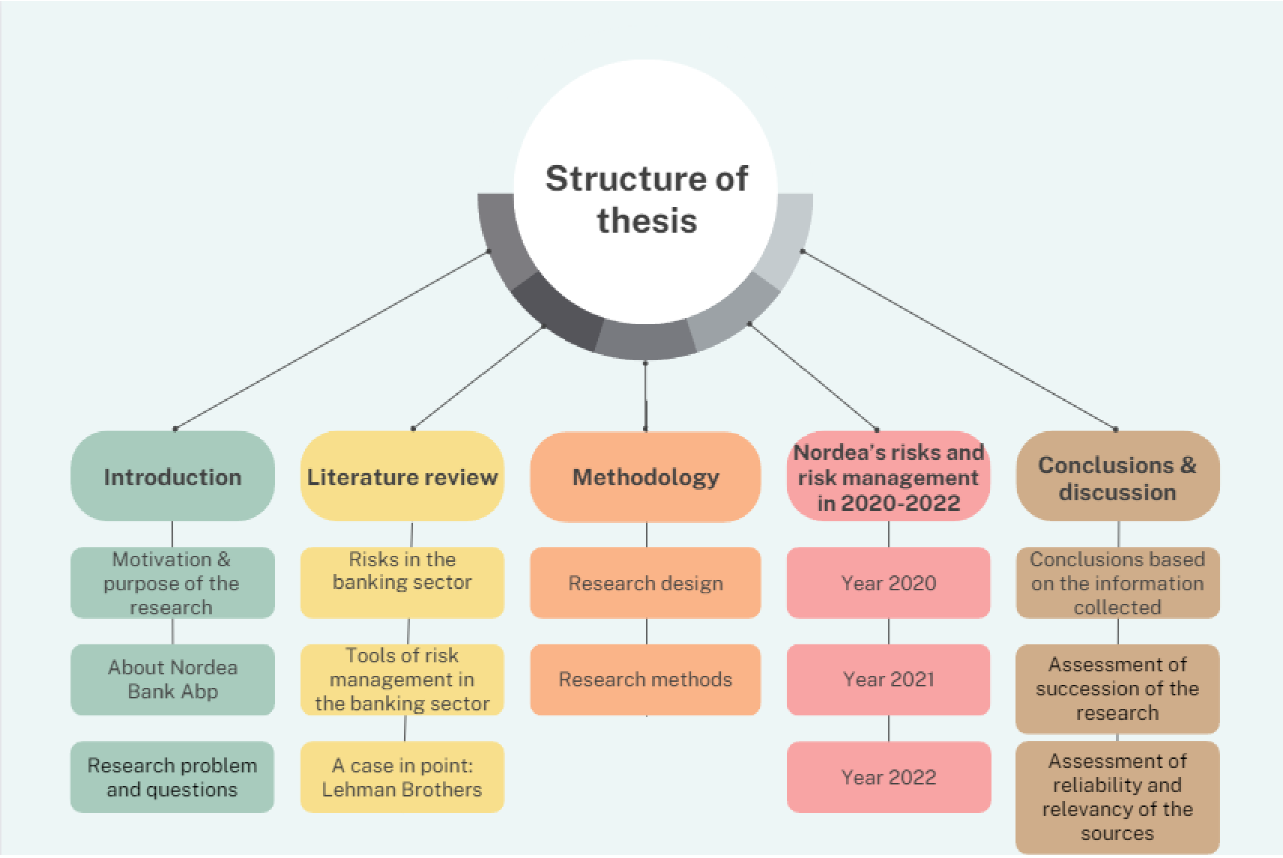

Figure 1. Structure of thesis, composed by the author

1.4 Research questions and the research problem

It is important to establish the main problem, which you are solving and the main questions, by which you will solve the problem, when conducting academic research. With that being said, for this research, the main research problem is the following:

- How did Nordea conduct its risk management during 2020-2022?

The current study has the following research questions:

1. What risks did Nordea face during 2020-2022?
2. How did Nordea manage the risks it faced during 2020-2022?

2 Risks & risk management in the banking sector

Before diving into Nordea's actions taken to mitigate the effects of the risks it has faced during 2020-2022, we must discuss the topic generally. In this chapter, there will be review academic literature, articles and research based upon our topic by first exploring the most common risks that banking sector faces, what methods are used in the banking sector to manage and hedge risks, and what implications these risks have on the banking sector, if not considered carefully.

2.1 Literature review - Risks in the banking sector

What does "risk" in general even mean? According to Cambridge Dictionary (n.d., para B2, para C1), risk is an English word, which describes, for instance, "the possibility of something bad happening or something bad that might happen". For banking sector, or the field of business in general, risk would mean something that when occurring, it could lead to simply loss of revenue and as known, banks' end game is to generate profits from revenue alike all other types of businesses. This chapter will embark on exploration of various types of common risks banks can face in their daily operations.

2.1.1 Credit risk

The business model of the consumer banking sector can be described as a fundamentally straightforward model, primarily revolving around the payment of funds in conjunction with a specified financing plan and a mutually agreed interest rate. Obviously, this framework is also applicable to business banking. In essence, the primary source of revenue for the bank are the interest payments collected from the borrowers (The Economic Times, 2016). The transaction's viability and success are fully linked to the borrower's solvency to make the loan payments to the bank, inclusive of the mutually agreed interest rate. Due to this, a prevailing and noteworthy challenge within the banking sector emerges, described as credit risk.

Credit risk is a diverse concern that is a crucial part of how banks work. According to Kanchu and Kumar (2013), there is always a chance that the customer may be unable to meet their financial obligations to the lending institution. This ominous factor of non-repayment creates a threat to the bank's revenue prospects. If a borrower defaults on their repayments, the bank is faced with an undesirable reality: a tangible reduction in its revenue, a situation that forces the institution to employ various risk mitigation and risk management strategies. This inherent weakness in the lending process emphasizes the need for adequate risk assessment, evaluation of creditworthiness, and the implementation of sustainable risk management methods to ascertain the financial stability and viability of the bank.

2.1.2 Market risk

As the Council of Europe Development Bank (n.d.) has described, market risk refers to the potential of financial losses resulting from unfavorable shifts or fluctuations in financial markets. One example of a market risk, which can have significant implications for the banking sector, is foreign exchange risk (Council of Europe Development Bank, n.d.).

Foreign exchange, sometimes referred to as forex, is a concept in finance, which means that one currency is bought (exchanged) with another currency, for instance dollars bought by euros (Lioudis, 2022). Forex is commonly classified as the biggest financial market in the world (DeRosa, 2011). If one was ever to visit a country for a holiday, and the destination country of the holiday uses different currency than one's home country, they would be obliged to participate with forex, if they wished to use cash. In the context of this thesis, this topic will be discussed throughout an example of two different banks from two different countries.

Imagine two different banking organizations, bank A and bank B. Bank A is based in Finland and bank B is based in the United States of America. Now, we know that bank A operates mainly using euros whereas bank B operates mainly using dollars. Now, imagine that the bank A would like to buy dollars with 10 million euros from the bank B. The two banks agree to execute this transaction in 30 days. The next part is crucial: the day the banks made the deal the foreign exchange currency rate was 1€=$1,08, which means that with 10 million euros the bank A would have received $10,8 million. Unfortunately, on the maturity date of the banks' deal, due to fluctuations in the market, the current exchange rate between euro and dollar is 1€=$1,05, which means that euro has depreciated against dollar (dollar has appreciated against euro), and bank A would receive only $10,5 million instead of $10,8 million. Since bank A did not hedge this market risk related to depreciation of euro, it "lost" $300 000. Luckily, there are tools for covering this type of risk, but they will be studied later.

