LAB University of Applied Sciences
Business Administration, Lappeenranta
International Business
Specialization of Supply Chain Management

Mariia Tikhomirova

Low and Negative Interest Rates Policy in Commercial Banks

Thesis 2020

Abstract

Tikhomirova Mariia
Low and Negative Interest Rates Policy in Commercial Banks, 51 pages, 2 appendices
LAB University of Applied Sciences
Business Administration, Lappeenranta
International Business
Specialization of Supply Chain Management
Thesis 2020
Instructors: Ms. Marianne Viinikainen, senior lecturer, LAB University of Applied Sciences

One of the objectives of the research was to study how monetary policy of low and negative interest rates has affected the main component of commercial banks. Furthermore, to study the possible reaction of customers to such services from commercial banks.

The data for this thesis were collected from literary sources, such as books, articles and sources from previous researches. Moreover, the information was also gathered from the Internet and interviewing of two case groups, two commercial banks and 15 respondents, namely customers.

The results of the study show that the issue of low and negative rates for customers is certainly unexpected. Based on the results obtained, it was concluded that, on the one hand, depositors would be ready to take measures to prevent capital loss immediately. On the other hand, people are not quite sure how to behave in such an environment. That leads to the understanding that banks can create an additional product that will allow them to continue to hold capital, thereby increasing their net interest margin.

Keywords: monetary policy, ECB, negative interest rates.

Table of contents

1 Introduction 4

1.1 Background 4

1.2 Delimitations 6

1.3 Research purpose and objectives 6

1.4 Research strategy and structure 8

1.5 Research methodology 9

2 Theoretical framework 10

2.1 The ECB's history 11

2.1.1 ECB policies and eurosystem activities 14

2.1.2 ECB's monetary policy strategy/main principles 16

2.2 Zero bound and monetary policy 17

2.2.1 The phenomenon of Negative interest rates 17

2.2.2 Reasons for placing negative interest rates 18

2.2.3 Risks measures 20

2.3 Commercial Bank 22

2.3.1 Definition 22

2.3.2 How banks make revenue and costs? 23

2.3.3 Three main functions 23

2.3.4 Types of banks 24

2.4 Bank of Finland 25

2.4.1 Values and Objectives 25

3 Empirical part 29

3.1 Data collection 29

3.2 Interview for commercial bank 30

3.3 Interview with depositors 34

Conclusion 43

List of figures 47

List of tables 47

References 48

Appendices

Appendix 1 The interview questions for banks' representatives

Appendix 2 The interview questions for private customers

1 Introduction

1.1 Background

Monetary policy is a set of macroeconomic measures and is a stabilizer aimed at resolving issues related to economic fluctuations. Stabilization policy is responsible for stable and high economic growth, full employment of resources, stable price levels, and balance of payments. Monetary policy in the state is an integral component, which in turn directly affects aggregate demand, in this matter, regulation carried out to the movement of the market, as well as the money supply (ECB 2015.)

The Central Bank is the crucial dictator of monetary policy. It is the implementer and directly determines the direction of the flow. Despite this, commercial banks and external companies also have an impact on the development or stagnation of monetary policy.

Thus, the Central Bank's monetary policy targets are the following tactical goals: controlling the money supply, controlling the interest rate level, and controlling the exchange rate of the national currency. The Central Bank is an essential institution in the formation of a stable and developing domestic economy. In turn, the Central Bank should also be involved in resolving some of the problems related to inflation and unemployment (ECB 2015). To solve these difficulties, the Central Bank has several specific instruments called monetary policy instruments. Such as interest rates and currency interventions. Despite this, these tools are powerless when the economy begins to suffer from a sharp drop in prices. Moreover, it can also cause the observation of a prolonged recession or even stagnation (ECB 2011.)

Low and negative interest rates are among the most widely used types of monetary policies. The term of negative interest rates from the Central Bank has come to be used to refer to profit, that Central Bank charges for transactions. Thus, if the interested party has a concern about keeping money in the accounts of the Central Bank, there are two cases.

In the first case, by having no matter the loss in profit of storing money, keep continuing placing finances but pay the interest rate for storage. If the bank concerned chooses this development directly, it will incur certain risks. If we look more deeply at the problem of the reluctance of commercial banks to invest money and keep them, then the question arises about the financing and maintenance of individuals of this bank. A commercial bank that does not receive third-party income cannot offer its clients lucrative offers of tangential passive income (Burenin 2016.)

When applying to a commercial bank, an individual is interested in becoming a client who will receive certain benefits and welcome offers from the money invested under the Deposit. When the bank does not physically have the finances to attract cash from this party, there is a risk not only for the bank itself in the concept of existence but also for the potential client. The question arises if a commercial Bank is ready to switch to negative rates against the Central Bank, and will the commercial bank's policy on deposits to the population change? (Burenin 2016.)

Therefore, if commercial banks introduce negative rates, it is more likely that some customers will be ready to store money even with a negative rate due to a certain kind of stability. At the same time, the other party withdraws from deposit accounts. The second scenario takes place if we are talking about small amounts of money. As for storing large sums of cash, this entails the same additional costs together with increased risks. It can safely include renting or buying a safe for security from uncertain avoidance, such as theft, fire, flood and earthquake. Moreover, this is a significant risk for the economic component of the country's structure. Due to the loss of these funds from the budget and turnover (Burenin 2016.)

It could be concluded that the rates of commercial banks on deposits can still be harmful if, in theory, they do not exceed the cost of storing cash. However, the implementation of negative rates by commercial banks should be done directly at the same time, due to the possibility of additional risks. One possible scenario is that customers of banks that have launched such bets will transfer their money to deposit accounts of banks with a positive rate.

It also noted that negative rates could draw investors' attention to the location of funds on riskier assets to attract and receive a higher income, which is more likely to carry a certain kind of risk. One of them is the emergence of bubbles in real estate markets, as well as financial assets.

In the second case, to a greater extent, commercial banks will focus on financing third-party organizations by issuing loans, both consumer and industrial; by funding of which in the future, banks can get a stable income in the number of interest rates or bonds. It will allow to achieve a reduction in credit rates by increasing the demand for them – and also a more loyal attitude of commercial banks to their issuance to individuals. In turn, credit growth should be a kind of counteraction to deflationary processes (Burenin 2016.)

1.2 Delimitations

Since the research primarily focused on how policies of Central Banks affect commercial banks' policies, depositors and investors, it is essential to understand that this is a variable. Its direction can be changed over time.

Therefore, it would be crucial for the author to apply concepts related to the policy of low and negative interest rates in cases of companies - banks. The study further delimited with the concern of commercials banks. The country of the chosen banks is Finland.

There are a few more delimitations that should be mentioned—for instance, some data provided by case commercials banks that might be confidential. As a general rule, commercial banks are not able to provide information regarding their customers and supplementary intelligence, following legislation about collecting and storing personal data. (Danske Bank) This concept includes information about customer accounts and transactions.

1.3 Research purpose and objectives

The purpose of the study was formulated as follows. After the collapse of 2008, many countries of the world were subjected to a General crisis. Central banks of various countries began to look for possible options for maintaining the economy at the proper level. After a while, the Central banks of various countries launched

a monetary policy related to the collection of a certain percentage from the Deposit accounts of commercial banks, which later received the full-term negative interest rate. However, strangely enough, the crisis of 2008 only catalyzed this phenomenon because the main prerequisites slipped back in the early 1990s. In this paper, the phenomenon will be considered primarily concerning the European Central Bank and the European Agreement country, Finland. Thus, it supports several ideas in this work:

It will be fascinating to build a hypothesis about the reaction of depositors if commercial banks have a similar policy to their deposit accounts, as well as full-fledged research in the form of interviews with a focus group of depositors, which helps to delve more extensively into the topic.

It supports the primary goal in this work: since this topic came in sight quite recently, the author wants to focus on the following objectives. As the economic structure is changing rapidly nowadays, it is essential to understand everything, that is happening around. Monetary policies are the ones that are invisibly connected with a life cycle of ordinary people. Therefore, the goal that author would like to aim at the thesis is to make understanding much more accessible, so that the global changes in European Union could be clear and distinct for people who are not connected to the economic sector. Thus, throughout the thesis leading question is the following:

"How have low and negative interest rates have affected the decisions of depositors?"

Moreover, the sub-questions that correspond to the main question are:

Why has the negative interest rate been established?

What is the impact of low and negative interest rates on commercial banks?

What can be the reaction of depositors to the introduction of negative deposit rates by commercial banks?

Do low rates provoke risky business?

If the answers to these questions are found according to the condition, then the central subject of the thesis will be completely covered.

1.4 Research strategy and structure

The thesis is divided into two main parts. The first part consists of Chapter 2.1, Chapter 2.2, Chapter 2.3 and Chapter 2.4, which include collecting information on the topic and familiarizing oneself with the basic concepts that apply throughout the paper. Moreover, this paper will need the usage of both forms of research and both forms of research sources. The leading research will be done by direct observation, analysis of literary sources, and study of other studies of previous researchers. Thus, such sources as statistics, books, and articles on economic issues will be used.

