

James Barry-1103491

3. What do you understand by the term 'securitized banking', and how did it contribute to the housing bubble that developed in the United States after the mid-1990s? Why did the bursting of the housing bubble lead the sub-prime crisis to 'go global'? Critically assess the reforms proposed by policymakers in the wake of the crisis.

Word Count (including citations):3190

This essay will analyse the logic behind Securitized Banking, explaining why it is an important tool in the financial system for financial institutions in being able to transform illiquid assets into marketable securities. It will then analyse its effect and role within US housing bubble, focusing on how the repackaging of securitized subprime loans were transformed into AAA rated securities, resulting in huge institutional demand for these products. Secondly, the essay will focus on how the interconnectedness of the world's financial system made a *localized* US housing bubble turn into a truly global financial crisis. Finally, it will review the new international standards for regulation and oversight of banks. This will analyse the effect on expectation and incentive placed on economic actors within the financial system, addressing whether these measures will reduce the occurrence of future financial crises. Finally there will be an analysis of the international monetary system, reviewing how it helped fuel the crisis and analysing why the system needs to be reformed, in order to reduce the global imbalances built up within the financial system.

Securitisation is the practise of pooling of anything which has predictable future cash stream (e.g. car loans, mortgages). The originator (Bank) then "consolidates these pools into special purpose vehicles" which are held off balance sheet (Casu et al, 2006, p.251). In effect, turning them into their own "little corporation" (Lewis, 2010, p.31) i.e. they become bankruptcy remote; therefore if the originator goes bankrupt the *pools* assets cannot be used to repay the originators creditors. The cash flows from the pool are redirected into the vehicles related securities (known as Asset Backed Securities (ABS)) which are issued and sold onto investors (ESFb, 1999, p.1).

The logic behind securitisation, economically, as stated by Batchelor (2004) is that the process creates "a low cost way of raising additional finance and provides longer term funds than could be obtained with bank debt" or from raising new equity. Therefore securitisation is liquidity enhancing, as it frees up the originators balance sheet to allocate capital in other ways, by allowing the originator to transform *illiquid* assets that would otherwise not be tradable into highly *liquid* marketable securities, giving the originator immediate access to the *present value* of the future cash flow, which would only be realisable over several years. Secondly, the process also helps in asset-liability management, as it facilitates the matching of short term liabilities, to highly liquid securities and cash on balance. Thirdly it enables more efficient allocation of capital; as it allows *theoretically* the transfer of risk to those investors who are most willing or able to bear the underlying risks of the securitized asset.

Arguably, securitisation has realised some social benefit; for instance, European Securitisation Forum states that "*the existence of liquid and efficient secondary securitisation markets has had the effect of increasing the availability, and reducing the cost, of financing in the primary lending market*" (1999, p.6) i.e. that securitisation has increased access to lending and has lowered transaction costs, e.g. allowing a greater proportion of society being able to own their homes, through greater access to credit and cheaper ways of financing through the securitisation of residential mortgages. However Rajan (2010, p.24) suggests that the greater access to housing finance is a result of the policy considerations used in addressing the growing income inequality between the "90th /10th percentile of the population".

According to Gerardi et al (2008, p.74) "*Many (citing 'Keys and Others(2008) and Calomiris(2008)') have argued that a major driver of the subprime crisis was the increased use of securitization*"ⁱⁱ. Accordingly, the rise of securitization created business models at the mortgage broker level that

incentivized maximising lending which generated practises of lax lending standards caused by the decoupling of the need to do the proper credit analysis by the mortgage broker, as the new business model “separated the under writer making the credit extension decision from exposure to the ultimate credit quality of the borrower” (ibid), meaning that institutions further down the securitization food chain ended up with holding wrongly rated lower quality assets - a problem of asymmetric information.

In reality the securitization of subprime mortgage debt created an illusion of safety. This arose from how securitized pools of subprime assets were structured. These are divided into tranches, with each tranche representing a level of *credit quality*, the credit quality of the tranches is derived from each tranches seniority in relation to financial claims on the pool, with the most senior (*super senior*) tranche receiving the highest rating from the credit rating agencies thus having the lowest implied risk as this tranche has first claim to the repayments and faced the least likelihood of bearing the risk from any defaults from within the pool. This is because the losses/defaults on the pool are not equally spread between the tranches; in fact the losses wipe out each tranche in turn by order of seniority before finally wiping out the highest rated *super senior* tranche i.e. that all the other tranches of debt within the pool would have to be fully wiped out before the super senior tranche was affected by defaults in the residual pool of mortgages.

The illusion of safety is further driven by the idea of that the pools of individual debts are a *safer* asset than the individual debt alone. This is because the individual debts inside the pool are not all correlated with each other i.e. that if individual debt *a* defaults it does not mean individual debt *b* defaults. Therefore, theoretically securitized debt benefits from diversification (if the underlying assets have a low correlation), meaning that the average income of the pool will remain relatively stable (law of large of numbers). This in combination with tranching led to “roughly 60% of all ABS rated AAA, whereas typically less than 1% of corporate bonds are AAA” (Rajan 2010, p.134), thus creating much greater institutional access to highly rated debt. Subprime mortgage securities offered a better yield than most AAA rated investments. Thus reducing a traders risk weighted return. These above factors drove institutional demand for highly rated subprime mortgage products.

