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Consumer Credit Market: Why Regulation Matters

Gül Dogan //
Student number:
1192175

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Supervisor: Dr. P.W. van Wijck

Second Reader: Dr. M. Berg

Educating the mind

without educating the heart,

is no education at all. - Aristotle

Preface

Dear reader,

Before you lies the master thesis *Consumer Credit Market: Why Regulation Matters* for the master program Public Administration: Governing Markets. I've been waiting for this moment for so long. I started this master right after getting my Bachelor's degree for Public Administration, in September 2014. I followed the program in 2014-2015 but didn't finish my thesis. As a matter of fact, I started to follow a second master program: Financial Law at the Erasmus University in Rotterdam. In the meantime I did an internship at the *Nederlandsche Bank*, which allowed me to bring my knowledge into practice. I got my first master's degree in August 2017. Some unforeseen circumstances have slowed me down in writing this thesis.

My interest in economics and regulation has led me to choose this topic. I'm interested in how regulation affects things and people. That's why I've followed this master's program in the first place. I have to admit that I've struggled a lot in the beginning, but I can proudly say that I've finished my master thesis. In truth, I could not have achieved this without a strong support group. I would like to thank my supervisor, Dr. P.W. van Wijck, for his excellent guidance, very helpful feedback and support during this whole process. I also want to thank my family, my parents in particular, for their support, love, wise councel and kind words: it served me well.

I hope you enjoy your reading.

Gül Dogan

The Hague, 9 January 2018

Content

Gül Dogan

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1. Introduction

Consumer credit and consumer protection is one of the topics that attracted more attention from policy makers after the financial crisis of 2008. Shortcomings in effective disclosures contributed to some degree to a breakdown of the financial crisis (Ardic et al, 2011: 2). The fact that consumers lack information and knowledge about financial products and the implications of transactions in financial markets, is an important reason to regulate credit markets (Ziegel, 1968: 490; Zinman, 2014: 5). Before the crisis, lack of transparency of financial markets was a serious problem. Because of this, a lot of households lost their houses and even banks went bankrupt. Government intervention is an option then to reduce these market failures.

The crisis triggered more regulation in consumer financial products and therefore, national governments introduced measures to combat these problems. The Banker's Oath, the new remuneration policy and the Banking Code are some of these measures that the Dutch government took after the crisis. In order to reduce information asymmetry between banks and consumers, the EU introduced the Consumer Credit Directive (hereafter: CCD) in 2008. Types of credit that are offered to consumers have developed substantially in the last years, but there are national differences in laws concerning consumer credit within the EU. These differences led to different instruments to protect consumers. Differences in laws can create a barrier for the internal market within the EU and can lead to distortion of competition between member states. This in turn can affect the demand of goods and services. (Directive 2008/48/EC: p: 1).

Lending by European Banks has increased in the last years.[1] One explanation for this can be that the economy in the EU-zone is growing. Though, there are introduced more and more rules on the field of consumer credit in order to protect the consumers and to reduce the information asymmetry between creditors and consumers. For example, if you want to close a mobile contract with a mobile phone provider in the Netherlands with a phone which is €250 or more, you have to ask as a mobile provider the income and expenses of the consumers. Consumers has to give this information in order to close the contract and to get the phone. Mobile providers are seen as credit providers. So on the basis of the income and expenses, the credit providers determine the maximum that can be borrowed by the consumer. There are obligations on mobile phone providers to assess the creditworthiness of customers on the base of sufficient information provided by the customer.

[1] FD.nl, 2017, https://fd.nl/economie-politiek/1189654/kredietverlening-in-eurozone-trekt-verder-aan.

The EU aims to create an internal market were transparency and an efficient market without borders in order to stimulate cross-border economic activities (Directive 2008/48/EC, p. 66). The EU wants a "harmonised Community framework" with respect to the developing and growing consumer credit. In order to achieve this goal, consumers have to be protected properly. The protection the consumers will get, has to be sufficient enough to establish consumer confidence (Directive 2008/48/EC, p. 67). The EU wants to protect consumers against misleading and unfair information/practices from the lender. Therefore, the CCD contains new rules concerning advertising and standard information that should be provided to consumers. This enables consumers to compare different financial products and offers (Directive 2008/48/EC, p. 68). In short, the creditor needs to provide a lot more information to the consumer and the consumer has to provide more information to the creditor.

1.2. Problem outline and research question

So everybody has some information.

the function of the market is to aggregate that information,

evaluate it,

and get it incorporated into prices. – Merton Miller (Source: Tanous, P.J. (1997), Investment Gurus)

There are information asymmetries in both directions between consumers and financial institutions in consumer credit markets. Due to the complexity of financial products and lack of transparency, the provision of consumer credit is regulated. Imperfect information has been seen as an argument for government intervention in order to expand credit supply (Zinman, 2014: 5). Information asymmetries in credit markets may be an obstacle for an efficient allocation of lending. Information sharing then may increase volume of lending and increase competitiveness (Pagano & Jappeli, 1993: 1693). Consumers may use less credit after obtained information or increase their credit use (Durkins, 2002: 201). The question is: what is the impact of regulation on consumer credit. The CCD forces creditors to give more information to the consumer. But also, lenders get more information about the borrower and assess their creditworthiness. What will happen to consumer credit after the reduction of information asymmetry? The main focus of this thesis is to look at the impact of the Consumer Credit

Directive on credit lending in the European Union. The main research question of this thesis is therefore as follows:

What is the impact of the Consumer Credit Directive on consumer credit as a percentage of GDP in countries where the Directive is implemented?

There's no consensus about the impact of regulating consumer credit. Proponents of regulations like the CCD argue that regulation on financial markets is useful to reduce unfairness by reducing the information asymmetries. Protecting consumers and reducing borrowing costs can be established by regulation and providing additional information (Agarwal et al., 2013:1). Regulation can increase societal efficiency by, for example, consumer protection and regulation that ensures the safety of the whole banking system (Stiglitz, 2009: 11). Opponents of consumer protection regulations are skeptic about the effectiveness. New laws and regulations on consumer credit may have consequences like increased bank account fees and making it harder to obtain credit for those the consumer credit is meant for. Regulations can also push consumers to obtain other, more problematic forms of credit (Zywicki & Sarvis, 2012:1). The CCD may also increase administrative and operational costs for banks, which can lead to a reduction of consumer credit.

The purpose and the main aim of this research is to look at consumer credit as percentage of GDP before and after the implementation of the Directive by the EU-15. The credit provision will be compared with the provision in other, non-EU countries (control group) in which consumer protection remained the same in the past 10 years. The assumption is that in the presence of CCD, consumer credit is lower. The results in chapter 5 will give answer to this assumption.

1.2. Academic & Social Relevance

As pointed out in the previous section, there is no consensus about the impacts of regulating the consumer credit market. Some argue that regulation is needed because of the information asymmetry between different players on the markets. Others on the other hand argue that restricting credit access may have unintended consequences, negative externalities. Conducting this research will be a meaningful contribution to the previous discussion. Regulation is mostly associated with stricter rules. Comparing regulated and unregulated markets is one of the methodologies for measuring the effect of regulation. For this research therefore, regulatory outcomes will be compared to the outcomes that would emerge in the absence of regulation, i.e. before the implementation of the CCD. Like stated previously, the main goal of this research

is to check what the impact of the CCD is consumer credit (as % of GDP) within the EU. The results of the EU Member States will be compared with countries outside the EU. Evidence from this research indicates the effect of CCD on consumer credit

This research has also a clear social relevance. After the financial crisis, governments and banks were designated for their mistakes. Loans were given to those who couldn't pay back. Consumer protection was at a low level and self-interest of bankers was a big issue. Trust of consumers in banks and governments was at a very low level. Consumers still don't fully trust banks and bankers. The directive aims to increase the level of protection of consumers. The EU introduces a lot of regulations and directives, but to what extend are they effective and do they really help to achieve what the regulators wanted in the first place? The EU wants to increase the transparency between financial service providers and consumers. Gaining more understanding about the effects of a regulation on EU-level, will help countries and the EU in further directives.

1.3. Reader's Guide

This research is organized as follows: In chapter two, I will give background information about the CCD and will discuss some recent developments in the EU credit market. The thesis follows with a theoretical framework and literature review in which the most important views on consumer credit will be discussed. How will the research be conducted? The answer to this question will be given in chapter four where the research design, description of the variables and data collection will be discussed. Chapter five is the most important part of the thesis and analyzes the results of the research. The thesis ends with a conclusion and recommendations.

2. Consumer Credit Directive

This chapter presents some background information about the CCD. In starts with a brief summary of older regulation concerning consumer credit. It follows with information about the financial crisis of 2008. Then, the CCD will be discussed. This chapter ends with information about the implementation of the Directive in the member states.

2.1. Consumer credit regulation in the EU: Background

Before explaining the Consumer Credit Directive, it is important to know the definition of consumer credit. According to the Directive, a consumer is a natural person who is acting for purpose which are outside his trade, business or profession. "*A credit agreement is an agreement whereby a creditor grants or promises to grant a consumer credit in the form of a deferred payment, loan or other similar financial accommodation*." (Directive 2008/48/EC, L 133: 71-72). "*Consumer credit results from the interaction between household decisions of consumption and savings"* (Guardia, 2002: 7). So a consumer credit is a credit agreement between a creditor, who grants the credit, and the consumer who gets the credit and is the result of the decision between consumption and savings of households.

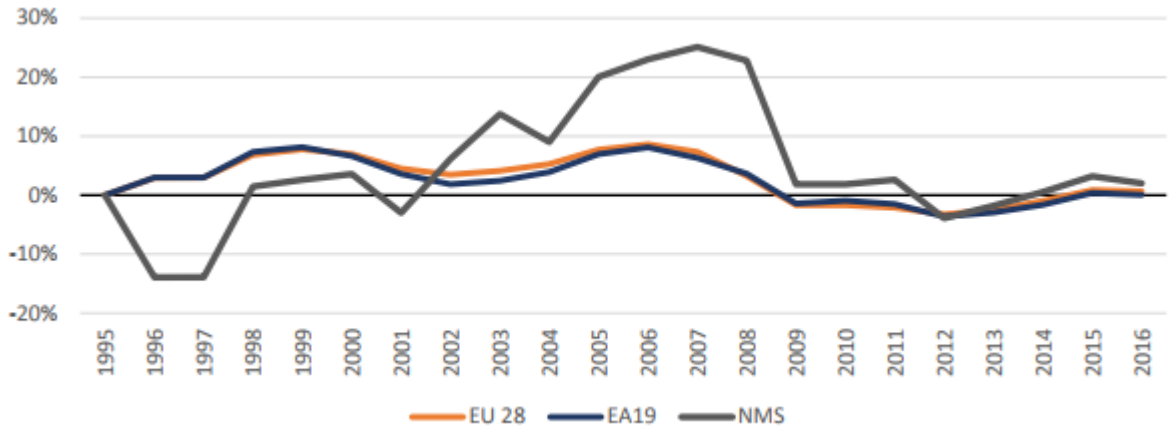
The first step towards a Directive that was taken was the council resolution in 1975 in which the need for consumer protection and information policy at Community level has been emphasized (O.J. No C 92, 1975). In 1979, an official Commission proposal has been published (COM/1979/69). The Council of the European Communities has proposed for a Council Directive in 1979 to harmonize the laws, regulations and administrative provisions of the Member States regarding consumer credit. In the proposal, the increasing demand for consumer credit was emphasized. New forms of credit have entered the market, but consumers don't get sufficient information in order to make the best decision. To protect the consumers, minimum requirements for all types of credit needs to be adopted (COM/1979/69). The proposals has been discussed and in 1984, a revised proposal has been published (COM/1984/342). In the revised proposal, the points that are made in the previous proposal have been further elaborated. The proposal contains rules concerning information provision to consumers. National differences in consumer protection laws has been mentioned as a cause of unequal consumer protection. There is a considerable change in the types of credit offered by financial service providers. In order to compare different products, the information the consumer gets needs to contain the annual rate of percentage or the total costs the consumer will pay for the credit

(COM/1984/342, p. 5). Yet the differences remain. The Council notes the differences between laws regarding e.g. advertising, consumer's rights of cancellation and the form/content of credit agreements in the Member States (COM/95/117, p. 11). The attempt of Member States to regulate specific forms of consumer credit not only created discrepancies in the degree of consumer protection but it also limited the ability of consumers to obtain cross-border credit. furthermore, differences in consumer protection in Member States affects credit in volume and nature which leads to fragmentation of the credit market (COM/95/117, p. 11). This hinders the harmonious development of economic activities between Member States (COM/79/69, p. 4).

Article 100 of the Treaty establishing the European Economic Activity follows as: *"The Council shall issue directives for the approximation of provision laid down by law, regulations and/or administrative action in Member States as directly affect the establishment or functioning of the common market."* So it's one of the tasks of the European Union to promote the development of economic activities in a harmonious way in Member States (COM/1995/117: 11).

When we look at the figure below, consumer credit shows an increasing trend starting from the end of the 90's, continuous to grow in the 21st century and starts to decline in 2009 in the EU.

Figure 1: Annual growth rate of total credit market



Source: ECRI Statistical Package 2017

Although the credit market is growing, consumers don't always receive all the necessary information regarding the conditions and costs of credit. Consumers will be better protected by minimum requirements for credit offered by creditors (O.J. No C 80, 1979: 4). Given these facts, it was necessary to establish a common market which not only benefits the consumers,

but also creditors, manufacturers and distributors. The consumers will benefit from a wider choice of services and lower prices because of the increased competition. To make the market work efficiently by itself, it's important that consumers knows the price of the financial service, can compare them and act on that knowledge. This is exactly the point that needs to be highlighted. Transparency is essential to promote financial service competition in particular and for the internal market as a whole. Consumer protection in the credit market is essential because in credit markets, consumers undertake agreements for payments in the future. But there is no certainty that the financial situation of the lender remains the same. Second, consumers obtain credit because they need it and therefore accept all terms of whoever gives the credit. For these reasons, consumer protection in the credit market is necessary (COM/1995/117, p. 11).