The first chapter represents a description of the general form of actions of the European Central Bank concerning the formation of monetary policy. Along the way, it is explaining the reasons for the introduction of the term negative rate for commercial banks. The second chapter is responsible for introducing the monetary policy and phenomenon of low and negative rates. There goes an explanation of occurrence, detailed description of the phenomenon, and the scheme of reflection on the economic factor. The third chapter includes a description of the commercial banks. Besides, covering concern on interest rates on deposits have changed since the introduction of this policy by the European Central Bank. The fourth is responsible for the National Bank of Finland.

The second part is a set of studies devoted to the study of the material flow received from a focus group of depositors, investors and case banks. Here the distribution will go to the expense of the empirical part of the thesis; empirical research will be shown. Chapter 3.2 will include a qualitative interview with case banks and analysis. Besides, Chapter 3.2 is responsible for an interview with the leading focus group - depositors, and results of particular research, which is being used to answer the leading question. Thus, the structure of the thesis includes part of the theory and research on the chosen topic.

1.5 Research methodology

The second part of the thesis, which is, namely, is the empirical part that has been conducted by using a qualitative research method. Since the nature of the research questions and the theoretical frameworks, for the most part, must carry an understanding, description, and explaining format (Gibbs 2007, 94), qualitative analysis was taken as a basis. Qualitative analysis allows us to take an interview as a basis. Nevertheless, in order to view them more accurately, a set of specific restrictions is needed. That will allow the reader to understand the essence of the study quickly.

Research questions include open questions and start with “how,” “what” and “why,”; the research was done using this primary method. Interviews are one of the traditional ways to collect information in qualitative analysis. One of its characteristics is questions that must be formulated in a certain way. Namely, to carry an open format and be pre-planned. The empirical data for this work was collected through interviews, which can be grouped into three different formats: structured, semi-structured, and unstructured. In this paper, the author has utilized a structured interview, so the evaluation of each candidate is made in an objective and fair way. (Pollock 2019)

The author interviewed both staffs from the banking sector and consumers in order to emphasize the view of both banks and clients. Opinion on this issue was gathered through interviews with two representatives of the banking sector working at two different banks. These respondents were selected for the interview due to their experience and insight into this matter. These two interviews helped clarify understanding of a topic and to answer the subsidiary question, such as “What is the impact of low and negative interest rates on commercial banks?”. Both interviews are structured and were conducted using the Outlook electronic messaging platform.

In order to answer the main question, a specific focus group consisting of 15 people was interviewed. The criteria for selection were based only on the availability of free capital of at least 500 euros. These interviews were conducted via the Skype Internet platform in April 2020. The interviews were structured and all results are presented and analyzed in the empirical part of the study.

2 Theoretical framework

The theoretical part of the thesis includes the main concepts that should be studied. It is imperative to understand that all these concepts are interrelated, and extensive analysis will be made in the empirical part.

This model is made for understanding the concept of phenomena and strategic order of theoretical implementation framework. The theoretical basis of this work pursues this model:

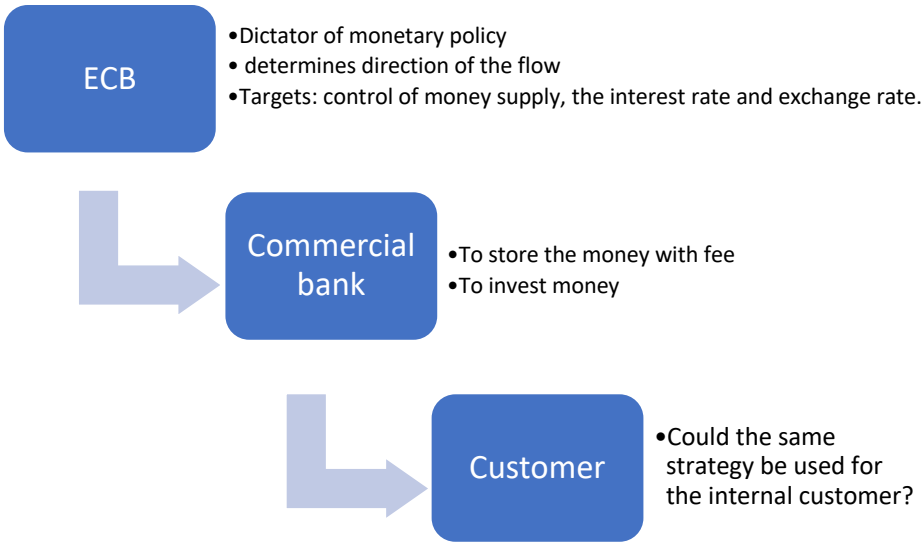

Figure 1. The model of work

This figure is also responsible for the cause and effect relationship caused by the phenomenon of Low and Negative interest rates. It was created in order to understand better and support one of the main objectives of this work.

Based on this figure, the European Central Bank is the primary source, i.e. the principal dictator of monetary policy. Besides, it sets the direction of the money supply to close the main goals. The main goals for monitoring are money supply, the interest rate and exchange rate (ECB 2011.)

A commercial bank occupies the second stage under its basic concept – being intermediary. Mediation in this model occurs due to the influence of the European Central Bank on the commercial bank, which in turn affects the primary behavior

of third parties, namely customers (depositors). Under certain conditions, a commercial bank is responsible for the central storage of money, or its investment. That is due to the granting of loans to third parties, individuals or organizations.

The last link in this chain is a customer-a depositor. When investigating the entire chain of the system, a question arises. If commercial banks are forced to adopt a negative monetary policy, can this strategy be passed on to the customer?

In fact, at the moment when the foremost financial institution of the country begins to struggle with the problems that have arisen, the monetary policy applied to commercial banks comes into force. Monetary policy will be directly linked to commercial banks because one of the main activities in these banks is the increase in profits from the implementation of projects (they will be discussed further in 2.3.4 Type of banks). As a result, the last element in this chain is the customer, and it is the result of the entered actions.

2.1 The ECB's history

This chapter describes how the European Central Bank appeared, its system of work, main functions, the monetary policy and how it manifests itself.

The issue and management of national currencies has always been regulated by central banking in Europe. A necessary component of a sovereign state was the sum of money, which was replaced by the nominal value of gold and silver coins as legal tender. Along with the increasing role of banknotes in modern economic life, their issuers, Central Banks, began to play an increasingly important role, and the conduct of monetary policy has become an integral part of the country's economic policy (Scheller 2006.)

Considering the Countries such as France, Germany, and the other European States participated in wars between each other three times during the period from 1870 to 1945, the concept of a single economic zone is a very significant development. Thus, the European leaders decided to ensure a lasting peace, which led to economic and political unification. The main changes regarding

the association began in the mid-20th century. Integration took place in the coal and steel industries. Later, after the signing of the Treaty of Rome in 1957, the European economic community and the European atomic energy community were established. That was followed in December 1969 by an official meeting whose agenda was the creation of an economic and monetary Association. The official representative in this matter was the Prime Minister of Luxembourg, Pierre Werner. The final report presented an ambitious plan that would lead to full capital liberalization in Europe and the creation of a new single currency in October 1970. In this regard, the main goal was to discuss issues related to the fiscal and monetary Union. It was divided into several stages. At the first stage of this plan, it was directly about reducing the limits of fluctuations in intra-European exchange rates. (Dominguez 2006)

Nevertheless, just at the beginning of the consideration of this stage, the currency system collapsed, and the world currency markets began to turmoil. Due to this, the beginning project of the currency union was suspended. In 1979, at the initiative of two countries, France and Germany, monetary policy coordination and exchange rate stabilization were resumed. The creation of a European currency system was based on the concept of fixed but regulated exchange rates. All members of the Union participated in the currency exchange mechanism, apart from the United Kingdom. The basic principle of operation was that exchange rates were based on comparison with the European currency unit or ECU, the European unit of account. The ECU was the weighted average of the participating currencies. The calculation was based on exchange rates of national currencies expressed in ECUs, and exchange rate fluctuations were to be kept within 2.25 per cent on both sides of bilateral rates. The only exception was created for the Italian Lira, which was allowed a difference of 6 per cent. (Dominguez 2006)

The mechanism had been successfully functioning for ten years, and in this regard, a new push was made to create a currency union. In 1989, a report was published that included the creation of a fully independent institution, the European Central Bank, or ECB, that would be responsible for overall monetary policy. The approach to the monetary union itself included a precise schedule. The first part of the plan was responsible for completely removing all restrictions on the movement of capital within Europe, as well as creating a more apparent division between Central banks and governments. Moreover, overdraft concerning state organizations has become prohibited. Furthermore, government agencies were denied privileged access to other financial institutions. (Dominguez 2006)

The second part of the plan involved making significant progress towards economic convergence in Monetary and fiscal policy. As a result, the European monetary Institute was established with the primary objective of strengthening cooperation between national Central banks. EMI also made the necessary preparations for the introduction of the single currency. In the third part of the Euro, the zone was supposed to accept the terms and become the European Monetary Union. Exceptions at that moment became two countries, Denmark and the United Kingdom. They have received certain conditions for refusal that allow them to remain outside the Eurozone (Dominguez 2006.)

Consequently, in 1999, the General meeting of the European Union adopted an Economic and Monetary Union, which led to the introduction of a new currency for all members of the Union. The Union zone included 11 countries-Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain (Hamori, & Hamori 2010.)

Banks were initially revised and transferred to the management of the single European Central Bank. That is why, in order to ensure the quality of such an Association further, each of the 11 countries had to give up the right to conduct its monetary policy (Hamori, & Hamori 2010.)

