



Universidade Pontifícia Comillas,
ICADE

The importance of Covered Bonds in Financial Crisis, Thesis

Author: Tomás Costa Barradas

Director: Juan Ayora Aleixandre

Madrid
July 2016

Tomás
Costa
Barradas

The importance of Covered Bonds in Financial Crisis, Thesis



Abstract

Having in consideration the current financial Outlook, this project pretends to display the role of Covered Bonds as an alternative to securitization. Firstly, I'll address the Mortgage market, namely the European Covered Bond Market, focusing on the main participants of this market, the characteristics of it and it evolved. Secondly, I'll focus my attention on the assets, defining and elaborating about the Covered Bonds and asset securitization, through the European lenses approach. Lastly, I'll analyze the Covered Bond Purchase Program launched by the ECB in 2009 and I'll present my conclusions about how this financial instrument might contribute to a decline in money market term rates, in an easing on funding conditions for credit institutions, also as an encouragement to credit institutions to maintain and expand their lending to final consumers and as a mechanism to improve market liquidity.

Key words: Mortgage Market; Covered Bonds; Securitizations; Subprime Crisis; Covered Bond Purchase Program

Table of Contents

Figures List.....VII

Abbreviation’s List.....VIII

Executive Summary.....VIX

1. INTRODUCTION.....1

2. LITERATURE REVIEW.....2

3. MORTGAGE MARKET.....4

 3.1 Mortgage Market institutions.....4

 3.2 European Mortgage Market.....4

 3.3 Financial Crisis – ECB initiatives to overcome.....5

4. COVERED BONDS.....6

 4.1 Origins and characteristics of the asset6

 4.2 European Covered Bond Market.....6

 4.3 Characteristics of the cover pool7

 4.4 Covered Bonds underlying advantages.....7

 4.4.1 Investor’s advantages7

 4.4.2 Issuer’s advantages8

 4.4.3 Advantages to the Market.....8

 4.5 Risks and Supervisory mechanisms.....8

 4.5.1 Covered Bond’s Risks.....8

 4.5.2 Supervisory mechanisms9

 4.6 Jumbo Covered Bonds.....9

5. SECURITIZATIONS10

 5.1 Origins and characteristics10

 5.2 Securitizations European Market.....10

5.3 Characteristics of the originator	11
5.4 Characteristics of the issuer	11
5.5 Securitization Advantages	11
5.5.1 Originator's advantages.....	11
5.5.2 Investor's advantages.....	12
5.5.3. Advantages for the Market	12
5.6 Securitization Costs	12
5.7 Risks and Supervisory mechanisms.....	12
5.7.1 Securitization's Risks.....	12
5.7.2 Supervisory mechanisms.....	13
6. SECURITIZATIONS AND THE ORIGIN OF THE SUBPRIME CRISIS	15
6.1 The Subprime Segment.....	15
6.2 The Evolution of the Market	15
6.3 Subprime Crisis.....	15
6.4 The Subprime Crisis Consequences.....	16
7. COVERED BONDS AND THEIR ROLE IN THE FINANCIAL CRISIS	
Impact assessment of ECB's first Covered Bond Purchase Program.	17
7.1 Covered Bonds before the Financial Crisis.....	17
7.2 Turmoil in the Covered Bond Market	17
7.3 Measures to overcome the financial crisis.....	17
7.3.1 The use of Covered Bonds	17
8. COVERED BONDS AFTER THE FINANCIAL CRISIS	
Impact of ECB Covered Bond Purchase Program.....	19
8.1 Why a Covered Bond Purchase Program?.....	19
8.2 What is an Asset Purchase Program?.....	19
8.3 Characteristics of the CBPP.....	19

8.4 Impact of the CBPP.....	20
8.5 Impact on the Primary Market.....	20
8.6 Impact on the Secondary market.....	20
8.7. Conclusions from the CBPP.....	21
9. Conclusions.....	22
Bibliography.....	23
Annex.....	24

Figure List

Figure 1: Fall of European Mortgage Market growth rates between 2007 and 2008

Figure 2: Fall of interest rates in the EU mortgage market between January of 2003 and May of 2009

Figure 3: EU countries with specialized Covered Bond Markets

Figure 4: Covered Bond operation structure

Figure 5: Rise in Covered Bond issuances between 2003 and 2007

Figure 6: Securitization transaction structure

Figure 7: Fall of securitizations in EU between 2006 and 2009

Article 1: Statute of the ESCB and of the ECB – Rules of Procedure

Figure 8: Total outstanding amount of covered and uncovered bank bonds

Figure 9: Total outstanding amount of (euro-denominated) bank and corporate bonds

Figure 10: Covered Bond Swap Spreads

Figure 11: Average daily changes of covered bond swap spreads around the CBPP announcement

Figure 12: Average daily changes of the UK covered bond swap spread and AAA financials spread around the CBPP announcement

Figure 13: Euro Covered (swap spread development bp)

Abbreviation List

ABS: Asset-Backed Securitization

AFME: Association for Financial Market in Europe

APP: Asset Purchase Program

ECB: European Central Bank

CB: Covered Bond

CBPP: Covered Bond Purchase Program

CDO: Collateralized Debt Obligations

ECBC: European Covered Bond Council

EMF: European Mortgage Federation

ESF: European Securitisation Forum

EU: European Union

GGB: Government Guaranteed Bond

IEDI: Instituto de Estudo para o Desenvolvimento Industrial

IMM: International Monetary Market

RMBS: Residential Mortgage-Backed Securitization

SPV: Special Purpose Vehicle

US: United States

VaR: Value-at-Risk

Executive Summary

During the summer of 2007, a world phenomenon started to take place in the global economy, agitating the financial markets across the globe. This event was the so called “subprime crisis”. In this financial crisis, that had its origins in the United States but then spread to the whole economy, the mortgage market was highly affected.

The financial instruments that will be under assessment in this project are both inserted in this market and have significant roles in the development and consequential recovery of the financial crisis. If in one hand there is the asset securitization, a huge responsible for the subprime crisis, in the other hand there is the covered bonds that were used as mechanisms of financial recovery. Since the beginning of this crisis, the issuance of covered bonds has risen when compared with credit securitizations, and also the advantages in using these types of bonds have increased. Furthermore, the constant revisions and updates regarding legal requirements have also been improved, what makes this financial instrument even more desirable.

Despite the downfall in issuances of Covered Bonds, during these last years, investors, regulators and issuers tend to prefer the CB instead of credit securitizations, seeing that in this current environment of uncertainty and financial instability, people tend to prefer reliable investments with a sounder credit rating instead of a debilitated financial instrument exposed to the subprime crisis. Furthermore, regulatory entities such as the ECB have been increasingly backing up the evolution and development of Covered Bonds, in order to soothe the financial markets. An example of those kinds of measures that aim to bring financial stability and stimulate the markets was the Covered Bond Purchase Program launched in May of 2009.

Regarding the securitizations, it is well known that these financial instruments were in the origin of the subprime crisis. The evolving of some risks during that time, like credit risk, ended up to harming the markets, having serious consequences to the securitization market and to the whole financial system.

1. Introduction

When talking about Mortgage financing activities, besides the risk that this presents, there are three alternatives that come to mind. The Securitizations, where there is a transfer of risk; the Covered Bonds, where there is a creation of a long-term and low risk liabilities collateralized by a cover pool of assets; and lastly by means of public government guarantees. (Bank of Spain, 2013)

On this thesis project I will approach the two first alternatives of funding, but with a clearly special focus on the Covered Bonds.

Having endured more than 200 in Europe, covered bonds still remains a today's option for funding alternative. Is for that exact reason that this financial instrument has evolved through times and today is recognized at a global level as a long term funding tool. Its characteristics like the dual recourse, gives them a safe an attractive look that delights several investors, especially the more conservative ones.

It is also known that Covered Bonds are particular resilient in times of financial turmoil having outperformed the two other funding alternatives mentioned above, during those times.

Supported in some literature, I will characterize the Mortgage Market, the Covered Bond Market and the Securitizations Market from an European context. I will then analyze the role of securitizations and covered bonds in the subprime financial crisis with several publications regarding these topics. Lastly, I will focus my attention in analyzing the first Covered Bond Purchase Program and how it influenced the Markets.

This project aims to contribute for the continuous development of finance, more precisely of the Mortgage Market and the role of Covered Bonds in periods of financial distress.

2. Literature Review

There are two main statements that justify the upcoming rise of covered bonds issuances, when compared with credit securitizations. The first one is developed in three major publications written by three different competent authorities inserted in the European Mortgage Market. These entities are the European Mortgage Federation (EMF), the European Central Bank (ECB) and the European Covered Bond Council (ECBC). In the EMF publication from 2003, entitled "*Mortgage Banks and the Mortgage Bond in Europe*" we can read in their report about the European Mortgage Sector, where in the ECB report from 2008 called "*Covered Bonds in the EU Financial System*" and in the ECBC report from 2009 "The European Covered Bond Fact Book" we can have a closer look into their Covered Bonds annual reports.