2.2. Directive 87/102/EEC

On 22 December 1986, the Directive (87/102/EEC) has been finally adopted to bring a certain degree of harmonization of laws, regulations and provisions regarding consumer credit. The Directive entered into force on the first of January 1990. The Directive contains rules about information requirements regarding consumer credit and minimum standards for consumer protection. In 1995, there has been a report published on the operation of Directive 87/ 102/EEC. The objective of the Directive 87/102/EEC was to harmonize consumer protection rules in Member States (COM/1995/117, p. 2). The problem that is pointed out in the report is that the Directive has enabled Member States to strengthen consumer protection. Member States took the provisions to strengthen consumer protection as minimum standard. It created a sort of floor for consumer protection in Member States. The report concludes that there are still large differences between Member States concerning consumer credit.

The European Commission presented a new proposal for a Directive in 2002 because reports and consultations has showed that there are still differences between Member States that hinders the harmonization of the Internal Market. The proposal calls for a more transparent credit market with a high degree of consumer protection, changes to the legal framework to reflect new methods of credit and a realignment of the rights of creditors and consumers. To meet these objectives, the Commission proposed a few guidelines that contains e.g. more comprehensive information for the consumer, a more balanced distribution of responsibilities between creditor and consumer and the introduction of an information framework for the creditor that enables him to assess the risks (COM/2002/443, p. 202). In 2008, the European Parliament and the

Council published the new Directive: Directive 2008/48/EC on credit agreements for consumers and repealing Directive 87/102/EEC.

2.3. Directive 2008/48/EC

In the previous section, the procedure of the Directive and the problems has been discussed. The objective of the first Directive was to harmonize consumer protection in Member States, but there are still too much differences concerning consumer protection mechanisms between Member States which contributes to limitations of competition between creditors and the EU internal market (Directive 2008/48/EC, p. 66). There has been an expansion in financial products and instruments that are offered to consumers. The EU wants to stimulate cross-border activities concerning consumer credit. In order to establish this goal, a more transparent and efficient consumer credit market is necessary. Internal barriers have to be reduced. The most important point of the EU credit market is to offer protection to consumers, which is essential to ensure consumer confidence (Directive 2008/48/EC, p. 67). Because of the national differences in for example laws concerning consumer protection, it's not possible to offer the same degree of protection to all EU consumers. Therefore, full harmonization is necessary. The aim of the Directive is to protect consumers against misleading practices and unfair information concerning the disclosure of information by the creditor. Providing clear, adequate and full information is the key. The EU believes that consumers are protected if the creditor provides full information to consumers (Directive 2008/48/EC, p. 68).

So the Directive is meant to increase transparency and to stimulate the integration of the European consumer credit market. The purpose of the CCD is the harmonization of certain aspects of laws, regulations and provisions concerning consumer credit. The key objectives of the CCD are in short:

- Stimulating the creation of an internal consumer credit market in the EU and to promote the provision of cross-border consumer credit;
- Protecting consumer from misleading practices and imperfect information (Ipsos & London Economics, 2013: 5).

This Directive applies to, among others, overdrafts, open- ended credits and credit linked to the acquisition of new goods/services and secured credit. It doesn't apply to credit agreements which are secured by a mortgage (Directive 2008/48/EC, p. 71).

2.4. New rules on Credit Agreements

How does the EU want to establish the key objectives stated above? Consumers need access to full information in order to make decisions about financial products. Creditors need to give consumers a set of information so that consumers can understand the product and compare it with other products. Before closing a contract and as part of the agreement, the creditor is obliged to provide sufficient information. To increase the transparency between the creditor and the consumer, the creditor needs to inform about the annual percentage rate (APR) of charge. The total costs of the agreement needs to be clear and understandable for the consumer. The total costs include interest, commissions, taxes, fees for the intermediaries and other fees that the consumer has to pay. Notarial costs are excluded from the total costs (Directive 2008/48/EC, p. 68). If the variable borrowing rate changes in the pre-contractual phase or during the credit agreement, the consumer has to be informed about it. The borrowing rate cannot be changes without a valid reason (Directive 2008/48/EC, p. 69).

The pre-contractual information needs to be understandable for the consumer. Consumers need to receive adequate information in order to make the decisions with full information in mind. Even if consumers have all the information to make a decision, they still may need help/assistance in order to decide which product suits his financial situation and his needs the best. Creditors should give assistance to consumers for the products they offer and need to explain the most important characteristics of the specific financial product. Consumers also need to be informed about the impact of such a credit agreement on their financial situation (Directive 2008/48/EC, p. 69).

The CCD includes rules about advertising, pre-contractual information that needs to be offered to consumers, the right of early repayment and the right to withdrawal without giving a reason (Directive 2008/48/EC). The standard information that needs to be provided to consumers concerning advertising should include by all means the borrowing rate, the total amount of credit, the annual percentage rate of charge and the duration of the credit. This information needs to be specified in a clear and concise way. The pre-contractual information needs to consists of the type of credit, the total amount of credit, the duration of the agreement, the annual percentage rate of charge and the total amount payable by the consumer, the amount, number and frequency of payments to be made by the consumer, the existence or absence of the right of withdrawal and the right of early repayment (Directive 2008/48/EC, p. 74-75). The

Directive pays special attention to the right of withdrawal. Consumers have a period of 14 days to cancel the contract without giving a reason (Directive 2008/48/EC, p. 79).

Furthermore, creditors need information too. In order to assess the creditworthiness of applicants for consumer credit, the creditor needs to consult databases in which this information is included. Article 8 of Directive 2008/48/EC obliges creditors to assess the credit status of the consumer before the conclusion of the credit agreement. This happens on the basis of sufficient information obtained by the consumer and the database. To stimulate cross-border lending, Member States have to ensure access to database which is used to check the credit status of the consumer to creditors from other Member States. In case a credit application of the consumer is rejected after consulting the database, the creditor needs to inform the consumer (article 9 of Directive 2008/48/EC).

The above means that creditors need to offer more information to consumers and consumer in turn need to provide more information too. The fact that creditors need to provide more information about financial products, means that creditors need to make more costs to provide the required large amount of information. Financial institutions need also more time to assess the information of the consumers. This also requires more costs. As a consequence, the costs of providing credit could increase which can result in a reduction of the supply of credit. Financial institutions consult databases to assess the creditworthiness of consumer, which may decrease the transaction costs banks make. On the other hand, the provision of credit to those with low credit scores may decrease. Banks can pass on the costs to the customer and may increase for example bank account fees, fees for ATM withdrawals or introducing/increasing transaction fees. The CCD thus may lead to more administrative and operational costs for banks. This may lead to a reduction of consumer credit.

In short, the Directive has two objectives: establishing an internal market by harmonized rules and ensuring a high degree of consumer protection. But the consumer credit markets is still seen as a market that is not working well in comparison with other markets. There are still issues regarding consumer credit, for example the establishment of a harmonized internal credit market. In 2009, consumer credit reached 9.1% of GDP in the EU27 (Ipsos & London Economics, 2013: 3). Since the financial crisis, there's a reduction of consumer credit debt. Creditors have been tightened the lending criteria for consumers. Thereby, the outstanding consumer credit debt has reduced to 8.2% of the GDP in 2011. More information about the developments in the credit market will be discussed in the next paragraph.

2.5. Implementation of the CCD

The CCD was adopted in April 2008 by the European Parliament and the Council. In the Member States it had to be effective from 11 June 2010. For this study, I will look at the EU-15. Since the date on which the Directive is implemented in Member States differs, I can take this into account in the analysis. It is important to keep this in mind while drawing conclusions.

Member States transposed the CCD on different dates. Date of implementation of the Consumer Credit Directive by EU-15* is as follows:

- Spain: 25 September 2011
- The Netherlands: 25 May 2011
- Finland: 1 December 2010
- Italy: 13 August 2010
- Germany: 1 June 2010
- Portugal: 1 July 2009
- Belgium: 13 June 2010
- Denmark: June 2011
- France: 1 July 2010
- Ireland: 11 June 2010
- Luxemburg: April 2011
- Austria: 11 June 2010
- United Kingdom: 30 April 2010
- Sweden: 1 January 2011
- Greece: June 2010

**Source: European Parliament 2012: Implementation of the Consumer Credit Directive*

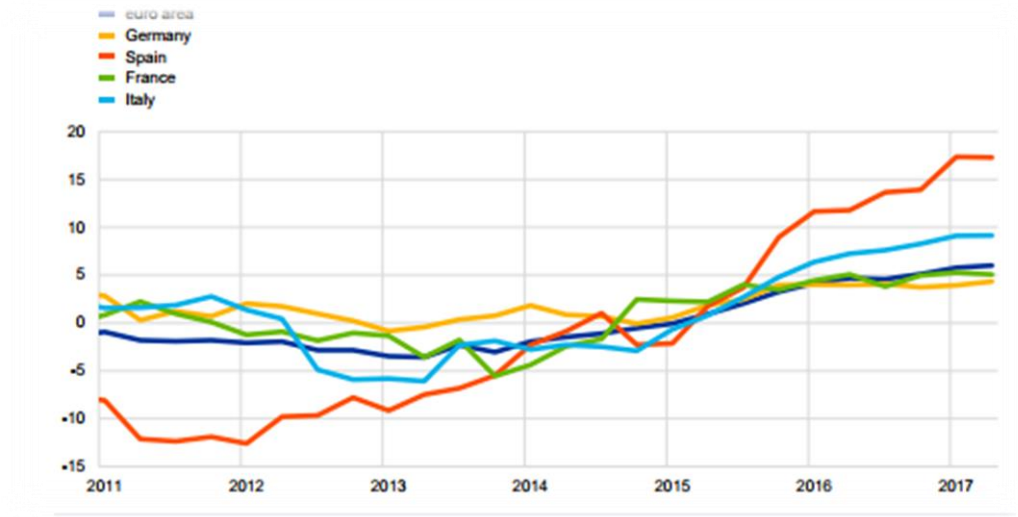
2.6. Developments in the EU consumer credit market

Over the past years, financial innovations presented a large set of financial options and instruments which stimulated the financial boom. Financial markets grew rapidly. Financial products and instruments became complex too. The products that were offered by banks and other financial organizations were opaque and hard to understand for the average consumer (Crotty, 2009: 564). Liberalization of the financial markets increases the vulnerability of the financial system as a whole. Transactions are way more complex then 20 years ago. More financial options means more need of information in order to make the right decisions.

Deregulation, liberalization of the capital movements in the EU and the attempt to establish a single market in the EU have changed the regulatory framework (Guardia, 2002: 1).

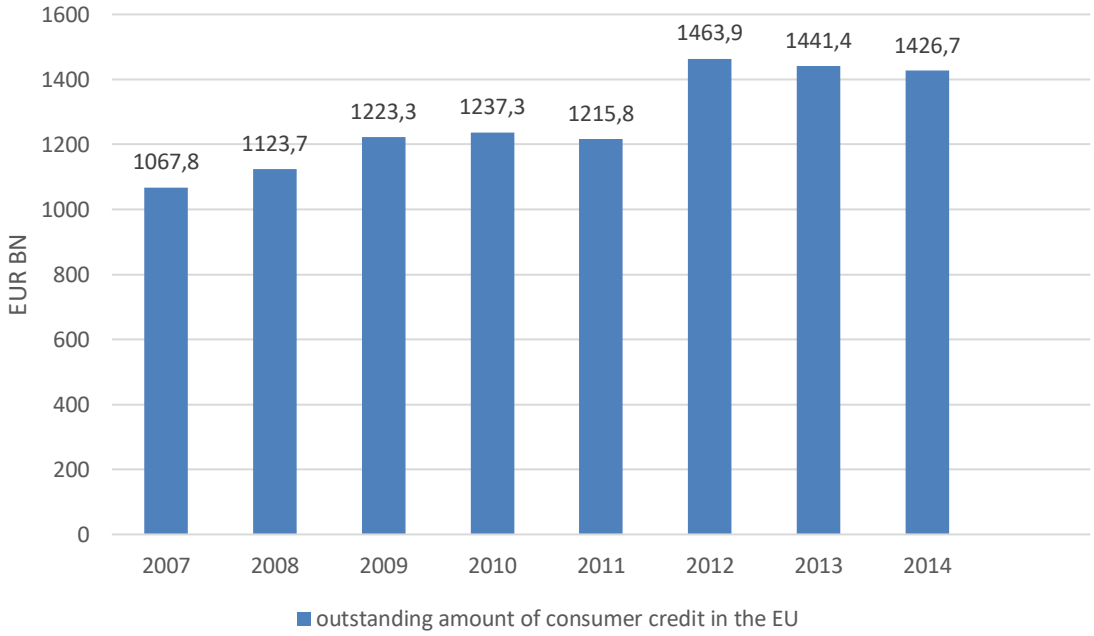
In the 80's and 90's, the EU removed restrictions on capital movements and attempted to establish a harmonized regulatory framework (see the previous two paragraphs about this topic), which affected the regulation of consumer credit. With the increase in the quantity of financial products, the European credit market and in particular the growth in the volume of outstanding consumer credit has grown enormously between 1998 and 2007 (Guardia, 2002: 6). The growth in the credit market was especially in the household sector: mortgage and consumer loans (Bouyon & Musmeci, 2016: 1). The real amount of consumer credit in the EU grew by 150% between 1995 and 2008 (Chmelar, 2013: 15). A measure that is used for financial development is credit to the private sector as a percentage of GDP (Bahadir & Valev, 2017; Beck et al, 2014; King & Levine, 1993). The total borrowing capacity of households was 42% of the GDP in 1998 and increased to 58% of GDP in 2007. Financial integration and single currency are two important factors that caused this growth (Bouyon & Musmeci, 2016: 1). The figures below shows the development of consumer credit in Europe. Figure 2 shows the development of consumer credit in Euro area countries. As we can see, there is a decline starting from 2011 for all countries except for Spain. Between 2011 and 2015, the growth is very small. Figure 3 shows the outstanding amount of consumer credit in the EU. Between 2007 and 2011, the growth is small, but there is a considerably growth starting from 2011. Credit to households as percentage of GDP is shown in figure 4. As we can see, consumer credit is 9% of GDP on average between 2006 and 2010. The question that will be answered in this research is what the effect is of the CCD on consumer credit (%GDP). This will be discussed in chapter 5. Growth in household debt in EU-27 is shown in figure 5. We can see that there's a decline.