The policy and strategy of the European Central Bank consist of characteristics that allow tracking price stability. This strategy is based on two main principles, where the first principle is responsible for the inflation rate, which should be close to 2 per cent over the average. Furthermore, the second pillar is stated for setting and public announcement of a reference value for the growth rate of the m3 money supply (Hamori, & Hamori 2010.)

The European Central Bank (ECB) can be considered one of the most independent Central banks in the world. However, this independence is severely limited: the Maastricht Treaty established the primary mandate for price stability and prohibited it from participating in monetary financing. These restrictions imposed by the Maastricht Treaty forced the ECB to act slowly during the crisis and rely primarily on the multi-layered institutional changes. Despite this, an effect that strongly affected the entire structure meant that these gradual changes had significant consequences over time. Unconventional monetary policy contrasts with radical changes, the appointment of the ECB as a single Supervisory mechanism (SSM). However, the self-sustaining effects and dependence on the path established by the ECB's high degree of independence in the Maastricht Treaty also limited the EU, since there are different nature and consequences of financial policy supervision (Chang 2019.)

2.1.1 ECB policies and eurosystem activities

“The money issued by the ECB, the base money, is to ensure the stability of the price policy in order to:

1. meet the demand for currency in circulation;
2. clear interbank balances;
3. meet the requirements for the minimum reserves that may have to be deposited with the central bank” (Scheller 2006.)

It is worth starting with the fact that the process of monetary policy is a direct change in money market rates. In consequence of which, the Central Bank can initiate through its control over the conditions of the money market. The impact of changes in money market rates is reflected in other interest rates. As a basic example, we can take the impact on interest rates set by banks on short-term

loans and deposits. Besides, they affect long-term market interest rates, since they reflect expectations of the future evolution of short-term interest rates (ECB 2011.) However, despite this, long-term interest rates, for example, on the yield of 10-year government bonds, long-term Bank lending rates, are considered very indirectly and less directly. In other words, changes in official Central Bank rates usually do not affect these long-term rates unless they change market expectations about long-term economic trends (Gali, Gerlach, Rotemberg, Uhlig & Woodford 2004.)

Changes in interest rates and prices of financial assets have a significant impact on savings, spending, and investment decisions. Thus, getting loans for companies and organizations is a less profitable solution if interest rates are high. Companies are more likely to save current income rather than spend it, as the return on their savings increases. Also, changes in official interest rates may affect the loan offer. For example, after interest rates increase, the risk that some borrowers will not be able to repay their loans safely may increase to such a level that banks will not provide loans to these borrowers. As a result, such as borrowers, households, or firms, will be forced to postpone their consumption or investment plans (ECB 2011.)

Among other things, an evident change in asset prices can significantly affect consumption and investment through the income and wealth effect. Let us, for example take a situation where due to rising stock prices organizations that own these shares become richer, thereby increasing consumption. Furthermore, a reverse example in which stock prices fall, which in consequence will lead organizations to reduce consumption. One additional way that asset prices can be affected by is increasing the cost of collateral, which allows borrowers to get more loans or reduce the risk premium required by lenders/banks. Decisions are often made by taking the amount of collateral into account. If the cost of the collateral falls, loans will become more expensive and may be challenging to obtain at all, resulting in reduced costs (Gali, Gerlach, Rotemberg, Uhlig & Woodford 2004.)

2.1.2 ECB’s monetary policy strategy/main principles

The main element of the ECB's policy is to quantify price stability. The strategy's ideology also includes defining a framework that ensures that the ECB's governing Council evaluates all relevant information and analysis needed to make monetary policy decisions in a forward-looking manner (Scheller 2006.)

The ECB controls price stability using influencing money market conditions and, consequently, the level of short-term interest rates. It follows that price stability is best maintained by influencing the price level through the process of transferring monetary policy (Scheller 2006.)

If we take into account the fact that changes in monetary policy are subject to a critical level of margins in the transfer, then changes, for example, even made today, will affect the price level only in a few months or even years. That directly means that a deliberate strategy is necessary. It will allow adjusting the position that is necessary today to maintain prices in a stable order in the future. In this sense, monetary policy should also be forward-looking (Scheller 2006.)

Looking at it from the other side, delays in the transfer of currency policy do not allow to compensate for unexpected shocks at the price level. Thus, some short-term volatility in the rate of inflation is inevitable. Besides, due to a precise and complicated process, there is a certain percentage called indeterminate. It is related to monetary policy utilizing consequences. For these reasons, the medium-term orientation of monetary policy is essential. In essence, it is consistent within essence, ECB's statement that "price stability must be maintained in the medium term", and avoids excessive act. It avoids the introduction of unnecessary (and possibly self-sustaining) volatility in the real economy (Scheller 2006.)

In conclusion, the ECB maintains the level of confidence and reliability of the Euro zone's economic indicators. Segments of the structure of the economy and the operating mechanism of monetary policy also come under close observation. That was especially important during the first few years of EMU's existence. Despite this, there is a reasonably high probability of encountering these uncertainties. Of course, the ECB is not a pioneer in this issue, and this is not a

unique event in the field of the economic component. However, this is the main factor for establishing principles based on stable monetary policy. In conclusion, the policy should take into account all the above factors, correlate them with each other, and not relying on a single economic model, create an entirely new strategic movement (Scheller 2006.)

2.2 Zero bound and monetary policy

The crisis in 2008 had shaken the major part of the countries, and most of the facets of monetary policy. After a while, in monetary policy, the main actor occurred, utilizing financial stability (De Gregorio 2010.)

One of the main discussions before the crisis was related to asset prices. Thus, they had to play a role in the development of monetary policy. The "Schwartz hypothesis" states that by always pursuing the goal of price stability, central banks will be better at promoting financial stability. (Bordo & Wheelock 1998.) Furthermore, for those who are more supportive of this idea, the Central Bank is sometimes forced to compromise on its goal of price stability when financial security is under threat (Kent & Debelle 1998). Thanks to these discussions, two paths were created and edited in future exercises.

The first direction insists that Central banks do not have the right to use interest rates as a way to influence asset prices (Herrero & Río 2003; Driffill et al., 2006; Corbo 2010). In the second case, there is a claim that the Central Bank is responsible for financial stability and they should control asset prices, using the interest rate to prevent bubbles from appearing (Brousseau & Detken 2001; Cecchetti et al 2002).

2.2.1 The phenomenon of Negative interest rates

Negative interest rates are undergoing a revolution in terms of financial stability in the launch countries. Starting from June 11, 2014, the ECB's negative rate was introduced at the established level of -0.10%. Then, on March 16, 2016, the rate level was -0.40%. And so far, the final result of the monetary policy of reducing the rate is the newly established position, which is -0.50% per annum. So, at the moment, European commercial banks can place their funds on Deposit accounts of the ECB using this special rate. It was launched in September 2019, and the

ECB expects these rates to remain at the same or lower level until the issue of inflation approaches 2% (Burenin 2016.)

2.2.2 Reasons for placing negative interest rates

Oddly enough, the reasons for the introduction of negative interest rates not only in the European Union but also in other countries are very diverse and undoubtedly differ from each other. Thus, the National Bank of Denmark was forced to use this monetary policy to combat the increased inflow of capital in the country, thereby keeping the growth of the national currency. The Swiss national bank faced the same problem and introduced this policy in December 2014. The Swedish Risksbank and Japanese banks set a negative rate to fight against deflation and further continuously stimulating economic growth. The main goal of the ECB was also to overcome the stagnation of deflation and stimulate economic growth (Burenin 2016.)

In the history of low and negative interest rates, the focus has always been concentrated on its impossibility. In the late 19th century, during the academic debates, Silvio Gesell introduces the first archetype of the idea of negative nominal interest rates. The concept of Gesell attracted the attention of a defined group of people due to its innovative approach. That is why, in the future, the social movement was created, literally translated as Free-economy Movement. Despite this, the idea has not been widely publicized. Only a narrow circle of academic economists with the form of a possible implementation of this phenomenon allowed the world to learn about this "experiment." (Menner 2011.)

After a while, with due verification and evaluation of Gesell's teaching, not many people agreed with His theory, which led to a certain kind of sceptical reflection. Nevertheless, despite this, while constant deflation and economic stagnation were growing in Japan, a group of scientists again set out to study the issue of overcoming nominal rates below zero. In turn, scientists did not rely heavily on Gesell's theory when reexamining it. They accepted his economic theory, which for the most part, mentioned the idea that money is not a necessary component for allocating resources, called dynamic stochastic general equilibrium models (DSGE) (Menner 2011.)

Only for this reason, when discussing ideas about negative interest rates, the main emphasis was placed and built on a model in which money does not have a distributive effect and therefore is neutral. Oddly enough, when properly studying this issue, the most important point was missed, namely, that there is another additional model class in which the introduced tax on money is a means of increasing efficiency. Kiyotaki and Wright, in 1991 and 1993, built a generalized feature of money search models based on cash facilitate two-way trade, while eliminating the need for double matching of needs. Therefore, it was concluded that money plays a significant role despite nothing. Monetary equilibrium cannot be achieved objectively in a barter economy, and consequently, the use of funds increases wealth. However, despite this, on further consideration, efficiency is still a vital risk of monetary economics (Menner 2011.)

