

## The impact of market behaviour unconnected to asset quality on the price volatility of securitisations from 2007-2009

March 2014

### Introduction

On 19 December 2013, the European Insurance and Occupational Pensions Authority (EIOPA) published a report titled *“Technical Report on Standard Formula Design and Calibration for Certain Long-Term Investments”*, which proposes revised capital charges for securitisations under the standard model (Securitisation Review). We remain concerned that the capital charges proposed in the Securitisation Review are still too high and will continue to hinder European insurance company investment in securitisation, adversely impacting the ability of securitisations to play a role in financing the real economy, including facilitating the funding of SMEs.

Whilst AFME generally agrees with EIOPA’s methodology in the Securitisation Review, we believe that the historical period of data used to calculate the calibration, namely 2007-2013, is inappropriate and produces damaging results. We propose that material recalibration is needed to adjust for the exceptional volatility of the period used in EIOPA’s analysis (from 2007-2009), which was caused by historical circumstances that were in large part unconnected with the credit quality of securitisations and in particular those types of securitisations classified as Type 1 in the Securitisation Review. This volatility was not caused by credit performance of the securitisations (which it has been proven has been quite strong other than in respect of US subprime and Alt A RMBS and certain types of European CMBS) but rather the rapid withdrawal of much of the leverage that underpinned much of the securitisation investor base (i.e. wider prudential issues). In particular this deleveraging occurred through rapid and significant liquidation of ABS portfolios by:

- a. Structured Investment Vehicles (SIVs) and bank sponsored arbitrage investment conduits both of which made money through a maturity mismatch arbitrage of buying longer dated higher yielding assets and funding them with inexpensive short dated wholesale funding;
- b. other types of investment funds that undertook similar activities but funded themselves with repo financing from banks;
- c. banks that held material amounts of securitisation paper either directly as a primary investor or indirectly as a result of buying assets out of their sponsored SIVs or conduits (per a. above) or closing out on repos per b. above; and
- d. other types of financial institution investors that liquidated their securitisation holdings because of the perceived stigma surrounding all securitisations (even good quality Type 1 securitisations) and the negative impact on these institutions equity prices if they were holding this stigmatised asset class.

In fact it is estimated that approximately 65% of the European ABS investor base pre-crisis was leveraged money<sup>1</sup> and because of the regulations we refer to below, these types of investors are unlikely to return to the market. As a result the massive liquidation and price volatility that characterised the period between 2007-2009 is unlikely to recur.

---

<sup>1</sup> Source: Lloyd’s Bank

We recommend that a recalibration should be based on the likely performance of the more regulated securitisation market going forward and should not incorporate price volatility caused by wider prudential risks that were unrelated to asset quality and have been mitigated through recent regulation. AFME proposes that one solution could be to exclude the 2007-2009 data period from the calibration exercise; the remaining period of 2010-2013, albeit shorter than the EIOPA time period, is more representative of the price volatility of the securitisation market, incorporates a stress period of securitisation instruments (the sovereign debt crisis) and considers some of the recent regulatory changes.

In this note, AFME aims to explain and demonstrate the impact of one type of such market behaviour that significantly impacted securitisation price volatility from 2007-2009. Specifically, we focus on the role of levered investors (a. and b. above) that had material maturity mismatches between their assets and liabilities, such as SIVs and ABCP arbitrage investment conduits. These vehicles invested in a significant proportion of the securitisation market prior to 2007. As a result of the impact of the US subprime crisis and the stigmatisation of the securitisation product (due to the lack of differentiation between good and bad products), these entities suffered a credit and liquidity shortage, which resulted in forced deleveraging and fire sales of large volumes of securitisation assets. Despite having been unrelated to the asset quality of much of the securitisation paper owned by these vehicles, such behaviour had a large impact on price volatility. We believe regulatory reforms introduced since the crisis would make it unlikely for these events to recur. For these reasons, we strongly believe that a forward-looking recalibration for securitisations is necessary and can be based on the price performance of securitisations from 2010-2013.