Figure 2: Consumer credit in Euro area countries (annual percentage changes)



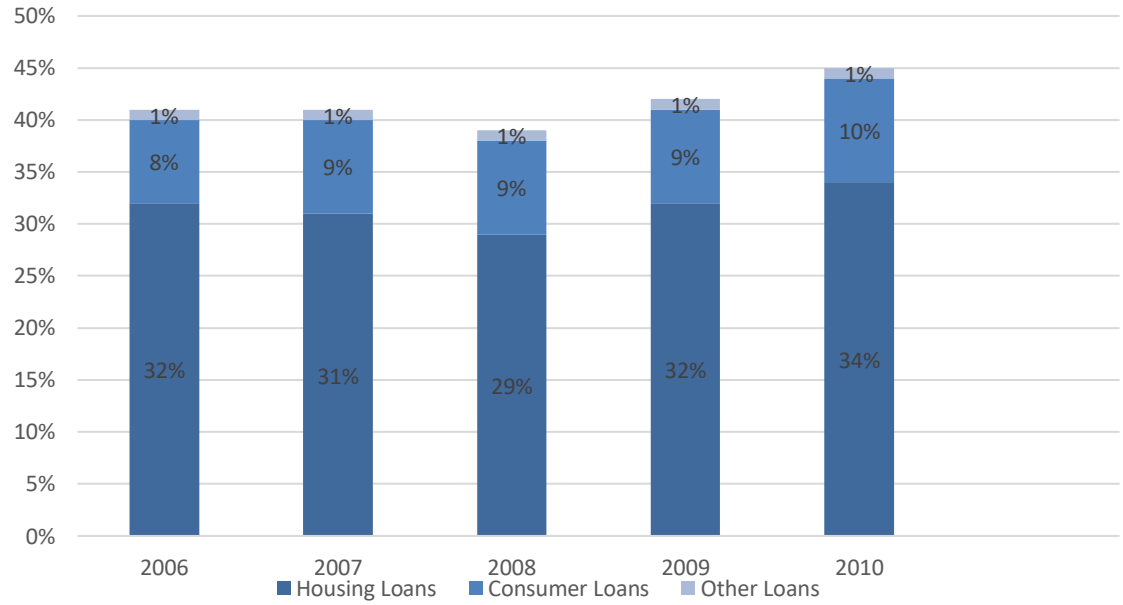
Source: ECB

Figure 3: Outstanding amount of consumer credit in the EU



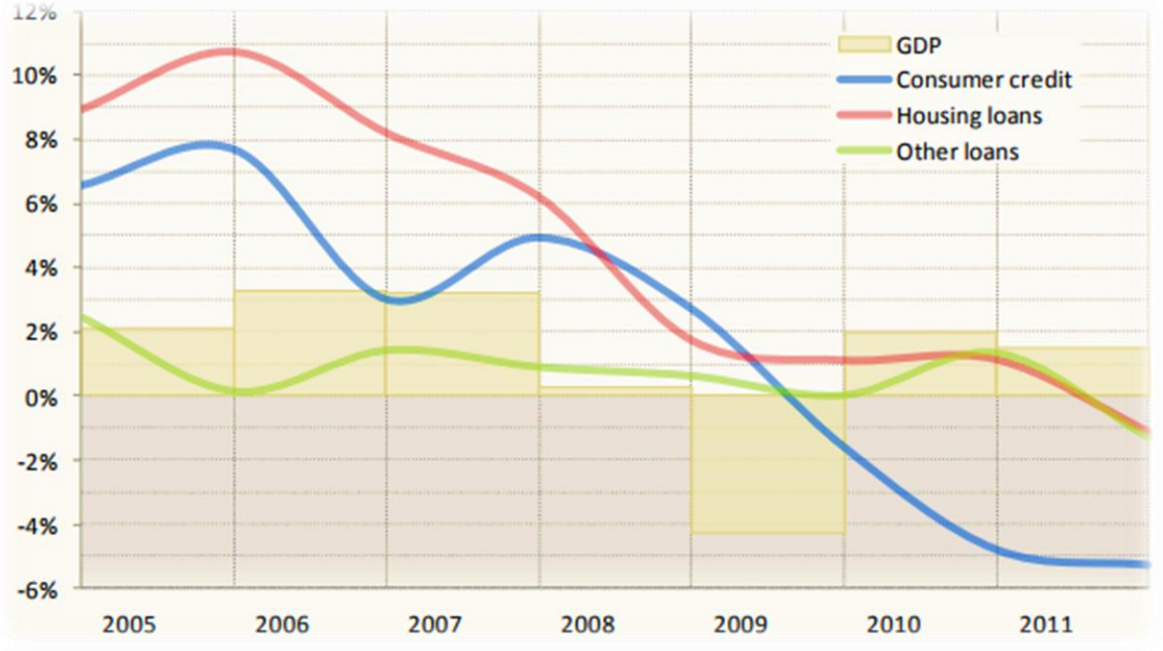
Source: Eurostat

Figure 4: Credit to EU-households as a % of GDP



Source: ECRI Statistical Package 2011 and ECB

Figure 5: Growth in household debt by type in EU-27



Source: ECRI Statistical Package 2012

3. Theoretical Framework & Literature Review

There has been a lot written about consumer credit regulation and its effects. However, there's still no consensus about the effectiveness of regulation. This chapter presents the most important literature about this topic. The next section will be about economics of regulation, market failure theory and literature about access to consumer credit and its impact. I will discuss the most important examples for the credit market.

3.1. Economics of Regulation

After the financial crisis, financial protection regulations have increased. Not only in Europe with the CCD (see chapter 2) but also in the Unites States. What are the purposes of consumer credit regulation? There are different views on this (Calem et al, 2016; Belsky & Wachter, 2010). According to Calem et al (2016), consumer credit regulation has two broad objectives, namely: 1) expanding access to consumer credit and therefore improving consumer welfare or protecting consumers from over borrowing, unsuitable credit and unfair practices and 2) protecting the safety of financial institutions (Calem et al., 2016: 3). Belsky & Wachter (2010) argue that regulation of consumer credit markets is due to market failures, to pursue equal treatment and equity and to promote positive externalities (Belsky & Wachter, 2010: 5). What is the rationale behind regulation? There are different theories of regulation. The literature on economics of regulation presents two broad theories: normative and positive theories. Normative theories are based on establishing ideal regulation from an economic perspective which in turn is based on economic efficiency and market failure. Positive theories on the other hand is based on explaining the nature and development of regulation and tries to describe the impact of regulation (Veljanovski, 2010: 19).

Normative approaches to regulation are built on concepts of economic efficiency and market failure. However, just focusing on market failure is misleading because governments can fail too, known as regulatory failure. Efficient outcome is a concept within economics of regulation. What is an efficient outcome? Efficient outcome has been explained by using Pareto efficiency and Kaldor-Hicks efficiency. A Pareto efficient outcome is established when all parties benefit, or none are harmed, by a reallocation of resources, goods or change in a law (Bator, 1958). Since most policies have winner but also losers, the Pareto efficiency is difficult. To deal with this difficulty, Kaldor-Hicks efficiency is adopted by economics. We speak of Kaldor-Hickss

efficiency if the 'winners' of a policy can compensate the 'losers' and still be better off, the economic gains exceeds the economics losses (Veljanovski, 2010: 20).

3.2. Market failure

Market failure is a second concept of normative theory of regulation. Market failure is described as the failure of the price market-system to achieve desirable activities or to reduce undesirable activities (Bator, 1958). Markets fail for four reasons: public goods, market power, externalities and asymmetric information (Zerbe & McCurdy, 1999: 561). The first one are public goods. Public good is non-rivalrous which means that consumption by one individual doesn't detract from that of any other individual. Individuals cannot be excluded from consuming a public good. This is why a competitive market may fail in providing a public good. Non-payers can't be excluded from the consumption of the public good, which can lead too free-riding (Veljanovski, 2010: 21; Bator, 1958: 369).

The second reason why markets can fail are the existence of externalities. Externalities are created when external losses, for example global warming, or benefits have an impact on third parties which are not taken into account by the market itself. The problem with externalities is that the costs doesn't reflect the full social costs or benefits of the activities. The social costs are higher than the private costs. This is why governments step in with regulations to reduce these kinds of negative externalities (Veljanovski, 2010: 21). Market power is the third reason for market failure. The market is not efficient if one firm or a few firms can raise the price of a good above the competitive price. A monopolist produce less and charges a higher price than a competitive market. The price exceeds the marginal opportunity costs or production and consumer's demand is lower than is efficient. In order to protect its monopoly position, monopolist can lead to excessive productions costs or reduce innovation (Veljanovski, 2010: 21).

3.2.1. Information Asymmetry

The most important form of market failure with respect to this research is the existence of asymmetric information. Asymmetric information is basically the fact that one has more or better information than the other. Therefore, this asymmetry can result in inefficient choices and market outcomes. In a financial contract, let's say a consumer credit contract, the bank has always more information about the contracts. The consumers are dealing with information asymmetry and the transparency is low. One of the most classic examples of asymmetric

information is the “Market for Lemons” (Akerlof, 1970: 489-490). Individuals that want to buy a new car don’t know whether the car they want to buy is a good or bad (lemon) one. The seller has more knowledge about the quality of the car than the buyer. The bad and good cars are sold for the same price and the buyer cannot tell the difference between the two cars.

In credit markets, there are several layers of information asymmetries. The first one is the information asymmetry between borrower and credit. In this situation, the borrower have information advantage on the lender about the individual circumstances. Borrowers know if they get a divorce, expect lower income or to lose their job. Borrowers can also falsify some information to gain advantage in order to get the credit (Belsky & Wachter 2010: 17. In the second situation, the creditor has information advantage over the consumer. Lenders has way more information about the products they offer to consumers. Borrowers lack information about expected risks and expected risk premiums. If cost information and options about the products are not provided to consumers or when costs of obtaining information are high, borrowers may make less economically efficient choices and end up with a product which is not a least cost product (Belsky & Wachter 2010: 18). Furthermore, high transaction costs and bounded rationality constitute a barrier to the consumer in order to make the right decision. Risk, uncertainty, incomplete information about alternatives and limited time are factors that lead to bounded rationality (Simon, 1972: 163).

Asymmetric information can create two problems: moral hazard and adverse selection. Moral hazard occurs when the prospect of compensation to cover risks and losses increases the likelihood and size of losses (Williamson, 1971: 117). One can increase their exposure to risk because of the insurance. Risky behavior cannot be monitored which can lead to compensation of excessive losses (Veljanovski, 2010: 22). For example, you buy a new MacBook, insure it and go on vacation with it. Because of the insurance, you know that you will get paid in case of loss or damage. The individual will behave more risky because of the insurance then without an insurance. Adverse selection can be explained by another classic example: health care insurance. Old people need more health care than youth. The people who insures themselves are the ones who are certain that they will need the insurance. Those individuals can assess the risks much easier than the insurance company. The result is that the price rises as the average condition of insurance applicants declines (Akerlof, 1970: 492).

3.3. Regulation of Credit Markets

What are the reasons of heavy regulation in credit markets? Markets can generate market failures like economic inefficiencies which provides an economic justification for government intervention to correct these failures (Belsky & Wachter, 2010: 8; Browning and Browning, 1992: 657; Boardman et al., 1996: 99). Perhaps the most important reason to regulate credit markets is the lack of understanding of the implications of the transaction by consumers (Ziegel, 1968: 490). The difference between financial and non-financial firms is that financial firms like banks are very complex. Banks have many stakeholders in comparison with non-financial firms. The business of banks is opaque and can shift rapidly (Mehran et al., 2011: 3). Making decisions about complex financial products is difficult and more likely to lead to suboptimal choices. The credit markets creates information asymmetries between creditors and consumers which can lead to consumers that pick products that doesn't suit the preferences, financial situation and their needs (Belsky & Wachter, 2010: 13). In general, consumers have present-based preferences which leads them to consumption instead of saving (Campbell ea. 2011: 91). In order to make rational decisions about financial products, especially decisions that are made infrequently, information on terms and conditions is required. These terms and conditions consist for example of pre-contractual information, information about the products and the rights of the consumer (see Directive 2008/48/EC). But many consumers are not able to generate information on their own. Financial providers are the most efficient supplier of information about financial products (Campbell et al, 2011: 93). Because of self-interest, financial providers do not always generate all the information. In some cases, regulations can improve the market outcomes. Rules and guides for financial providers to give consumers all the needed information in order to make the best decisions on financial products is an example. The financial situation, the lending history and personal information of the consumer is needed to determine which product suits the needs of consumers the best. This information is registered in a credit registry system (Directive 2008/48/EC, p. 69).

3.4. Effects of Information and Unemployment on Credit

Information disclosure is used by regulators to protect consumers (Day & Brandt, 1974: 21). Legislators have focused to make information available for consumers. Consumer make uninformed purchases on credit and when the contract has been established, too many consumers lack the information to protect themselves. This is why governments ensure that

creditors disclose contractual information to consumers (Davis, 1977: 842). But in most cases, more information means more complexity (Davis, 1977: 843).

Day & Brandt concluded in their research that increased knowledge about credit rates (APR) and information had a little effect on consumer behavior regarding credit usage (Day & Brandt, 1974: 31; Day, 1976: 51). But the truth is that more access to information increases confidence of the consumer in their choices (Day, 1976: 46). Durkin (2002) states that the effects if disclosure regulation is difficult to address. Expanded disclosures may lead to consumers who use less credit because the information persuaded that credit is expensive or consumers who don't change their use of credit or increase their credit use if information confirms that credit is affordable (Durkin, 2002: 201). The researcher concludes that information disclosure requirements affected 18% of the consumers, where 77% said that it didn't affect their decisions (Durkin, 2002: 207). Durkin, in line with Day (1976), also founds that consumers have more confidence in the relationship with creditors. They feel that creditors are monitored which seems like a positive effect of information disclosure (Durkin, 2002: 208).