According to the Menner (2011), the economic theory that was built by Silvio Gesell, regarding negative interest rates, was directly related to the taxation of the money supply. The approach includes mainly the idea of legalizing a monetary currency as a means of payment, called a banknote, by attaching a thousandth part of the nominal value of the note to it. Ans it is an annual ratio of 5% depreciation. (Gesell 1958, pp. 266-276)

Using this, Gesell in Menner (2011) created a separate monetary instrument and economic theory with which he describes in more detail and justifies the needs of tax money. Gesell reinforces and explains his theory through simple and highly understandable principles.

First of all, the author emphasizes in his cultivation that storing money does not require necessary costs. Goods, in turn, can be seen as the subject of destruction and natural decomposition, which is direct evidence that their storage entails expenses and losses. In this regard, it was concluded that the room of money allows o withdraw them from circulation painlessly, but not for goods. That is the reason for the essential dimension of Gesell's' work that states that the holders of money have a strategic pressure in the economic component of the country. It is mostly because holders of the money supply could have a choice, whether let their money into circulation or keep them. By holding capital and thus not exchanging it for goods, means the creation of an unfavourable situation for

holders of assets. As a result, the products could be unusable after some time. Gesell solves this problem by introducing the concept of payment to money holders to avoid depreciation on products. From this, it could be taken out the main idea of his theory, that the interest rate is a monetary phenomenon due to the minimum associated costs (Menner 2011.)

2.2.3 Risks measures

The implementation of negative interest rates occurred quite recently. Due to this factor, there are not that many studies that analyze the effects of negative interest rates on bank risk-taking. Moreover, that leads to the limitation of the study of this question with only existing literature. In turn, literature is mostly associated with low or slightly below zero rates. (Boungou 2019, p.8-9.)

Risk reduction measures can be considered using variables, which are considered very common for banks: non-performing loans, provisions and z-score.

Bank's risk behaviour is usually measured, employing non-performing loans ratio (NPLs). The quality of the loans portfolio depends on the indicators of this variable. An example of a high rate of non-performing loans is the fact that the bank has assumed too much risk associated with the provision of loans. If a bank has extended more loans to potentially insolvent non-financial agents, it may mean that it has accumulated higher bad debts on its balance sheet, which, if they can be redirected, will not be in a shorter period. The ratio, measuring the bank credit risks, is named as provisions. The quality of assets held by the bank is measured by the ratio of loan loss provisions to gross reserves. That is also an indicator for the bulk of gross loans that were granted but not withdrawn. The high ratio of low-quality loans indicates the bank's risk-taking. An important indicator in this issue is the z-point measure. It includes the probability that the bank will fail or fail. If the z-score is high, it indicates that the probability of insolvency risk is low and thus carries the lowest level of risk acceptance. (Boungou 2019, p.8-9.)

Potential risks from negative rates policy could be viewed from different perspectives using the variables mentioned previously. As professor John Iannis Mourmouras indicated in a 2016 lecture, there are four potential risks:

1. Erosion of bank profitability

As it happens in theory, there are costs directly related to negative interest rates. Their interaction is disastrous, since the net interest margin of banks, namely the gap between the credit rates of commercial banks and Deposit rates, will be significantly reduced. That is because there is a high probability that banks may not want to pass on negative Deposit rates to their customers. This possible solution may be since under this policy their customer base may suffer significantly from erosion and the subsequent decrease in profitability. (Mourmouras 2016.)

2. Negative effects on financial markets

The working scheme of the market involves the operation of funds with investments in assets that are equivalent to cash. These include highly rated short-term corporate or government debt to provide liquidity to investors and help them retain capital while paying out modest positive returns. The primary condition for these funds is to avoid reducing the value of net assets. Nevertheless, if the market rates are negative, this could lead to massive outflows and a decrease in liquidity in a critical segment of the financial system. Also, pension and insurance funds will have to face a number of problems. (Mourmouras 2016.)

3. Excessive risk-taking

Negative interest rates can affect credit demand and the risk of bubbles. That is the resulting search results for financial stability solutions from the search for yield and higher leverage. Inefficient capital allocation and investor risks are one of the few consequences. After all, investors mostly seek to increase capital by increasing returns, and in this situation, they will have to operate risky assets. (Mourmouras 2016.)

4. Disincentive for government debt reduction

A negative interest rate does not put any pressure on the government to reduce public debt. This type of system, on the contrary, encourages the state authorities to make additional loans. Negative rates also create the perceived effect that debt is acceptable, thus highlighting the fact that budget and structural reforms will be delayed, given the fiscal space they get from reducing debt servicing costs. (Mourmouras 2016.)

2.3 Commercial Bank

Humanity is used to such a word as - Bank. For us, this is not unusual. On the contrary, every year, awareness is getting better, and the perception of this financial instrument is significantly improved. At the moment, banks all over the world take the position of financial institutions that provide services of different formats and quality. (Omarini 2015, 3, 26.)

2.3.1 Definition

National Bank, namely commercial Bank, plays two essential roles in the functioning of the economy: firstly, by facilitating the payment system. Moreover, secondly, by serving as financial intermediaries. That turns the term “bank” in a way that it represents an organization, that provides services in a financial sector starting from the regulation of the money flow to loans and saving organizations. The association with this term could also be connected with the Central Bank. As it was mentioned earlier concerning the European area, a large regional bank (ECB) regulates economic development besides countries’ banks or universal banks. (Heffernan 2005, 1.)

The definition of the Bank consists of a corporate entity, financial intermediary and a service provider (Omarini 2015, 4-5). By different understanding of these types of entity, the Bank could be viewed from different perspectives. It should match the entity type and features. The author focuses in this thesis on a bank by the third type, so Bank provides intangible products to its customers. (Omarini 2015, 5.)

The Bank defines and simplifies the ability for the customers to succeed in all kind of payments. It also provides a smoother process of trade for the organization. Businesses or individual customers could also to store money on

deposits, in order to check account or savings account. Alternatively, using a withdrawing process as needed by the usage of a direct withdrawal, writing a check, or using a debit card. (Greenlaw & Shapiro 2017, p25.)

2.3.2 How banks make revenue and costs?

Main revenue element of banks is interest income; it includes such points as:

- Transactions commissions
- Account fees
- Net profit on financial operations. (OECD 2017.)

Expenses in banking industry are usually as follows:

- Interest expenses
- Net loss on financial operations
- Staff costs
- Property costs
- Income/ corporate taxes. (OECD 2017.)

The above-mentioned items are not specifically the ones for the industry, but the most significant points. In this paper, the major accent is to be focused on the revenue elements, namely net profit on financial operations, since the low and negative interest rates are connected with profits of the bank.

2.3.3 Three main functions

Three main functions are held among the banks:

1. Loans

   Loans could be given either to business issues or to individuals concerns. For both parties given investment plays an important role, as it allows us to reach the desired target rather quickly (Akrani 2011). Banks are as it could be called the intermediary element in a system of exchanging goods and services for money or other financial assets. The advantage of this factor is mainly done

according to the simplicity of the process of finding an individual who is interested in borrowing assets for future usage. It also works oppositely, an individual, who is interested in taking credit, will be connected directly to the means of banks. (Greenlaw & Shapiro 2017.)

2. Transaction security

Banks stand between savers and borrowers. The bank defines and simplifies the ability of the customers to succeed in all kind of payments. It also provides a smoother process of trade for the organization. Businesses or individual customers could also to store money on deposits, in order to check account or savings account. Alternatively, use a withdrawing process as needed by the usage of a direct withdrawal, writing a check, or using a debit card (Greenlaw & Shapiro 2017, p.23). It is also playing an essential role as it put the idea of the cash on the new level. Year by year, the reduction of cash usage makes the electronic bank payments evolve. (Meola 2020.)

3. Depositing

One more option for the usage of the bank is a deposit account. The ability to store money reduces the uncertain risks and could be also beneficial for customers (Greenlaw & Shapiro 2017). Bank guarantee that savings are reliable and secure (Akrani 2011).

2.3.4 Types of banks

Taking into consideration the broad definition of the term “bank”, the types of banks should be discussed. The classification of the banks starts with the understanding of different factors: ownership type and activities.

1. Activities

Financial activities in the banking sector are divided and distinguished into four types: universal, commercial, investment and merchant. Universal banks provide a comprehensive and exclusive range of products, which includes investment management, insurance, payment system support and deposit or loans operations. Banks which focus on the capital rise are named as investment

banks. Their activities are highly connected with trading and corporate advising. Banks which perform by shares are called merchant banks. Commercial banks offer loans and accept deposits. (Hefferman 2005, 19-24.)

2. Ownership

Two types of ownership distinguish banks: private enterprises or state-owned. Most of the existing banks are focused on gaining profit from their activities, and they are single sectored ones. State-owned banks are also usually called national banks (Cornett, Guo, Khakasari & Teharanian 2010), as an example, The Bank of Finland.

2.4 Bank of Finland

In paragraph 2.1 of the ECB's History, issues related to the European Union and the European area regulatory authority were discussed. Here, the author narrows the scope of information search and analysis to the country that was initially being selected as a case-oriented standard - Finland. That is the last and final paragraph in the discussion of the theoretical part. It will describe monetary policy affecting only the country of Finland. Moreover, the main conclusion will be drawn here regarding the original drawing at the beginning of the theoretical part, where the cause-and-effect relationship between such elements as the Central Bank, the commercial Bank and the client was indicated.