2.1.3 Operational risk

Operational risks, as the name suggests, are risks related to a certain institutions or organization's operations. According to European Banking Authority (n.d.), operational risks can be elucidated as the vulnerability to financial setbacks arising from the shortcomings or breakdowns within a company's inner workings, its workforce, and its technological frameworks, or from unanticipated external circumstances and they also encompass risks associated to legal matters. It goes without saying that if a bank is not able to conduct its internal operations adequately, it eventually needs to take actions which are not crucial for its main business model, but which will still take time from the workforce.

For instance, if a bank neglects to train its employees properly, it can lead to remarkable consequences. It is likable that the poorly trained employees make mistakes which are required to be rectified in the future and which leads to inefficiency, since working hours are required to use towards fixing the mistakes compared to using the same hours working towards current work-related tasks. This kind of operational risk is caused by conducting an internal process (in this case familiarization) poorly, which has been listed as one typical cause of operational risk by Morgan (2021). Additionally, common examples of operational risk include situations where employees may try to steal from their employer (the bank) or situations where the bank's customers commit frauds or attempt to do so against the bank.

2.1.4 Reputational risk

Reputational risks are sort of linked to operational risks since both appear via the organization's operating actions. However, reputational risks are more specific risks (could be considered as subclass of operational risks). As the Office of the Comptroller of the Currency (n.d.) has stated, reputational risks are risks associated with unfavorable public sentiment. What makes reputational risks interesting in the context of this research is that this research aims to study a bank. A bank is known to be a provider of financial services and "Financial services comprise an array of special businesses. They are special because they deal mainly with other people's money." (Walter, 2010, p. 104). With that being said, if one starts to see their bank as immoral or spineless, their initial reaction would probably be strong, considering the speciality of the bank due to it taking care of their own money.

As mentioned earlier, currently there is an ongoing war in Ukraine, the Russian Federation being the aggressor and attacker of the said nation. Due to this, one can publicly want to dissociate itself from the Russian Federation, applicable especially to companies. Now, if it was revealed that a certain bank, based in Europe for example, had conducted business interactions with some Russian counterparties, the investors of the bank and all-around public audience would most definitely want to see that bank stopping the businesses linked to Russian counterparties, since by their tax rubles the Federation's government is financing their war of aggression towards Ukraine. If a certain banking institution would get caught of continuing their Russian related businesses, one could deduct that consumers could start boycotting it and investors could sell their equities and flee. Reputational risks are heavily tied to the way the public perceives and formulates mental image of matters related to the actions of an operator (a bank in this context), as the example explained clearly shows.

2.2 Literature review - Tools of risk management in banking sector

As the Wisconsin, United States of America based Marquette University has established it (n.d.), risk management is an ongoing procedure aimed at recognizing, scrutinizing, assessing, and addressing potential areas of loss, all while overseeing measures to control risk and financial assets in order to reduce the negative consequences of such losses. Now that there has been discussion about common risks banking institutions can face, it shall be assessed how these risks can be avoided or how the effects of the risks could be mitigated to the minimum.

2.2.1 Credit risk management

As discussed earlier, one potential risk which banks can face is credit risk. There are various methods of managing credit risks and mitigating their affection on the institution in question. A paper, authored by R.S. Raghavan and published in February 2003, discusses these various methods. Let us review two of the methods; "exposure ceilings" and "risk based scientific pricing" (Raghavan, 2003, p. 843).

According to Raghavan (2003), banks should consider a few prudential limits when granting loans. First, they should not loan more than 15% worth of their capital funds to individual loaners. On the other hand, the limit could be risen to 40% if the borrowing counterparty consists of a group of lenders. Raghavan (2003) also stated that all the money being lend should not add up to 600% to 800% of one's capital funds. Setting different and/or certain limits when loaning capital seems reasonable. Obviously, lending capital is always a risk for the lender, and there is a higher chance that not all counterparties from a group of borrower's default on their loan payments compared to a single borrower, hence one is able to lend more money to a group than to an individual. Also, one should always have a solid capital buffer, hence applying some limits is wise.

Raghavan (2003) has described risk based scientific pricing as basically knowing who you lend to and acting accordingly. For instance, when a bank gets a loan proposition, it should check the potential borrower's credit score in order to find out whether they have any history of defaulting on their payments when given credit. Also, Raghavan (2003, p. 843) has suggested that one should compose "historical data on default losses". This can be interpreted as the bank sketching customer profiles for different borrower candidates. Whether the borrower would be a company/companies operating in a volatile business or whether the borrower would be an individual, nine to five-working person whose income statements seem vague, the bank should have a framework in place for potential borrowers. For example, it could establish a specific interest rate at which it would be willing to offer a loan depending on the borrowers' financial background.

2.2.2 Foreign exchange risk management

Earlier, there was discussion about foreign exchange risk, a financial risk in the banking sector that can be classified as a market risk, related to fluctuations of currencies and changes in currencies valuations. This chapter will go through two different methods which can be used to mitigate the effects of fluctuations of currencies, forward contracts, and futures contracts.

Forward contract represents a private arrangement wherein a purchaser and a vendor agree to exchange an asset (currency in this context) at a prearranged value on a predetermined date in the future (Phung, 2023). To establish an exhibit of the use of forward contract, the same hypothetical situation discussed earlier; bank A based in Finland and bank B based in the USA and the bank A would like to purchase dollars from the bank B with 10 million euros. The transaction will take place 30 days after the agreement is made between the banks. The bank A wants to use forward contract as risk management tool in this transaction, so the two banks agree on an exchange rate of 1€=$1,06 for the transaction. That means that whatever happens in the currency market during the 30 days, the transaction will be executed with the agreed exchange rate. However, using forward contract does not necessarily always offer the best solution possible. For example, it is possible that on the date the transaction is executed, the market's foreign exchange currency rate could be 1€=$1,09, which means that if the bank A took a risk and just wished the best from the market, it would have received more dollars with the same amount of euros compared to the forward contract's exchange rate.

Futures contract has partially same characteristics as forward contract, but they still have differences. According to Phung (2023), futures contracts undergo daily marking to market, whereby daily adjustments are resolved daily until the contract's conclusion. Futures contracts can be classified as long (buying) contracts and short (selling) contracts. Using the same example as above, let us think again banks A and B. Like mentioned above, bank A would like to buy dollars worth of 10 million euros. This time, the banks agree on futures contract to be used in this transaction, in a way that bank A has the option to buy dollars worth the 10 million euros with the market price (long contract). Let us imagine that when the banks agree on futures contract, the exchange rate is 1€=$1,0883. The next day, the same rate goes to 1€=$1,0890, which means that euro has appreciated against dollar and the bank A would receive more dollars than yesterday with the same amount of euros. However, as the example shows, futures contracts can be described as more volatile than forward contracts, since they are marked-to-market. As Phung states (2023), futures contracts are more commonly used by opportunists.

2.2.3 Operational risk management

As mentioned earlier, operational risks are risks associated with (in the context of this thesis) bank's inner operations and workings (Operational risk, n.d.). One could argue that managing operational risks would require simply better overview of a bank's internal processes from the bank's management. However, since (hopefully) everyone knows how to use common sense, we should consider more specific methods.

An article, published on Auditboard.com webpage and authored by Vicente (2023), offers well-established insights on how operational risks are managed. Vicente presents (2023) a model, which shows a five-step process of operational risk management. The steps are the following: identifying risks, assessing the risks, mitigating the risks, implementation of control and supervising the implementation.