## **The impact of leveraged securitisation investors with maturity mismatch between assets and liabilities on securitisation price volatility**

### **Prior to 2007 & early 2007: SIVs and ABCP arbitrage investment conduits invested in large amounts of securitisations**

Prior to 2007, securitisation was attractive to many types of investors because it had a historical reputation of strong performance, in terms of both credit and price. However, large buyers of securitisation included highly levered vehicles (e.g. SIVs and ABCP arbitrage investment conduits). Many SIVs and ABCP arbitrage investment conduits were bank-owned or bank-sponsored investment vehicles that invested mainly in medium- and longer-term financial assets and funded those investments by issuing commercial paper or other short-term debt or drawing on short-term credit lines.

Securitisation was especially attractive to these vehicles because of the asset yields, historical performance, predictable cash flows and typically floating rate return (important because SIVs did not wish to take interest rate risk).

In early 2007, the total asset holdings of SIVs rated and surveyed in Europe<sup>2</sup> was around USD 297bn<sup>3</sup> (c. EUR 229bn)<sup>4</sup>. Of the assets that SIVs held, 57%, on average, were structured finance products (approximately USD 169bn). Therefore, not only did these vehicles primarily purchase securitisations but also they held a material portion of the market<sup>5</sup>. It should be noted that in addition to SIVs' holdings of ABS, as of 31 December 2007 an additional \$121 billion of assets were held in ABCP Credit Arbitrage programmes. 92% of these assets were AAA rated securitisations. After the crisis, many of these securities also were sold into the market at distressed prices. Further details of these ABCP Credit Arbitrage vehicles are available as needed.

---

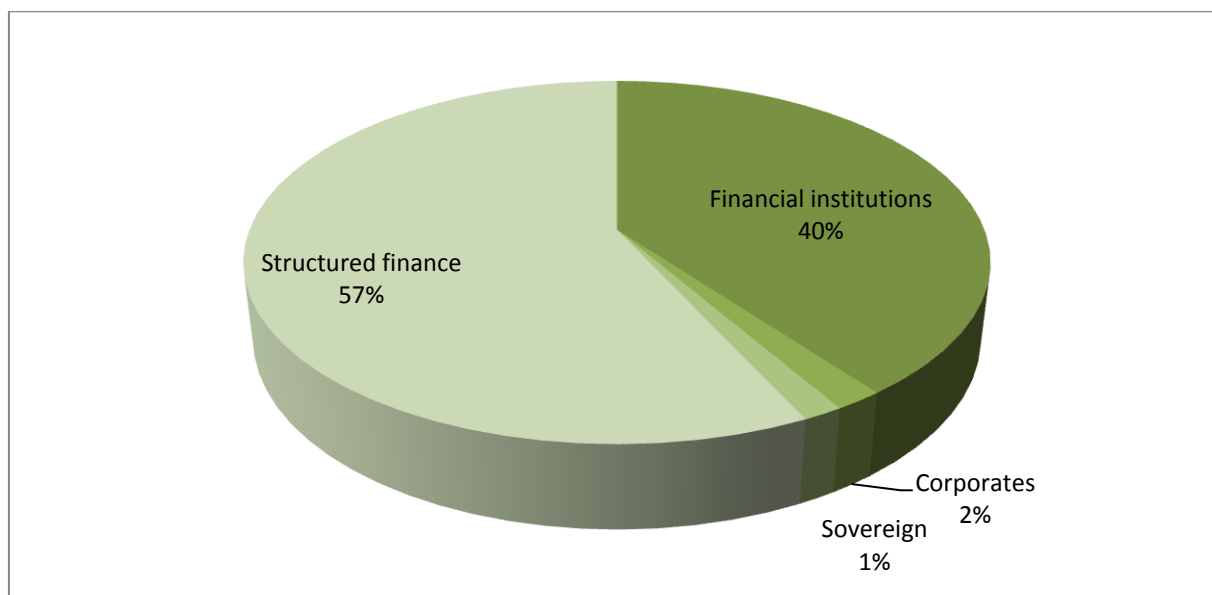
<sup>2</sup> Source: S&P

<sup>3</sup> "SIV Outlook 2007 – Another Bumper Year Ahead for SIVs After Assets Approach \$300 Billion in 2006". 26 February 2007, Standard and Poor's