Values and Objectives

The Bank of Finland is responsible for observation of economic stability. It includes the keeping track of such sectors as price stability, secure payments systems and reliable financial systems, which are suitable for sustainable growth, employment and welfare of Finnish society. (Bank of Finland.)

Three values are highly followed in The Bank of Finland:

- Competence
- Appreciation
- Responsibility

Each of the values is commonly used and followed according to the corporate regulations. Moreover, there is a certain kind of contact line between values and strategy and vision. In that way, The Bank of Finland's vision is to be known as a forward-looking and practical central bank and a constructive and influential member of the Euro system. (Bank of Finland.)

The strategic management of the Bank of Finland has four main principles: influence and ability to serve, efficient use of resources and capital adequacy, the efficiency of internal processes and building the future. Using these principles, we can draw an undeniable conclusion about the main objectives and values that this Institute adheres.

	Strategic guideline
1. **Influence and service capacity**	The Bank of Finland's primary influence is generated by a high level of expertise and research. Besides, the Bank participates in maintaining the level of service to financial markets and related infrastructure. Also, the Bank aims at a conscious level of public confidence by providing relevant information about the Bank's activities and the Eurosystem.
2. **Efficient use of resources and capital adequacy**	The Bank of Finland is one of the most efficient Central banks in the EU area. It provides guarantees regarding the safe investment of its financial assets, regulating this also by international obligations and anti-crisis management requirements. The main task here is to ensure a stable distribution of profits to the state

	without compromising the Bank's capital adequacy.
3. Efficiency of internal processes	The Bank of Finland monitors the quality of analytical and operational processes, thereby actively trying to improve them.
4. Building the future	Indicators of a high level of sustainability in the Bank of Finland's activities indicate its focus on building long-term prospects. The Bank accordingly increases the competence and qualifications of its employees and does not forget about the long-term well-being of its employees.

Table 1. Bank of Finland's guidelines

By giving an example and publishing the main guidelines of the Bank of Finland, the author wants to emphasize the conscious parallel between the European Central Bank and the Bank of Finland. Despite this, the National Bank acts as a separate unit and is therefore considered separately.

Table 1 shows The (National) Bank of Finland's policy and commitment to building a stable economic component. Because the Bank of Finland works together with the European Central Bank and is a full member in the Euro system, the Bank of Finland participates in the preparation of the single monetary policy, related decision-making and implementation in the euro area. (Bank of Finland.)

Thus, National Bank fully supports and accepts the main goal - maintaining price stability in the Euro area and thereby preserving the purchasing power of the Euro (Bank of Finland). The concept of price stability means that the annual rate of increase in consumer prices should be below, but close to 2%. (Eesti Pank.)

However, the question arises, why should it be below, but close to 2%? The explanation hides in the idea that 2% is a low rate in order to allow the economy to benefit fully from price stability. (Eesti Pank.)

3 Empirical part

This chapter contains the empirical part of the research. The main goal of the research is to study the phenomenon of low and negative interest rates, as well as to show this topic from all sides for any interested person. The chapter begins with a detailed description of the collection of information, as well as, finalizing the outcome in the results related chapter.

The empirical study was divided into three parts of two focus groups for conducting an analysis. The first part contains the opinion of commercial banks in Finland. It explores how banks view low and negative interest rates, how this phenomenon affects profits, and how it affects risky business practices.

The second part of the study is based on a hypothesis. Commercial banks impose negative interest rates on individuals, namely depositors. Here, the author wants to study the issue from the private sector in order to determine the possible reaction and approve the sequence of actions of the focus group participants. To determine precisely how this was considered and how the further disposal of capital would go.

3.1 Data collection

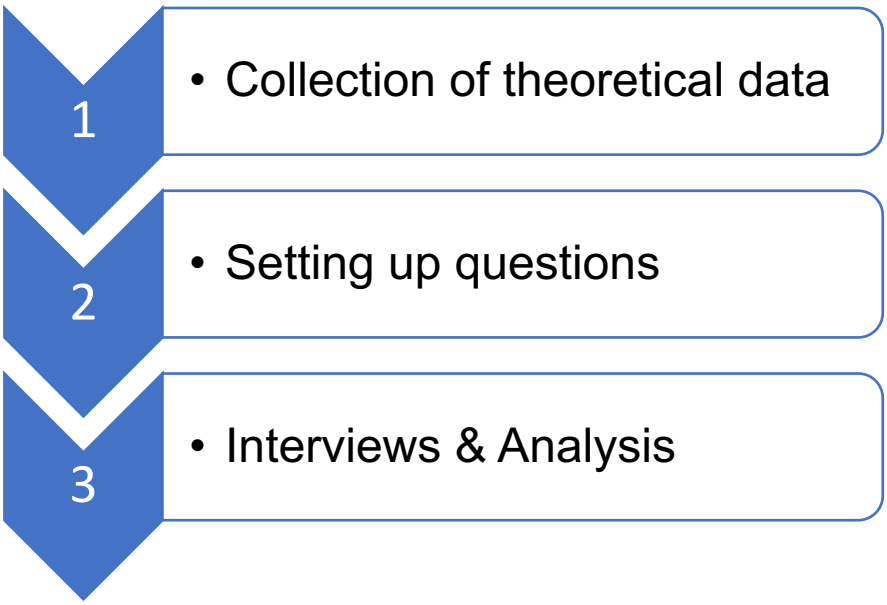

Figure 2. Model of working process

The collection of the theoretical data is the first step out of 3 in order to fulfil the research. The existing data from open trustworthy sources were carefully gathered. Each of the followed focus groups is being used with data collection, as performed in Figure 2 Model of working process.

The second step is to prepare interview questions using the theoretical information collected. At this stage, for a more unambiguous conclusion and an opportunity to analyze the information from case banks, the interview questions were partly borrowed from the sub-questions section. This action is since, during the writing of the thesis, its primary purpose was slightly changed, thereby emphasizing a new fundamental one. Based on the interviews of the case banks, questions for a focus group of depositors had been made. Based on this fact, the author answered the central questions of this paper, and added to the conclusion judgments about the main question.

The author combined the interview itself and the analysis in the third and final step, considering that not all respondents will be able to provide answers to the questions on time. The analysis of the obtained data was carried out gradually, which on the one hand allowed a better assessment of each case company, and on the other hand, made it possible to select information sources more carefully.

3.2 Interview for commercial bank

The online interview was conducted among commercial banks of Finland to study the relation and affecting point of low and negative interest rates stated by the European Central Bank. The interview was held via platform Outlook, by email, and sent on 18th of February 2020 and the expected day for getting replies was 3rd of March 2020. The interview was available in two languages: English and in Finnish. This decision was made due to the objective simplification of the perception of information, as well as for a more accurate response.

The empirical part of the study was based on four commercial banks in Finland:

Case bank 1

Case bank 2

Case bank 3

Case bank 4

While waiting for answers to interview questions, the author received interviews from two banks only. Each of the banks wished to remain anonymous, which was highlighted in the question number 7 (see Appendix 1): **Name in the thesis. Would you like that your name or company is shown in the thesis? Or would you prefer to stay anonymous?** Thus, the empirical part is based on case Bank 1 and case Bank 2.

The choice was made concerning these banks due to a certain kind of accessibility to information for a full-fledged study. Author rely on personal opinion, in order to fully disclose the topic of this study, the interview should be made up of auxiliary questions related to the sub-questions. Thus, the online interview consisted of five questions, which are differentiated by types of experience verification, opinion and case questions - these five questions were referred to previously partly as sub-questions, and two additional ones. Additional questions included a section for free comment, as well as information about privacy in the study.

The transformation of the received information was performed using the received responses. It allowed the author to operate with data for use when formulating statements.

1. **What is the impact of low and negative interest rates on commercial banks?** This part includes the findings of low and negative interest rates of commercial banks. Thus, the impact of this phenomenon was analyzed with the actual cases of banks.
    - "Perhaps the most visible effect is the low-interest rate margin, which affects banks' earnings. Loans granted are rapidly shortening, and new loans should be given in large numbers to replace or receive returns on other products." (1:1.)
    - "Net interest income (NII) is a major source of income for banks, and it derives from margins between lending and deposits but also treasury operations. Higher interest rates are good for banks as it

increases income. Low or negative interest rate lowers funding costs but also the return from investments is lower." (1:2.)

From the rephases of interviewees of two case banks responses, could be noticed the impact of how the phenomena related to the bank's earnings. Two respondents at once focus on net interest income and margin, which affects the profitability of banks. To maintain a high indicator, it is necessary to significantly increase the production of additional products, namely, the issuance of loans. Nevertheless, despite this, a low or negative interest rate significantly reduces the cost of financial security.

2. **How do low and negative interest rates in the euro area hurt commercial banks' profitability?** This part helps the author learn about the negative effect of negative interest rates on banks' profitability.
    - "The same answer as above" (1:1).
    - "See the above. The synthetically kept low-interest rates have probably reduced growth in the euro area." (1:2.)