In all of these three publications, we can clearly see a common thread of thinking that translates into the idea that this rise in the issuance of Covered Bonds, when compared with securitization transactions, is due to advantages from covered bonds and also to the fact that these securitization operations are very closely linked with the subprime crisis, what doesn't favor them.

For financial entities working as issuers it's cheaper for them to issue covered bonds instead of securitizations from the financing cost point of view (EMF, 2003). The costs of issuing covered bonds are relatively cheaper seeing that these instruments are inserted in the Balance Sheet of the issuer and they benefit from guarantees of mortgage credits, reserves and other assets own by the issuing entity. On the other hand, asset-backed securities by not having the same type of guarantees that the covered bonds present, they end up carrying extra costs for the issuers. Another relevant fact is that these type financial instruments are not included in the Balance Sheet of the issuer, having to be incorporated in an SPV.

An additional differentiating factor is that financial entities are incentivized to perform thorough reports where they evaluate the strength of the credit behind the covered bonds (ECB, 2008), which doesn't happen in the case of securitizations. This process has to be put in place seeing that the management and responsibility of insuring the soundness of the credit is attributed to the financial entity that issues the covered bonds, being these last ones exposed to potential losses arising from the performance of these bonds. In the securitization processes the responsibility is transferred to the investor.

Additionally, if the issuer of these financial instruments goes bankrupt or becomes insolvent the distribution of cash flows will be different from one case to another. In the case of covered bonds, the collateral associated to these financial products will be segregated from the assets of the issuer and the pool of covered bond collateral will be owned by a bankruptcy-remote SPV that will guarantee the bonds. In the event the issuer defaults on bond payments, the bondholders may look to the SPV and the covered bond collateral for payment. Furthermore, if the collateral is insufficient to make the required payments, the bondholders will retain a claim against the issuer for any deficiency in the repayment of all principal, interest and other amounts owing under the bonds. Regarding the asset-backed securities, investors will only continue to be paid if the securitizations continue to generate cash flows.

Other factor under scrutiny that separates the two financial instruments one from each other, is the fact that operations involving covered bonds are quite more transparent than the securitizations transactions seeing that these last ones, as it was mentioned before,

are not submitted in the balance sheet. These operations that did not appear in the balance sheet are directly linked with the subprime crisis and were responsible by the major losses registered in the EU.

During financial crisis time, like the one we had in from 2007 until 2010, regulatory entities and central banks supported the rise of issuances of covered bonds instead of securitizations. Additionally, financial institutions continued to give some guarantees to covered bonds, whereas with securitizations this doesn't happen (ECBC, 2009). Furthermore, covered bonds kept presenting more stability and a better performance than securitizations, and until today they are still considered as a sound financial instrument and with a way smaller risk than securitizations.

3. MORTGAGE MARKET

3.1 Mortgage Market Institutions

Founded in 1967, the European Mortgage Federation (EMF) was designed with the objective of representing the mortgage loan product at a EU level, and the vested interests of national banking associations and individual mortgage lenders from the EU member states.

Their overarching aim is to ensure a sustainable housing environment for EU citizens. For that matter, they participate as a key talking partner of the European Commission, the European Parliament, the 3rd pillar committees and the Basel Committee on Banking Supervision on all industry related questions.

“ The European Covered Bond Council (ECBC) is the platform that brings together covered bond market participants including covered bond issuers, analysts, investment bankers, rating agencies and a wide range of interested stakeholders. The Council has over 100 members across more than 25 active covered bonds jurisdictions and many different market segments. The ECBC represents over 95% of covered bond issuers in the EU.

The purpose of the ECBC is to represent and promote the interests of covered bond market participants at the international level. The ECBC's main objective is to be the point of reference for matters regarding the covered bond industry and operate as a think-tank, as well as a lobbying and networking platform for covered bond market participants.” (ECBC, 2008).

The European Securitisation Forum (ESF), known today as the AFME/ESF as a result of a merger in 2009 of SIFMA and the London Investment Banking Association (LIBA), aims to promote the development and sustainable growth of securitizations in Europe, assure the continuous and proper functioning of securitization markets in EU and support the interests of all parties involved.

3.2 The European Mortgage Market

In the beginning of 2000, the European economy was facing a recovery stage. After the ninety's recession, the construction sector was in expansion, the interest rates were extremely low and real estate market was starting to grow. Given the positive outlook, several financial institutions were attracted by this fast growth and started to invest in the mortgage market. As the lending transactions started to intensify, the mortgage markets in Europe began to improve. This brought some developments into the mortgage market and some financial instruments such as the ones in question, Covered Bonds and Securitizations became the main engine of this market.

In the summer of 2007, a new event took place. The housing bubble erupted and the prices of homes started to drop. The subprime crisis burst.

Given the close interconnectedness of the markets, the remaining financial sectors were quickly hit by this economic epidemic. Despite having started in the US, where we were able to see the fall of major financial entities such as Lehman Brothers, the European mortgage markets were quickly struck by the effects of the crisis.(see figure 1)

The years that followed were characterized as turbulent times, having the real estate sector and the mortgage market been seriously harmed by this financial catastrophe.

Nowadays, the outlook is a little bit brighter despite all the uncertainty and skepticism around it. With the latest interventions of the ECB, credit lending has been trying to get back on tracks in order to foment consume and bring back some financial soundness into the markets.

3.3 Financial Crisis – ECB initiatives to overcome it

During 2009, the ECB announced several initiatives in order to reduce the impacts of the crisis, namely by the establishment of a new class of bonds called the *Government Guaranteed Bonds*, also by cutting interest rates till 1% and by launching a Purchase Program for guaranteed bonds.

In order to sooth financial markets, the European Governments decided to start issuing Government Guaranteed Bonds (GGB). This type of bonds, were issued by the first time in 2008 and were largely used during the post-crisis times (until May 2010). Their existence had a limited timeframe, and its objectives were to control and stabilize the credit risk of covered bonds, as well as to cover the financing and liquidity requirements of the markets, in the short and medium term.

Furthermore, this monetary policy implemented by the ECB influenced the interest rates associated with the mortgage market. (see figure 2). (EMF, 2009)

Another initiative implemented by the ECB in order to combat the financial crisis and its consequences was the Covered Bond Purchase Program that will be discussed later on the project, as the main topic.

4. COVERED BONDS

4.1 Origins and characteristics of the asset

As history tells us, the first appearance of Covered Bonds dates to the eighteenth century to the land of Prussia with the implementation of the Pfandbrief. After the Seven Years War, King Frederick the Great, introduced a new mortgage financing system to restore liquidity for Prussia's aristocracy whose lands and financial position had been hit by the conflict. He then issued a decree given permission to these people to access agricultural credit by issuing full recourse bonds using their estates as collateral. Two centuries later, around 1900, the German Mortgage Bank Act introduced a formal framework for the Pfandbrief system. With the rise of usage of covered bonds in Europe the need to create a system for these types of bonds proliferated. Since then, the issuance of these financial instruments has been intensifying, and today there are more than 30 countries in Europe with a specialized market for these bonds. (see figure 3) It's believed that the number of countries participating in these markets continues to grow, seeing that the markets continue to develop themselves through several revisions and updates in their legislations in order to harmonize its operations and protocols for a better integration of EU Covered Bond markets. Despite being a financial instrument with great employment in the EU, the use of this type of bond continues to be weak outside the old continent, however, new tendencies started to develop in the mid and after the financial crisis in countries such as the United States, Canada and New Zealand.

Regarding the financial instrument, and as it was stated previously, a Covered Bond is typically classified as *"a debt instruments secured by a cover pool of mortgage loans (property as collateral) or public-sector debt to which investors have a preferential claim in the event of default. While the nature of this preferential claim, as well as other safety features (asset eligibility and coverage, bankruptcy-remoteness and regulation) depends on the specific framework under which a covered bond is issued, it is the safety aspect that is common to all covered bonds."* (ECBC).

In other words, covered bonds are securities issued by financial entities that have their cash flows collateralized by assets such as mortgages or public sector loans, as well as by their day-to-day business cash flows. (see figure 4). In case of default, the holders of these bonds have preferential claim over other creditors, regarding the reimbursement of the cash flows.

4.2 European Covered Bond Market

Despite being present almost all over Europe, the EU covered bond market is mostly concentrated in a small amount of European countries, including Germany, Denmark, Spain, France and the United Kingdom, having Germany and Denmark (the pioneers of this financial instrument) the most relevant role when it comes down to issuances. From 2000 until today, this market has expanded significantly, becoming one of the biggest segments in the Bond Market growing not only geographically but also in volume of transactions.

Regarding the investors, these are characterized for being mainly financial entities, investment funds, insurance companies and pension funds.

Before the crisis, between 2003 and 2007, this market registered a growth of 38%. (see figure 5) (ECBC, 2009).

4.3 Characteristics of the cover pool

During the last years, several changes have been made in the covered bond framework regarding the underlying assets. These changes result from the power of each EU national authority to implement their covered bond-specific legislation/regulation where they can define the asset classes which the issuers are allowed to use as the cover pool in regulated covered bond programs. For example, in all jurisdictions with a covered bond-specific legislation residential and commercial mortgages are allowed to qualify as cover assets for at least one of their regulated covered bond types. Whereas in France, a real estate loan guaranteed by a financial entity is also able to qualify as a cover asset, what that doesn't happen in any other EU jurisdictions (EBA, 2012).