<sup>4</sup> Based on exchange rate as at 1 Feb 2007 – [www.oanda.com](http://www.oanda.com)

<sup>5</sup> The total outstanding European securitisation in Q1 2007 was EUR 1366.8bn (including volumes retained on bank balance sheet). Source: AFME

**Chart 1: Average SIV portfolio breakdown by asset type (as at February 2007)**



Source: Standard & Poor's

Notably, SIVs mostly invested in AAA-rated assets (67.59% - around USD 114bn) – please see **Appendix 1** for the complete breakdown of SIV investment by credit rating<sup>6</sup>. Also, SIVs invested in a diverse range of securitisation assets, including a large proportion of European securitisations. For example, as at 2 November 2007, the majority of EMEA SIV assets were US securitisations at 49%; however, 36% of their assets were UK, German, Dutch and French securitisations – please see **Appendix 4** for the breakdown<sup>7</sup>. It is difficult to determine the precise volume of paper that SIVs and other similar vehicles purchased because of the manner in which orders were placed into books (i.e. banks would put in one aggregate order both for their own balance sheet and for their sponsored vehicles); some of the large pre-crisis UK RMBS issuers estimate that at least 30% of their paper was purchased by SIVs and other leveraged buyers<sup>8</sup>.

### **SIVs and ABCP arbitrage investment conduits invested were mostly funded through short term credit lines**

In order to fund their portfolio investments, SIVs almost exclusively issued debt – mostly short term paper. In early 2007, the total senior debt of SIVs rated and surveyed in Europe<sup>9</sup> totalled approximately USD 271bn<sup>10</sup> (c. EUR 209bn<sup>11</sup>). The majority of senior debt issued was through US MTN programs<sup>12</sup> at approximately USD 169bn (c. EUR 130bn<sup>13</sup>); USD 21.52bn (c. EUR 16.52bn<sup>14</sup>) was from European Commercial Paper – please see

<sup>6</sup> "SIV Outlook 2007 – Another Bumper Year Ahead for SIVs After Assets Approach \$300 Billion in 2006". 26 February 2007, Standard and Poor's

<sup>7</sup> "Moody's Update on Structured Investment Vehicles", International Structured Finance: Europe, Middle East Africa: Special Report, Moody's Investor Service, 16 January 2008

<sup>8</sup> <sup>8</sup> Lloyds Banking Group per Permanent and Arkle 2006-7 RMBS issuance.

<sup>9</sup> Source: S&P

<sup>10</sup> "SIV Outlook 2007 – Another Bumper Year Ahead for SIVs After Assets Approach \$300 Billion in 2006". 26 February 2007, Standard and Poor's

<sup>11</sup> Based on exchange rate as at 1 Feb 2007 – [www.oanda.com](http://www.oanda.com)

<sup>12</sup> Medium Term Notes

<sup>13</sup> Based on exchange rate as at 1 Feb 2007 – [www.oanda.com](http://www.oanda.com)

<sup>14</sup> Based on exchange rate as at 1 Feb 2007 – [www.oanda.com](http://www.oanda.com)

**Appendix 2.** There was even a greater volume of ABCP outstanding: approximately EUR 377bn of US and European ABCP outstanding in Q1 2008 (EUR 26.8bn European ABCP outstanding)<sup>15</sup>.

The debt issued by SIVs and ABCP arbitrage vehicles was typically short-dated – liabilities generally had Weighted Average Lives (WALs) of 6-9 months for SIV debt and even shorter for ABCP arbitrage vehicles. The WAL of the liabilities indicates the time frame in which the vehicle needs to obtain new funding and so points to the levels of near-term funding pressures these vehicles. A vehicle with liabilities with very short WALs will have a very high level of funding pressure. If such a vehicle is unable to obtain new funding at maturity of its liabilities, it will need to take urgent action, such as liquidating assets or drawing down backstop liquidity facilities if available, and may be forced into receivership if it cannot raise enough money to pay its maturing debts. **Table 1** illustrates the WAL-based funding pressures of the SIVs in November 2007 – the average WAL of senior debt issued by SIVs was 5.5 months, the shortest was 3.5 months and the longest was 11.6 months<sup>16</sup>. It should be noted that the WAL of debt issued by ABCP credit arbitrage vehicles would have been shorter.