Although all the information is given, lack of trust by consumers can be another problem. Lack of trust may lead to consumers who avoid financial products. Rules about disclosure are not enough to ensure trust. Regulation may improve consumer trust through information and requirements (Campbell et al, 2011: 93). Agarwal et al (2013) compared statistics before and after the implementation of an Act, which regulates consumer protection, using a difference-in-difference research design. The Act is similar to the CCD and is drafted to protect consumers from misleading and unfair practices (Agarwal et al., 2013: 1). The researchers didn't found any reduction in credit volume but did find that the Act has reduced borrowing costs. Furthermore, the Act had a significant impact on the repayment behavior of borrowers (Agarwal et al, 2013: 30). On the other hand, there is evidence that information sharing between banks about consumers, increases lending (Jappelli & Pagano, 2002: 2032). Bank lending is higher in countries where there is large information sharing. Besides, countries with higher GDP per capita and countries which have better law enforcement have large information sharing (Jappelli & Pagano, 2002: 2039). Also, credit data can reduce the problem of adverse selection which means that safe consumers enters the market and risky consumers are driven out. This could decrease lending. It also decreases the uncertainty about consumers' type. (Pagano & Jappelli, 1993: 1700)

There are several factors that contribute to consumer's decision to obtain credit. Education, age, income, employment status are some of the factors that impacts such a decision (Zinman 2009;

Souleles & Gross 2002; Stavins 2016). Consumer's expectations about changes in these factors can contribute to the decision of use of payment instruments, such as credit cards(Cole 2016; Borzekowski, Kiser, and Shaista 2008). The relationship between unemployment and the way consumers manage their finances is an important question for policymakers (Cole, 2016: 2). More unemployment tend to increase consumer credit (Russo et al, 2016; Bikker & Hu, 2002; Bethune 2014). Access to credit is valuable for the unemployed. Therefore, demand for credit increases among job losers (Bethune, 2014: 2). There's positive relationship between begin unemployed and demand for credit: there's an increased rate of 14% in credit applicants by the unemployed compared with the employed (Bethune, 2015: 10). Evidence shows that more unemployment extends the access to consumer credit (Russo et al, 2016; Bikker & Hu, 2002). More consumer credit results in more unemployment (Russo et al, 2016: 37, Bikker & Hu, 2002: 159). But the unemployed are denied significantly more for credit than the employed. Consumer credit is therefore more difficult to obtain by this group (Bethune, 2015: 10). When consumer have access to credit, they benefit from a higher level of consumption which in turn benefits the aggregate demand and decreases unemployment (Russo et al, 2016: 44). On the other hand, there's evidence that the unemployed borrow less because the chance to repay the loans are small (Michel et al, 2014: 148). Sullivan (2008) finds that households with low assets do not borrow from unsecured credit markets to compensate their job loss (Sullivan, 2008: 409). These households reduce consumption rather than borrowing (Sullivan, 2008: 406).

Another important factor in consumer economic behavior is consumer confidence. Consumer confidence affects borrowing behavior (Klopocka, 2017: 713). Optimistic consumers tend to save less and borrow more than pessimistic consumers. Consumer credit tend to increase when consumers are optimistic (Van Raaij & Gianotten, 1990: 271; Park, 1993:33-43)

3.5. Expanding and Restricting Credit Access

Unstable macroeconomic conditions restricts the availability of financing for households. Therefore, improving these conditions lead to reduction of restrictions and extends credit for households and businesses. The improved access to credit benefits the economy and is viewed as financial development (Bahadir & Valev, 2017: 102; Zinman 2010: 1). But improved access to credit is not always flawless, it can lead to problems as well. This section discusses the effects of expanding and restricting credit access to consumers.

3.5.1 Expanding Credit Access

There's a presumption that expanding credit access has a positive effect on consumers (Melzer, 2011; Campbell, 2011; Morse, 2011; Zinman, 2008; Zywichki & Sarvis, 2012; Karlan & Zinman, 2010; Morgan & Strain, 2008; Wilson et al, 2010). Credit access can ease hardship in periods of income shocks. Individuals might prefer current consumption to future consumption which benefits the consumer (Melzer, 2011: 521-522; Campell et al, 2011: 91). Payday credit for example is meant to help individuals to bridge financial shortfalls and to absorb financial shocks. Payday credit functions here welfare enhancing (Morse, 2011: 29).

Restricting access to consumer credit by policy changes decreases (expensive) short-term borrowing and leads do consumers who ends up in trouble from the restricted access (Zinman, 2008: 16-17). Policy changes in witch binding restrictions regarding credit has been introduced, reduced credit, worsened financial situation and/or leads to unemployment (Zinman, 2008: 14). The effects of the policy changes is that the supply of credit has been reduced and leads to worse financial condition (Zinman, 2008: 15). This means that restricting credit access to borrowers does harm.

Expanded access to consumer credit creates good economic outcomes and improves the financial condition of the borrower. Expanding access to credit improves the welfare of borrowers. There's not any evidence that the effects of expanded credit access to consumer credit are negative (Karlan & Zinman, 2010: 461). Also, credit access has a positive impact on economic self-sufficiency (Karlan & Zinman, 2010: 453).

Morgan & Strain (2008) found evidence that reduced payday credit supply increases credit problems. When credit access is reduced, consumers bounce more checks and complains more (Morgan & Strain, 2008: 3). The higher the supply of household credit, the lower the problems that arise (Morgan & Strain, 2008: 24). Reduction of credit increased problems. Households are forced to look for more expensive credits, which makes them worse off (Morgan & Strain, 2008: 26). Wilson et al (2010) also finds that payday loans are beneficial to households. They examined the effect of existence and use of payday credit on individual welfare and financial survival (Wilson et al, 2010: 12). They found that the existence of payday credit increases the probability of financial survival of households. Access to payday loans make it easier to absorb unexpected financial shocks (Wilson et al, 2010: 17). The existence of payday loans was beneficial for the majority of the households, namely 78.1% (Wilson et al, 2010: 16). This means that the access to credit works welfare enhancing for consumers.

3.5.2. Restricting Credit Access

Some argue that access to credit does harm to consumers (Melzer, 2011; Bond et al, 2008; Durkin & Staten, 2002; Campbell et al, 2011). Access to expensive credit worsen financial distress (Melzer, 2011: 518). It can also lead to consumers struggling with hardship because they want to increase their present consumption but don't take into account the large debt burden on the longer term. Many consumers borrow with the intention to pay the loan in one period. They cannot commit to this assumption which lead to consumers borrowing and paying interest over more than one period. This increased credit access lead to repeated borrowing behavior which reduces the welfare of consumers instead of increasing it. Welfare can be improved by restricting credit access (Melzer, 2011: 522).

Zywicki and Sarvis (2012) assumes that regulating consumers credit has unintended consequences. The assumption of regulation consumer credit is that it will reduce bad financial outcomes. But this assumption is misguided. Regulating consumers credit can create worse outcomes. This is because consumers have present-biased needs. When consumers are excluded from specific types of credit, they will search for substitutes which may be offered on less favorable terms and conditions for consumers. The likelihood of higher interest rates, bad terms and conditions and/or consumer credit outside the scope of regulation is high. Consumers are forced to agree with less preferred forms of credit (Zywichki & Sarvis, 2012: 3). As a result of heavier regulation of consumer credit, banks seek to charge more on other services like ATM withdrawals, charging more for checks, adding fees on bank accounts and so forth. Another externality of consumer credit regulation is the exclusion of specific groups from the credit market. Making it harder to obtain consumer credit can result in fewer people being able to get credit. Poor people are left then with illegal and less reliable sources (Zywichki & Sarvis, 2012: 4).

Bond et al., argue that securitization has played a role in the information asymmetry between consumer and creditor: lenders has information advantage over their borrowers (Bond et al., 2009: 421). Borrowers are misinformed about their ability to repay the credit and consumers therefore underestimate the total costs of borrowing. The lender could tell the borrower the chance to repay the loan within a period but don't tell them (Bond et al., 2009: 422-423). Economic conditions also plays a role in the decision of consumers regarding the demand of credit. For example, economic growth increases employment and wages. This could lead to increases in access to credit markets by increasing the borrowing capacity of all household (Durkin & Staten, 2002: 176).

Campbell et al (2011) argue that consumer financial markets, like the consumer credit market, are an example of market failure because of the existence of asymmetric information (Campbell et al, 2011: 92). Negative externalities can be a rationale for policy interventions. Consumers don't only need information about prices in order to make decisions, but they also need information on terms and conditions. But consumers are not always able to criticize the information on their own (bounded rationality). Financial providers are the one who can provide information to consumers. Consumers can make decisions without thinking about the impact it may have on the financial situation in the future because they have present-biased preferences (Campbell et al, 2011: 93).

3.6. Summary

In this chapter, I presented the theoretical framework which will be the base of the hypotheses of this research. This chapter presented literature about the effect of unemployment, information and consumer confidence on the provision of consumer credit. According to literature, a higher unemployment rate tend to increase consumer credit (Russo et al, 2016; Bikker & Hu, 2002; Bethune 2014). Furthermore, information disclosure and information sharing has a positive effect on the provision of consumer credit (Jappelli & Pagano, 2002). Consumer credit is also increased when consumer confidence is high (Van Raaij & Gianotten, 1990; Park, 1993; Klopocka, 2017). These are the theoretical expectations. The hypotheses of this research, based on literature, are formulated in the next chapter.

4. Research Design

This chapter describes how this research has been conducted. The hypotheses, research method & case selection, operationalization of the key variables and the data collection will be discussed below.

4.1. Hypotheses

This sections discusses the expectations of the research results: the hypotheses. The theoretical framework on which the hypothesis is based, has been presented in chapter 3.

I start with the main hypothesis of this research, namely the effect of the CCD on consumer credit (%GDP). Restricting access to consumer credit by policy changes like the CCD, decreases short-term borrowing and reduces the supply of credit (Zinman, 2008: 16-17). Information sharing leads to more rejected applicants for loans (Bos et al, 2016: 16). CCD introduced binding restrictions regarding credit. The CCD obliges creditors to provide a large amount of information to the customer which means that creditors like banks and other financial institutions must incur more costs. To assess the information, financial institutions need more time and make more costs to do so. The costs of providing credit increases, which can result in a reduction of the availability of credit. Financial institutions consult databases to assess the creditworthiness of consumers (Directive 2008/48/EC). The provision of credit to those with low credit scores may decrease. On the other hand, transaction costs may decrease because they get more information about customers by themselves. Therefore, the expectation of this research is that after introducing the CCD, consumer credit in the EU will decrease. So a negative relationship between consumer credit and CCD is expected. The hypothesis that will be tested is formulated as follows:

Hypothesis 1:

Ho: The CCD has a negative effect on consumer credit in the EU

H1: The CCD doesn't has a negative effect on consumer credit in the EU

Information sharing could have an effect on consumer credit (Jappelli & Pagano, 2002: 2032). Bank lending is higher in countries where there's more information sharing. Therefore, the second hypothesis that will be tested is as follows:

Hypothesis 2:

Ho: Consumer Credit is higher in countries with higher score on information index.

H1: Consumer Credit isn't higher in countries with higher score on information index.

More unemployment tends to increase consumer credit (Russo et al, 2016; Bikker & Hu, 2002; Bethune 2014). This is because access to credit is very valuable for the unemployed because of the job loss. This in turn increases the demand for credit. The third hypothesis that will be tested is therefore as follows:

Hypothesis 3:

Ho: High unemployment increases consumer credit.

H1: High unemployment doesn't increase consumer credit.

Consumer confidence tend to affect borrowing behavior (Klopocka, 2017: 713). Optimistic consumers save less than pessimistic consumer and borrow more than pessimistic consumers. Consumer credit tend to increase when consumers are optimistic (Van Raaij & Gianotten, 1990: 271). The expectation is therefore that a higher consumer confidence increases consumer credit. The fourth hypothesis is as follows:

Hypothesis 4:

Ho: High consumer confidence increases consumer credit

H1: High consumer confidence doesn't increase consumer credit

4.2. Research method and case selection

A quantitative, explanatory research design is chosen to conduct this research. The purpose of this research is explanatory. I want to discover and report the relationship between the variables of this research (the variables are discussed in the next paragraph). I estimate the impact of the

CCD using a longitudinal research design (panel study) (Babbie, 2010: 107). A longitudinal study is a research method in which data is collected for the same subjects (in this case countries) repeatedly at different points in time. This enables me to look at changes over time. There are several types of longitudinal studies: trend study, cohort study and panel study. In a panel study, data is collected from the same set of sample/panel at different points in time (Babbie, 2010: 109). In this research, data has been collected for the same set of countries for different years. This study enables me to analyze overall trends in the development of consumer credit for different countries: the EU-15 and non-EU countries. I do this by comparing the outcomes of consumer credit for the EU-15 (treatment group) and non-EU countries (control group) between 2006 and 2016. A control group is a group of subjects that doesn't receive a 'treatment or stimulus' and is used as a benchmark to compare the results with the treatment group, which shows the effect of the study (Babbie, 2010: 233). In this research, the control group consists of countries outside the EU that do not have to deal with the CCD, so the CCD is not implemented in these countries. The important value of the control group and the different periods (the years before the implementation of the CCD and the years after the implementation of the CCD) is to see what would happened if the CCD was not implemented. The assumption is that in the absence of the CCD, consumer credit in countries where the CCD has been implemented and non-EU countries would have maintained parallel trends. The focus of the research is the change in differences in credit level (credit % GDP) in the countries over time.

I want to see what happens to consumer credit after introducing the CCD. Therefore, to conduct this research, data from the EU-15 and data from countries outside the EU has been collected. The size of my sample are 19 countries. The EU-15 consist of the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom. The reason why I've chosen for the EU15 is to extend the reliability of my research. The larger the sample size, the higher the level of confidence of the estimates and the lower the uncertainty. In order to see what would happen to consumer credit in the absence of the CCD, a control group has been used. The control group contains countries that are not Member States of the EU: Australia, Turkey, United States and Switzerland. The reason why I've chosen for the United States is the fact that it was hit very hard by the financial crisis. Furthermore, consumer credit is large in the United States and Turkey (USA: 20% of GDP and Turkey: 10% of GDP in 2016). Although Switzerland is not an EU country, the developments in this country are almost always in line with EU countries. Australia shows similar trends in consumer credit as the rest of Europe.

4.3. Variables & Operationalization

It is important to give a description to the variables of this research in order to conduct the research. To do that, description of variables are given first. The dependent variable of this research is consumer credit (%GDP). The independent variables are CCD credit information score (infoindex), Consumer Confidence Index (CCI) and unemployment rate. The dependent variable consumer credit is obtained by calculating the credit volume as percentage of the GDP of that country. The ratio of consumer credit to GDP is the most widely used measure of financial development (Bahadir & Valev, 2017; Beck et al, 2014; King & Levine, 1993) and enables us to compare credit provision between countries. For all the countries, the consumer credit in volume for the period 2006-2016 has been collected from the OECD. Then the GDP for these years has been collected in order to calculate the credit volume as percentage of the GDP. This will make it easier to compare the consumer credit between countries.

The independent variable CCD is labeled as 0 or 1-12 in which 0 means that the CCD isn't implemented in the country. To take into account the different dates of the implementation, a score between 1 and 12 indicates the number of the month in which the CCD is effective in a specific year. For example, if the CCD is implemented in May, a score of 8 is given because the CCD is 8 months in force (from May to December).