Regarding these types of assets that are able to qualify as cover pool, there are several ones, such as, residential loans, commercial mortgages, exposures to public entities, ship loans, aircraft loan and a few other.

Another important characteristic about these assets that form the cover pool is that they tend be dynamic. By this I mean, issuers normally adjust the quality and structure of these assets on a regular basis in order to guarantee that the coverage requirements are fulfilled at any time. This happens because the quality of the underlying assets affects the performance of the covered bond program. In order to oversee if the assets really comply with the agreed standards, covered bonds are usually rated by at least one External Credit Assessment Institution (ECAI).

4.4 Covered Bonds underlying advantages

4.4.1 Investor's advantages

Since its creation that covered bonds are seen as a financial instrument with a solid performance. Their yield is higher than the state debt securities, like for example the T-bills. Furthermore, the costs associated to these bonds are usually perceived as low seeing that these financial instruments are considered to be safe by presenting guarantees to the investor. As it was stated before, by segregating the assets that collateralize the covered bond, the cover pool is easier to identify what facilitates the realization of the covered bond investor's preferential claim over the cover assets.

The continuous increment and revisions of regulation by the Central Banks and National Authorities, is also a relevant factor for the amount of demand of this bond, since it gives a more transparent and sound aspect to the financial instrument in question. Among other things, the ECB performs tests and analysis to the cover assets in order to assure the quality of them, tracks if those assets are not "under-collateralized" (there is a need for overcollateralization) in order to assure that cash flows that need to be paid to investors are sufficient to meet its obligations.

Another important aspect is that these bonds are highly active and liquid in the secondary market, reason for bringing each time more investors to look for this type of bond.

Like in the main financial markets, in the covered bond market there are multilateral channels that make the bridge between parties, an example of this is the EuroCredit MTS/Euro MTS. The Euro MTS is known as the most common platform for trading liquid debt in the universe of covered bonds, agencies and sub-sovereigns. In this platform, like in others serving other markets, there are market-makers that are responsible for realizing the buying/selling transactions, offering bid and ask prices that end up contributing largely for the liquidity of secondary markets.

Lastly, due to the geographical expansion of this market and to the continuous integration of the European markets, the growth of covered bonds regarding issuers, currency and assets permitted the rise of diversification. Despite continuing to be more present in the European market, covered bonds are becoming more frequent in other continents such as North America and Oceania, what benefits investors seeing that they can take advantage of exchange gains and additional sources of investment.

4.4.2 Issuer's advantages

Regarding the issuers, these ones benefit from a reliable funding source for the mid and long term (usually between two and ten years), that enables them to expand their clients portfolio and reinforces the quality of credit, given the fact that these type of bonds share low costs and high ratings. Furthermore, these types of bonds may facilitate the management of liquidity and solve unbalances between assets and liabilities of the issuer.

Concerning the balance sheet of the issuer, on the asset side are the investments and financial applications of the financial institution, like mortgage loans. These types of loans are considered to be long term and may vary from a fix to a floating rate. On the other hand, in the liabilities side of the balance sheet, we can find the means of financing of the issuer, such as, funding coming from the International Monetary Market (short-term and with a floating rate); covered bonds with a fixed rate for the mid and long term; and long term fixed rated securitizations.

Like asset securitizations, covered bonds contribute for the equilibrium of the issuer's balance sheet, seeing that they level with long term loans, either fix or floating rate. In times of financial distress, these financial instruments represent an important way of financing for the banking system. Furthermore, they have also been playing a major role in the ECB operations, contributing with liquidity to the market since they offset the risk of losses associated to banks and also to implement an efficient monetary policy.

4.4.3 Advantages to the Market

The advantages to investors, as much as the advantages to the issuers, contribute for the evolution and expansion of the covered bond market and also for the development of the capital markets. These bonds have contributed for the continuous progression of the markets, more precisely in the mortgage market sector and for the prosperity and development of the financial system.

4.5 Risks and Supervisory mechanisms

4.5.1 Covered Bond's Risks

There are four main risks that may affect covered bonds. The first one is related with the interest risk. This one might occur when there can be seen some adverse fluctuations in the interest rate for this type of bond. Given that covered bonds' interest rates are usually fix, in case there is a hike on the rates the bonds will lose value.

Due to increasing proliferation and globalization of the covered bond market, risks like the exchange risk start to arise. The investors are exposed to fluctuations in the exchange rate that might pinpoint the value of the bonds.

When we're talking about liquidity, more precisely asset liquidity, we are referring to the degree of interchangeability of the asset, by this I mean if it is easy or not to trade without having to make significant changes in its price. This level of liquidity depends of several factors, such as, the amount of Demand and Offer in the market, the tendencies of the interest rate to rally or to fall or even between the differences of the bid and ask price (spread). The last financial crisis highlighted the risk of liquidity of covered bond transactions.

Structural risks are also present and might affect the demand and supply of covered bonds. For example, in a weak macroeconomic scenario, where financial institutions keep struggling to survive, despite being a resilient financial instrument, the supply of covered bonds tends to decrease at the same time that investors tend to reduce their investments.

In a short description, liquidity translates in the ability of an asset to be exchanged. The degree of liquidity of an asset depends of several factors, like the amount of demand and supply, the fluctuations of interest rates, the bid-ask spread, between others. The subprime crisis shed some light on the liquidity risk in covered bond transactions.

The risk of default reflects the ability of the issuer to pay in time the due cash flows (interest and principal). This risk is directly link with the bond's credit risk. In the case of covered bonds, the default risk associated to the issuer is not that relevant, seeing that the credit risk from the underlying assets is almost inexistent. Having covered bonds an AAA rating, the probability of the issuer defaulting with its obligations is almost close to zero. Nevertheless, is always a risk that one should have in mind!

4.5.2 Supervisory mechanisms

In order to cover the covered bond's risk, such as exchange risk and interest risk, one can use derivatives to protect itself from possible undesirable outcomes. Derivatives, like interest rate swaps or Call/Put options may be used in this case.

4.6 Jumbo Covered Bonds

The first appearance of Jumbo covered bonds was in Germany, in the year 1995, and was presented to the world as *Jumbo Pfandbrief*. This category of covered bonds, rapidly reached the starlight becoming known as the benchmark-model for covered bonds. These type of bonds were created in order to increase liquidity in the covered bond market and improve the covered bond structure to suit foreign institutional investors.

Jumbo model contains a set of rules that mainly refer to size, format, issuance and buybacks practices. The key feature of this model relies on the commitment of market makers for a limited amount of cash orders, a feature that increases transparency and guaranties investors a minimum amount of bond trading (Bank of Spain, 2013)

5. SECURITIZATIONS

5.1 Origins and characteristics

“Securitization is an important channel for diversifying funding sources and allocating risk more efficiently within the EU financial system. Appropriately regulated, it allows for a broader distribution of risk and can help to promote lending to the wider economy” (European Committee, 2015)

The first appearances of securitization transactions send us back to the seventies in the United States. Financial institutions decide to start withdrawing the loans that they granted to final consumers from their portfolios, converting them into financial securities that could be sold to other parties, such as hedge funds or pension funds from all over the world.

The securitization process is based on two steps. The first one corresponds to the identification of the assets that the originator wants to remove from its balance sheet and to the gathering of those assets in a pool, also known as reference portfolio. The financial institution in question then sells those assets to an issuer, usually created by the financial institution in question, called an Special Purpose Vehicle (SPV) with the special purpose of purchasing and realizing the off-balance sheet treatment for legal and accounting reasons. In the second step, the SPV issuer finances the acquisition of the pooled assets by issuing tradable interest-bearing asset-backed securities which are then sold to capital market investors. These investor will the receive fixed or floating installments made form a trustee account funded with money raised by the cash flows generated by the reference portfolio. (Andreas Jobst, 2008) (see figure 6).

The value of the transaction, and consequently, the size of it will be usually reflected in the net present value of the future cash flows. Additionally, the interest payments will solely depend on the performance of the assets and not of the originator entity.

It's also important to mention that asset securitizations may envision several types of assets, such as, vehicles, equipment, and loans from financial entities, among others.

Furthermore, the reference portfolio, mentioned above, is divided into several tranches, separating each level by the degree of risk associated to it for them selling it independently.

5.2 Securitizations European Market

With the mortgage sector starting to gain more importance in the late nineties, the urge to create regulations for securitizations first appeared. The European market for securitizations, quickly enter the scene, expanding at a good pace, mostly due to the enter of new participants in the market, to a better financial outlook, to the appetite of new investors and to the aggressive marketing performed by financial entities. Since the beginning of the subprime crisis, the securitization markets started to decrease its pace, having the numbers of issuances drop significantly. (see figure 7).

5.3 Characteristics of the originator

As it was mentioned previously, the originator participates in the first step of the securitization process. This party is the one who initially owns the assets present in the deal. Normally, the originator is a financial entity that seeks to raise capital, restructure debt or adjust its finances. However, there are other types of entities that can also participate in the securitization process, such as, insurance companies, pension funds and state entities.