**Table 1: SIV senior debt WAL (months) – as at 16 November 2007**

|                 |      |
|-----------------|------|
| <b>Average</b>  | 5.5  |
| <b>Shortest</b> | 3.5  |
| <b>Longest</b>  | 11.6 |

*\* Average figures include vehicles in enforcement (which, for the purpose of computing these averages, are set to zero, but are ignored in the search for the shortest WAL).*

Source: Moody's Investment Services

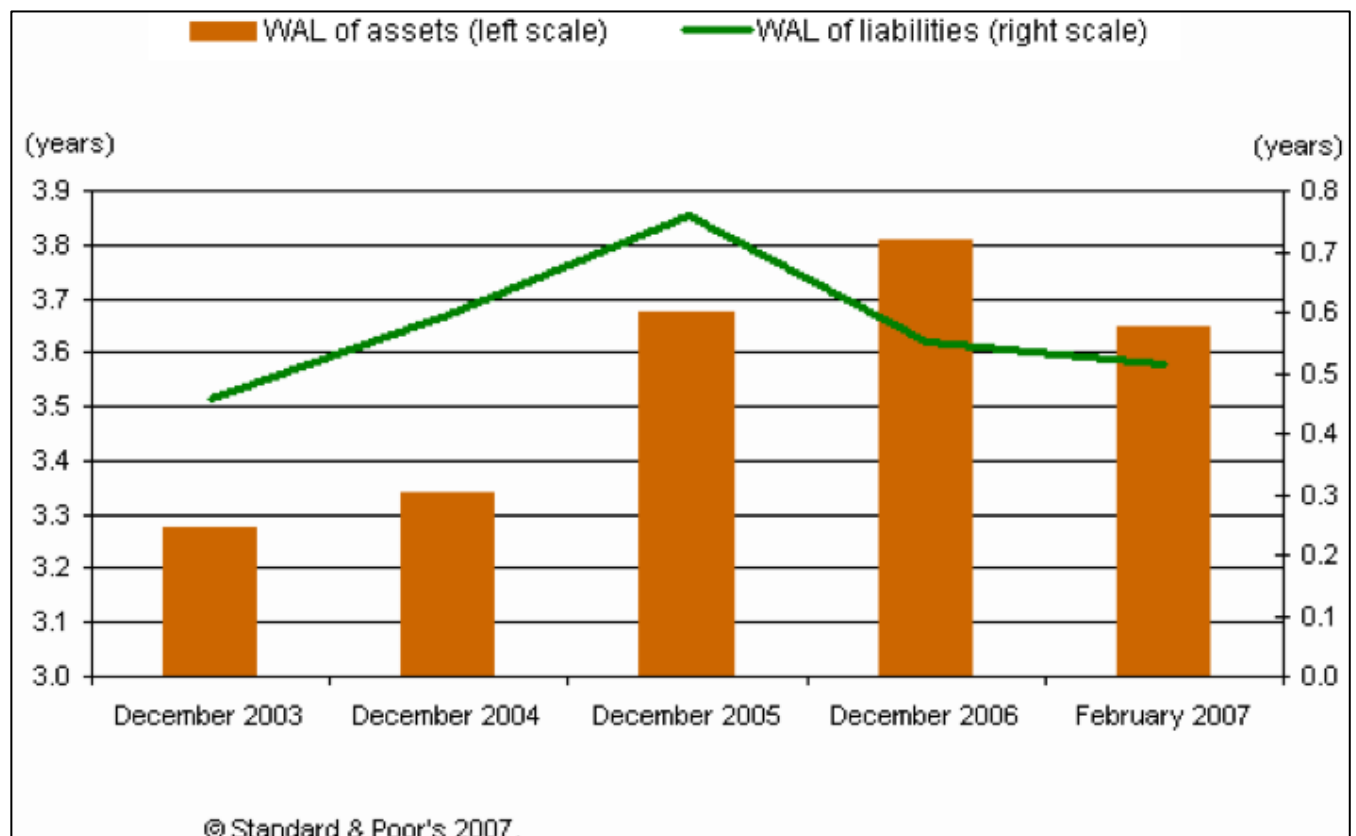
The funding pressures of these vehicles were exacerbated by the great deal of maturity mismatch between their assets and liabilities. As explained above, the length of WALs of SIV and ABCP arbitrage vehicles liabilities was *months*. However, SIV and ABCP credit arbitrage vehicle assets typically had asset WALs of *years* - usually 3-4 years.

