Financial Risk (MVE220)

BTO's: The new CDO's?

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May 2017

1 Introduction

The financial crisis of 2008 was the largest since the Great Depression of the 1930's. Banks were going into default and unemployment rates all across the western world skyrocketed.

For the crash of markets worldwide there have been different reasons given. However about one fact everyone agrees. The greed of the people in charge of the financial sector had grown outside proportions, thus creating too much risk. One of the risk investment banks took, was simply said, having too much leverage on their financial products. The product where the banks rigorously underestimated the risk, is called a Collateralized Debt Obligation (CDO). There are many different kinds of CDO's, however we will focus solely on one type called the Asset-Backed Securities CDO's. Ongoing in this paper whenever we refer to the term CDO, the characteristics of the ABS CDO are meant.

Looking forward and with some knowledge about the history of financial crises "when", rather than "if" is the question about a new one. It follows then that you start pondering over what could be the cause of the next one, and intuitively this would probably not be the same as the last time, right? Or could it, but in a new form?

1.1 aim

The aim of this report is to look into the field of credit derivatives and more precisely collateralized default obligations together with the new bespoke tranche opportunity (BTO). This will be presented on a basic level and we will try to conclude whether BTOs could become as dangerous as the CDOs.

2 Background

As our financial system is quite complicated, the cause of a crisis is never one, but a combination of events and structural problems. The collapse of the system could be argued being based on a foundation of low interest rates, missing or thin regulation, easy and available credit, and mortgages that in many cases were very risky. Securities partly based on these problematic mortgages were in many turns repacked and sold to investors who often had little or no clue what they were actually buying. The different kinds of derivatives circulating and sold over the counter (OTC) made the

collapse of the bubble even worse.[4]

An interesting thing to mention regarding the underlying changes in the economy, leading up to the crisis, is how the view of dept had changed in the financial sector. This dept were more than doubled as a share of gross domestic product in the US from 1978 to 2007.[4] A similar movement can also be seen in the households debt although a little less extreme.[5] Viewing dept as a less serious issue and increasingly looking at the possible leverage from derivatives gives higher incentives to risky behaviour.

A credit derivative is a sort of insurance against default, or a way of lower the exposure to credit risk. There are many kinds of credit derivatives, i.e. Credit default swaps (CDS) and Collateralized debt obligation (CDO).

Credit default swap is a way to move credit risk between parties. A party might for example buy a bond and is therefore taking a risk that the lender can't pay back. The buyer therefore goes to a third party and buys a swap. He pays a premium over the time of the contract and in return the seller agrees to compensate the buyer if the underlying asset defaults during this period. This basically means that the buyer would earn more money if he did not buy the swap but then with the possibility of getting no money back if the lender can't pay back. The party selling the swap can also later buy a swap and move the risk to someone else. [2]

A mortgage backed security (MBS) is a way of move the risk of multiple mortgage loans. The lender (usually a bank) has issued many loans and then sells shares of big bundles of them to investors who then takes on some of the risk but in return receives parts of the principal and interest payments from the mortgages. This means that a bank can issue loans to people not caring whether the can pay or not.[3]

3 CDO

The Collateralized Debt Obligation (CDO) was first introduced in 1987 by Michael Milken, from the now non existing firm Drexel Burnham Lambert. Initially Milken developed these structures as asset-backed securities. The goal of these CDO's was to cover corporate debt. In the late 1990's however, instead of using corporate bonds, banks started to use mortgage backed securities. Until 2003 these CDO's were still diversified, containing different

kinds of ABS's. Starting in 2003 banks began to use less diversification in their CDO's, using the argument that the assets had little correlation.

3.1 Structure

In order to understand the structure of a CDO, one must first understand the structure of Mortgage Backed Securities. These consist of different so-called 'tranches', these tranches are filled with bonds, based on Mortgage bonds. Each of the tranches is then given a rating, ranging from superior AAA down to the lowest called 'equity'. A higher rating means a higher chance of payout, the owners of the higher rated tranches are more likely to get the interest payments on their mortgage bonds than the owners of the lower rated tranches.

A CDO consists of the more 'dangerous' tranches of these MBS's, the tranches no one wants, because they have high risk but significant payouts. The managers then pool these and other forms of securities, with the goal to gain diversification benefits. The rating agencies agreed with the securities firms that diversifying these pools would give less risk of the whole pool being drained. They argued that if one security failed that other ones in the same tranche had less chance of failing as well. This is how the CDO's filled with tranches consisting of originally A, BBB and lower rated MBS's could be given high ratings. For instance, 80% of the tranches in a CDO were given a triple-A rating whilst they were actually filled with low rated tranches of MBS's.

3.2 Key players

In the creation of a CDO there are five players needed: securities firms, CDO managers, rating agencies, CDO investors, and financial guarantors. For all of the above mentioned contributors, there was no way that they did not had any risk with these investments.

Securities firms were responsible for the approval of structure notes within the tranches of every CDO, and selling them to the investors. The three largest firms giving out these were: Merrill Lynch, Goldman Sachs, and Citigroup, accounting for over 30% of the structured CDO's between 2004 and 2007. [4] These agencies were the underwriters of every CDO.

The CDO managers had the responsibility of selecting the collateral for the CDO's, such as MBS's. These managers even had, in some cases, the

responsibility of managing a whole portfolio on an ongoing basis.

Rating agencies have the full power to cancel the issue of a CDO. This meant that the agencies had to provide guidelines on the collateral and the structure of the CDO's, however basic they were. In this case the structure means the size and returns that were given on the tranches within a CDO. All of this was done in consultation with the underwriters.