Considering this model in the context of a hypothetical bank, which has noticed that a lot of their workforce's time is being distributed to fixing newer employees' mistakes (an example given previously), this model could be applied to manage this problem. Firstly, the bank would identify the risk, which in this case is the inefficiency amongst the workforce due rookies' flaws (resulting from inadequate familiarization of new employees). After this, the bank would analyze the effects of this operational flaw (e.g., calculating how much it costs to fix these mistakes). Third step includes creating and selecting a strategy for managing this identified risk (investing more in familiarization, maybe having personal tutors for the newer employees for a certain period of time after familiarization). After this, it is time to implement the strategy chosen to mitigate the risk (in this case, simply starting new familiarization processes with more resources than before). Finally, it is time to supervise the process' outcomes (whether newbies are more qualified after familiarization than before). The five-step process model of operational risk management seems like something that could be utilized almost in every segment of life, not just in financial business.

2.2.4 Reputational risk management

For people and for businesses, having an adequate and clean reputation seems desirable. As humans, we tend to treat each other based on other people's reputations or at least based on the mental image of other people's reputations. The same goes towards businesses: consumers tend to treat businesses in a way they feel like they are deserved to be treated. That is why having a good reputation can be classified as one of the most important assets a business can have.

According to Henslowe (2003, p. 8), "Poor images come from ignorance, prejudice, hostility, and apathy. Public relations can convert these into knowledge and understanding, acceptance and interest". This statement can be considered in the context of our earlier example, linked to the ongoing war in Ukraine. When the war started, if a bank, based in Europe for instance, had business operations in Russia, the public would probably condemn it right at the spot for indirectly financing the Russian Federation's war of aggression. One could describe the bank as ignorant or as apathetic. Now, if the bank, after learning about this situation, announced that it will retreat from

Russia as soon as possible, in the framework of the local legislation, the public would probably be quick to remark the bank as responsible and as abreast.

The example above describes the importance of good public relations (PR) conducted by a business: the bank's board of directors realized, what they have to do in order to preserve a good public image (abandon the business operations located in the Russian soil) and the bank's PR-department had the duty to inform the public about it (announcement of retreat from Russia). Even though reputational risks can be easily managed by words, one should always back up the words by actions. As we know, it is easy for companies (and why not for people in general) to declare themselves as responsible and as good Samaritans, but the concrete and tangible maneuvers are the ones which formulate the real and honest public image.

2.3 How can underestimating risks impact banks?

Now that it has been analyzed what kind of risks banks commonly face and how the risks are managed, moving on to the so-called sad part seems adequate; what can happen to a bank if it ignores the probability of risks, or if it manages them poorly?

As commonly known, during the years 2007-2008 the whole world encountered a global financial crisis, stemming from the United States of America's housing markets. The crisis was so major, that "In 2012, the St. Louis Federal Reserve Bank estimated that during the financial crisis the net worth of American households had declined by about $17 trillion in inflation-adjusted terms, a loss of 26 percent." (Duignan, 2019, para 17). But how did the crisis affect the banking sector and what it has to do with general risk management and hedging policies? To establish a correlation between these topics, one of the most notorious bankruptcies the financial world has seen should be discussed, the bankruptcy of Lehman Brothers.

Lehman Brothers was a US based investment bank, which market value was almost $60 billion in February 2007 (Corporate Finance Institute, 2020). Everyone with even a bit of common sense agrees with the absurdness of the fact that the same investment bank declared bankruptcy during September 2008 (Duignan, 2019). How could this happen? Well, according to Adu-Gyamhi (2016), the bank failed to adequately account their financial transactions and to manage their risks. Let us see, what risks the bank did not take into account and to what it led to.

Like many other financial institutions during the 2000's, Lehman Brothers was heavily involved in the subprime mortgage business (Adu-Gyamhi, 2016). In a nutshell, subprime mortgages are mortgages, which are granted for individuals with poor credit scores, typically classified too risky for a regular approval of loan (Adu-Gyamhi, 2016). One could ask, why would a bank want to grant a loan so risky? According to Adu-Gyamhi (2016), the main rationale within the subprime mortgage sector was that they could grant these loans since the common belief was that the escalating property values in the real estate market could offset potential losses through refinancing, even in cases of loan defaults. This is a perfect example of a credit risk evolving into a significant threat. As it seems, Lehman Brothers acknowledged the possibility of credit defaults, but it failed to thoroughly take into account the potential consequences in a situation where scores of defaults occurred.

Also, one could argue that Lehman Brothers' actions related to generally disclosing their financials gave birth to operational risks, which backfired heavily and were also part of the reason the institution went belly-up. Adu-Gyamhi (2016) points out that Lehman Brothers made a mistake by falsifying their financial information. He states that "Ernst and Young should have realized that Lehman had breached the US Generally Accepted Accounting Principles (GAAP) requirement of ensuring that all significant events that are potential to a firm's financial statements should be disclosed" (Adu-Gyamhi, 2016, p.139). This information casts doubt for also Ernst and Young, which used to operate as Lehman's auditor, but it is fair to say that the main antagonist of this story is the bank itself.

At this point, the importance of adequate risk management and hedging policy has certainly become very clear, and its significance (or the lack of it) in the case of Lehman Brothers can not be underscored enough. According to Adu-Gyamhi (2016), Lehman Brothers prided itself on its proper risk management approach, taking into account especially market risks and credit risks. Because of that, it is rather weird that the bank was not able to make their way over the hurdles when these risk management approaches were the most essential to make sure the institution would survive. At the end of the day, the bank basically ate itself due to the risks it was certain to be able to manage properly.

3 Methodology

According to Jansen & Warren (2023), methodology in a research encompasses the practical aspects of conducting a research study. Crafting the study's design is crucial to produce reliable and precise results that are in harmony with the research's aims, objectives, and inquiries (Jansen & Warren, 2023). This chapter will discuss about the research methodology in general and specifically the methodology used in this research.

3.1 Research design

Basically, for the research design, there are two common types of approaches: qualitative approach and quantitative approach. Main difference between these approaches is that qualitative approach is based on interpretation, whereas quantitative approach is based on numbers and countable data (Fullstory, 2021).

In this research, the author has utilized mostly qualitative data but also partly quantitative data, which has resulted this thesis to be a mix of both approaches. The research questions and research problem stated in the Chapter 1.4 give base to the qualitative approach for resolving the problem, supplemented with quantitative data.

3.2 Research methods

In this research, the data has been mainly collected from Nordea's annual capital and risk management reports from the years 2020-2022. While the data has been mostly qualitative and interpretable non-numerically, some quantitative data has been also used to establish e.g., quantities of certain risk types. Since the data collected is original work of Nordea from its own annual reports, the data mainly used is primary data. However, some secondary data has been also used to e.g., define certain topics and subjects.

To draw interpretations based on Nordea's risk recognition and risk management, the author has first looked at the amounts of risk distribution of Nordea during the years 2020-2022 and compared the potential changes of them throughout the years. This has given a point of view of which risk types seem to be most crucial ones (and which less important). Even though this method establishes information quantitatively, it is only used to supplement the results, since the remaining of the findings have been summarized qualitatively, by recapping concretely what Nordea has reported about its risk management. Like mentioned earlier, this research is executed by both quantitative and qualitative research methods, even though the main research problem and the research questions will all be solved qualitatively.

4 Nordea's risks, risk management & hedging policy during 2020-2022

During the previous section of this thesis, the examination and presentation of a general perspective on the fundamental concepts of risks took place, as well as their management and possible effects within the landscape of the banking sector. The following chapter's purpose is to establish concrete information about what risks did Nordea face and how did it conduct its risk management and hedging policy from 2020 to 2022. The chapter is based on Nordea's own Group Capital and Risk management Reports of each year. However, since the reports are very broad and extensive, this chapter aims to bring to light the most important and fundamental points from each annual report and to compare the facts from each year.