---

<sup>15</sup> ESF Securitisation Data Report: Q1 2008

<sup>16</sup> "Moody's Update on Structured Investment Vehicles", International Structured Finance: Europe, Middle East Africa: Special Report, Moody's Investor Service, 16 January 2008

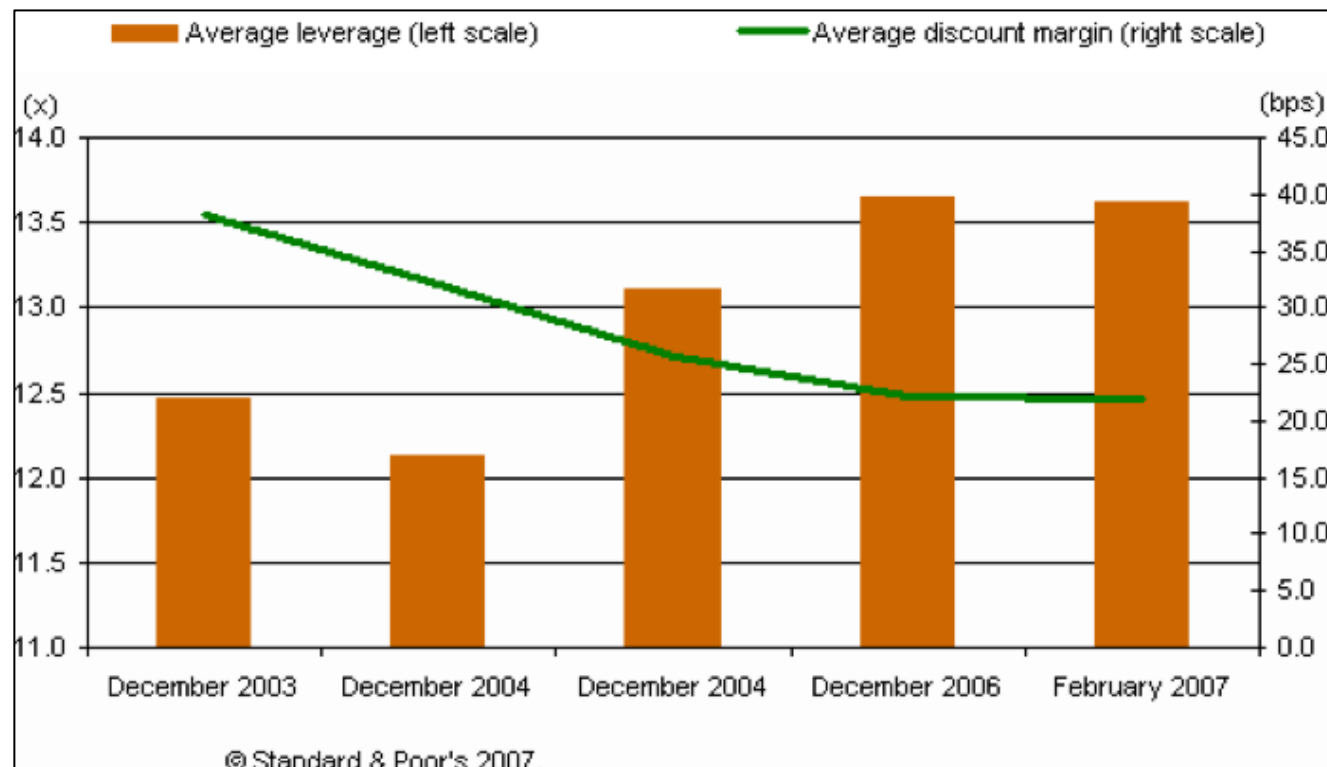
**Chart 2: Weighted average life of SIV assets compared with weighted average life of liabilities**