5.4 Characteristics of the issuer

According to the European Commission in their proposal for laying down common rules on securitization and creating a European framework, an SPV or an SSPV (Securitization Special Purpose Vehicle) is “*corporation, trust or other legal entity, other than an originator or sponsor, established for the purpose of carrying out one or more securitisations, the activities of which are limited to those appropriate to accomplishing that objective, the structure of which is intended to isolate the obligations of the SSPE from those of the originator, and in which the holders of the beneficial interests have the right to pledge or exchange those interests without restriction*”. In other words, an SPV is an off-balance sheet vehicle that might take the form of different types of entities, being the most common the trust, and is used to fulfill a temporary objective of the originator. It's generally used as a method to separate the risks of the underlying pool of exposures held by the SPV and pass them to the investor.

5.5 Securitization Advantages

5.5.1 Originator's advantages

Until the last financial crisis, the use of securitizations in Europe was increasing at a considerable pace. This was due to several advantages between all the participating parties.

Regarding the issuer, there are several advantages that make securitization attractive to this party. The main reason for the use of securitization was linked with the fact that securitization led to the reduction of assigned debt from the originator's balance sheet, which would lead to a reduction in the capital requirements, under Basel II framework. With the financial turmoil new capital requirements were implemented in Basel III.

Additionally, some other advantages may also arise from the originator point of view, such as, the reduction of borrowing costs. Through securitization, a company with a non-investing grade rating but with AAA ranked cash flows can borrow at an AAA rating, lowering its costs significantly. Furthermore, with the detachment of the assets from the originator balance sheet and the consequential move to the SPV, the responsibility of managing those assets and the exposure to certain risks arising from the securitization process, shift from the originator to the vehicle company. The cost of shifting those risks will be reflected in the spread associated to the securitizations.

5.5.2 Investor's advantages

Several investors search for securitizations due to their "AAA" credit ratings, meaning that credit agencies, like Fitch and Moody's, believe that is a safe bet and that the investors will not lose their money with these investments. These high ratings are made possible through a combination of features, such as bond insurance, letters of credit and senior-subordinate credit structures. Investors also appreciate the diversification that securitization can bring to their portfolios. By having the underlying reference portfolio divided in different stages, each one with its level of risk/reward, the investor may choose his investments according to his appetite and tailor his portfolio.

5.5.3. Advantages for the Market

At the height of securitization, several economic benefits were achieved. In the beginning of the 21st century, securitizations contributed for the development of the housing market, enabling people to buy a house, reducing the cost of credit lending and easing the credit access to majority of the developed countries. Hence, it contributed with liquidity to the markets and ended up adding value to the companies.

Securitization links the capital markets and financial markets by converting these financial assets into capital market commodities. The agency and intermediation costs are thereby reduced.

5.6 Securitization Costs

When talking about the costs associated with securitization processes, one should have in mind the structural and legal aspects. When compared with other types of funding procedures we can conclude that the one in analysis is quite more complex. For start, there are a big amount of costs coming from activities, like assembling, structuring and funding in the securitization process. This process encompasses several parties that end up having special requirements for the participation. These requirements are usually related with financial matters and with the good practices between the parties.

Moreover, investors tend to demand safety and quality in the cover pool of assets collateralizing the securities. Contrary to what happens in traditional funding, where the assets of the borrower serve as guarantee, when investing in securitizations, investors don't have this "safe haven". Therefore, for the success of operation there are alternative methods to ensure the safety and soundness of the transaction. This insurance may be given by rating agencies, where they evaluate the credit risk associated to security and the counterparty risk.

5.7 Risks and Supervisory mechanisms

5.7.1 Securitization's Risks

Securitization processes are subject to five main risks that are supported by the SPV. Like the other financial transactions, there is a liquidity risk associated to securitizations. During a financial turmoil, like the one lived in 2008, liquidity tends to decrease whereas the risk tends to move in the opposite direction. This phenomenon happened in the last financial crisis, where we did see investors becoming each time more averse to the risk ending up to retrieve their investments. A decrease in transactions took place, leading to a decline in market liquidity and a rise in the liquidity risk associated to the securitizations.

Another risk worth mention is the default risk. Whenever the quality of the assets is put in question this type of risk arises. Given the fact that credit risk is directly linked to default risk, a credit insufficiency regarding the securities might cause some uncertainties concerning the cash flow payments and the well-being, soundness and resilience of the underlying assets.

It is also important to mention that the credit rating attributed to the issuer is one of the mechanisms to evaluate the credit risk, and therefore the default risk. Most of all securitization operations are rated with an AAA grade, the highest possible rating, what makes in theory the risk of defaulting almost null.

However, securities' investors are subject to a higher risk of defaulting, when compared with other types of investors. Contrary to what happens in traditional funding, when there is a case of default or bankruptcy, securities' investors aren't able to reach for the originators in order to regulate their payments. Investors don't have access to the issuer's assets, seeing that cover pool of assets that collateralized the securities aren't on the originator's balance sheet, having been integrated in the SPV.

The subprime crisis also pinpointed another aspect of credit risk that is on the epicenter of the crisis, which was the reckless evaluation of credit risk associated to securities. The loss due to credit valuation adjustments (CVA) is believed to be accountable for two thirds of the losses.

With the progression of the crisis, another risk arose, the early amortization risk. This risk normally arises when a portion or the totality of a mortgage loan is amortized before the due time. This may occur from several factors, such as the borrower of the loan defaulting on its payment. During the financial crisis, this risk affected greatly the securitizations as the situation described above happened very often.

Another risk worth mentioning is the reinvestment risk. This one derives from the last risk (early amortization risk), seeing that as a portion or the whole amount of the loan is early amortized, is foreseeable that the investor decides to reinvest it. In the case where the interest rates falls, there is a risk that the new investment rate is now lower that the interest rate that was available in the beginning of the securitization process.

Finally, the interest rate risk is connected with the reinvestment risk, and it can lead to possible losses for the investor side. If the interest rate linked to the securitization is a fixed one, the securities might lose value if there is a hike in interest rate. At the same time, if it is a floating interest rate, the securities might lose value whenever there is a fall in the market interest rates.

During the subprime crisis, interest rate risk was one of the risks that had more influence in securitizations. Most of all securitizations from the subprime market had a floating rate which ended up causing severe losses.

5.7.2 Supervisory mechanisms

Given the complexity of securitization's operations, the use of derivatives by the issuer (SPV) is a common practice to safeguard itself from possible risks and losses.

Seeing that in Europe, there are differences between interest rates and currencies that might affect the securities and the underlying assets, interest rate swaps and currency swaps might be used as a tool to manage risk.

Furthermore, credit enhancement techniques are also used as tool to manage risk, and consequently avoid a possible default risk on the securities. Credit enhancement involves

the adoption of additional guarantees by the vehicle entity that will enable it to limit its exposure to investors. Generally, this improvement in the amount of credit is determined by rating agencies.

6. SECURITIZATIONS AND THE ORIGIN OF THE SUBPRIME CRISIS

6.1 The Subprime Segment

Born in the eighties, the subprime segment first appeared in the US. It was mainly composed by mortgage loans destined to a large portion of population that did not have any credit history nor had a not so favorable credit record.

The subprime segment is known to have a high risk, seeing that no guarantees were asked to credit owners. These types of borrowers, who were in a financial unstable condition, had already a history of payment delinquencies, or even more serious problems like charge-offs, judgements and bankruptcies. Obviously, due to these characteristics of the borrowers, the loans given to them had a higher risk of default than loans to prime borrowers. In order to deal with these type of debtors, seeing that there were no state guarantees protecting the financial institutions, the only method that this party could use to shelter themselves was to take possession of the property, in a process called foreclosure.

6.2 The Evolution of the Market

The expansion of the subprime market was mainly due to the boosting of the securitization market. With the appearance of new financial instruments, such as derivatives, new opportunities to invest arose.

This type of financial engineering enabled the appearance of a new financial instrument, which in turn prompted securitization operations, the evolution and expansion of the subprime market and add more liquidity to the markets.

In the second quarter of 2007, just before the subprime crisis burst, Mortgage-backed securities already amounted to \$6,8 trillion, from which around 19% were subprime mortgage loans

Secondly, we can also attribute the development of this market to some policies and regulations implemented by the state bodies that at the same time helped to improve the mortgage market segment. In the beginning of 2000, the US government decided to implement new measures to stimulate the mortgage market and to control the effects that were felt after the terrorists' attacks. Deregulations were put in place, several interest rate cuts were performed and extra incentives to foment consume were presented. One of those incentives was home ownership. During this decade, and in order with the government provisions, several American families decided to enter the adventure of buying a house and for that they asked banks for help. A rise in mortgage loans started to develop. Funny or not, the biggest adherence to this incentive was from low income families, with a weak credit record and with few possibilities. Around May of 2007, 7,2 million US families had a subprime mortgage loan. (IEDI, 2008).