However, the reason why the correlation of the default rate was so high in the residual pool of mortgages is as follows: Borrowers were enticed with “teaser rates” (Lewis, 2010, p.34) i.e. exceptionally low interest rates, well below market rate in comparison to the risk of the borrower. These rates would then shoot up to the real costs of funding after 2 years. Lewis (ibid) states the rates would jump from 6% to 11%, forcing the borrower to re-mortgage. This is fine if house prices are rising as a mortgagee can always refinance using the additional equity he has ‘*acquired*’ in his house as collateral, however when house prices begin to fall, a subprime borrower becomes unable to refinance their mortgage debt, or to continue to pay the new the higher repayments. Therefore in America when house prices peaked in June, July 2006 (S&P, 2012), and then began to fall, greatly increased the risk that subprime borrowers who *bought* their houses at the peak of the American housing boom in 2005-2006, would be unable to refinance their mortgages by late 2007, thus creating conditions, due to the *reset*, which made subprime borrowers particularly susceptible to defaulting *en masse*. Therefore the correlation of the default rate was grossly underestimated within the underlying pool of securitized subprime mortgage securities of this 2005 vintage, firstly as credit rating agencies used “outdated and inapplicable historical assumptions” (Partnoy, 2009, p.8) when

assessing the risk/correlation of default within the pool, and secondly exasperated by the initial conditions (the reset) created by how the original mortgage products were arranged. The bad incentives for the creation of mortgages, as suggested by Gerardi et al (2010, p.74) through the separation of “*the under writer making the credit extension decision from exposure to the ultimate credit quality of the borrower*”, also meant that the ultimate credit quality within the pool was worse than expected.

What further extenuated the crisis was that Investment Banks were able to repackage subprime mortgage bonds, into “*synthetic subprime mortgage bond backed collateralized debt obligation (CDO)*” (ibid), here a bank would take many of the worst tranches i.e. the BBB securities and below rated tranches of subprime mortgage bonds, bundle many of these together, turning them into the new security- “*CDO*”. This was in turn was now rated “80 percent AAA” (Lewis 2010, p.63) i.e. the least risky of all debt securities, as it was perceived that this new pool of bundled BBB tranches by the rating agencies as “just another portfolio of diversified income streams” (ibid). Essentially, as Barnett-Hart argues, these CDO’s became the “dumping ground for the bonds that could not be sold on their own” (2009, p.14), further reducing credit quality.

Effectively investment banks through the process of securitization were able to “turn lead into gold” (Lewis, 2010, p.63), creating a huge profit machine. This ‘*alchemy*’ created arbitrage opportunities for investment banks, by *flipping* BBB rated tranches into a product which was now made up of 80% AAA rated mezzanine tranches. With their higher ratings and higher yield than comparable AAA rated products e.g. 25 percent more than the average yield on a similarly rated corporate bond (Tomlinson and Evans, 2007), they could be easily sold onto institutional investors all over the world, unlike the BBB tranches. This in turn freed up banks’ balance sheets allowing them to repeat the process. Furthermore, investment banks were also then also able to flip the 20% BBB rated and below tranches of the new CDO - “by repackaging the hard to sell mezzanine CDO tranches”, into another set of 80% AAA rated product for institutional investors! (i.e. “the *notorious CDO²*”) (Barnett-Hart, 2009, p.12) In all these CDO products caused \$542 billion of losses within the financial system (Barnett-Hart, 2009, p.3) - over half the overall related subprime losses.

The losses on subprime related products to large global financial institutions provided a direct channel for the crisis to go global. This is the idea of contagion, where the shock travels through the whole system, which was particularly prevalent through the development of cross-border banking. Cross-border banking is where a bank is headquartered in country A but lends in country B, or where a bank has a subsidiary away from its operating base e.g. RBS has its American subsidiary Citizens.

The direct losses caused by the subprime mortgage products and also the collapse of Lehman Brothers, caused contagion throughout the financial system. Contagion is caused where Bank A has foreign losses in country B, he will then cut lending to country C, even though country C may have no direct exposure to the initial crisis. This also encapsulates the idea of Counterparty risk, because bank A lends to bank B, bank A is exposed to the shock, he does not know how exposed Bank B is to the shock. Therefore to preserve his capital he will call in his lending to bank B, this process is then repeated throughout the market, causing a freeze in interbank lending. This is supported empirically by the Financial Stability Report (2008, p.8) where it shows that there was a dramatic fall in interbank liquidity i.e. the reduction of interbank lending following 2007. This results in credit being starved from both the financial institutions, causing them to liquidate assets in order to shore up

their over leveraged balance sheets, which creates further downward pressure on asset prices as there is now a greater supply in the market, causing further losses to the bank. Secondly, the cut in interbank lending starves the *real* economy of credit, causing a decline in economic output.