## As the SIV and ABCP credit arbitrage vehicle markets grew, leverage increased

From 2003 to 2007, SIV and ABCP credit arbitrage vehicle investment portfolios grew. From 2006 to 2007, there was an increase of 43.8% in SIV total asset holdings from the previous year. As a consequence of the funding model of SIVs – short-term credit lines to fund longer assets – SIV leverage also increased<sup>17</sup>.

**Chart 3: SIV average leverage compared to discount margin**



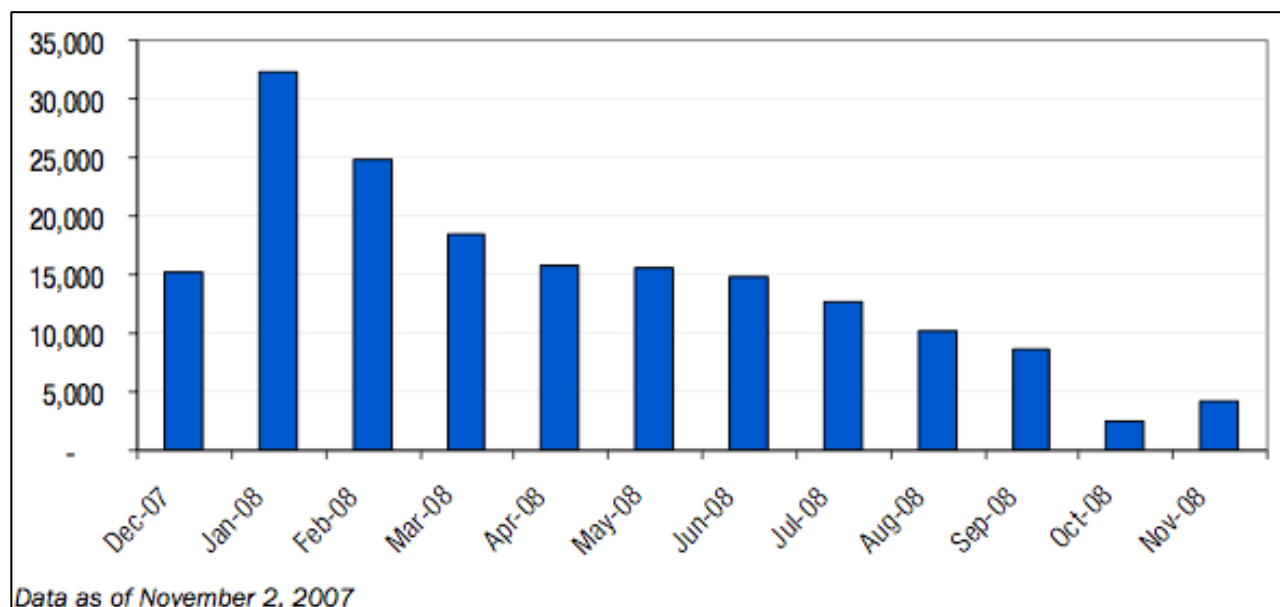
## 2007-2009: the subprime crisis made it impossible for SIVs and ABCP credit arbitrage vehicles to refinance their short term funding, resulting in forced deleveraging