For the independent variable infoindex, countries have scores varying between 0 and 8. This index attempts to measure rules and practices affecting the scope, coverage and accessibility of credit information. For the years 2006-2013, the scores a country could get varies between 0 and 6 in which 0 is low and 6 is high. From 2013 until now, the maximum score a country can get is 8. These values are labeled in the dataset in which the maximum score for the years 2006-2013 is 6, and from 2013-2016 the maximum score is 8. The low score of zero is the same for 2006-2016.

Unemployment may have a positive effect on consumer credit which means that consumer credit increases with an increase in unemployment (Russo et al, 2016: 37). I therefore include the control variable unemployment rate. The data collection methods of the unemployment rate and consumer confidence index will be described in the next section. Unemployment rate is the number of the unemployed as a percentage of the labour force. OECD defines unemployment as: persons of working age who are without work, available for work and have taken action to find work (OECD, 2016). Secondly, I include control variable consumer confidence index which is made available by the OECD. This is an index which is based on households' plans

for major purchases and their economic situation. 0 indicates extreme lack of confidence, 100 is neutral and 200 indicates extreme confidence

A summary of the variables of this research is given in the next table:

Table 1: Variable Summary

Variable	Source	Description
Consumer credit	OECD's Households' financial assets and liabilities database (2006-2016); OECD's GDP database (2006-2016)	Loans provided to consumers expressed as percentage of GDP
Infoindex	Credit depth of information index of World Bank: Doing Business Project, available on doingbusiness.org, Getting Credit database, 2006-2016	An index which attempts to measure rules and practices affecting the scope, coverage and accessibility of credit information, ranging from 0-6 for the years 2006-2013 and 0-8 for the years 2013-2016
CCD	Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers, available on EUR-Lex	CCD is valued between 0 and 12. Score 0 indicates that the CCD is not implemented. To take into account the different dates of the implementation, a score between 1 and 12 indicates the number of month in which the CCD is effective in a specific year. A score of 4 in 2010 for example means that the CCD is effective from September of 2010 (4 months).

Unemployment	OECD's Harmonised employment rate database, 2006-2016	Unemployment rate is the number of the unemployed as a percentage of the labour force
CCI	OECD's Business tendency and consumer opinion surveys: a subset of Main Economic Indicators (MEI), 2006-2016	An index which is based on households' plans for major purchases and their economic situation. 0 indicates extreme lack of confidence, 100 is neutral and 200 indicates extreme confidence.

4.4. Data Collection

The data that is used for this research is collected from the existing data of the OECD, an intergovernmental economic organization, and World Bank, an international financial institution. The reliability and availability of the data was important for this choice. The data on consumer credit per country from the statistics of OECD is annual and quarterly. I use data for the years 2006-2016. The dataset from the OECD includes loans, investment funds shares, life insurance and annuity entitlements and pension entitlements. For the purpose of this research, I only use the detailed breakdown of loans. The data is collected for the sector households. The measurement is in current prices and the unit of measurement that is used is in millions of national currency (euros or US dollars). For the EU15 countries, the unit is set in euros and for the other countries in dollars. The difference in currency won't be a problem because the consumer credit will be expressed as % of GDP.

The first data set is the annual provided consumer credit in volume for both the treatment and control group. For the consumer credit, I use the *Households' financial assets and liabilities* dataset from OECD.Stat. In this dataset, the OECD defines liabilities as loans which is subdivided into short term loans (up to one year) and long term loans (more than one year). The short term loans are in turn subdivided into the next categories:

- Consumer credit (up to one year)
- Short term loans for other purposes

The long term loans are subdivided into the next categories:

- Consumer credit (more than one year)
- Loans for house purchasing
- Long-term loans for other purposes

The OECD refers to *System of National Accounts* (SNA) for the definitions of terms which provides internationally agreed statistical standards for national accounts. SNA describes in a coherent and consistent way internationally agreed definitions, classifications and concepts on how to collate measures of economic activity. It is intended for use by all countries which facilitates the integration of these statistical systems. The OECD uses the definitions which are formulated by the SNA for their datasets. This increases the reliability of the dataset because most of the OECD countries compile the *Households' assets and liabilities* questionnaire according to the SNA definitions and statistical standards. SNA defines households as "*a group of persons who share the same accommodation who pool some or all of their income and wealth and who consume certain types of goods/services collectively (housing and food)"* (SNA 2008: 82). Loans are defined as follows: *"Financial assets that are created when a creditor lends funds directly to a debtor, and that are evidenced by documents that are not negotiable*" (SNA 2008: 229; OECD Guidelines 2016: 11). Short term loans include loans which have a duration for one year or less. A consumer credit is a form of loan which is granted to households for the purchase of goods and services. This can be a credit for up to one year or more than one year. Long term loans have a duration of more than one year. Loans for house purchasing is credit to households to invest in housing, building and improvements. Loans for house purchasing are long-term loans. For the purpose of this research, these loans are excluded. Last, there are long-term loans for other purposes to purchase goods and services (OECD Guidelines, 2016: 13).

The second dataset which is used for this research is the Credit depth of information index of the World Bank. This index measures two sets: the effectiveness of collateral and bankruptcy laws that facilitate lending and the rules affecting the quality, accessibility and the scope of credit information available through public/private registries. The first set of the information index, legal rights of borrowers and lenders, measures the strength of these legal rights. It measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and facilitate lending. This index contains 12 aspects which are related to legal rights (10) and bankruptcy laws (2). The index ranges of scores between 0 to 12, where 0 indicates that collateral and bankruptcy laws are weak to expand credit access and a score of 12 indicates that these laws are better designed in order to expand credit access. The second set of

the information index measures rules and practices which affects the quality, scope and accessibility of credit information.

World Bank has added two measurements to the credit information index: 1) whether banks/financial institutions access a credit registry database and 2) the credit scores are offered as a service to help banks/financial institution to assess the creditworthiness of applicants for loans. If there's no such a database or when it covers less than 5% of the population, the score of the index for the specific country will be 0. This index ranges from scores between 0 and 6 where 0 means that less credit information is available and a score of 6 means that more credit information is available. This was the scores until 2013. From 2013, the scores varies between 0 and 8. Score 8 is the new highest score of the index a country can get.

The data for the variables unemployment rate and consumer confidence index are obtained from the OECD. The consumer confidence index have been produced since 1969 by the Conference Board and is based on household's plans for future purchases and their economic situation. It measures the current state of the economy and is, other than the previous datasets used in this research, based on surveys and opinions. Countries report this indicator monthly. The indicator of consumer confidence are based on answers to questions. For example in the Netherlands, over 1600 households per month are interviewed. The questions that are asked to Dutch households are as follows:

1. *Do you think that the general economic situation in our country has improved, deteriorated or remained the same in the past twelve months?*
2. *What is your opinion on the general economic situation in the twelve months to come?*
3. *In your opinion, has the financial situation of your household improved, deteriorated or remained the same in the past twelve months?*
4. *How do you evaluate the financial situation of your own household in the next twelve months?*
5. *Do you think it is the right or wrong time to buy expensive items like furniture, a washing machine or a television set?* (Centraal Bureau voor de Statistiek)

The categories of the answers are either very positive, neutral or very negative. The difference between positive percentage and negative percentages provides a qualitative index on economic conditions (Segers et al, 2017; Batchelor & Dua, 1998).

The unemployment rate of the countries are collected from the OECD dataset *Harmonized Unemployment Rates.* The working age population is the active population + inactive

population. The active population means the employed population + the unemployed population. The unemployment rate is calculated as the number of unemployed people in a country divided by the labour force. The data in this dataset is directly collected from the national statistics bureaus and Eurostat (OECD).

4.5. Statistical tests

I use pooled time-series cross-section data for the analysis (panel data) which means that I have a cross-section (country) variable and time-series variable. I use data for 11 years in 19 countries, so I have 209 observations over 19 countries and 11 observations per group (years of observation). To test the relationship between consumer credit and unemployment, information index, CCI and CCD, I conducted multiple regression analyses with 27 dummy variables. 9 of the 27 dummy variables are for the years (omitted one year due to dummy trap) and 18 of the 27 dummy variables are for the countries (omitted one country due to dummy trap). With this multiple regression analysis, it is possible to test all the four hypothesis. A regression analysis is a technique which is used to estimate the relationship between variables and enables a researcher to understand if independent variables are related to the dependent variables. It also gives the direction of the relationship. The regression analysis will give the regression coefficients for the independent variables information index, unemployment rate, CCI and CCD. By interpreting the coefficients, I will be able to either reject or accept the null hypothesis for all of the four hypothesis. The coefficients gives whether there's a significant positive or negative relationship between the independent variable and dependent variable. For example, when the coefficient for the independent variable CCD is negative, I'm able to reject the alternate hypothesis of Hypothesis 1. When the coefficient is positive, I reject the null hypothesis of Hypothesis 1 which means that CCD doesn't have a negative effect on consumer credit.

The equation of the regression analysis is as follow:

$$CC_{it} = C + \beta_1 II_{it} + \beta_2 U_{it} + \beta_3 CCI_{it} + \beta_4 CCI^2{}_{it} + \beta_5 CCD_{it} + \cdots + \varepsilon_{it}$$

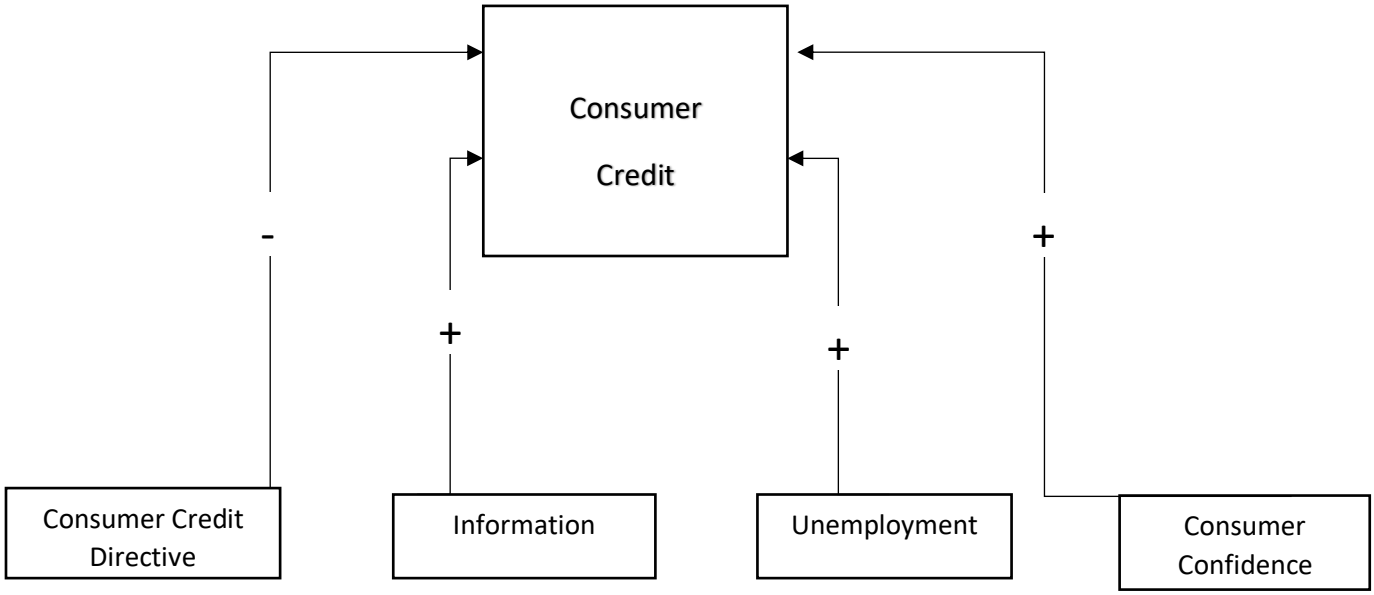
Where CC_{it} is the Consumer credit in country *i* in year *t*, II_{it} is Information Index in country *i* in year *t*, U_{it} is Unemployment rate in country *i* in year *t*, CCI_{it} is Consumer Confidence Index in country *i* in year *t*, $CCI^2{}_{it}$ is the squared term of Consumer Confidence index in country *i* in year *t*, CCD_{it} represents Consumer Credit Directive in country *i* in year *t*, "…" represent year

and country dummy variables (27 dummies) and ε_{it} represent the error term in country *i* in year *t*

4.6. Summary

The hypotheses, the variables and the operationalization of the variables are discussed in this chapter. To test the relationship between consumer credit, infoindex, unemployment, CCI and CCD, I conduct a multiple regression analyses. What are the expected results of the regression analysis? I expect that information index, unemployment and CCI have a positive effect on consumer credit and that CCD have a negative effect on consumer credit. The plus symbol means that a positive relationship is expected and the minus symbol means that a negative relationship is expected. The theoretical expectations are presented in the figure below.

Figure 6: Expected influences on consumer credit:



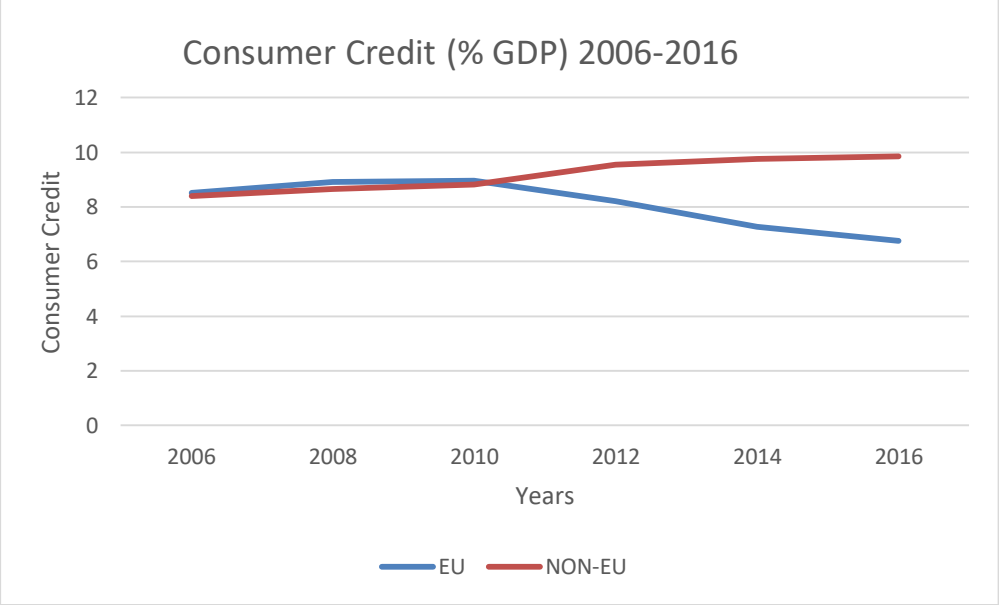
5. Results & Analysis

Having established basic facts about consumer credit regulation, I turn to presenting the results of my analysis. The purpose of this study is to gain more insight in the relationship between consumer credit, CCD, information, unemployment and CCI. In this chapter, I show the overall results first, then I discuss the results per hypothesis and interpret the meaning of the results.