4.1 Year 2020

As generally known and mentioned earlier, the world was hit heavily by the COVID19-pandemic. All of a sudden, people were not able e.g., meet in person in the same way they were used to before and even some occupations became impossible to practice. It goes without saying that some entrepreneurs faced horror, since the government declined them to run their businesses, which most definitely lead to them losing money. During times like these, among others, banks played a significant role. For instance, due to the pandemic, Nordea took action and provided their customers temporary time periods during which they were not obliged to make payments of their loans (Vang-Jensen, n.d.). Talking about Nordea, in this chapter the analyze will be based on what risks Nordea recognized in 2020 and how did it manage them.

4.1.1 Risks in 2020

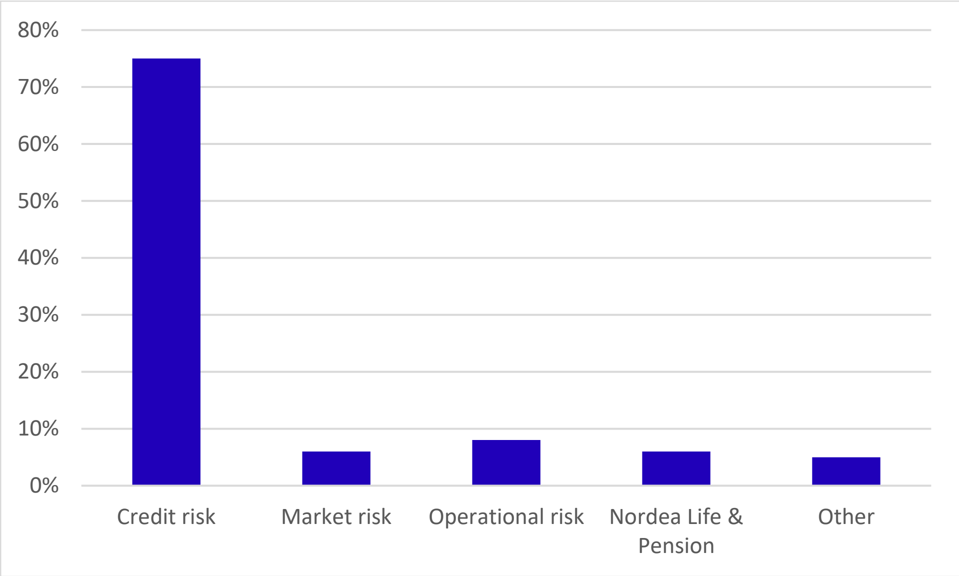

Figure 2. Total risk distribution of Nordea Group in 2020 (Nordea Bank Abp, n.d.)

Not so surprisingly, Nordea has addressed the global COVID-19 pandemic almost right at the beginning of its Capital and Risk Management Report 2020. The bank has stated (n.d.) that the lockdowns, which were caused by the pandemic and implemented worldwide by different countries' governments, resulted already during the year's first quarter in risen market volatility and decreased liquidity in the wholesale funding sector. According to Nordea (n.d.), in anticipation of the probable implications on the overall economy, it majorly bolstered its loan loss reserves.

As Ozili and Outa (2017) have described, loan loss reserves, or loan loss provisions, are used by banks to manage credit risks adequately. They have stated, that:

> To mitigate credit risk, in principle, banks will set aside a specific amount as a cushion to absorb expected loss on banks' loan portfolio and this amount is referred to as loan loss provisions (LLPs) or provisions for bad debts; therefore, loan loss provision estimate is a credit risk management tool used by banks to mitigate expected losses on bank loan portfolio. (Ozili & Outa, 2017, p. 144)

After defining what bolstering loan loss reserves means, it can be safely deducted that Nordea was waiting for the broad economy to get effected due to the global pandemic, so it applied a hedging method in order to mitigate the potential losses from credit defaults. Talking about credit risk, the cruciality of credit risk when talking about risks affecting Nordea comes out clearly, since the financial institution has addressed it followingly, after describing the diversity of its business model: “This activity gives rise to credit risk, which is Nordea’s primary financial risk, accounting for approximately 86% of its total risk exposure amount (REA)” (“Key risks in Nordea’s operations”, n.d., p. 2). Figure 1 justifies this point, although in the figure credit risks are compared with all types of risks Nordea has faced in 2020, not only financial ones.

Regarding operational risks, Nordea has addressed both the losses related to them and their prevalence. According to the Nordic banking giant (n.d.), it lost roughly 27 million euros due to operational risks in 2020 and their REA was 14,7 billion euros. Again, the big bad pandemic was mentioned: “The COVID-19 crisis is assessed to have heightened Nordea’s level of operational risk. Events such as fraud, large-scale processing errors and data breaches are all the more likely given the current situation” (“Key risks in Nordea’s operations”, n.d., p. 3). Although, the bank continues to argue that even though the risk level of operational risks has risen, it has not concretely resulted in incremented financial losses (“Key risks in Nordea’s operations”, n.d.).

Other types of risks mentioned by Nordea are market risks and liquidity risks. According to Nordea (n.d.), market risks were only a small threat from them, making up a relatively small portion of its regulatory capital requirements, accounting for only 3% of the total risk exposure amount. What comes to liquidity risks, Nordea has considered them as a significant concern and they have applied adequate measures in order to ensure its liquidity in every possible scenario (“Key risks in Nordea’s operations”, n.d.).

Because it has not discussed before during this research, a definition of liquidity risk should be established. As the Council of Europe Development Bank has described (n.d.), liquidity risk refers to the potential losses that can occur when a party is not able to meet its financial obligations promptly and completely as they come due. In other words, if one does not have enough funds to make payments they signed up for, a liquidity risk has been realized. As this definition shows, liquidity risk is something that is applicable also to individual human beings, not only to businesses or corporations.

4.1.2 Risk management in 2020

In its Group Capital and Risk Management Report 2020, Nordea (n.d.) has introduced a model, consisting of three parts, which it has incorporated to its risk management methodology. According to Nordea (n.d.), the model mentioned, named three lines of defence, is assembled followingly:

> First line of defence (1st LoD) is responsible for the daily risk management and for compliance with applicable rules. Second line of defence (2nd LoD) is responsible for maintaining and monitoring the implementation of the Internal Control Framework. Third line of defence (3rd LoD) is the independent internal audit function. (“Three lines of defence model”, n.d., p. 15)

The model described seems like a hierarchical instrument of risk management. Internal Control Framework, which is included in the second life of defence, is defined as a framework, in which “all Business areas, Group Functions and units are responsible for managing the risks they incur in conducting their activities and to have controls in place that aim to ensure compliance with internal and external requirements” (“Internal Control Framework”, n.d., p. 14).

Starting from the credit risk, the main concepts of Nordea for managing credit risks were “a risk-based approach, independence and the three LoDs” (“Management of credit risk”, n.d., p. 19). Furtherly described, the risk-based approach means e.g., that the risk management functions must be calibrated to match the inherent characteristics, scale, and intricacies of Nordea’s operations, guaranteeing that the actions taken are commensurate with the specific risks involved (“Credit risk”, n.d.). The independence is portrayed in the way that the risk control function should maintain its autonomy from the business it oversees (“Credit risk”, n.d.) and the three LoDs (lines of defences) were already described earlier in this chapter.

According to Nordea (n.d.), it has based its credit risk management to credit risk limits, which have been set individually to their customers. Sounds familiar, since this kind of method of credit risk management, presented by Kanchu and Kumar in 2013, has been studied previously during this research, in Chapter 2.1. Moreover, the bank has stated, that it has continuously been monitoring their credit customers and that they have always been ready to take adequate action, “if credit weakness is identified in relation to a customer exposure it receives special attention in terms of more frequent review" ("Management of credit risk", n.d., p. 19).