6.3 Subprime Crisis

Despite only being truly felt after the summer of 2007, signs of the subprime crisis started to be felt in the beginning of 2007. The increasing hike in interest rates, around 2004/2005, started to affect the holders of the subprime mortgage loans due to their vulnerable financial situation. The number of defaults on payments started to rise and successive foreclosures became a reality. With this, the price of the assets (houses), which were the only guarantee that banks had, started to decline.

Then, when the complex nature of the securities, that had resulted from the securitization of the subprime mortgage loans started to face some difficulties, the crisis created in the mortgage market suddenly spread to the financial markets.

The fixing of securities with derivatives, like the Collateralized Debt Obligations (CDO's) influenced rating agencies to inflate their ratings, attributing to these financial products a credit risk way below their real supposed rating, and ending up classifying the securities that derived from subprime mortgage loans with really good grades.

The performance of the securities associated to the subprime mortgage loans quickly was affected. A big number of cash outflows were registered, continuous rating devaluations were put in place and several bail-outs had to be performed in investment funds that had invested an enormous amount of money in this financial segment. In the summer of 2007, the bubble burst and the financial markets took a hard tumble.

6.4 The Subprime Crisis Consequences

The lack of transparency and heterogeneity of all the operations that took place in the subprime market had big repercussions on the performance of financial markets, financial institutions and in the interbank lending market. With the recycling of the credit in the markets, the financial institutions ended up being completely exposed to risk without acknowledging completely. This affected the quality of credit ratings and made banks lose track of its debtors. Furthermore, this brought a halt in the interbank lending because confidence was broken, what translated in a real contraction of liquidity in this market. (Ferreira L., 2008).

The globalization of the subprime segment and the strong interconnectedness of the markets helped the propagation of systemic risk into the markets. Investment portfolios were contaminated at a global scale and continuous devaluations of assets, mixed with a high level of uncertainty regarding the exposure of financial institutions to the subprime segment, resulted in an outrageous amount of losses and bail outs.

In the summer of 2008, the first signs of contagion started to appear, with the French bank BNP Paribas needing to bail-out three investment funds that were exposed to the US mortgage market. With all the financial turmoil affecting the markets, a proper evaluation of the cover pool of assets collateralizing the securities was impossible, so the European investors started to withdraw their applications that were exposed to the North American mortgage market.

A state of financial emergency was then declared by the ECB that end up injecting €95 billion in the banking sector. (ECB, 2009)

7. COVERED BONDS AND THEIR ROLE IN THE FINANCIAL CRISIS

Impact assessment of ECB's first Covered Bond Purchase Program.

7.1 Covered Bonds before the Financial Crisis

Before the financial turmoil that started in 2007, covered bonds were considered the main funding instrument of the EU, thanks to their good performance when compared with other assets. Due to the long tradition of covered bonds in Europe and to the boosting of its market through the Jumbo bonds, covered bonds were seen as a substitute to Treasury Bonds.

They were seen as a highly liquid instrument, worthy of the highest rating (AAA). Furthermore, the supply of covered bonds was rising at a good pace, due to the increasing funding needs of financial institutions that weren't able to get finance themselves in the monetary market. (ECBC,2008)

7.2 Turmoil in the Covered Bond Market

Right after the beginning of the subprime crisis, in the summer of 2007, there was a hike in the investor's aversion to risk, having as consequences a big stirring in the covered bond market. However, and contrary to what happen in the securitization market, the covered bonds showed some resilience and stability. While the covered bond market was decreasing substantially, the securitization market simply collapsed.

On the 15th of September of 2008, Lehman Brothers went bankruptcy and a new stage in the financial crisis arose. This crash had a tremendous effect on the global economy and suddenly the advantages of investing in covered bonds started to fade away, increasing significantly counterparty risk. The performance of this bonds felt considerably leading to a raise of the Value-at-Risk in investment portfolios.

These factors lead to a decrease in covered bonds' demand, leading to stagnation in these bonds issuances and diminishing the liquidity of the market.

Covered Bond Markets across Europe felt the harsh backlash of the financial turmoil, including the German Pfandbrief Market, which until then was considered the safest in the world. Due to this situation, the soundness and safeness of the covered bonds started to be put in question.

The truth is, even if a financial instrument has the highest rating, the exposure to some degree of risk is always there. By not being an exact science, but an opinion, investors should bear in their minds that for every investment there is a risk associated.

7.3 Measures to overcome the financial crisis

7.3.1 The use of Covered Bonds

In order to address the financial crisis and bring back "life" to the financial markets, the ECB decided to choose covered bonds as the financial instrument to do it. Given the outcome of financial downturn, as a result of a wrong evaluation of credit risk, the ECB opted to select a more conservative asset.

Covered bonds, despite having suffered with the crisis through hits in their transaction volume, continue to be a safe and effective financial instrument, still occupying the top positions in financial institutions "minds", as an alternative way to raise funds.

Worth mentioning that covered bonds were the first source of financing, non-guaranteed by the state, to be traded by financial institutions after the Lehman crash.

8. COVERED BONDS AFTER THE FINANCIAL CRISIS

Impact of ECB Covered Bond Purchase Program.

8.1 Why a Covered Bond Purchase Program?

As it was previously stated, the covered bond market is one of the most important privately issued bond segment in Europe's capital market. According to the ECBC in 2009, this financial instrument was a key source of funding for the European banks, having its market grown from €1,5 trillion in 2003 to €2,4 trillion in the end of 2008.

In the beginning of 2009, the spreads in the covered bond market started to widen and liquidity became scarcer. Banks lost confidence and the interbank market activity plummeted. As liquidity risk continued to develop, solvency issues associated to the banking system dominated the headlines.

In this dark scenario, a need for intervention was becoming more relevant, and therefore the ECB decided to step in providing support to the covered bond market in the euro area through outright purchases of covered bonds under the Covered Bond Purchase Program (CBPP). With this they aimed to revive this market, due to its relevancy, focusing on liquidity, issuances and spreads. In their own words, the choice of selecting covered bonds as the asset to perform a purchase program was linked to the fact that, *“Covered bonds possess a number of attractive features from the perspective of financial stability. Covered bonds as dual recourse instruments are less risky than most other bank securities and also increase banks' access to long-term funding, thereby mitigating liquidity risks. In the context of the ongoing financial market turmoil, it is important to stress that, on the whole, covered bonds have proven themselves relatively resilient, in particular in comparison with securitisation”*.

8.2 What is an Asset Purchase Program?

Despite Trichet stating it as “enhance credit support” I believe that an asset purchase program like the one in question is part of a Quantitative easing program.

When a Central Bank chooses an Asset Purchase Program (APP), as the program to implement, theoretically, it can have two main goals, like the injection of money into the economy as a way to recover spending or to address specific market problems in particular market segments.

In order to achieve it, it may choose from one of four channels to reach the real economy. Through those channels, the purchases made from the Central Bank will try to stimulate and revive the confidence of investors on those particular assets.

The first one is called the “announcement effect”, where just the simple announcement of the program brings back some confidence to the market itself. Secondly, the “portfolio balance effect” where there is an expectation for the price of the assets purchased by the Central Bank, to increase, at the same time that the supply of that asset decreases in the market. The third channel is called the “liquidity premium effect” that refers to the tightening effect of central bank asset purchases on liquidity premia, and lastly there is the “real economy effect”.

On the 7th of May of 2009 the ECB decided to announce their Covered Bond Purchase Program.

8.3 Characteristics of the CBPP

For this asset purchase program, the ECB chose to follow the Article 18.1 of the Statute (article 1).

As their goals, they decided to focus their purchases under the CBPP in, “promoting the ongoing decline in money market term rates; easing funding conditions for credit institutions and enterprises; encouraging credit institutions to maintain and expand their lending to clients; and improving market liquidity in important segments of the private debt securities market”.

Regarding the technical aspects surrounding this program, the Covered Bond Purchase Program was launched by the ECB on the 2nd of July, aiming to purchase directly an amount of €60 billion to be distributed across the euro area, until the end of June of 2010. Furthermore, these purchases were destined to be conducted in the Primary and Secondary market, between other technicalities.

8.4 Impact of the CBPP

In order to assess the impact that this Asset Purchase Program had in the economy it is necessary to address the implications in the Primary and Secondary Market separately. These assessments of the CBPP, were produced by the ECB itself having chosen to follow a co-integration analysis to indicate the effect on outstanding amounts of covered and uncovered bonds for the Primary Market, and an event study analysis and a regression analysis to study the implications on the Secondary Market.

8.5 Impact on the Primary Market

Some days after the announcement of the Covered Bond Purchase Program, there was a significant rise in the amount of outstanding covered bonds, having the issuances hiked around 36 % to €32 billion, in a space of a month. However, data was not 100% reliable about the actual effect of the CBPP seeing that economic conditions were improving slightly. One thing was sure, the CBPP had a positive impact in the outstanding amount of covered bonds, but there was no certainties about the effect of the asset purchase program on the outstanding amount of bonds, covered and uncovered, issued by banks. To clarify any remaining doubts, further investigation was needed, in order to study the relation between these two types of bonds. (see figure 8)

Despite several fluctuations on the outstanding amount between covered bonds and uncovered bonds in the market, throughout the financial crisis period, having the gap between these two bonds widen in the beginning of the turmoil, then reaching a record low in the beginning of 2009 due to the issuance of government guaranteed bonds, and then widen again due to the launch of the CBPP, a conclusion was reached. Was then conclude that the CBPP was directly linked with the revival of the covered bond market but had also trigger a substitution effect, having the covered bonds crowded out uncovered bonds.