The financial crisis “unveiled the shortcomings in the regulation of systemic risk and exposed the moral hazard that is associated with systemically important financial institutions” (Georg, 2011, p.2), in response the G20 introduced a new regulatory framework for banking in the form of the third Basel Accord which is to be fully implemented by 2019. This accord has introduced two liquidity and one leverage ratio, and requires banks to increase their “quality and quantity of banking capital” (ibid). The aim of the framework is to reduce the probability of bank failures by improving banks’ loss absorption, by the increase of the capital requirements and by increasing the quality of assets held on the balance sheet. The new liquidity ratios have been introduced as a counter to the contagion caused by the freeze in the interbank lending market. Therefore banks will be required to hold a “sufficient amount of liquid assets with a high quality to obviate short-term disruptions” (Georg, 2011, p.4). Furthermore, following contagion caused by the collapse of Lehman Brothers and AIG, Basel III has imposed additional requirements for institutions which are considered systemically important (SIFI’s), thus reducing their default probability, the Financial Stability board (2011, p.4) introduced a list of 29 institutions which are considered SIFI.

However though increasing capital buffers, decreases the chance of default and contagion through the financial system, it can be argued that the new regulatory framework does little to address the incentive and moral hazard problems which were so widespread beforehand. The government bailouts of the financial sector can be suggested to reinforce the idea that there will be an implicit guarantee particularly enhanced by the idea of SIFI’s. Though, other regulatory responses have started to address these problems for instance, the UK, through the Vickers report implementation have *ring fencing* of investment banking activities, in the event of banks failure and in the US banks have created “living wills”, which as suggested by Nasiripour (2012), “provide regulators with detailed road maps that would help the government prevent a repeat of taxpayer-funded bailouts” , with the reduction of implicit bailouts there will be reduced moral hazard within the system.

Following the financial crisis there also needs to be some reform of the international monetary system, due to the severe global imbalances which have built up within this period. One of the causes is that emerging economies such as China and South Korea have economic growth models that are export led. This has resulted from partially the greater proportion of savings by the developing East Asian economies have in comparison to the west, particularly China, which due to the “one child policy” and “limited state social security” (Rajan, 2010, p.65), means that this greater proportion of savings acts as a retirement and healthcare buffer and partly state intervention in depressing their currencies.

These imbalances are a result of the Asian financial crisis of 1997-1998. As a response these economies switched their economies to export led growth models. In order to do so they built up large foreign exchange war chest, funded by their excessive savings and reduced domestic investment. This created the current account surpluses and thus the worlds developing nations fuelled the wests consumption by funding the west current account deficits. Furthermore this build-up of foreign exchange and asset reserves allowed these nations to maintain their exchange rates at artificially low levels, which thereby reduced inflationary pressures on imported goods for the west,

which helped pave way to the idea of the “great moderation” (Bernanke, 2005) in the following period.

In turn these capital flows helped fuel the US housing bubble, as a result “nearly the entire universe of emerging market economies were running current account surpluses and the US was absorbing the vast majority of their excess savings” (Eichengreen, 2008, p.190). The net result, was that the US was absorbing 70% of excess savings (Rajan, 2010, p.203); this created hot capital flows into American financial system, which Reinhart and Rogoff argue (empirically) raises the risk of crisis (2008, p.7). These capital flows allowed banks to have an almost unlimited access to liquidity i.e. that they could massively inflate their balance sheets, without any detriment in their costs of funding, therefore raising the leverage ratios of banks in the process which reduced the cushion in which banks had to absorb losses on bad loans. Therefore this process of recycling the “world’s savings glut” (Bernanke, 2005) i.e. the extension of liquidity to the US financial system, inflated asset prices (US housing) and allowed banks’ balance sheets to swell, reducing the cushion they had to absorb losses. Over time the emerging economies growth models need to be switched to include more consumption and domestic investment as a percentage of their economic growth so they become more balanced, reducing the hot capital flows to the rest of the world.

In conclusion, securitization can be an important tool for actors within financial markets in transforming illiquid assets; however its use in combination with poor understanding of risk - creating asymmetric information problems, the misaligned incentives and moral hazard, made securitization the tool which created the subprime mortgage crisis. The asymmetric information problems of institutions holding over rated products they did not fully understand, the collapse of interbank lending and the failure of the systemically important institutions – AIG and Lehman Brothers, ultimately caused contagion throughout the financial system resulting in the crisis going global. The regulatory response has addressed capital/leverage requirements, which will reduce the probability of crises but there needs to be further reform to address incentive and moral hazard problems. The imbalances of the international monetary system ultimately helped fuel the housing bubble, by giving banks vast access to liquidity, these need to be addressed and balanced to help reduce the future possibility of crises.

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