Moving forward, Nordea has mentioned a risk type called counterparty credit risk. As it has described,

> Counterparty credit risk is the risk that Nordea's counterpart in an FX, interest, equity credit or commodity derivative contract defaults prior to maturity of the contract and that Nordea at that time has a claim on the counterpart. In addition, counterparty credit risk also appears in repurchasing agreements and other securities financing contracts. ("Counterparty credit risk", n.d., p. 28)

As Zhu and Pykhtin (2007) have described, counterparty credit risk and a traditional credit risk are different in a way that the counterparty credit risks are born from bilateral contracts, in where both counterparties of the contract can theoretically create a threat to one another, and the contracts include derivative transactions. Derivative transactions are "financial instruments that derive their value from the performance of assets, interest or currency exchange rates, or indexes" ("Counterparty credit risk", n.d., para 1). Based on given information in this paragraph, a conclusion can be drawn, that traditional credit risk for Nordea means that e.g., an individual person all of a sudden default on their mortgage payments, whereas counterparty credit risks include e.g., other financial institutions failing to meet their financial obligations, for example related to foreign exchange. The difference between the nature of these risks creates an establishment of why Nordea has listed different hedging methods for the two risk types in their Group's Capital and Risk Management Report 2020.

What comes to managing counterparty credit risks, Nordea (n.d.) has introduced mitigation techniques in order to mitigate the risks' implications on it. The bank has described the most notable technique; "The most significant one is the use of legally enforceable closeout netting agreements, which allows Nordea to net positive and negative market values on contracts within the same agreement in the event of default of the counterparty" ("Mitigation of counterparty credit risk exposure", n.d., p. 28). Seems reasonable for a financial institution to reserve the rights to juridically net at least some of the agreed funds in the event of counterparty's default.

Regarding to market risks, Nordea has introduced three different principles of how it has managed its market risks. The principles are “risk identification and measurement, market risk mitigation and management, and risk limits and monitoring” (“Market risk management principles”, n.d., p. 30.). According to Nordea (n.d.), the first principle includes capturing material characteristics of market risk and conducting stress tests regularly to establish estimate of potential losses due to market conditions. Market risk mitigation and management consists of e.g., determining of which instruments are traded and surveilling its hedges. The third principle includes monitoring traded market risks on a daily basis.

Speaking of traded market risks, Nordea has described how they are managed. First, the definition for the risk type should be established. According to Nordea (n.d.), traded market risks are stemming primarily from client-initiated trading activities and associated hedging strategies in its Markets belonging to its department of Large Corporates & Institutions. Basically, what this definition tells is that traded market risks are related to e.g., trading instruments. Nordea (n.d.) has explained that it uses multiple different quantitative procedures for measuring traded market risks, with one of them being value-at-risk (VaR). It has specifically used VaR as a historical method. According to Kenton (2023), this approach involves examining an individual's previous performance records, arranging them from most significant losses to highest gains and the approach assumes that past performance can provide insights into future results.

Operational risks and compliance risks are also risks, which Nordea has recognized. Discussion about operational risks have already taken place during this research, but compliance risk is a new acquaintance to this research. As it has been explained, “Compliance risk is defined as the risk of failure to comply with applicable regulations and related internal rules.” (“Operational risk and compliance risk”, n.d., p. 37.). One example of managing these kinds of risks, which Nordea (n.d.) has introduced, is risk and control self-assessment (RCSA). As followingly explained:

> The process improves risk awareness and enables effective assessment, control, and mitigation of identified risks. For risks identified in the RCSA, the level of inherent risk and the controls in place to mitigate the inherent risks, is assessed. If mitigating actions are required to reduce the risk exposure, these are identified and implemented. (“Risk and Control Self-Assessment”, n.d., p. 38)

What comes to liquidity risks, the goal of their management for Nordea, according to it, is to make sure that it is always able to fulfill its financial commitments (n.d.). For this, Nordea (n.d.) has mentioned a process, named Internal Liquidity Adequacy Process (ILAAP). As described by Nordea (n.d.), "The ILAAP provides an assessment of liquidity adequacy through a comprehensive analysis of liquidity risk management practices in the respective entities." ("ILAAP", n.d., p. 42.).

4.2 Year 2021

Now that the year of the full-scale launch of the big bad pandemic has been analyzed in the context of risks recognized by Nordea and risk management of Nordea, next the focus will be on the following year, 2021. Alike during this chapter and the upcoming one analyzing the year 2022, differences and confluences between the years in recognized risks and methods of risk management are being sought.

4.2.1 Risks in 2021

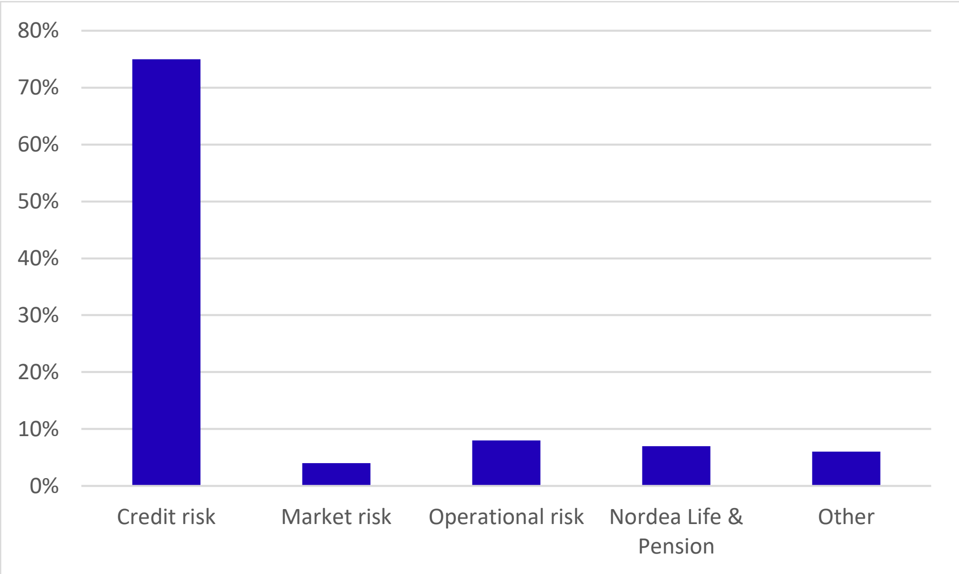

Figure 3. Total risk distribution of Nordea Group in 2021 (Nordea Bank Abp, 2022)

Comparing the risk distribution of Nordea in 2020 and 2021, only small differences can be noticed. First, the amount of credit risk stayed the same, covering 75% of the whole distribution of risks. Market risk's percentage decreased from 6% to 4%. The percentage of operational risks remained equal at 8%. Both Nordea Life & Pension related risks and risks classified as Other saw a small rise.

The distribution of credit risks remaining as high in 2021 than in 2020 again shows, how crucial credit risks have been to Nordea. One could argue that the start of pandemic in 2020 resulted in 2021 as credit defaults for banks. Interestingly, the proportion of market risks decreased, which could tell about e.g., stabilization in the market, which sounds odd, since 2021 was still a year of lockdowns and other pandemic related measures. Also, the percentage of operational risks stayed the same.

Not so surprisingly, Nordea (2022) has addressed the COVID19-pandemic in its Group Capital and Risk Management Report 2021. Nordea (2022) has stated that the virus remained as a prominent risk factor during the year 2021.

What comes to the risks recognized by Nordea in 2021, its has addressed the same risk types as it did in its Group Capital and Risk Management Report 2020. One of the risk types the financial giant has recognized but what has not studied yet during this research, is risks related to Nordea Life and Pensions (NLP). NLP seems interesting risk-wise, since “NLP consists of a range of different life and health products, from endowments with duration of a few years, to very long-term pension savings contracts, with durations exceeding 40 years” (“Business profile, 2022”, p. 48). To simplify, the NLP is a service, which offers life insurances and pension savings agreements.