Furthermore, was then compared the relation between bank bonds (uncovered and covered bonds) (see figure 9) and corporate bonds having been reached also the conclusion that there was a relation between the movement of these bonds, being both driven by common fundamental factors, but the change noticed between these two bonds at the time of the launch of the program means that the CBPP had a real impact in bank bonds and without it even more severe funding conditions would have arisen.

8.6 Impact on the Secondary market

In order to assess the impact of the Covered Bond Purchase Program in the Secondary market, an analysis of the yields of covered bonds was put in place.

First of all, let's start with the day of the announcement. As it was previously mentioned, the day of the announcement of the program bared significant importance for the development of the APP, and this wasn't any difference when it came to the covered bond yield spreads. (see figure 10)

Almost in every EU covered bond market, in the day of the announcement and the days that followed it, a tightening of spreads was clearly visible, having Germany lead the way through a reduction of 7 basis points on the day of announcement and an average of 3 basis points per day on the following days. After German, France and Spain followed the lead. (see figure 11)

However, this constriction of the spreads was a specific feature of the Euro-Zone markets, seeing that didn't have a direct implication in the Sterling markets. (see figure 12)

Regarding the longer term impact, in order to perform the analysis, a comparison was made to access the changes in the spread between iBoxx country indices and the debt yields of national agencies which the French and German governments individually guarantee.

In that comparison, it is clear that the Covered Bond Purchase Program had a significant impact on the fall of the spreads, being France more influenced by this program seeing that the decline was quite bigger than in the German case because the spread from the latter had already narrow previously to the announcement of the APP. Additionally, according to Barclays Capital researchers this declining of spreads in the long term also occurred in other countries of the EU, such as Portugal, Spain, Sweden and the UK, that at the time was still part of EU. (figure 13)

Furthermore, during this program there were issued around 148 new eligible covered bonds as well as 47 taps of existing covered bonds that all together combined a total of €148 billion. Adding to this factor, the tightening of the bid-ask spread, there is no doubt that there was an enhancement of liquidity in the covered bond market, all due to the implementation of the Covered Bond Purchase Program.

8.7. Conclusions from the CBPP

From the overall point of view, this program was a success seeing that achieved its objectives. With the implementation of the CBPP, there was a revival of covered bonds issuances in the primary market, which also permitted the arrival of new participants searching for covered bonds as their funding instrument. These new participants are countries from the euro area, like Italy, Portugal and Austria. This entry of new members in the market, not only improved euro area funding, but also enabled euro area banks to not depend entirely in the Eurosystem's liquidity injections.

Furthermore, the sharp fall in covered bond spreads leading to a tightening of the same in the secondary market, and the narrowing of the bid/ask spread also give satisfactory signs of how the Covered Bond Purchase Program improved liquidity in this market.

However, a question arises about the date of completion of the CBPP. In retrospective, and after looking at the (figure 13), seeing the spreads to increase again near the completion date of the program, wouldn't have been better to continue with the program?

9. Conclusions

As it was stated in the literature review, the arguments used by the three European bodies that are present in the covered bond market, namely the ECB, the EMF and the ECBC, were proved to be right during this project. The rise of covered bonds, when compared to the amount of securitizations operations, is due to the financial crisis and to the advantages of covered bonds.

The European Covered Bond Market has been also been growing more than securitizations market. Despite the decline of covered bonds issuance (comparing to pre-crisis period), since the beginning of the financial turmoil, investors tend to prefer these type of bonds instead of securitizations.

With the beginning of the subprime crisis came the halt in the securitizations market. This financial instrument faced several difficulties, ending up to infecting the financial markets and the biggest economies. The advantages that were once perceived, regarding securitizations, quickly fade away and translated into rising costs and risks. Furthermore, the complex nature of this financial instrument, the lack of guarantees regarding the underlying assets and the careless evaluation of the credit rating associated to these funding tools, were all in the epicenter of the crashing of securitizations market. Adding to all these factors the other risks associated to securities and the meltdown of the subprime market, suddenly the entire financial system was being contaminated, spreading its "diseases" throughout the world.

Nowadays, Covered Bonds continue to be considered one of the most stables financial instruments in the market. With the investment in covered bonds, investors benefit from an attractive source of income, that has tighter supervisory mechanisms, a good amount of liquidity in the secondary market and the possibility to diversify funding sources.

The issuers of these types of bonds have also been benefiting from an alternative way of funding, that has a really high credit rating and low borrowing costs.

Additionally, regulatory entities, such as the ECB also decided to choose the covered bond as the asset to perform in their asset purchase program, pointing again the relevance of this financial instrument in Financial Crisis and in today's market. The first Covered Bond Purchase Program and that was under analysis in this project was also a success.

Bibliography

BCE (2008), Covered Bonds in the EU Financial System,

http://www.ecb.int/pub/pdf/other/coverbondsintheeufinancialsystem200812en_en.pdf.

ECBC (2008), European Covered Bond Fact Book

[https://www.pfandbrief.de/cms/_internet.nsf/0/48ECC314FBF8CB47C1257EAB0041C583/\\$FILE/E/CBC%20Fact%20Book%202008.pdf?OpenElement](https://www.pfandbrief.de/cms/_internet.nsf/0/48ECC314FBF8CB47C1257EAB0041C583/$FILE/E/CBC%20Fact%20Book%202008.pdf?OpenElement)

Instituto de Estudo para o Desenvolvimento Industrial (2008), Entendendo a Crise Subprime e suas Repercussões na Economia Mundial

http://www.iedi.org.br/cartas/carta_iedi_n_300_entendendo_a_crise_subprime_e_suas_repercussoes_na_economia_mundial_1_parte.html

Statute of the ESCB and of the ECB – Rules of Procedure

<https://www.ecb.europa.eu/pub/pdf/other/ecbinstitutionalprovisions2011en.pdf?7de2897f4d26b668aa75600be195e253>

“Covered bonds – ripe for expansion?”

[http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/545713/EPRS_BRI\(2015\)545713_REV1_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/545713/EPRS_BRI(2015)545713_REV1_EN.pdf)

“The impact of the eurosystem’s covered bond purchase Programme on the primary and secondary Markets”

<http://www.ecb.europa.eu/pub/pdf/scpops/ecbocp122.pdf>

“EBA Report on EU Covered Bond Frameworks and Capital Treatment”

<https://www.eba.europa.eu/documents/10180/534414/EBA+Report+on+EU+Covered+Bond+Frameworks+and+Capital+Treatment.pdf>

Creating and Understanding of Special Purpose Vehicles

<https://www.pwc.com/gx/en/banking-capital-markets/publications/assets/pdf/next-chapter-creating-understanding-of-spvs.pdf>

MONTHLY REPORT ON THE EUROSISTEM’S COVERED BOND PURCHASE PROGRAMME SEPTEMBER 2009

<https://www.ecb.europa.eu/pub/pdf/other/monthlyreporteurosystemcoveredbondpurchaseprogramme200909en.pdf?df067dc64944b8b423902476c84415e8>

The ECB and covered bonds – the next chapter?

<http://ftalphaville.ft.com//2011/09/27/686746/the-ecb-and-covered-bonds-the-next-chapter/>

What is Securitization?

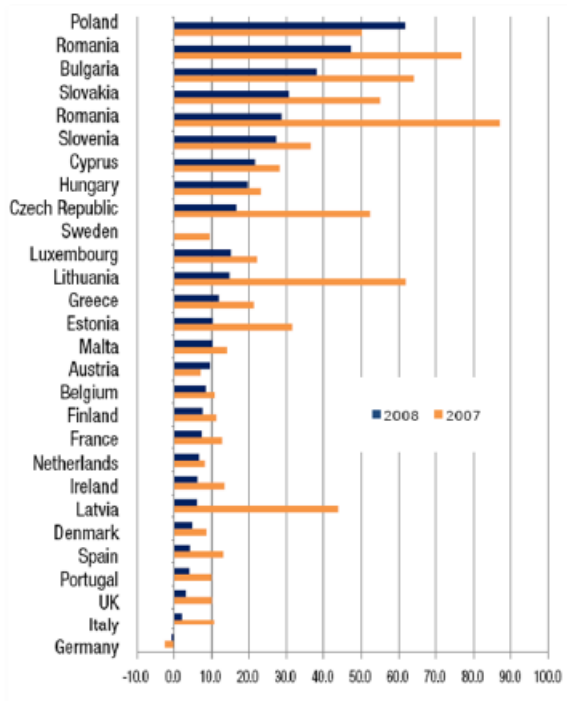
<https://www.imf.org/external/pubs/ft/fandd/2008/09/pdf/basics.pdf>