5.1. Development of the consumer credit

I start my findings by showing the development of consumer credit for 2006-2016 for both the treatment group and control group (see figure 7). The figure below shows that consumer credit in both groups (EU countries and the other countries) develops more or less the same between 2006 and 2010. The average consumer credit in the EU was a little more than the other countries between 2006 and 2010. We see that, despite the financial crisis, consumer credit didn't decrease between 2008 and 2010 in both EU countries and the other countries. Not so surprising, there's a reduction of consumer credit in the EU after 2010 and an increase in the other countries. If this decrease was due to the financial crisis, the same would happen in the other countries. Traditionally, in countries like the US and Turkey, consumer credit is very popular. The US for example, is one of the countries that was hit very hard by the financial crisis. A lot of households lost their houses and banks went bankrupt. Consumers lost their confidence in financial institutions and even then, consumer credit increased after the crisis.

Figure 7: Development of the Consumer Credit 2006-2016



Between 2010 and 2016, consumer credit in the other countries (including US) increased with 1.5% while in the EU, it decreased with almost 2% of GDP. In 2006, consumer credit was 8.51% of the GDP in the EU. This percentage declined to 6.77 in 2016. This is a large decline. In the other countries, consumer credit increased in from 8.41% in 2006 to 9.86% in 2016 (see table 2 and 3 below for the descriptive statistics). What made consumer credit decrease in the EU, while in the rest of the world it increased? The question is to what extent this decrease is due to the CCD.

5.2. Overall results

Before starting discussing the results of the hypothesis, I want to show the descriptive statistics of this research. Table 2 and 3 shows the descriptive statistics of the test for both the treatment and control group. As reflected in figure 6, the average consumer credit in the EU starts declining in 2010 while in the control group it's increasing. When we look at the CCI, it's declining in 2006-2012 and starts to increase in 2013 which could mean that due the economic conditions the consumer confidence starts to recover in the EU. However, in the control group it continues to decline until 2016 (except for 2013). The unemployment rate develops more or less the same in 2006-2016.

Table 2: Descriptive Statistics of the variables used (%) (treatment group)

Variables	2006 N=15 Mean (St. Error)	2007 Mean (St. Error)	2008 Mean (St. Error)	2009 Mean (St. Error)	2010 Mean (St. Error)
Consumer credit	8.51(0.95)	8.62(1.04)	8.91(1.16)	9.18(1.21)	8.96(1.23)
Unemployment	6.93(0.52)	6.39(0.47)	6.48(0.53)	8.49(0.86)	9.22(1.04)
Infoindex	4.33(0.35)	4.40(0.36)	4.40(0.36)	4.47(0.36)	4.47(0.36)
CCI	100.95(0.15)	100.29(0.27)	97.28(0.36)	99.71(0.29)	99.91(0.53)

2011 Mean (St. Error)	2012 Mean (St. Error)	2013 Mean (St. Error)	2014 Mean (St. Error)	2015 Mean (St. Error)	2016 Mean (St. Error)
8.62(1.21)	8.21(1.11)	7.72(1.06)	7.27(0.93)	6.72(0.88)	6.77(0.99)

9.54(1.28)	10.66(1.68)	11.23(1.81)	10.74(1.69)	10.13(1.54)	9.41(1.41)
4.47(0.36)	4.33(0.36)	4.40(036)	6.20(0.50)	6.20(0.50)	6.20(0.50)
98.29(0.33)	98.10(0.33)	100.10(0.31)	100.40(0.35)	100.71(0.44)	100.85(0.36)

Table 3: Descriptive Statistics of the variables used (control group)

Variables	2006 N=4 Mean (St. Error)	2007 Mean (St. Error)	2008 Mean (St. Error)	2009 Mean (St. Error)	2010 Mean (St. Error)
Consumer credit	8.41(3.25)	8.62(3.29)	8.65(3.30)	8.74(3.23)	8.82(3.12)
Unemployment	5.55(1.09)	5.48(1.11)	5.95(1.31)	7.90(1.91)	7.40(1.62)
Infoindex	5.25(0.25)	5.25(0.25)	5.25(0.25)	5.25(0.25)	5.25(0.25)
CCI	101.11(0.33)	100.87(0.73)	96.57(1.12)	99.06(1.09)	100.53(0.74)

2011 Mean (St. Error)	2012 Mean (St. Error)	2013 Mean (St. Error)	2014 Mean (St. Error)	2015 Mean (St. Error)	2016 Mean (St. Error)
9.41(3.27)	9.55(3.39)	9.90(3.53)	9.77(3.62)	9.71(3.59)	9.86(3.61)
6.80(1.19)	6.50(0.96)	6.63(0.88)	6.75(1.09)	6.63(1.25)	6.60(1.45)
5.25(0.25)	5.25(0.25)	5.25(0.25)	6.50(0.29)	6.50(0.29)	6.50(0.29)
99.37(0.65)	99.49(0.27)	100.00(0.39)	99.38(0.75)	99.69(0.36)	99.58(0.67)

A multiple linear regression was calculated to predict consumer credit based on infoindex, unemployment, CCI and CCD. A statistically significant regression equation is found because ($F(33,175) = 83.21$, $p < 0.01$), with an R-square of 0.940 and adjusted R-square of 0.929. This means that the model can statistically significantly predict the dependent variable consumer credit. *R- Square* (also called the coefficient of determination) represents the proportion of variance in the dependent variable that can be explained by all the independent variables (Healey, 2012: 450). R-square value of 0.940 means that the independent variables (unemployment, infoindex, CCD, CCI and measurement) explains for 94.0 % of the variability of the dependent variable consumer credit (% GDP). The results of the multiple regression

analysis are shown below (see table 6). The statistical significance of each variable can be found by looking at the *t*-value and corresponding *p*-values. The *t*-value is the coefficient divided by its standard error. It tests the hypothesis that each coefficient is equal to zero. If $p < 0.05$, I can conclude that the coefficient are statistically significantly different to zero. The t-value has to be ±1.96 to reject the null hypothesis (Healey, 2012: 200). We can see from the *t* column that all independent variable coefficients are statistically significantly different from zero because the *t*-value for the independent variable infoindex is -2.49, for CCD it's -3.48, for CCI the t-value is 3.04 and for CCI^2 it's -3.24. This means that the independent variables infoindex, CCD, CCI and CCI^2 have a significant influence on consumer credit. Unemployment rate is not statistically significant. So infoindex, CCD, CCI and CCI2 are significant predictors of consumer credit and unemployment isn't.

Table 6: Regression coefficients and significance levels of the multiple regression analysis (Number of observations: 209)

Variables	Coefficients (St. Error)	t	R-square	Adjusted R-square
Infoindex	-.701(.281)**	-2.49		
Unemployment	.018(.038)	0.46		
CCD	-.12(.034)*	-3.48		
CCI	5.561(1.827)*	3.04		
CCI^2	-.0303(.009)*	-3.24		
			0.9401	0.9288

*p<.01 **p<.05

I now turn to the coefficients of the regression analysis. I presented the expected results in the previous chapter (see figure 6). The expected result of the relationship between consumer credit and CCD was negative. The obtained result of the relationship between consumer credit and CCD is significantly negative with a coefficient of -.12. The expected relationship between consumer credit and infoindex was positive, but the obtained result is significantly negative with a coefficient of -.701. The relationship between consumer credit and unemployment is not statistically significant. For the relationship between consumer credit and CCI, I added the squared term CCI^2. Both the linear and quadratic term are significant. As we can see from the coefficient, the effect of CCI changes when CCI increases. Each additional point increase in CCI, reduces the slope by .0303. The coefficient of the squared term is negative, so the relationship is concave. More about the interpretation can be found in section 5.5.

The above means that the expected results between the dependent variable consumer credit and the independent variables and the obtained results don't match. In the next sections, I interpret the results of the test more in depth and discuss the meaning of my findings per hypothesis.

5.2. Interpretation Hypothesis 1

I start with the main hypothesis of this research. Shortcomings in effective disclosures contributed to some degree to a breakdown of the financial crisis (Ardic et al, 2011: 2). The fact that consumers lack information and knowledge about financial products and the implications of transactions in financial markets, is an important reason to regulate credit markets (Ziegel, 1968: 490; Zinman, 2014: 5). That's why market failures provide an economic justification for government intervention (Belsky & Wachter, 2010: 8; Browning and Browning, 1992: 657; Boardman et al., 1996: 99). Regulation can increase societal efficiency by for example consumer protection and regulation that ensures the safety of the whole banking system (Stiglitz, 2009: 11). Consumer protection contains laws and regulations that assure fair and honest interactions between consumers and (financial) service providers due to the fact that there're information asymmetries (Ardic et al, 2011: 2). The European Commission introduced the CCD in order to decrease the information asymmetry between consumers and financial institutions, offer protection to consumers and to stimulate the integration of the European consumer credit market, in which harmonization of laws regarding consumer credit is a key element CCD (Directive 2008/48/EC, p. 67-68). The aim is to protect consumers against unfair and misleading information/practices because there're information asymmetries in both directions between consumers and financial service providers.

The question now is what impact the CCD has on consumer credit. The CCD has been implemented between 2009 and 2011 by the EU-15. Did consumer credit increased or decreased in these countries after the implementation of the CCD? When we look at table 6, it shows a significant negative relationship between consumer credit and CCD. This result basically means that in countries where the CCD is implemented, consumer credit decreases (see appendix for the graphs). Therefore, I accept the null hypothesis of Hypothesis 4, *The CCD has a negative effect on consumer credit in the EU.* I turn to the interpretation of this result. Restricting credit access to consumers by policy changes like the CCD, decreases short-term borrowing and reduces the supply of credit (Zinman, 2008: 16-17). CCD introduced binding restrictions regarding credit and placed a great responsibility on creditors, which could have reduced the

supply of credit. Banks have many stakeholders in comparison with non-financial firms. The business of banks is opaque and can shift rapidly (Mehran et al., 2011: 3). Financial products became also more complex. A growing number of people rely on financial services. The financial crisis of 2008 has called attention to the shortcomings of existing laws and regulation regarding consumer protection. There're a lot of systemically important banks (significant banks) whose have a serious role in the banking system. When one significant bank faces problems, this can affect the whole banking system (nationally and internationally). Those banks are referred to as "too big to fail" and needs to function safe. Therefore, the purpose to protect the safety of financial institutions has been met by the CCD.

On the other hand, consumers may be protected from over borrowing because consumer credit has decreased in the EU-15 after the implementation of the CCD. Regulating financial markets is useful to reduce unfairness by reducing the information asymmetries. Protecting consumers can be established by regulation and providing additional information to consumer which enables them to compare different financial products (Agarwal et al., 2013:1). This is actually what the CCD does. It forces financial service providers to provide fair, comprehensible (pre-contractual) information which enables consumers to make a comparison among different offers and to understand the provided information. Furthermore, financial service providers need to inform the consumer adequately about the borrowing rate, the total amount of credit, the annual percentage rate of charge, the duration of the credit the existence or absence of the right of withdrawal and the right of early repayment (Directive 2008/48/EC, p. 74-75). But consumers need to provide sufficient and honest information too to the creditor.

One reason for the reduction in consumer credit could be that consumers don't pass the creditworthiness test. Banks assess the creditworthiness of consumers through credit registries. Credit registries require banks to share information about borrowers. After the financial crisis, a lot of households got problems and couldn't pay their debt. Credit registries got tightened up, more households were registered. This could mean that more consumers have been rejected for a loan because information sharing leads to more rejections (Bos et al, 2016: 16). On the other hand, it could also due to restrictions of banks, making it harder for consumers to obtain credit. When a consumer applies for credit and don't pass the creditworthiness test, they will be rejected for the credit. In itself, this is a good way to combat excessive lending and to safeguard the financial system. Who will be rejected? Consumers who have had payment problems in the past. So such a test works preventively and protects the consumer as well as the bank. This means that adverse selection in the credit market can be reduced. The objectives of consumer

credit regulation are met by the CCD: protecting consumer from over borrowing and protecting the safety of financial institutions (Calem et al., 2016: 3).

According to the CCD, even though all the information is provided to the consumer, they still may need help in order to make a decision. Creditors should give assistance to consumers for the products they offer and need to explain the most important characteristics of the specific financial product. Consumers also need to be informed about the impact of such a credit agreement on their financial situation (Directive 2008/48/EC, p. 69). This gives the financial service provider a great responsibility. Article 8 of the CCD (obligation to assess the creditworthiness of the consumer) shifts the responsibility from the consumer to the financial service provider. The article obliges the financial service provider to assess the creditworthiness of the consumer on basis of sufficient information provided by the consumer. The consumer has better information about their ability to repay the loan but they don't bear the responsibility for their decision. Instead, the financial service provider who has less information about consumer's ability to repay, bears the responsibility for providing the credit. Consumers may hide relevant and important information about their financial situation. Thus, there's a disproportionate distribution of information and responsibility. If consumers fail to repay the loan, lenders will be liable instead of the consumer himself. This could increase the moral hazard problem because consumers could become less careful in choosing a financial product. One can ask to what extent this shift of responsibility is righteous.

Opponents of credit regulations are skeptic about the effectiveness because new laws and regulations on consumer credit may have (unintended) consequences like increased bank account fees and making it harder to obtain credit and more expensive for those the consumer credit is meant for. Regulations can also push consumers to obtain more problematic and riskier forms of credit (Zywicki & Sarvis, 2012:1). One negative effect of the CCD could be that, as a result of heavier regulation of consumer credit, banks need to make more costs to fulfill the obligations of the CCD. They have to provide more information to consumers to make sure they understand all the terms and conditions of the agreement. The consequence of this could be that banks charge more on other services like ATM withdrawals and adding fees on bank accounts to compensate the costs they have to make. The CCD may also increase administrative and operational costs for banks, which can lead to a reduction of consumer credit. This brings about another externality of regulating the consumer credit: the exclusion of specific groups from the credit market. Consumers will look for other options to obtain credit. Households are forces then to look for more expensive credits, which makes them worse off (Morgan & Strain,

2008: 26; Zywichki & Sarvis, 2012: 4). Reduced credit supply increases credit problems (Morgan & Strain, 2008: 3).