Risks related to Nordea’s NLP are classified as e.g., market risks and life & health insurance risks (Risk profile and risk management, 2022). What comes to market risks, Nordea (2022) has stated that NLP is exposed to market risks as the worth of their assets and liabilities fluctuates in response to changes in market prices and interest rates. According to Nordea (2022), these risks mainly originate from certain savings and investment products. Now that this risk is defined, it seems to be logical that Nordea has recognized it. If it has sold a pension program or a life insurance and the moment comes where it would be obliged to make the payments agreed on these products to its customers, it needs to be solvent. According to Nordea (2022), life and health insurance risks involve potential financial losses due to e.g., changes in mortality and policy surrender rates. The biggest ones are lapse risks and longevity risks, lapse risks being the most significant ones (Life & health insurance risk, 2022).

4.2.2 Risk management in 2021

As Nordea did similarly in its Group Capital and Risk Management Report 2020, it has also introduced the same defence model in its Group Capital and Risk Management Report 2021, consisting of the same identical three parts (Group Capital and Risk Management Report 2021, 2022). What can be deducted from this is that Nordea has found the defence model viable and it has not seen any reason to either abandon the model or to reassemble it, even though the year 2021 probably was not identical with 2020 for the financial institution.

Risk appetite is a term, which comes up often when studying Nordea’s Group Capital and Risk Management Reports. Since the term has not been discussed nor defined yet, both should take place now. As described by Barfield (2007), risk appetite establishes the parameters that create an interactive connection among strategic planning, goal establishment, and the mitigation of risks. In a nutshell, the term’s definition is self-explanatory through its name. It represents the amount of risks a certain institution thinks they are ready to face.

What comes to managing credit risks, Nordea has applied similar methods in 2021 than it did in 2020 (Group Capital and Risk Management Report 2021, 2022). However, what comes to credit risks related to COVID19-pandemic, their nature has been slightly different compared to 2020, since Nordea has stated interestingly:

> Covid-19 has been a risk factor also over the course of 2021. The Nordic governments have supported the economies with a range of COVID-related support packages targeted for individuals and companies. As the pandemic prolonged in 2021, the measures were extended, and new ones established as the pandemic continues. However, there is a risk that support measures have enabled non-viable businesses to continue operating. (“COVID19-measures”, 2022, p. 18)

As Nordea has described, it is possible that since e.g., the Finnish government has helped financially Finnish companies due to the pandemic, it may have enabled some companies to operate successfully even though they would not be able to do that by themselves. For instance, if one would consider a certain hypothetical business being on a verge of bankruptcy and “luckily” a pandemic hits the world and enables the business to seek and receive financial help from the government, it would distort the laws of market economy. That hypothetical business mentioned would not have been able to operate even during the normal times without lockdowns or any other precautions executed by the government, so Nordea recognized the threat that since these kinds of companies may exist, when their financial aid from the government is halted when circumstances normalize, they may not be able to meet their financial obligations to Nordea, resulting to default losses.

Up next, as it did in previous year's Group Capital and Risk Management Report, Nordea has addressed counterparty credit risks. Since the risk type itself has already been defined in Chapter 4.1 and the hedging methods for the risks have stayed similar in 2021 compared to 2020, there is one point which was discussed already in the year's 2020 report but has not been addressed yet in this research, it should be addressed now. As Nordea has stated, "Interest rate swaps and other derivatives are used in hedging activities of asset and liability mismatches in the balance sheet." ("Counterparty credit risk", 2022, p. 26).

Since the term interest rate swap has now been brought to the table, due to Nordea's usage of it, its definition should be made. As told by Corporate Finance Institute (n.d.), an interest rate swap is a derivative contract in which two different parties concur to trade a set of future payments for another, involving a predefined amount of capital. In essence, considering the two parties, the other is receiving floating rate payments and the other is receiving fixed-rate payments and they consent to exchange their loan arrangements (Corporate Finance Institute, n.d.). In the context of this research, Nordea probably has found either fixed- or floating-rate payments more viable and profitable to it, so it has made agreements with other counterparties to exchange their rate types. As it can be deducted, the interest rate swap bears risks, even though it is a method of risk management. If Nordea were to change their receiving payments from fixed rate to floating rate and after that the interest rate declines, Nordea would face financial losses, by receiving less capital due to lower interest rate.

Regarding managements of market risks, operational risks, and liquidity risks, all of them seem to be handled similarly in 2021 than in 2020 by Nordea. However, since the results of Nordea's management of risks related to Nordea Life and Pensions have not been brought up yet, it is time do it now.

As established earlier in this chapter, risks related to Nordea Life and Pensions are classified as either market risks or life & health insurance risks. As explained by Nordea (2022), market risks are observed and mitigated by e.g., performing different stress tests and shocks. What this could mean is that Nordea is putting their NLP business unit in various hypothetical situations to see whether it would still be able to operate under given circumstances. What comes to life & health insurance risks and specifically to lapse risks, "a regular sensitivity test is performed at NLP group and local entity level" ("Continuous monitoring and risk mitigation", 2022, p. 49). Longevity risks are managed by e.g., keeping record of death rates and the expectancy of life (Nordea Life and Pensions (NLP), 2022).

4.3 Year 2022

After analyzing the years 2020 and 2021, which were mostly famous because of the outbreak of COVID19 and its consequences to humanity, it is time to dive into the year known for especially one historical event, the war in Europe, Ukraine. This chapter aims to find topics addressed by Nordea caused by the still ongoing war in addition to what the company has reported generally about their risk recognition and risk management in 2022. Also, qualitative differences and confluences related to risks and risk management will be drawn between 2021 and 2022.

4.3.1 Risk in 2022

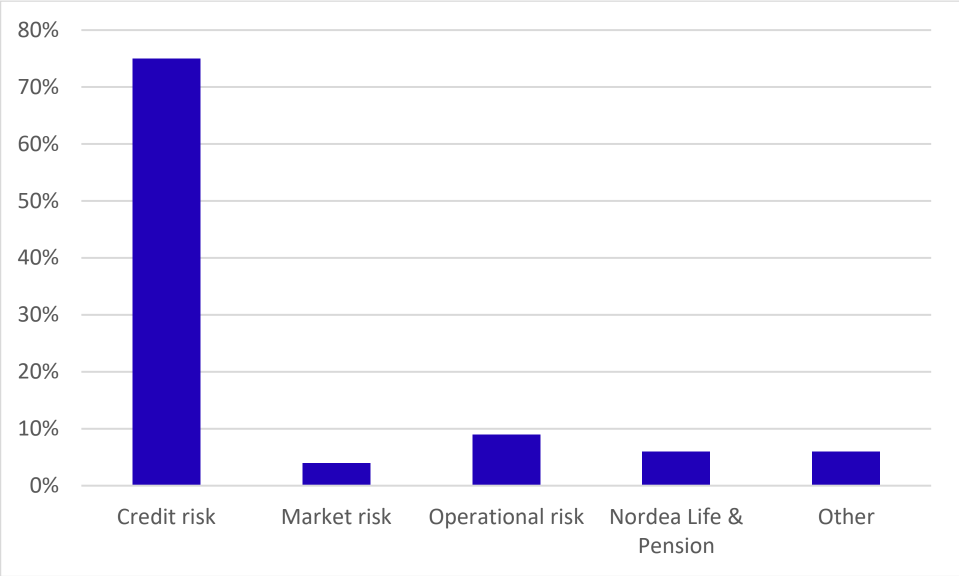

Figure 4. Total risk distribution of Nordea Group in 2022 (Nordea Bank Abp, 2023)

Comparing the risk distributions of 2022 and 2021 results to same conclusion as when the years 2021 and 2020 were compared; no significant movements did not happen. The amount of credit risk remained at 75%, as did the percentage of market risk with 4%. However, small changes did happen in distributions of operational risks and risks related to Nordea Life & Pensions; the amount of operational risks had risen from 8% to 9 % and the distribution of risks associated with Nordea Life & Pensions saw a decline from 7% to 6%. Risks classified as other were distributed identically, at 6%.