COVERED BONDS: THE RENAISSANCE OF AN OLD ACQUAINTANCE

<http://www.bde.es/f/webbde/GAP/Secciones/Publicaciones/InformesBoletinesRevistas/RevistaEstabilidadFinanciera/13/Mayo/Fic/ref2013244.pdf>

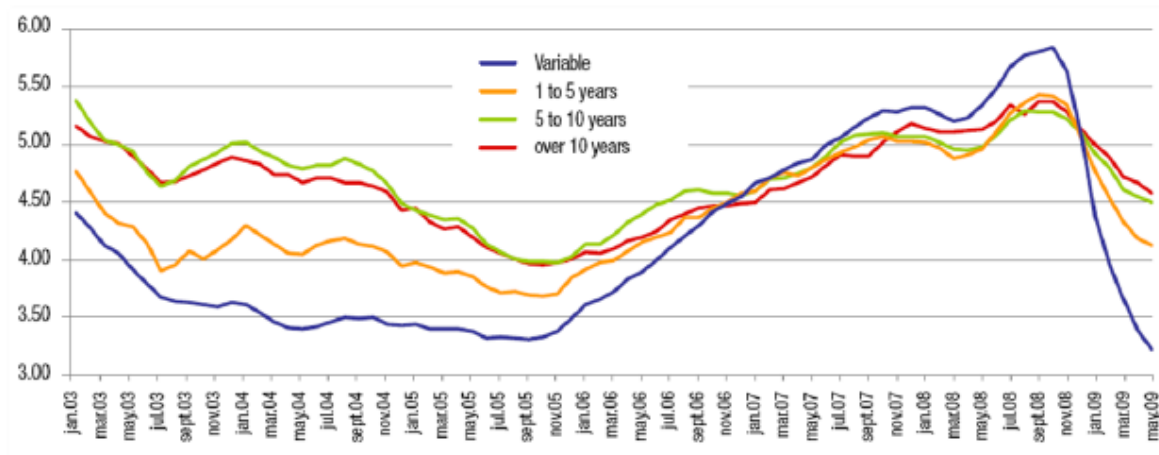
Annex

Figure 1: Fall of European Mortgage Market growth rates between 2007 and 2008



Source: EMF (2009)

Figure 2: Fall of interest rates in the EU mortgage market between January of 2003 and May of 2009



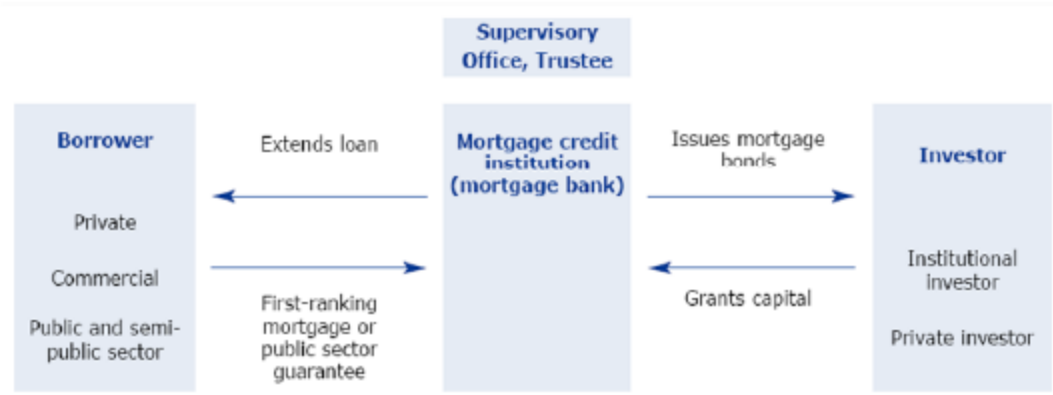
Source: ECB

Figure 3: EU countries with specialized Covered Bond Markets



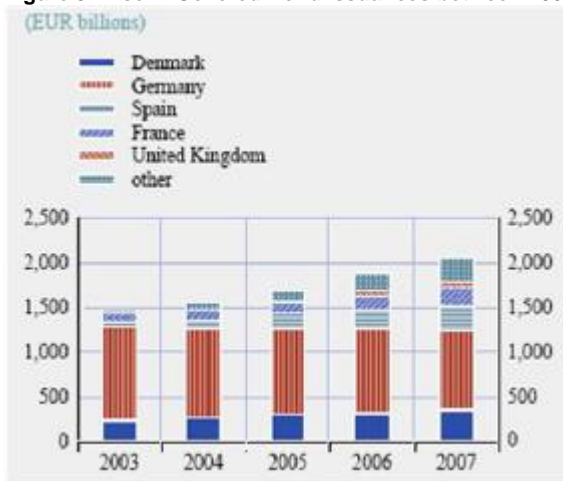
Source: ECBC (2014)

Figure 4: Covered Bond operation structure



Source: ECBC (2009)

Figure 5: Rise in Covered Bond issuances between 2003 and 2007



Source: ECBC (2009)

Figure 6:Securitization transaction structure

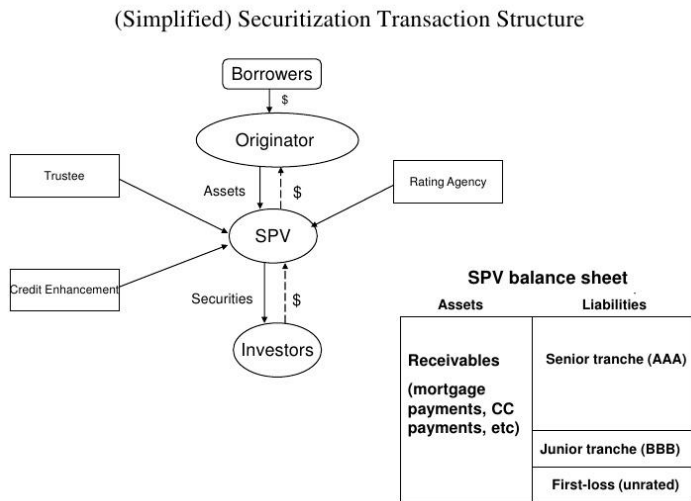
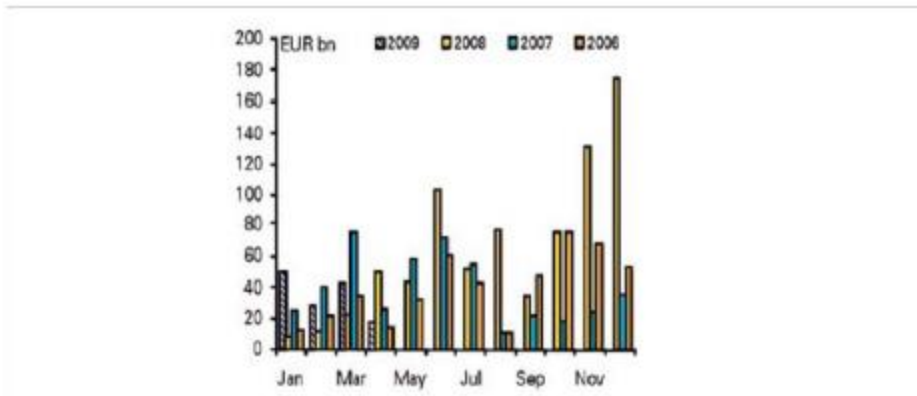


Figure 7:Fall of securitizations in EU between 2006 and 2009



Source: ECBC (2009)

Article 1: Statute of the ESCB and of the ECB – Rules of Procedure

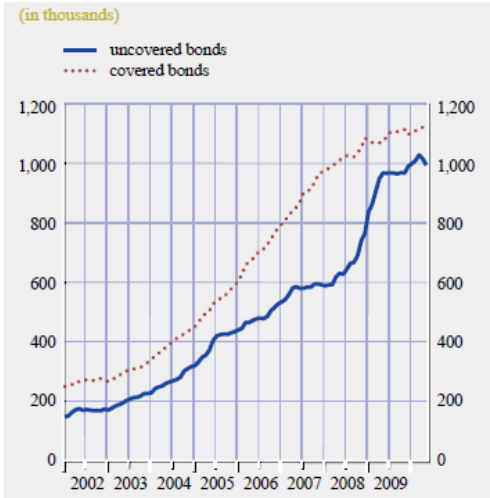
Article 18

Open market and credit operations 18.1.

In order to achieve the objectives of the ESCB and to carry out its tasks, the ECB and the national central banks may:

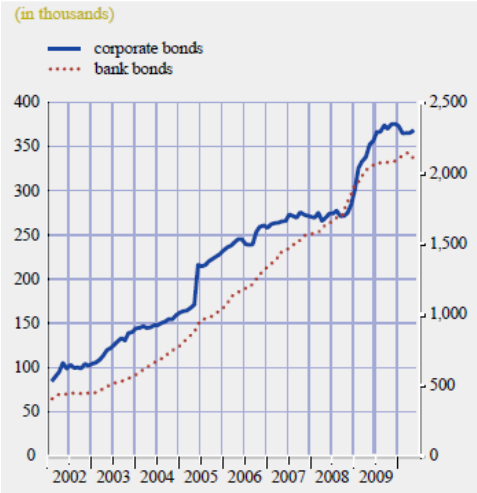
- operate in the financial markets by buying and selling outright (spot and forward) or under repurchase agreement and by lending or borrowing claims and marketable instruments, whether in euro or other currencies, as well as precious metals;
- conduct credit operations with credit institutions and other market participants, with lending being based on adequate collateral.