In mid-2007, when the US subprime housing market collapsed, adversely impacting the financial industry's perception of all securitisation (including high quality securitisation). In many cases (i.e. European RMBS and ABS and US ABS (credit cards, autos, etc.) the negative perception was not directly related to the actual credit risk of the assets, which is demonstrated by the strong credit performance of most European assets throughout the crisis (see **Appendix 3**). However, the result of the market-wide negative perception was that highly levered vehicles (including SIVs and ABCP arbitrage investments) with short-term refinancing pressures and significant maturity mismatch between their assets and liabilities and other vehicles, irrespective of whether they were holding good or bad quality assets (due to the lack of distinction between the two) could not obtain financing. The lack of financing forced SIVs and other similar vehicles to delever: they either entered into fire sales, selling off their securitisation assets, or parent banks took the assets onto balance sheet to slowly liquidate the assets. This process of liquidation by parent banks was in itself highly challenging, as the small number of banks and insurers remaining who retained any appetite for ABS with good underlying credit risk were not able to buy from the forced sellers at any price due to regulatory changes. The only buyers left were therefore hedge funds, not buy and hold investors, and whose pricing expectations reflected both this and prevailing market conditions. All of these factors combined to create a "perfect storm" which caused further sharp falls in the market price and liquidity of securitisation assets.

<sup>17</sup> "SIV Outlook 2007 – Another Bumper Year Ahead for SIVs After Assets Approach \$300 Billion in 2006". 26 February 2007, Standard and Poor's

**Chart 4** shows the aggregate sector refinancing needs of SIVs from December 2007 to November 2008<sup>18</sup> and demonstrates the amount the sector would need to refinance through alternative funding arrangements or asset liquidations.

**Chart 4: SIV Refinancing Needs: Net Outflow Profile (USD Millions)**



Source: Moody's Investment Services

**Chart 5** illustrates the dramatic decrease in SIV liabilities from January 2008 to December 2008 (the chart produced in May 2008 forecasts the decrease in liabilities based on the maturity of the liabilities). Further, **Chart 6** illustrates the sudden decline in SIV assets through forced selling. In July 2007, SIV assets totalled approximately USD 400bn (c. EUR 295bn<sup>19</sup>), by November 2007, the assets decreased to USD 300bn (c. EUR 208bn<sup>20</sup>) – a decrease of USD 100bn of assets in 4 months<sup>21</sup>.

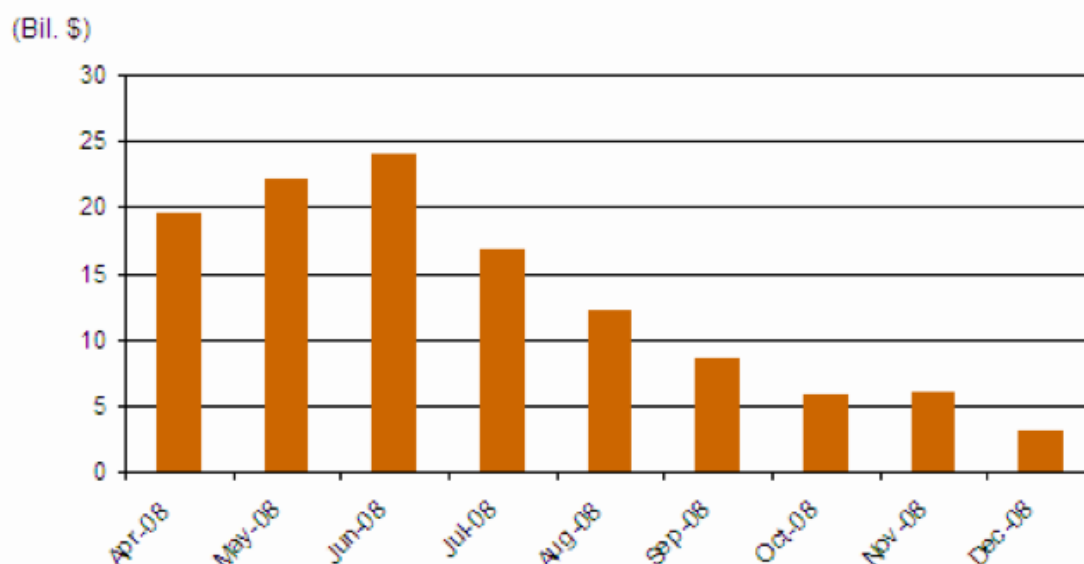
<sup>18</sup> "This is computed by netting daily asset inflows with liability outflows across the sector for each month" - "Moody's Update on Structured Investment Vehicles", International Structured Finance: Europe, Middle East Africa: Special Report, Moody's Investor Service, 16 January 2008