Since the full-scale war broke out in Ukraine in February 2022, it is safe to assume that Nordea has addressed the situation in relation to their risk management. This assumption is backed up at least in the bank's board of directors' statement. Nordea (2023) has stated the following:

> The war in Ukraine, the associated European energy crisis, the high level of inflation and the high level of inflation and the associated monetary tightening have led to an uncertain and rapidly changing geopolitical and economic situation. All of the factors comprise risks to the economic outlook. In the Nordic economies the higher interest rates have triggered ongoing housing market corrections, which are expected to at

> least partly reverse the sharp price increases seen since the outbreak of COVID in the spring of 2020. (p. 1)

While simultaneously addressing the war in Ukraine, Nordea (2023) has stated in the quotation above also that inflation has offered challenging times to it. As explained by McKinsey & Company (2022), inflation refers to goods and services becoming more expensive, diminishing the purchasing strength for both individuals and enterprises. Basically, inflation means that the value of currency declines (McKinsey & Company, 2022). Concretely, with common sense it can be deducted that since individuals and companies are not as solvent as before, for example granting loans for them is riskier for a bank than it was before.

Nordea (2023) has also stated that it has been actively surveilling the geopolitical situation in Ukraine and that it has recognized that e.g., there has been a rise in the risk of facing issues related to cyber security. Also, once again the COVID19-pandemic has been mentioned in the Capital and Risk Management Report 2022. Even though it is not directly related to risks and risk management, it is worth to mention that Nordea (2023) has announced that it was able to reopen their physical branches progressively during 2022 due to easement of the pandemic.

In a nutshell, risk recognition-wise it seems like Nordea has addressed the mostly same kind of risks in 2022 than it did in 2021. However, due to the war in Europe, their nature could have been changed and by that also the methods of managing them. The risk management methods presented by Nordea in 2022 will be discussed in the following chapter.

4.3.2 Risk management in 2022

Starting from Nordea's management of credit risks and counterparty credit risks, seems like they have been managed likewise in 2022 compared to 2021 and 2020, according to the bank's Group Capital and Risk Management Report 2022 (2023). However, Nordea has addressed a method called scoring in all of the Group Capital and Risk Management Reports of the years 2020-2022 in their respective sections of depicting credit risks, but the method has not yet been discussed during this research.

Nordea (2023) has stated that it uses the scoring method to valuate its retail customers' creditworthiness. The bank grades the customers' financial reliability by this method. It has introduced two different grading scales; first one consists of 18 different grades, varying from A+ to F-, which is used for clients which have not yet defaulted on their payments for Nordea. The second grading scale includes three different grades, ranging from 0+ to 0- and is used for customers which have a history of defaults. As discussed in Chapter 2.2, this kind of customer profiling, interpreted from the findings of Raghavan (2003), seems very rational for a bank.

Nordea's (2023) description of how market risks were managed in 2022 is identical to the years 2021 and 2020, so nothing new to address about that. Same applies to the bank's management of operational and compliance risks. However, there has been a subject mentioned which has not been yet addressed throughout this research in. One tool of preventing operational and compliance risks according to Nordea (2023) is that they have a particular whistleblower channel called Raising Your Concern. It has been assembled for all the company's stakeholders to be able to report inadequate conducts, behaviors, and actions in order to maintain the feeling of safeness in their working life. This kind of reporting tool is nowadays mandatory for "companies operating in the EU with at least 49 employees" (Homann, 2023, para 2).

Risks associated with liquidity were managed in 2022 by Nordea similarly than it did in 2021 (Nordea Group Capital and Risk Management Report 2022, 2023). However, there is one topic Nordea has addressed in its Group Capital and Risk Management Report 2022 which has been excluded from the same report of the years 2020 and 2021, risks related to ESG factors and their management. As Nordea has stated (2023), ESG refers to Environmental, Social and Governance factors. ESG factors fundamentally aim to maximize the sustainability of Nordea's business (2023).

An example of ESG related risk according to Nordea (2023) is credit risk. The bank has stated (2023) that these kinds of risks stem from portfolios, which consist of e.g., activities related to fossil fuels. Also, Nordea's customers within the household sector are mentioned by the probability that the households are not able to survive with their mortgages owned to Nordea (2023). What comes to managing credit risks related to ESG factors, "Nordea assesses also the social aspects related to counterparties' operations" ("Social factors", 2023, p. 54).

5 Discussion and conclusions

This chapter's goal is to conclude the thesis by both discussing the research generally and by establishing conclusions based on the research's findings. Conclusions also include the solving of the research problem by answering the research questions.

5.1 Discussion

This thesis' fundamental purpose was to find out, how a bank manages its risk management in a time where the prevailing circumstances can be described as challenging. To fulfill the fundamental purpose, the thesis utilized previous academic literature and articles about the main topic generally and obviously the information provided by the bank which was analyzed, Nordea Bank Abp.

Looking back at the literature review of this thesis, a few points shall be addressed. First, the literature review offered concretely and qualitatively insights and examples about the risks the banking sector faces and how the banking sector manages them. The literature review heavily supported the results of this thesis, which will be also addressed during this chapter. However, even though the sources utilized for the literature provided comprehensive information about the topics studied, the publication dates of the sources varied from being old to being current. That could lead to a conclusion that the topics have not been studied between these publication times. Still, the literature review used the best sources available, and it is worth to mention that while there existed multiple other viable sources, a lot of them were not subscribed by JAMK and which therefore were not accessible.

The results assembled for this thesis were fully collected from Nordea's self-published yearly capital and risk management reports, supplemented from time to time by external sources when e.g., some terms needed to be defined. Considering that this thesis aimed to find out about Nordea's risk management when there prevails a global pandemic and a war in Europe, provoked by the neighboring country of Nordea's headquarters, both pros and cons can be stated. First, the COVID19-pandemic was mentioned multiple times in the mentioned reports, which enabled the author to draw interpretations and conclusions of how the pandemic concretely affected Nordea's hedging policy. Second, "unfortunately" not a lot was stated by Nordea related to the war in Ukraine. Obviously, one may feel delighted that this kind of historical, brutal, and unprovoked war did not affect the biggest private bank of Northern Europe risk and risk management wise. Still, as assumed by the author in Chapter 1, this thesis tried to find concrete changes in risk management of Nordea due to the war. This assumption turned out to be at least partly bogus.

Moreover, even though the results offered a lot of useful information, some limitations were also visible. As found in the results, Nordea's report of their recognized risks and their risk management did not vary almost at all comparing the years 2020-2022. The coverage of each year in the results declined year by year since there was no point for the author to repeat itself. Simultaneously, certain information covered already in the later years was brought up in the coverages of following years to supplement those years' coverages. Also, although some changes were seen in e.g., the amount of risk distribution of each year, the methodology of this thesis consisted of establishing qualitative information, so that kind of information offered nothing but supplementary information.

To summarize, considering all the points mentioned above, this research was explicitly successful. It was able to provide unique information from a one-of-a-kind point of view.

5.2 Conclusions

For this research, the main research problem was "How did Nordea conduct its risk management in 2020-2022?", which was meant to be solved by answering to the two research questions; 1) What risks did Nordea face during 2020-2022? and 2) How did Nordea manage the risks it faced during 2020-2022?