Mainly, the problem of negative interest rates for commercial banks is connected with high costs for the banks. The theory from the case banks says that more effort should be made in order to stay relevant to the profit growth area. Nevertheless, the overall effect on banks profitability is not immediately noticeable. The experience of Sweden and Denmark is significant in this content since those two countries are more profound in negative territory. (Madaschi & Nuevo 2017.)

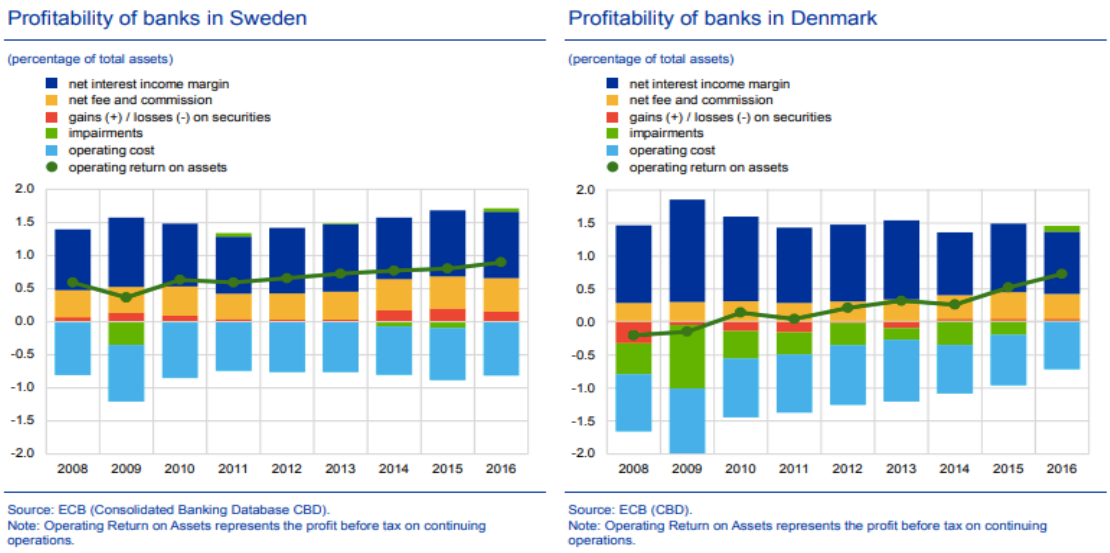

Figure 3. Profitability of banks in Sweden and Denmark

As can be seen from the indicators of these two charts, despite negative interest rates, the banks of Sweden and Denmark did not suffer much and even improved their performance. But according to a source from the European Central Bank, improvements in Swedish banks were mainly driven by an increase in operating income for banks, while in Danish banks, this mainly reflects a decrease in operating expenses. (Madaschi & Nuevo 2017.) Thus, we conclude that the profitability of indicators of profitability indices does not depend much on the negative interest rate. In real terms, this depends on the banks ' strategy and proper use of the products.

3. **What can be the reaction of depositors to the introduction of negative deposit rates by commercial banks?** In this section author examines gained data concerning the possible outcome of depositors to the introduction of negative deposit rates.
    - "Deposits are not a productive form of savings at the moment. Funds are controlled, for example. Funds and shares, although they must always bear in mind the risk of losing capital." (1:1.)
    - "The negative deposit rates have been introduced for corporates and more significant deposits such as >EUR 100,000 (in Denmark). We have not yet seen a reaction. (1:2).

Unfortunately, there has not been a real reaction to this policy from depositors yet. So, based on the answer from (1:2), we can only assume. Despite this, (1:1)

emphasizes that depositors should be prepared for the fact that the risk of capital loss will be very high

4. **Should a negative rate be treated as an interest rate or as a deposit fee paid by the depositor?** In this question, the author is interested in the possible reaction to how the bid should be treated.
    - None of the respondents was able to answer this question, which is why we will return to it in the second part of the study when a focus group of five contributors will be presented.
5. **Do low rates provoke risky business?** Implementation of possible conduct and review whether this type of policy is a manifestation and stimulation of a risky type of investment.
    - "Yes, low-interest rates certainly attract both companies and individuals to borrow, but banks decide to lend or not so that provocation does not in itself increase risky businesses" (1:1).
    - "For banks, the required risk weights for lending to corporates are quite high and require much collateral. Regardless of the interest rate level." (1:2.)

On the one hand, negative interest rates do not entail provocative actions, since banks still directly solve issues related to the issuance of loans and regulation of their products. On the other hand, the risk increases if banks cannot be sure that organizations will be able to return capital and interest.

In the next chapter, the customers' interviews are introduced, along with empirical findings. If commercial banks are pursuing similar policies in a negative interest rate environment, what will be the reaction of their clients? Will the private sector be able to accept and adapt to this type of change promptly? Will customers be able to start managing their savings correctly and how likely are they to decide to open a business?

3.3 Interview with depositors

Interviews with customers are the leading research method in this paper. It allows to support the knowledge gained from the theoretical part, as well as answer additional questions and supplement the answers to the first interview with banks.

A detailed survey of the focus group was conducted by interviewing questions in which the respondents were required to answer questions in a specific format. The search for interview participants was made using several Internet sites, such as Facebook and Vkontakte, where anonymous posts were published. Besides, the author published an interview request on the Quora space. After processing the requests, a group of 15 people was assembled. Thus, the number of participants was determined to be 15 people. The interviews were not group interviews; it was a separate conference on Skype for each of the respondents. Thus, the type of interviews is a one-on-one interview. The main criteria for selecting respondents was the factor of their authorized capital, namely at least 500 euros and more. This point is mostly due to the fact that the author needs to make sure that the depositors have free capital to dispose of. The author of this paper asks the question of how, in theory, people would manage their capital if they were faced with the question of managing funds in an environment of low and negative interest rates.

One of the most critical aspects of the interviewer's job was to find out the necessary information about the interviewees, such as age and occupation. That was done in order to divide the collected audience into two groups for more detailed analysis.

Interviewee	Age	Occupation
A	21	Student
B	21	Student
C	22	Worker
D	22	Just graduated student
E	22	Just graduated student
F	24	Student and owner of a business
G	25	Worker
H	28	Student
I	29	Just graduated student

Table 2. Group 1

Interviewee	Age	Occupation
J	31	Student
K	32	Worker
L	32	Worker
M	34	Worker
N	36	Worker
O	37	Worker

Table 3. Group 2

Please note that the names of the interviewees are listed from A to O (see table 1 and table 2). These names are used instead of the actual names of the interviewees. Starting with interviewee A and ending with I, this is a category of people between the ages of 20 and 30. It consists of nine people. In the future continuation of the study, this group will be called group 1. From Respondent J to Respondent O, this is a group of people between the ages of 30 and 40; there were six people here, and this is group 2.

When compared, both groups have significant differences. For a start, the average age differs significantly, as indicated above (this is the method of separation) and occupation. So, in group 1, most of the respondents are students or newly graduated students. Group 2, on the contrary, is dominated by working people. Where only one respondent was a student; thus, this allows us to focus on the response that depends on the age difference and the general understanding of the situation.

Therefore, after dividing the focus group by age criteria and clarifying the status, the author started implementing the basic concept of a negative interest rate policy. First, it was necessary to determine whether the respondents had any experience with placing free capital in the Bank's deposit accounts (see Appendix 2). **(Have you ever placed capital on deposit accounts of your bank in order to earn profit from stated interest rate?)** All participants shared their experience in this field. The author of the study found that all respondents, resorted to this method of investment. The purpose of this question was only the

initial introduction to the audience for further development of the interview. An exciting feature was that most of the respondents went for this type of investment because of the relative guarantee of stable profits and confidence.

After that, the author decided to ask (see Appendix 2) if the two groups were familiar with the negative interest rate policy (NIRP). **(Have you ever heard about NIRP?)** From group 1, three respondents knew the concept and how this policy works. Group 2 showed the opposite result. All participants knew and understood the working conditions; moreover, they were able to provide detailed additional information about their awareness.

A description of the NIRP followed after and the brief description of the main elements of the system. The main question of the interview was the set criteria for respondents to express their reaction. The situation (see Appendix 2, question 5) was presented: where respondents were placed in the conditions of a negative interest rate at their bank. **(Negative interest rate is the policy of the European Central Bank in relation to commercial banks that charge them a certain percentage for storing money in their accounts. Now let's hypothetically imagine that you are the owners of the authorized capital, and keep your money in a commercial Bank at interest. As you are informed that your Deposit rate is changing, and now it is negative, that is, in fact now you are paying for the maintenance of money.)**

According to the fifth interview question (see Appendix 2), **(What would be your reaction? What would you do first?)** the main possible reaction of Group 1 was to think about an alternative way to store capital, namely reinvestment as soon as possible. This was accompanied by a very calm reaction, and only one respondent expressed the deepest surprise and indignation. But mostly, the answers were accompanied by a very adequate response.