All in all, it can be said that the aim to protect consumer from over borrowing and to protect the safety of financial institutions have been established by the CCD because consumer credit decreased after the introduction of the CCD. It also reduces adverse selection. But the distribution of information and responsibility is disproportionate which may increase the moral hazard problem. Furthermore, the obligation to provide more information to consumers may increase the costs of the bank. To compensate these costs, banks may charge more on other financial services. Furthermore, less credit could negatively affect consumer spending and GDP. When consumers reduce their spending and decide to save, lower GDP could be a result. Restricted credit access could also create a welfare loss for consumers, especially for those who cannot obtain credit.

5.3. Interpretation Hypothesis 2

The second hypothesis is about the relationship between consumer credit and information. Literature argue that more information doesn't affect consumer behavior (Day & Brandt, 1974: 31; Day, 1976: 51). Expanded information sharing by creditors can lead to less credit usage by consumers because consumers may be convinced that credit is expensive. On the other hand, there will be consumers that increase their credit usage if information disclosure confirms that credit is affordable (Durkin, 2002: 201). So if cautious consumer see that it's not expensive to obtain credit, they will increase their usage.

Like mentioned earlier, financial markets can create market failures like economic inefficiencies. The information between creditor and consumer is divided asymmetrically. On one hand, consumers make uninformed purchases and lack the information to protect themselves. They lack information about specific financial products. On the other hand, creditors take risks by providing credit because they assess the creditworthiness by the available information made by the consumer. Consumers can hide some important relevant information about their future revenues/expenditures or other commitments. To correct these problems about information asymmetry in credit markets, regulators have focused on information provision to consumers (Davis, 1977: 842), like the CCD by the European Commission. This suggests that when the information asymmetry between creditor and consumer is reduced,

consumers make better choices that suits their preferences and financial situation the best. So what happens when more information about financial products is provided?

When we look at table 6, we see a significant negative relationship between consumer credit and information. The regression coefficients for the independent variable infoindex is -.701. This means that that for each point increase in the independent variable infoindex, there's a significant decrease in consumer credit by .701 points, holding all the other independent variables constant. Therefore, I reject the hypothesis that consumer credit is higher in countries with higher score on information index. So there is no positive relationship between consumer credit and information, which is surprising. The assumption that information sharing between banks about consumer's creditworthiness increases lending (Jappelli & Pagano, 2002: 2032), is not correct. In fact, consumer credit isn't higher in countries where the information index score is higher. The result of the test shows that the higher the information sharing, the lower consumer credit.

Providing sufficient information to consumers have decreased consumer credit. This raises the question about the situation before the crisis. The reduction could mean that banks have restricted their lending and more consumers are rejected for a loan application. This was different before the crisis. Before the crisis, many (risky) consumers who were not creditworthy could take out loans. Those who didn't have a job or an income were able to get a (mortgage) loan. Home-owners couldn't pay their loans back and got in trouble. A lot of households lost their houses and banks went bankrupt. This had partly to do with self-interested bankers and the bonus culture of banks. But also with the information asymmetries between consumers and banks. To reduce the risks of the bonus culture of banks, the Dutch government decided to set a maximum of 20% of the fixed salary as a bonus for bankers (article 1:121 of the Financial Supervision Act). The maximum in other EU countries is set at 100% (EBA/GL/2015/22, p. 7).

Tightening lending criteria may result in fewer defaults. Banks have access to credit registries to assess the creditworthiness of consumers and require more information from consumers. Consumers who were eligible for credit first, may not eligible now because of their credit score. This possibly made it more difficult for a specific group of the population (people who need it the most) to access credit. How can this affect consumers? When consumers are excluded from specific types of credit, they may look for substitutes which are offered on less favorable terms and conditions for consumers (Zywichki & Sarvis, 2012: 3). One consequence could be that their financial condition gets worse (Zinman, 2008). But the fact that the problem of adverse selection is reduced by tightening lending criteria is more important and needs to be highlighted.

The availability of credit data can namely reduce adverse selection, which means that "bad" borrowers are driven out of the market and "good" borrowers enters the credit market (Pagano & Jappelli, 1993: 1699-1700). Information sharing, thus, reduces credit because it eliminates uncertainty about consumers' types, which is good for the quality of the credit and the safety of the banking system. Information asymmetries are reduced by information sharing.

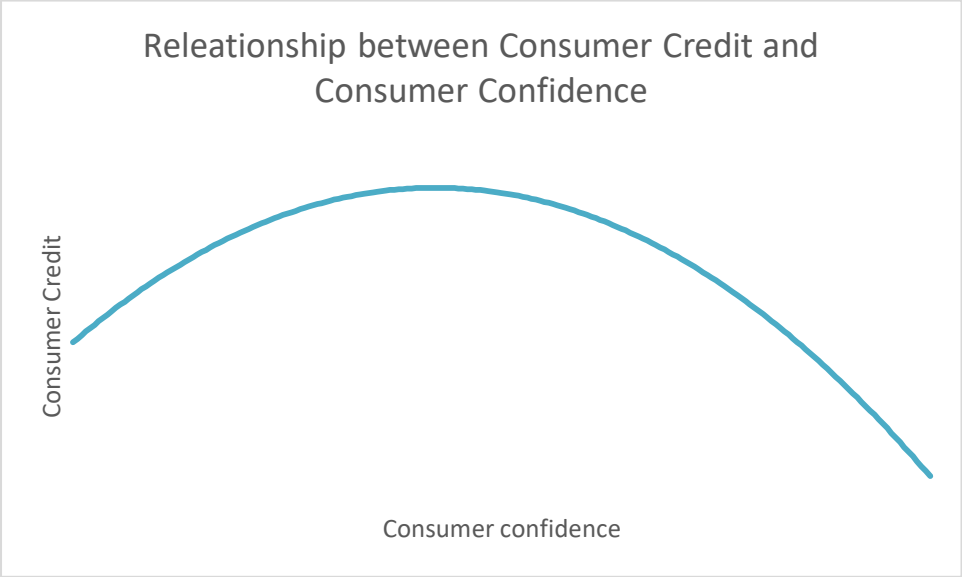
5.4. Interpretation Hypothesis 3

The third hypothesis tests the relationship between unemployment and consumer credit. Unemployment may lead to an increase in consumer credit (Russo et al, 2016; Bikker & Hu, 2002; Bethune, 2015). When people lose their job, credit becomes valuable and starts to increase. However, the result of the regression shows that the relationship between consumer credit and unemployment is not statistically significant. I didn't found any indication that unemployment has an effect on the provision of consumer credit. Therefore, I reject the hypothesis that unemployment increases consumer credit.

5.5. Interpretation Hypothesis 4

The third hypothesis is about the relationship between consumer credit and consumer confidence (CCI). To test the relationship between these two variables, I added a squared term (CCI^2) because CCI gave a negative coefficient, which contradicts the theory. This turns a linear regression model into a curve with a hump: either in U or inverted-U. This is also called a curvilinear regression. Regressing the three variables (consumer credit, CCI and CCI^2) gives a significantly positive relationship between consumer credit and CCI and a significantly negative relationship between consumer credit and $CCI^{2.}$ The regression gives a coefficient of 5.562 for the independent variable CCI and a negative coefficient for the squared term: -.0303. As we can see from the coefficient of CCI, the effect of CCI changes when consumer credit increases. Each additional point increase in CCI, reduces the slope by .0303 which means that the relationship is concave: it gives an inverted-U curve. It's helpful to see this relationship in a graph (see figure 8).

Figure 8: Relationship between consumer credit and consumer confidence



What does the graph above means? It means that when CCI increases, consumer credit increases. But at some point, consumer credit starts to decrease while consumer confidence continues to increase. The left side of the parabola in the figure above, is in line with theory. Consumer credit increases when consumer confidence increases. The expectation was that consumer's perception about the economy will influence their borrowing positively, so when confidence is low consumers save more and spend less and when confidence is high, consumer save less and spend more. When the confidence of consumers increases, their use of credit would increase too. According to literature, consumer confidence affects borrowing behavior (Klopocka, 2017: 713; Van Raaij & Gianotten, 1990: 271). Optimistic consumers tend to save less and borrow more than pessimistic consumers (Van Raaij & Gianotten, 1990: 271; Park, 1993:33-43). But the right side of the parabola is interesting because it indicates that consumer credit falls when consumer confidence is very high. Therefore, I reject the hypothesis that high consumer confidence increases consumer credit. As a matter of fact, consumer credit increases to a certain level of consumer confidence, and then it drops. How is this possible?

When the economy is growing, lenders and borrowers become optimistic. For example, consumers tend to borrow more. Credit increases when confidence increases. However, when a certain confidence level has been reached, consumer credit decreases. This could be due to the fact than when confidence is high, consumers may expect a downturn and borrow less. Another explanation could be that when consumer confidence is high and the economic forecast is positive, consumers don't need credit. The financial crisis could be a key factor of this result. The economy is recovering, trust among consumers increases but consumer credit declines. So

despite a high level of confidence, they borrow less (and save more). It could also due to expected income loss. So uncertainty about future income could decrease consumer credit while consumer confidence is high. There could be another factors that contribute to this outcome, which may be a suggestion for further research to explore the relationship above. For example, economic growth and interest rate could be taken into account. When interest rates increases due to higher consumer confidence, this could reduce consumer credit. Increasing interest rates increases borrowing costs, which limits economic growth. Consumers may decide then to save instead of borrowing since they can receive higher returns.

5.6. Summary

The results of the research have been discussed. The most important result is that the relationship between consumer credit and CCD is significantly negative. I can conclude CCD has succeeded in protecting consumers from over borrowing and to protect the safety of financial institutions. Consumer credit decreased after the introduction of the CCD. But the distribution of information and responsibility is disproportionate which may increase the moral hazard problem, so CCD may have some unintended consequences. It does reduce information asymmetries which is a key purpose of the CCD. The relationship between information sharing and consumer credit is significantly negative: information sharing leads to a reduction of consumer credit. The benefit is the fact that it may reduce adverse selection because it eliminates the uncertainty about consumers' types and it drives out "bad" borrowers from the market (Pagano & Jappelli, 1993: 1699). I didn't found a statistically significant relationship between unemployment and consumer credit, which raises some questions. The relationship between consumer confidence and consumer credit is significant. Consumer credit increases when consumer confidence increases, but when a certain level of confidence has reached, consumer confidence starts to decrease. One explanation for this relationship could be that when consumers are confident, they don't need credit. Another reason could be that consumers have become savers after the crisis. The illustration of the expected and obtained results are shown below.

Figure 8: Expected influences on consumer credit:

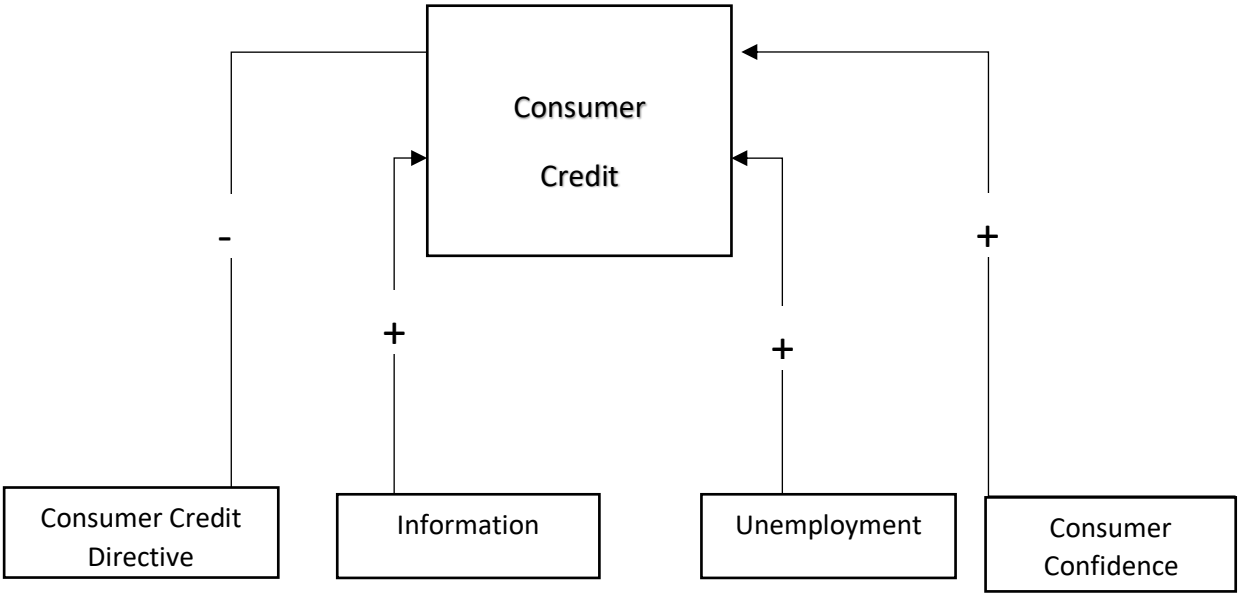
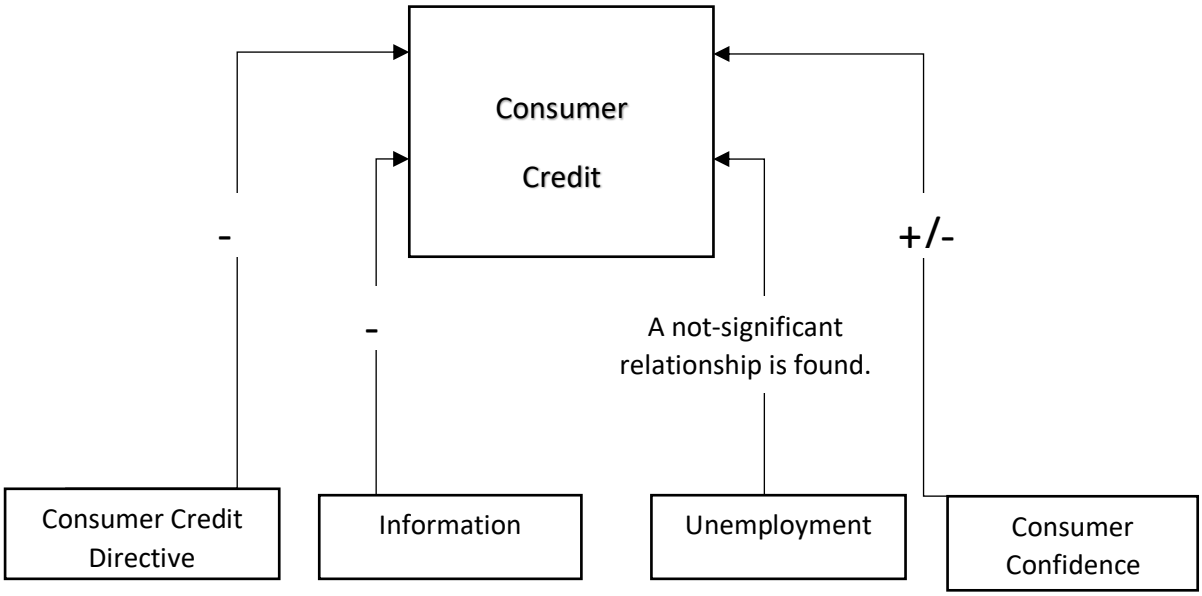