The bankers that actually invested in CDO's, were standing on the sideline of the process of constructing a CDO. Although the investors are not directly included in the construction process, they of course did have their own preferences regarding the risk they wanted to have and the returns they wished for.

Financial Guarantors play a big role in issuing the derivatives that could in theory cover the investors from losses. Most of the derivatives were sold over the counter as credit default swaps.

4 BTO

The name Bespoke Tranche Opportunity was first used in January 2015 by Goldman Sachs in an e-mail from an employee at the investment bank.[1] The employee defined as follows: "A tranche of a bespoke portfolio of credits can offer exposure to diversified risk with the possibility of leverage, credit enhancement and enhanced returns". In the current state of the global economy the returns have almost been divided 3 times as opposed to the returns in 2008 at its peak. This calls for investors to find new ways to improve their returns.

4.1 Structure

Similar to a CDO, a BTO consist of different tranches that make up a pool of bonds and thus creating a security. The creation of a BTO starts with an investor that tells a bank a mixture of derivatives he wants to invest in. All these 'bets' are then packaged by a bank into one tranche of a BTO. This tranche meets the exact wishes of the investor, every tranche is unique and is never to be replicated. The bank on its turn, combines the wishes of a small group of investors, usually only 2 or 3, into one security called the BTO.

The tranches of the BTO's contain solely derivatives, which makes it very difficult to determine the underlying assets. Credit default swaps are mainly used by investors to make up the BTO's, since the swaps are not directly

linked to an assets. This fact makes it very difficult to determine the value of the structured product. The rating agencies are in the end the ones that value the tranches, thus creating a yield that is linked to the rating of a tranche. These two factors combined means that, if the underlying asset of the credit default swaps becomes more volatile, the leverage on the product rises and potential losses are amplified in such a way that it cause serious problems for the ones investing with borrowed money.

5 Reforms and Regulations after the crisis

The most noticeable regulatory change in the aftermath of the crisis is the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA). Amongst many other things the DFA aims to make the financial system more transparent and accountable and to prevent risky practices. One bureau created as a consequence, is for example supposed to prevent mortgage lending that is not set up in a secure way for customers. Hopefully fewer people will be lured in to bad mortgage deals.

There are concerns about the DFAs ability to prevent future crisis. Vasudev argues that the act doesn't look into the problematic nature of the derivatives themselves, but *"merely attempts to improve the procedures or mechanics governing the trade in credit derivatives and to promote prudential standards for the entities dealing in swaps".* [**p.57**, 7] It could also be interesting to mention that the notional amount of the credit derivatives by mid 2011 almost were back at the same level as the peak late 2008.[7]

For Banks the DFA results in a lot of new rules though. For example, the Financial Stability Oversight Council can decide to split banks that are becoming too big and therefore being a risk in themselves for the financial system. The DFA also restricts the way banks can invest by setting limits for its business with hedge funds and private equity funds. Looking at the low interest rates though and knowing banks history one could presume that they already are bypassing the DFA in various "clever" ways.

6 Conclusion

If you were to read financial newspapers, the thing you will read is that a BTO is exactly the same as a CDO. This does not have to be true, although a BTO is a form of a CDO, in such a way that it consist of a pool of secur-

ities, there are however some key differences between the two.

As stated above a BTO is created according to the preference of the investor, as opposed to a CDO that is created by a bank and then sold on the market. This distinction is however small a very important one. This circumvents a part of the regulations set by governments around the world. Before the crisis these kind of CDO's were called synthetic CDO's. Besides being a synthetic CDO, a BTO is also what is called a single-tranche CDO. A single-tranche CDO is a type of CDO, where all of the notes are in possession of the investor, called a full-capital structure. In a such a structure the tranches are all owned by the investors. This structure therefore leads to the banks having minimal risk. The investors are the ones that have to take all the risk. The last and maybe the most significant distinction is the fact that the underlying assets in BTO's are derivatives, not asset-backed securities as was the case with most CDO's. This causes the value of the BTO's to be not directly linked to the performance of the real economy as most bonds would be, but rather to the rating of the rating agencies.

At this moment not much is known about the exact structure of what specific BTO's consist. This could pose a big risk in the future, intuitively one would think that every layer that is added on top of the derivatives creates more leverage of the real underlying assets. In order to prevent the same happening as with the CDO's in 2008, where the leverage was so high that the underlying assets were in no way capable to cover the initial losses, let alone the personal losses they caused. The BTO's have to be researched in more depth, otherwise it is very likely that eventually bankers will start making BTO's squared and maybe even higher to satisfy their greed.

All in all, the most important steps, in order to prevent a new crisis caused by overleveraging derivatives, are giving banks more restrictions in the creation of financial products. A proficient restriction would be, restricting the banks to invest in 'artificial' financial structure that add zero to no value to the global economy. This only leads to investors investing in bubbles that will burst at some time in the future, thus the waste of money.

7 Further Reading

For the people more interested in the time leading up to the financial crisis we suggest that you read the *Financial Crisis Inquiry Report*[4]. Although

very large it contains a lot of usefull information about the risks that the investment bankers were aware of. For the ones more interested in the mathematical models behind derivatives and how the quants calculate the expected returns and which models were used, we suggest that you read the following article by Mulaudzi et al. [6]. For the people who are not feeling like reading, the movie *The Big Short* is a good movie explaining the MBS's.

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