"I am worried that it pushes unsustainable usage of cash for banks as they are more pushed to give loans. Especially now I notice more and more private lending at low rates and especially long term, and am worried this push will drive more unsustainable loans, and at the time that things go badly, will cause a crash,

especially now that unemployment will rise substantially. In general, there is a huge crash in the markets." *Interviewee C, Group 1*

"I would invest the capital in somewhere. Surely that is a much more profitable way." *Interviewee D, Group 1*

It proves the understanding that people will be ready for these changes. Even though respondents would have to change the way they hold their capital, the group was determined to change it quickly in order to maintain the profitability of their bank deposits. Thus, we can conclude that banks in this scenario will be in a precarious position. The outflow of a large number of deposits will change the net interest income and lead to an aggravation of the situation with financing costs. However, one respondent from the first group constructively emphasized that:

"I'd continue storing the capital as this policy is getting more popular all over Europe as it keeps the currency level stable and, therefore, helps banks prevent a high level of inflation on the market." *Interviewee G, Group 1*

The second group had a more pessimistic reaction, but the main idea was still to find a way to manage capital better. Respondents were interested in aspects of the bank's forecasts.

"Depending on the amount of capital, of course, I would make a decision. If that were a significant size of capital, the best solution would be to continue using commercial bank services as a means of transparency (quite an important aspect nowadays)." *Interviewee M, Group 2*

"I would ask for forecasts and explanation. If the explanation was not obvious for me, close account and reuse money" *Interviewee J, Group 2*

"My reaction would be simple; the bank just wants more money. The possible solution, cash out what I could, invest in real estate or anything that will "keep the value" of the money just no fiscal money*" Interviewee O, Group 2*

If we take into account the results obtained from two groups; in fact, the banks will have two scenarios. The first involves the bank's actions aimed at navigating

clients in this environment. Namely, investing money in the markets, rather than leaving it in savings accounts. That would generally reduce the amount of cash held in bank accounts. The main thing is that the bank is ready for rapid outflows. The second option is to set negative interest rates on their clients' deposits in order to restore the interest spread that is wide enough for them to survive. (myLIFE team 2020.)

If the bank introduces a negative interest rate, this will be a fact for the depositor. Furthermore, the leading indicator for applying the main actions. That is why the best possible action would be not waste time and money, but to consult a competent bank representative, which could help and determine the possible tactical course of capital investment.

The commission that a bank usually charges for using the services can usually include such items as withdrawing money from a bank account, or vice versa, adding money to it. That is usually a fixed fee and rarely depends on the volume. Also, the commission may consist of transferring the monetary equivalent to an account with another bank. In this case, the amount already depends on the transfer amount. For a particular group of people, most often, using the bank's services is free, mainly people of a specified age category or status, such as students or pensioners. Otherwise, the bank's clients pay a small commission, which also does not depend on the storage of the money supply. Nevertheless, there is a question about deposits with a negative rate policy. Will this be mostly a deposit fee, or will it be a rate that depends on the amount of capital? (see Appendix 2, question 6). **(Would you consider this policy as an interest rate or a deposit fee?)**

Ten respondents said they would consider this policy a deposit fee. Only two participants indicated that they would accept this as an interest rate. The rest of the participants either refrained from answering or agreed that they could not determine for themselves.

"I'd consider this as an interest rate of a bank. It also depends on whether the bank is reputable and reliable enough so that I can be sure a commercial bank I work with has got a high level of liquidity." *Interviewee G, Group 1*

"I do not know anything about this, anyway, I do not like even when bank place a commission of 10-20 euros for transferring money from a company's' account to a personal one! That is a robbery!" *Interviewee F, Group 1*

"Personally, I would not be able to determine exactly what these banks' move would mean for me. Most likely, I would have learned this from my personal manager. Still, at this point, my answer is neither one nor the other." *Interviewee K, Group 2*

At this stage, the author can conclude that customers would expect a fixed fee for storing money. However, it would be useful and would carry at least some real advantages if the maximum level of stored savings was determined by banks. Going back to the changes that have already been introduced in Danish banks, where the negative interest rate on private customers' deposits is calculated in the interest rate starting from 100,000 euros or more. (Danske Bank 2020.) The trend could be seen that banks put more emphasis on large deposit accounts, thus, focusing the attention of depositors on the search for additional reinvestment of funds.

Therefore, if the negative deposit rate is already a fact for the client, how likely would he be to continue to keep money, even for an indefinite period? A significant part of the responses took the position that the probability would be close to or equal to zero. (see Appendix 2, question 7). **(How likely would you be to continue keeping money in your accounts?)**

“I would be 100% positive to withdraw my money from the account and wouldn’t want to keep them on the account on such conditions” *Interviewee A, Group 1*

“I would focus on investing my money as well as spending it, if it was present in my accounts, however, that is generally my attitude” *Interviewee H, Group 1*

Despite this, according to the author, the respondents of the second group were more focused on getting additional help in this issue. People were concerned about the consequences, both in a personal and corporate format.

“Again, depending on a size of a company or the amount of capital the decision could be both yes and no. Most probably, it is still reasonable to use accounts in

a bank due to current requirements and better image of a firm to be crystal-clear in terms of law" *Interviewee M, Group 2*

"In case a commercial bank I work with has got a good reputation and encourages their clients to run their business, I'd definitely continue storing money in my account despite the fact the bank has a negative interest rate policy." *Interviewee G, Group 1*

"This issue will need to be studied, but it is more likely that I will not give large amounts of money to the bank for safekeeping" *Interviewee N, Group 2*

In the last question (see Appendix 2, question 8), **(Would you be able to properly manage your money and invest it in your business?)**, the author tried to determine whether the audience would decide to open their own business or manage their capital correctly. Unfortunately, only a few respondents answered this question clearly, referring to their personal experience and knowledge.

"I am aware of other means and instruments of managing the capital other than keeping the money at certain interest rate" *Interviewee N, Group 2*

However, there is a certain additional question: do these people calculate the risks they take?

"I would be able to manage my savings properly, at least I would be able to find more commercially interesting application even with higher risks than in banks" *Interviewee C, Group 1*

"This, of course, is possible. I have often faced the open question of finding additional income, even with positive interest rates in my bank. At that time, when I was conducting research, I found more favourable conditions for making a profit. This is due to the already existing experience of presence in the European market." *Interviewee M, Group 2*

"Investing in your own business has always been a challenging task since it's not always easy to manage your finance properly, especially if I haven't got enough experience. However, I think a commercial bank will be able to provide you with

a loan for your business as long as you can prove your financial management is reasonable and you'll be able to get a profit in a long-term perspective." *Interviewee G, Group 1*

Even with higher risks, respondents are willing to invest in risky assets. Will this allow us to develop the small business segment in the Euro zone rapidly?

Conclusion

This part of the study is the final chapter in this paper; it is a detailed description of the results of the study of the theoretical and empirical parts. The author answered the questions posed initially in the introductory part of the work. The presentation of conclusions follows the principle: first, the author reveals the topic of sub-questions, answering them can give a detailed response to the main question. Furthermore, it secondly presents the analysis of the leading research question is the final part of the entire thesis. Also, this chapter is devoted to possible proposals for further research in this area.

Why has the negative interest rate been established?

The European Central Bank is responsible for setting the official interest rate. Since the beginning of the European Central Bank, the Eurozone has faced several problems that required drastic measures to solve. The crisis in the beginning of the millennium, which began in 2008, served as the basis for the introduction of a negative interest rate. This monetary policy is characterized by a certain kind of struggle against the stagnation of deflation and stimulation of economic development. The primary type of economic stimulation is provided by supporting the business segment.

What is the impact of low and negative interest rates on commercial banks?

Commercial banks are intermediaries between the European Central Bank and clients. In an environment of low and negative interest rates, they depend on both. The main direction of influence depends on the products that the Bank initially started working with.

Theoretically, the main activity is based on revenue. The Bank is interested in reducing operating expenses as much as possible and increasing revenue at the expense of interest rates. Different types of banks use different methods to achieve this result. When analyzing this issue, low and negative rates affect the profitability index of the banking segment, taking into account their primary revenue. A commercial Bank uses the funds of depositors, earning in such a way that part of the profit is returned to the Deposit, and partly remains for itself.

Before the policy of negative rates, the placement of funds in the accounts of the Central Bank occupied one of the leading positions, after the introduction of the same, they lost this significant part, thereby forcing themselves to look for new ways to increase profits.

Loans, in this case, are the leading way to maintain a stable income. Nevertheless, with the same success, the conditions for issuing such loans are strikingly different from those previously established. Banks must adhere to new tactics: loans already issued should be as quickly as possible reduced, namely closed. New loans should be provided to interested parties in much more copious amounts. That means that initially, this policy is not destructive for the banking segment. On the contrary, it allows reducing the cost of financing, thereby increasing the speed of return on investment.

What can be the reaction of depositors to the introduction of negative deposit rates by commercial banks? Do low rates provoke risky business?

The primary literature so far cannot accurately describe the reaction of real depositors who are faced with an environment of negative interest rates. Given that the main innovations were adopted only in one country, and this happened relatively recently, it is too early to conclude. In this case, at this stage of development, we can only make assumptions and support these assumptions with the help of data obtained from interviews with the focus group.

The author concludes that depositors start from understanding how profitable the Bank's offer is. If the client has an understanding of how a particular policy works, they can conclude and thus focus without distractions. Distractions include the fear of losing control of the capital, which was presented in the empirical part of the study. Making only the meek assumption that this would entail unnecessary costs, the assessment of the overall state of the situation was significantly exaggerated. Despite this, the research also revealed that such clients fully trust the opinion of an authoritative and competent representative. Thus, it is emphasizing that the Bank can generate an additional way to preserve the clientele. Why is there a question about saving clients? The answer to this question can also be seen in the dynamics of responses in interviews with the

focus group. A significant percentage of respondents expressed a desire to change the Bank, or withdraw money from the General turnover, and roughly hide it under the bed mattress, which is not the best outcome of this question. In this way, both participants will lose part of their capital.