Figure 9: Obtained influences on consumer credit:



6. Conclusion

Traditionally, the market for consumer credit is heavily regulated. Securitization created more complex financial products whereby the information asymmetry between financial service providers and consumers has been increased. Market failures can be a reason for regulation (Belsky & Wachter, 2010; Browning and Browning, 1992; Boardman et al., 1996). Regulation can increase societal efficiency by consumer protection and regulation that ensures the safety of the whole banking system (Stiglitz, 2009: 11). Information disclosure is used by regulators to protect consumers (Day & Brandt, 1974: 21). To increase transparency and to stimulate the integration of the European consumer credit market, the EU developed the Consumer Credit Directive. The purpose of the CCD is the harmonization of certain aspects of laws, regulations and provisions concerning consumer credit in the Member States. The aim is to protect consumers against unfair and misleading information/practices because there're information asymmetries in both directions between consumers and financial service providers. For financial service providers, providing clear, adequate and full information is the key. This research has focused on the impact of the Consumer Credit Directive on the provision of consumer credit. The main research question of this thesis was formulated as follow:

What is the impact of the Consumer Credit Directive on consumer credit as a percentage of GDP in countries where the Directive is implemented?

The CCD has been implemented between 2009 and 2011 in the EU-15. I looked at the effect of the CCD on consumer credit. When compared to the non-EU countries, consumer credit decreased after 2010 in the EU-15. Consumer credit in both groups developed the same between 2006 and 2010, but there was a decline in EU-15 with almost 2% (compared to 2006) while there was an increase in the non-EU countries with 1.5%.

The most important result of this research is that consumer credit and CCD has a negative significant relationship. This result simply means that in countries where the CCD is implemented, consumer credit decreases. The answer to the research question is that consumer credit did decrease in the EU-15 after the implementation of the CCD. Like literature argued, restricting access to consumer credit by policy changes like the CCD, decreases short-term borrowing and reduces the supply of credit (Zinman, 2008: 16-17). CCD introduced binding restrictions regarding credit and placed a great responsibility on creditors, which could have reduced the supply of credit. But reduced credit supply increases credit problems (Morgan & Strain, 2008: 3). Consumer credit could also have decreased because banks restricted the

provision of credit due to an increase in the costs. There are of course several other reasons why it decreased, but the fact is that there's a negative relationship between consumer credit and the CCD. Less credit could result in a reduction of consumer spending and increased savings, which in turn could lead to a lower GPD. It could also lead to a welfare loss among consumers.

Consumer confidence has a significant relationship with consumer credit, but the direction of the relationship is interesting. Consumer credit increases when consumer confidence is increasing but at a certain level of consumer confidence, consumer credit decreases. The theoretical expectation was that optimistic consumers tend to save less than pessimistic consumers and borrow more (Van Raaij & Gianotten, 1990: 271). But, the results show a very different significant relationship between consumer credit and consumer confidence. This could be due to the fact that when the economic forecast is positive, consumers don't needs consumer credit. There are of course several other factors that influence the relationship between consumer credit and consumer confidence and that can explain the inverted-U curve. However, this is beyond the scope of this research.

A significant negative relationship is found between consumer credit and infoindex. The theoretical expectation was that bank lending is higher in countries where there is large information sharing (Jappelli & Pagano, 2002: 2039). Expanded disclosures may lead to consumers who actually increase their credit use if information confirms that credit is affordable (Durkin, 2002: 201). According to literature, information sharing between banks about consumer's creditworthiness increases lending (Jappelli & Pagano, 2002: 2032). But in contrary, information sharing leads to a decrease in consumer credit: more rejected consumers for loans (Bos et al, 2016: 16). But the problem of adverse selection is reduced by information sharing, which means that "bad" borrowers are driven out of the market and "good" borrowers enters the credit market (Pagano & Jappelli, 1993: 1699-1700). Information sharing, thus, reduces credit because it eliminates uncertainty about consumers' types, which is good for the quality of the credit and the safety of the banking system. Furthermore, I didn't found a statistically significant relationship between consumer credit and unemployment. Unemployment doesn't affect consumer credit.

To sum up the above, it is a fact that the credit markets is a risk business in which there're several layers of information asymmetries between consumers and banks. Not only consumers faces uncertainty (about their future), banks also face uncertainty. CCD reduces this information asymmetry by several obligations. CCD protects the consumer from over borrowing and the safety of financial institutions. However, consumer credit decreased after the introduction of

the CCD. The disproportionate distribution of information and responsibilities may increase the moral hazard problem. CCD increases the costs of consumer credit and restricts the supply of consumer credit and. The relationship between information sharing and consumer credit is significantly negative: information sharing leads to a reduction of consumer credit. This may reduce adverse selection because it eliminates the uncertainty about consumers' types and it drives out "bad" borrowers from the market (Pagano & Jappelli, 1993: 1699). A significant surprising relationship between consumer credit and consumer confidence has been found: consumer credit increases when consumer confidence increases, but when a certain level of confidence has reached, consumer confidence starts to decrease. One explanation for this relationship could be that when consumers are confident, they don't need credit or that consumers have become savers after the crisis.

Limitations of the research & further research

This research has made some progress in the relationship between CCD and consumer credit. The findings give important answers but it also raises some questions. The sample size is an important limitation of this research. The small sample size may have reduced the chance to confirm all of the hypotheses. However, the direction of the relationship between the variables supports the theoretical expectations. The relationship between consumer credit and unemployment may achieve significant effects if the sample size increases. The empirical evidence provided by this research covers only 15 EU countries due to the chosen observations. Replication of this study in several countries (within the EU and other countries) might yield different results or it may improve the level of certainty of the findings. This is the second limitation: it raises the question whether the sample is representative for all European countries. The EU-15 consists of the countries before the enlargement in 2004. Most of these countries that joined the EU in 2004 are from East-Europe that have a different economy than West- and North-Europe. Including these countries in the sample may provide a different result. Future study could build on this research by including these countries which provides more observations.

Since not all my results support my hypotheses, further research is recommended. The obtained relationship between consumer credit and consumer confidence and the relationship between consumer credit and unemployment raises some questions so further research on this is needed.

There are of course many other factors that could affect the relationship between consumer credit and consumer confidence like the economic growth and interest rates. Taking this into account may provide a change in the relationship between consumer credit and consumer confidence and could enable us to a better understanding of the relationship. The main and most important finding of this research is that the CCD decreases the provision of consumer credit. This could be a first step to understand the effects of CCD. In countries where the CCD is implemented, consumer credit decreases. So I think that more attention has to be paid to the effects of regulation. Regulations increases societal efficiency, but it also creates externalities. Research on these externalities could be explored further to increase the knowledge about regulation externalities. Furthermore, replicating this research in more countries could increase the generalizability of the findings and provide greater understanding of the effects of the CCD.

Less credit lefts consumer unable to smooth consumption. In the longer term, this could drop GDP. Further research on this, effect of CCD on GDP, could provide more insight in economic effects. CCD could also reduce consumer spending and increase savings, which in turn affects the GDP. It will be useful to search for the welfare effects of the CCD too. When consumer spending decreases because of restricted credit access, there could be a welfare loss for the consumer. This is another suggestion for further research, which is very relevant for the field of Public Administration. Another suggestion for further research is measuring the indirect impact in a country where the CCD is implemented. When credit access is restricted in a country, other countries could be affected too. For example, the demand for specific products/services could decrease due to restricted credit access in another country. This could be a barrier for the creation of a single market, while one of the key objectives of the CCD is to promote the creation of a single European credit market. In short, there are several suggestions for further research.

Policy recommendations

The effects of regulations have been discussed. Regulation does have positive effects, but attention has to be paid to the unintended consequences of regulation. Consumer credit regulations are meant to expand access to consumer credit, protecting consumer from over borrowing, and protecting the safety of financial institutions (Calem et al., 2016: 3). CCD decreases consumer credit so consumers may be protected from over borrowing. This could also mean that protecting the safety of financial institutions has been met by the CCD. More

rejected loans to risky consumers means a safer baking system. But, CCD shifts the burden of proof from consumers to creditors. The creditors gets responsible for a lot of things. This may increase the moral hazard problem among consumers. In addition, new laws and regulations on consumer credit may have unintended consequences like increased bank account fees and making it harder to obtain credit and more expensive for those the consumer credit is meant for. Regulations like the CCD can also push consumers to obtain more problematic and riskier forms of credit (Zywicki & Sarvis, 2012:1). This could be a risk for the safety of the financial system because making it harder to obtain credit can result in fewer people being able to get 'safe' credit.

My results highlight the negative effect of CCD on consumer credit, which means that consumer credit decreases in the EU. A measure that is used for financial development is credit to the private sector as a percentage of GDP (Bahadir & Valev, 2017; Beck et al, 2014; King & Levine, 1993) and one of the tasks of the European Union is to stimulate the economic development in the Member States. The EU want to stimulate cross-border activities and the CCD is a good way to promote this by harmonizing the laws in consumer protection. Regulations doesn't have to slow down the economy, but CCD could have negative effects in the wider economy. In fact, consumer credit is still a small market in the EU and regulations like the CCD shrinks the market further. Compared to other countries, consumer credit decreased after the introduction of the CCD. When revising the CCD, this needs to be highlighted. This is also something that should be takin into account in the field of Public Administration. Market failure should not lead to regulatory failure.

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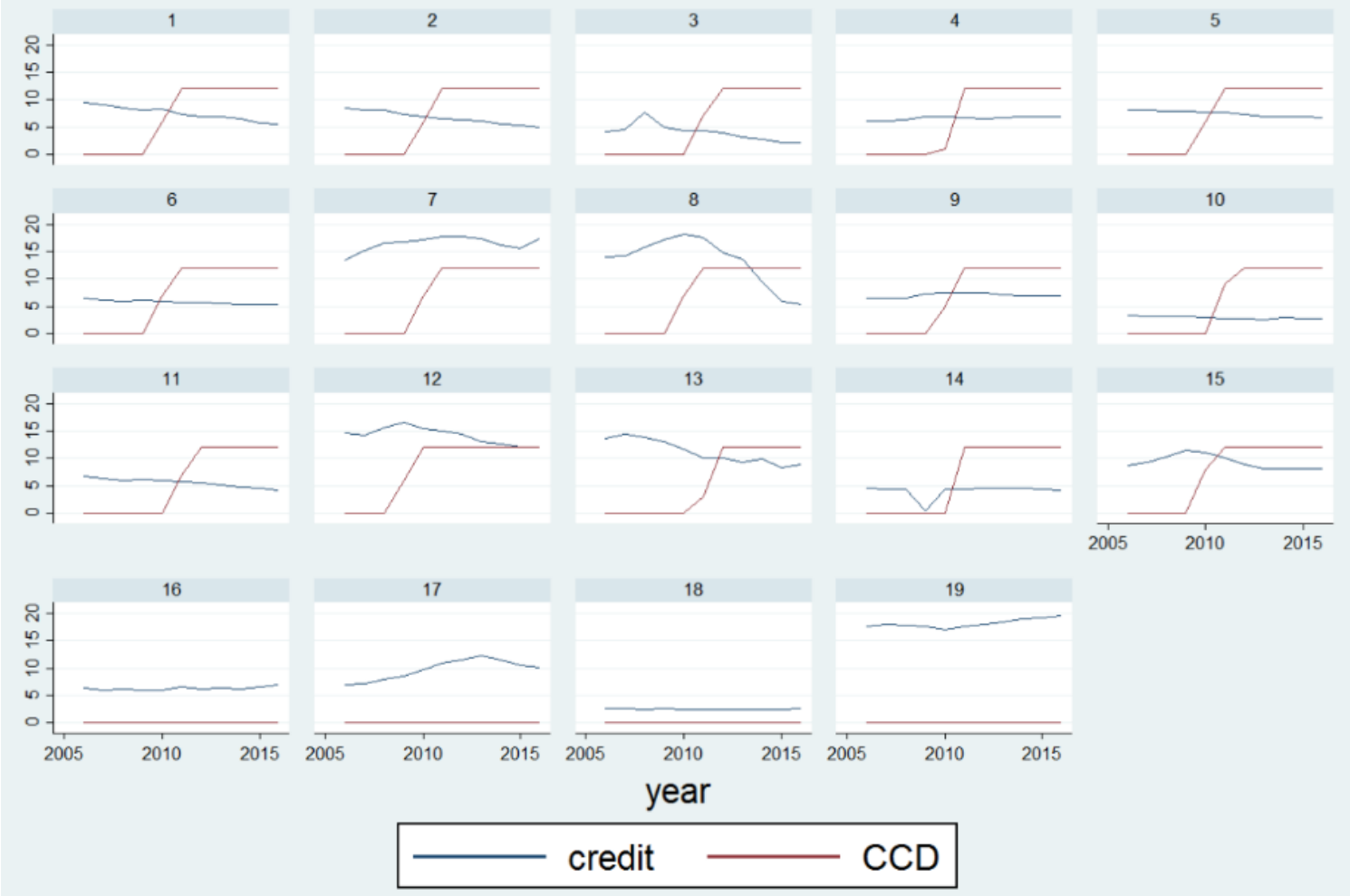
Appendix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