To answer the first research question; according to Nordea, the risk types it faced during 2020-2022 were credit risk, counterparty credit risk, market risk, operational risk, liquidity risk, COVID19 as a whole risk factor, risks related to Nordea Life & Pensions and risks related to ESG factors. Nordea's management of the risks consisted of multiple different methods. To summarize, only a few of them should be mentioned. Examples of the methods are the model of three lines of defence, netting agreements, scoring, three principles of managing market risks and risk appetite.

As a conclusion, it can be stated that the research problem of this research was solved adequately. As the evidence shows, COVID19-pandemic played a major role in a bank's risk management and hedging policy onwards 2020. Also, it can be concluded that even though a bank, which is headquartered next to imperialistic, post-Soviet state, which is trying to annex a sovereign European country, acknowledges these facts, it has barely had concrete implications on the bank's risk management framework.

References

Adu-Gyamhi, M. (2016). The bankruptcy of Lehman Brothers: causes, effects and lessons learnt. *Journal of Insurance and Financial Management*, 1(4), 132-149. https://www.journal-of-insurance-and-financial-management.com/index.php/JIFM/article/view/36

Barfield, R. (2007). Risk appetite-how hungry are you? *The journal: Special risk management edition*, 1, 8-13. https://www.pwc.com/gx/en/banking-capital-markets/pdf/risk_appetite.pdf

Cambridge Dictionary. (n.d.). Meaning of risk in English. *Dictionary.cambridge.org.* https://dictionary.cambridge.org/dictionary/english/risk

Council of Europe Development Bank. (n.d.). Liquidity risk. *Coebank.org.* https://coebank.org/en/investor-relations/risk-management/liquidity-risk/

Council of Europe Development Bank. (n.d.). Market risk. *Coebank.org.* https://coebank.org/en/investor-relations/risk-management/market-risk/

Corporate Finance Institute. (2020, January 8). Lehman Brothers. *Corporatefinanceinstitute.com.* https://corporatefinanceinstitute.com/resources/career-map/sell-side/capital-markets/lehman-brothers/

Corporate Finance Institute. (n.d.). Interest Rate Swap (IRS). *Corporatefinanceinstitute.com.* https://corporatefinanceinstitute.com/resources/derivatives/interest-rate-swap/

DeRosa, D. F. (2011) *Options on foreign exchange.* John Wiley & Sons. https://shorturl.at/wKR69

Duignan, B. (2019, March 14). Financial crisis of 2007-08. *Britannica.com.* https://www.britannica.com/money/topic/financial-crisis-of-2007-2008

European Banking Authority. (n.d.). Operational risk. *Eba.europa.eu.* https://www.eba.europa.eu/regulation-and-policy/operational-risk

Henslowe, P. (2003). *Public relations: A practical guide to the basics* (2nd ed.). Kogan Page Publishers. https://shorturl.at/LV067

Homann, M. (2023, November 7). What is Whistleblowing in the Workplace? FAQ for Companies. *Integrityline.com.* https://www.integrityline.com/expertise/blog/what-is-whistleblowing/

Jansen, D., & Warren, K. (2023, April). What Is Research Methodology? *Gradcoach.com.* https://gradcoach.com/what-is-research-methodology/

Kanchu, T., & Kumar, M. M. (2013, February). Risk management in banking sector-an empirical study. *International journal of marketing, financial services & management research, 2(2), 145-143.* https://shorturl.at/dwE07

Kenton, W. (2023, March 23). Understanding Value at Risk (VaR) and How It's Computed. *Investopedia.com. https://www.investopedia.com/terms/v/var.asp*

Lioudis, N. (2022, July 27). What Is Foreign Exchange? Factors That Affect The Value and Rates. *Investopedia.com.* https://www.investopedia.com/ask/answers/08/what-is-foreign-exchange.asp

Manenkov, K. & Grits, S. (2023, April 15). Newest NATO member Finland starts building fence on Russian border. *PBS.org.* https://www.pbs.org/newshour/world/newest-nato-member-finland-starts-building-fence-on-russian-border

Marquette University. (n.d.). What is risk management? *Marquette.edu.* https://www.marquette.edu/riskunit/riskmanagement/whatis.shtml

McKinsey & Company. (2022, August 17). What is inflation? *Mckinsey.com.* https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-inflation#/

Morgan, L. (2021, October). What is operational risk? *Techtarget.com.* https://www.techtarget.com/searchsecurity/definition/operational-risk

Nordea Bank Abp. (2022). Annual Report 2022. *Nordea.com.* https://www.nordea.com/en/doc/annual-report-nordea-bank-abp-2022.pdf

Nordea Bank Abp. (2023, August 30). Capital and Risk Management Report 2022. *Nordea.com.* https://www.nordea.com/en/doc/nordea-group-capital-and-risk-management-report-2022.pdf

Nordea Bank Abp. (2022, October 7). Capital and Risk Management Report 2021. *Nordea.com.* https://www.nordea.com/en/doc/nordea-group-capital-and-risk-management-report-2021.pdf

Nordea Bank Abp. (n.d.). Who we are. *Nordea.com.* https://www.nordea.com/en/about-us/who-we-are

Nordea Bank Abp. (n.d.). Nordea in society. *Nordea.com.* https://www.nordea.com/en/about-us/nordea-in-society

Nordea Bank Abp. (n.d.). Capital and Risk Management Report 2020. *Nordea.com.* https://www.nordea.com/en/doc/nordea-group-capital-and-risk-management-report-2020.pdf

Office of the Comptroller of the Currency. (n.d.). Categories of risk. *Occ.treas.gov.* https://www.occ.treas.gov/news-issuances/news-releases/1996/nr-occ-1996-2a.pdf

Office of the Comptroller of the Currency. (n.d.). Counterparty Credit Risk. *Occ.treas.gov.* https://www.occ.treas.gov/topics/supervision-and-examination/credit/commercial-credit/counterparty-credit-risk.html

Ozili, P. K., & Outa, E. (2017, June 1). Bank loan loss provisions research: A review. *Borsa Instabul Review*, 17(3), 144-163. https://www.sciencedirect.com/science/article/pii/S2214845017300108

Phung, A. (2023, April 25). Forward contracts vs. Futures Contracts: What's the difference? *Investopedia.com.* https://www.investopedia.com/ask/answers/06/forwardsandfutures.asp

Raghavan, R., S. (2003, February). Risk management in banks. *Chartered accountant-New Delhi-* 51(8), 841-851. https://un.uobasrah.edu.iq/lectures/1784.pdf

The Economic Times. (2016, September 19). Smart things to know about sources of income for a bank. *Economictimes.indiatimes.com.* https://economictimes.indiatimes.com/wealth/save/smart-things-to-know-about-sources-of-income-for-a-bank/articleshow/54377370.cms

The Fullstory Education Team. (2021, October 6). Qualitative vs. quantitative data: what's the difference? *Fullstory.com.* https://www.fullstory.com/blog/qualitative-vs-quantitative-data/

Vang-Jensen, F. (n.d.). CEO Letter. *Nordea annual report 2020.* Nordea.com. *https://www.nordea.com/en/doc/annual-report-nordea-bank-abp-2020.pdf*

Vicente, V. (2023, April 27). A Complete Overview of Operational Risk Management. *Auditboard.com.* https://www.auditboard.com/blog/operational-risk-management/

Walter, I. (2010). Reputational risk. *Finance ethics: Critical issues in theory and practice*, 10, 103-124. http://secure.ditchley.co.uk/assets/media/REPUTATIONAL%20RISK%20-%20Ingo%20Walter.pdf

Zhu, S. H., & Pykhtin, M. (2007). A guide to modeling counterparty credit risk. *GARP Risk review*, 16-22. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1032522