Figure 8: Total outstanding amount of covered an uncovered bank bonds



Source: ECB (2011)

Figure 9: Total outstanding amount of (euro-denominated) bank and corporate bonds



Source: ECB (2011)

Figure 10: Covered Bond Swap Spreads

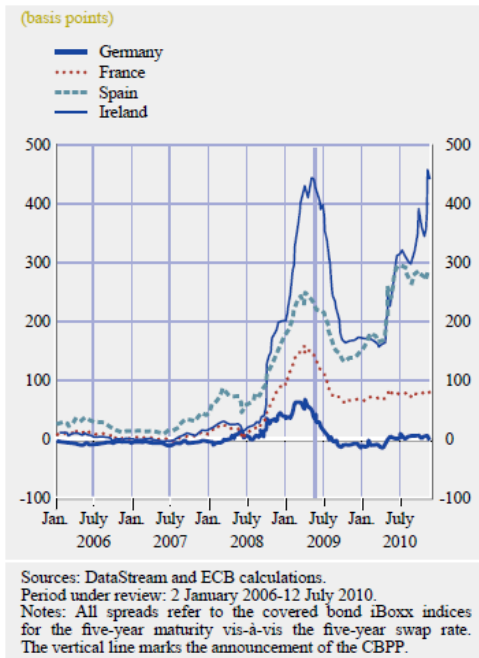


Figure 11: Average daily changes of covered bond swap spreads around the CBPP announcement

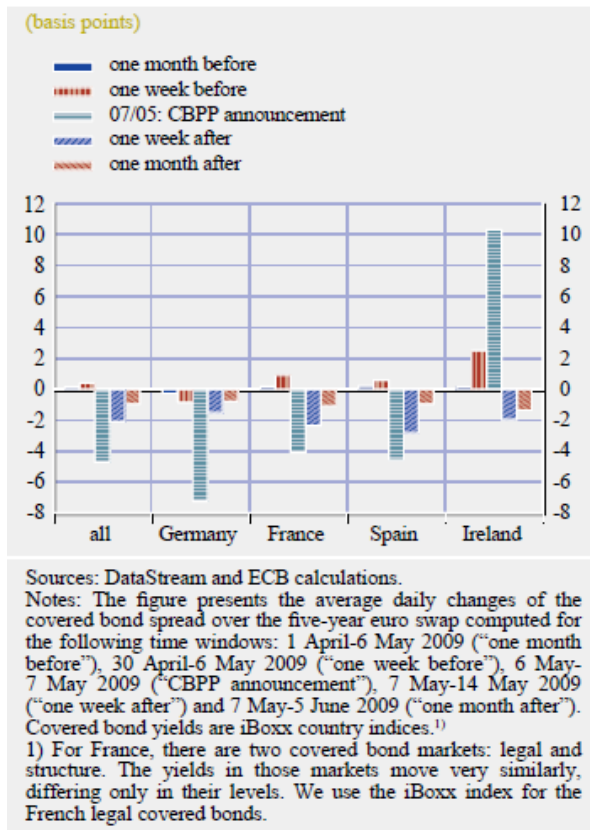


Figure 12: Average daily changes of the UK covered bond swap spread and AAA financials spread around the CBPP announcement

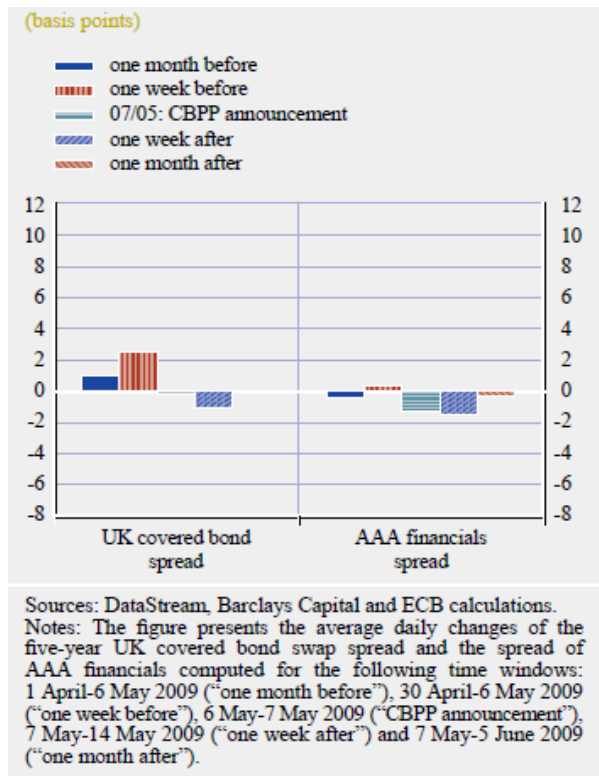
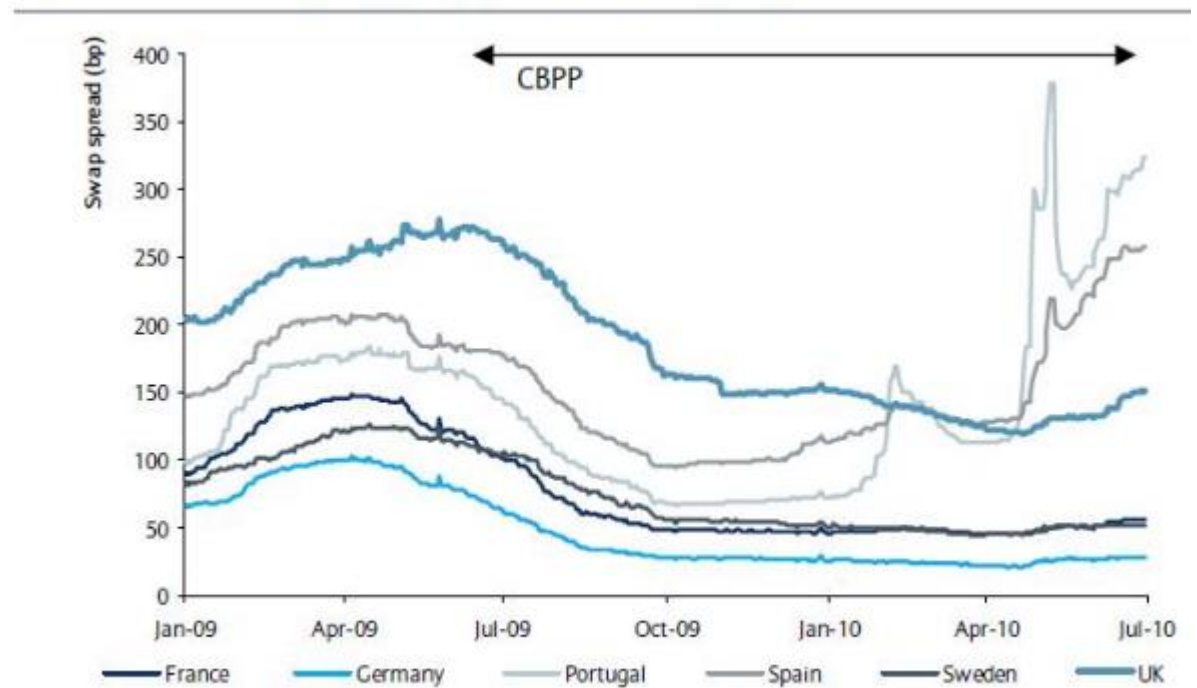


Figure 13: Euro Covered (swap spread development bp)



Source: Barclays Capital

	Covered Bonds	Asset Backed Securities
Issuer	Regulated credit institution, subject to prudential oversight.	Special Purpose Vehicle.
Balance sheet treatment	On-balance-sheet funding, though cover pool assets are segregated for exclusive benefit of covered bond investors.	Assets packaged and sold to investors for purposes of off-balance-sheet sale treatment, risk and capital reduction.
Investor recourse in event of default	"Dual recourse". Investors have sole right to proceeds of cover pool assets and, if cover pool collateral is insufficient, an unsecured claim against the issuing bank.	If collateral in pool is insufficient, bondholders suffer the loss, with no recourse to issuing bank.
Payment source and schedule	Typically, principal and interests are paid from bank cash flows, with cover pool serving only as collateral. Principal is returned in a "bullet" installment at maturity of bonds. No prepayment risk.	Principal and interest are paid solely from the proceeds of asset in pool. Principal is returned as individual assets mature, with prepayments passed through to investors.
Asset pool management and structure	Dynamic collateral management, with substitution allowed and required for non-eligible assets. Single class of bonds, generally overcollateralized.	Static pool, with investors bearing risk of any asset-quality deterioration. Multiple tranches, with senior and subordinate classes having varying degrees of credit enhancement.

SOURCES: Moody's (2010), Schwarcz (2011).