A very appropriate and understandable reaction can be a change in the investment plan. Reinvesting money is an alternative method, and almost all respondents stressed in one way or another that they would have resorted to this solution. Nevertheless, such a decisive step requires a full understanding of what is being taken at this stage. In the course of the study, respondents mentioned alternative investment methods such as opening a Deposit account with another Bank and placing capital there, buying shares in companies, investing in developing start-ups and opening business. A client who does not have enough knowledge and experience for this type of operation can quickly determine the most profitable solution. As for the less knowledgeable individuals, there is a big question about the safety of their savings. That is by far the most frightening reality in this matter. In the course of the research, the author finds out that the negative rate is considered individually. However, most focus group participants identified a negative rate as a deposit fee.

How low and negative interest rates have affected the decisions of depositors?

Summing up the results of the study and answering the main question, we can determine that the negative interest rate conditions put depositors in an exciting position. Most likely, this monetary policy concerning individuals will serve as an impetus for development. This impact can lead to an improvement in the small and medium-sized business segment. The significant interest of clients to increase their capital will leave them no choice but to invest money, both in a traditionally safe and proven way, and to resort to more complex and risky ones.

Oddly enough, in this consideration of the issue, the risk is an integral part of improvement. The decisions of depositors, regardless of the method, are always an indicative gamble. The outcome can be predicted or calculated, but is the investor able to make rational decisions in a crisis?

The primary purpose of the author's work was to present the phenomenon of low and negative rates to any interested person, to cover this topic in a more precise sense. The author fully reveals all the questions of the diploma and the main task. The main elements and principles derived from the literature on the work of the European Central Bank allow us to understand better the structure of monetary policy in the Euro area. The qualitative analysis was especially crucial for this work, because, statements from the theoretical part were checked, as well as a hypothesis based on the main question was built.

The process of conducting the final part of the study was very involved. That is due to getting an interview with the first focus group consisting of commercial banks. According to the author, the interviews should have been well thought out in advance, as it was challenging to access participants. The author recommends that future research should start by conducting interviews and specify a more precise time frame for conducting them. The author also recommends narrowing the empirical part of the study to only one component of the system (see Figure 1: work model), described at the beginning of the theoretical part.

In conclusion, it is worth adding that the current economy is subject to huge fluctuations and changes, due to world crises, cataclysms and pandemics. That allows us to conclude that it is not eternal; it changes with time and the needs formed by society. That should encourage people to study and generalize the leading theories for development and improvement. After all, this is what creates the economy of the future for a stable life.

List of figures

Figure 1. The model of work 10
Figure 2. Model of working process 29
Figure 3. Profitability of banks in Sweden and Denmark 33

List of tables

Table 1. Bank of Finland guidelines 27
Table 2. Group 1 36
Table 3. Group 2 36

References

Akrani, G. 2011. Functions of Banks – Importance Banking Functions and Services https://kalyan-city.blogspot.com/2011/04/functions-of-banks-important-banking.html Accessed on 25 March 2020

Bank of Finland, n.d.a. Activities, values and strategy. https://www.suomenpankki.fi/en/bank-of-finland/tasks/activities-values-and-strategy/ Accessed on 28 March 2020

Bank of Finlqnd, n.d.b. Bank of Finland objectives and results framewoek 2016-2018. https://www.suomenpankki.fi/globalassets/en/bank-of-finland/tasks/documents/bank-of-finland-objectives-and-results-framework.pdf Accessed on 28 March 2020

Bordo, M.D. & Wheelock, D.C. 1998. Price stability and Financial Stability: The Historical Record http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.437.2288&rep=rep1&type=pdf Accessed on 28 March 2020

Boungou, W. 2019. Negative interest rates, Bank profitability and Risk-taking. www.ofce.sciences-po.fr/pdf/dtravail/WP2019-10.pdf Accessed on 25 March 2020

Brousseau, V. & Detken, C. 2001. “Monetary policy and fears of financial instability” ECB working paper number 89.

Burenin A.N. 2016. Negative Interest Rates: Central Banks Initiated Experiment. MGIMO Review of International Relations. (4(49)):262-273. (In Russ.)

Chang, M. 2019. Journal of Contemporary European Research Volume 15, Issue 2, The Constraints of Central Bank Independence: The European Central Bank’s Unconventional Monetary Policy and Incremental Accountability in the Euro Crisis

Cornett, M., Guo, L., Khaksari, S. & Tehranian, H. 2010. The impact of state ownership on performance differences in privately-owned versus state-owned

banks: An international comparison. Journal of Financial Intermediation, January 2010, 19(1), 74-94.

Danske Bank. 2020. Danske Bank A/S privacy notice for retail customers and private individuals (Denmark) https://danskebank.dk/PDF/GDPR/Danske_Bank_privacy_notice.pdf Accessed on 7 April 2020

De Gregorio, J. 2010. Monetary Policy and Financial Stability: An Emerging Markets Perspective https://www.bis.org/review/r090924b.pdf Accessed on 10 April 2020

Dominguez K. 2006 "The European Central Bank, the Euro, and Global Financial Markets". Volume 20, Number 4—Fall. 67–88

ECB. 2011. The monetary policy of ECB. ECB https://www.ecb.europa.eu/mopo/intro/transmission/html/index.en.html Accessed on 10 January 2020

ECB. 2015. What is monetary policy? ECB. https://www.ecb.europa.eu/explainers/tell-me/html/what-is-monetary-policy.en.html Accessed on 10 January 2020

Eesti Pank. Importance of price stability. https://www.eestipank.ee/en/monetary-policy/importance-price-stabilit Accessed on 30 March 2020

Gali, J., Gerlach, G., Rotemberg, J., Uhlig, H. & Woodford, M. 2004.The Monetary Policy Strategy of the ECB Reconsidered

Gibbs, G. R. 2007. Analyzing qualitative data. SAGE Publications Ltd.

Greenlaw, S.D. & Shapiro D. 2017. Principles of Economics 2e (27.3)

Hamori, S & Hamori, N. 2010. Introduction of the Euro and the Monetray Policy of the European Central Bank

Heffernan, S. 2005. Modern Banking. 1st edition. Chichester: John Wiley & Sons Ltd.

Herrero, G. & Río, D. P. 2003. “Financial Stability and the design of monetary policy” Bank of Spain working paper number15.

Kent, C. & Debelle, G. 1998. “Trends in the Australian banking system: implications for financial system stability and monetary policy” presented at BIS Autumn Central Bank Economists’ Meeting, Basel 28-29 October.

Madaschi, C. & Nuevo, P.I. 2017. No 195. Occasional Paper Series. The profitability of banks in a context of negative monetary policy rates: the cases of Sweden and Denmark. ECB.

Menner, M. 2011.” Gesell” Tax and Efficiency of Monetary Exchange

Meola, A. 2020. E-Commerce & Online Payment Technologies Overview & Trends. Business Insider. https://www.businessinsider.com/ecommerce-online-electronic-payments Accessed 14 March 2020

Mourmouras, J. 2016. Global Risks in an era of negative interest rates. Lecture notes.

myLIFE team. 2020. How should I react to negative interest on savings? https://my-life.lu/en/how-should-i-react-to-negative-interest-on-savings-52502/ Accessed on 25 March 2020

OECD. 2017. Bank profitability: Financial statements of banks. OECD http://www.oecd.org/finance/financial-markets/2373422.pdf Accessed 14 March 2020

Omarini, A. 2015. Retail banking: business transformation and competitive strategies for the future. 1st edition. New York: Palgrave Macmillan.

Pollock, T. 2019. The Difference Between Structured, Unstructured and Semi-Structured Interviews

Scheller, H.K. 2006. The European Central Bank History, Role and Functions. SECOND REVISED EDITION

APPENDICES

Appendix 1: The interview questions for banks' representatives

1. What is the impact of low and negative interest rates on commercial banks?
2. How do low and negative interest rates in the euro area hurt commercial banks' profitability?
3. What can be the reaction of depositors to the introduction of negative deposit rates by commercial banks?
4. Should a negative rate be treated as an interest rate or as a deposit fee paid by the depositor?
5. Do low rates provoke risky business?
6. Free comment question, if you have something to add.

Name in the thesis. Would you like that your name or company is shown in the thesis? Or would you prefer to stay anonymous?

Appendix 2: The interview questions for private customers

1. How old are you?
2. What do you do for living? Are you a student or already in working life?
3. Have you ever place capital on deposit accounts of your bank in order to earn profit from stated interest rate?
4. Have you ever heard about NIRP?
5. *Negative interest rate is the policy of the European Central Bank in relation to commercial banks that charge them a certain percentage for storing money in their accounts. Now let's hypothetically imagine that you are the owners of the authorized capital, and keep your money in the lights of a commercial Bank at interest. As you are informed that your Deposit rate is changing, and now it is negative, that is, in fact now you are paying for the maintenance of money.*

   What would be your reaction? What would you do first?
6. Would you consider this policy as an interest rate or as a deposit fee?
7. How likely would you be to continue keeping money in your accounts?
8. Would you be able to properly manage your money and invest it in your business?