<sup>19</sup> Based on exchange rate as at 2 July 2007 – [www.oanda.com](http://www.oanda.com)

<sup>20</sup> Based on exchange rate as at 1 November – [www.oanda.com](http://www.oanda.com)

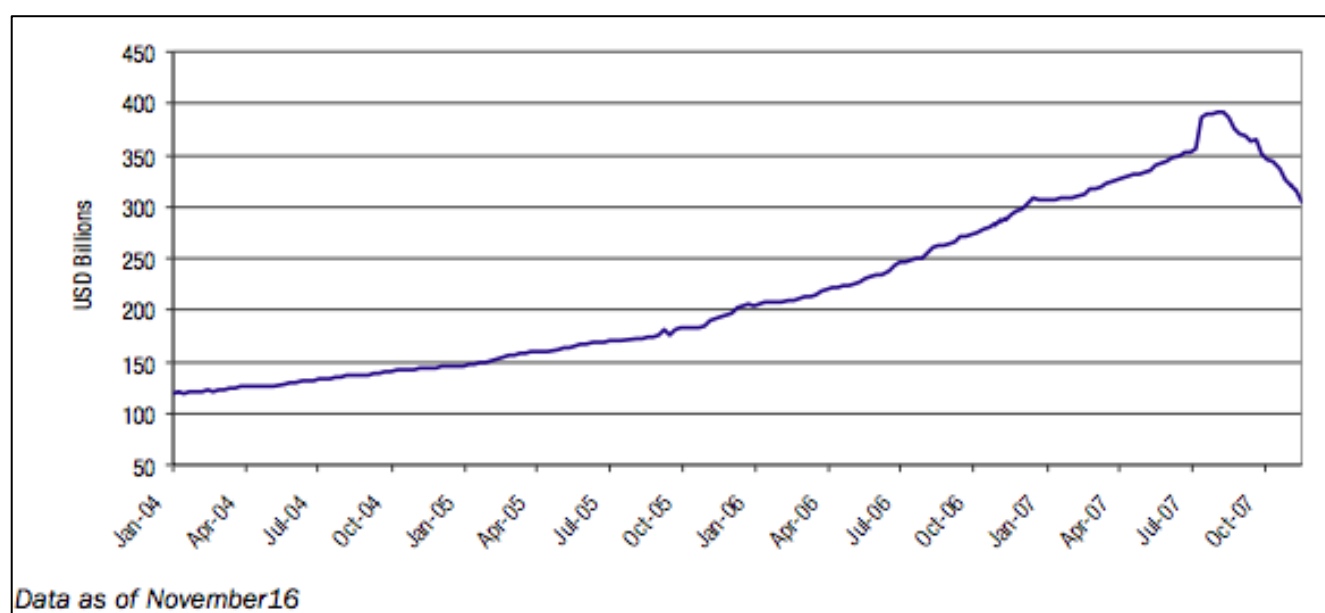
<sup>21</sup> "Moody's Update on Structured Investment Vehicles", International Structured Finance: Europe, Middle East Africa: Special Report, Moody's Investor Service, 16 January 2008

**Chart 5: Total outstanding SIV and LPFC Senior Liabilities Due from April – December 2008<sup>22</sup>**



Source: Standard & Poor's<sup>23</sup>

**Chart 6: Assets under management of EMEA SIVs<sup>24</sup>**



Source: Moody's Investment Services

Moody's estimated that SIVs liquidated a total of USD 55.6 billion of assets between 1 June and 16 November 2007 – a drop of 16% of the sector's total assets under management on May 31 2007. As a result of this sudden delveraging, price volatility dramatically increased for securitisation in all sectors.

<sup>22</sup> Data includes 29 SIVs and one limited purpose finance company (LPFC). Among the 30 vehicles, 25 SIVs and one LPFC still had senior liabilities due after March 31 2008. The remaining four SIVs had no senior liabilities due after March 31 2008. The senior liabilities included a liquidity facility and senior repurchase funding. Data for all of the vehicles senior liabilities was as of March 31 2008, except for four SIVs whose senior liabilities data was as of Dec 31 2007

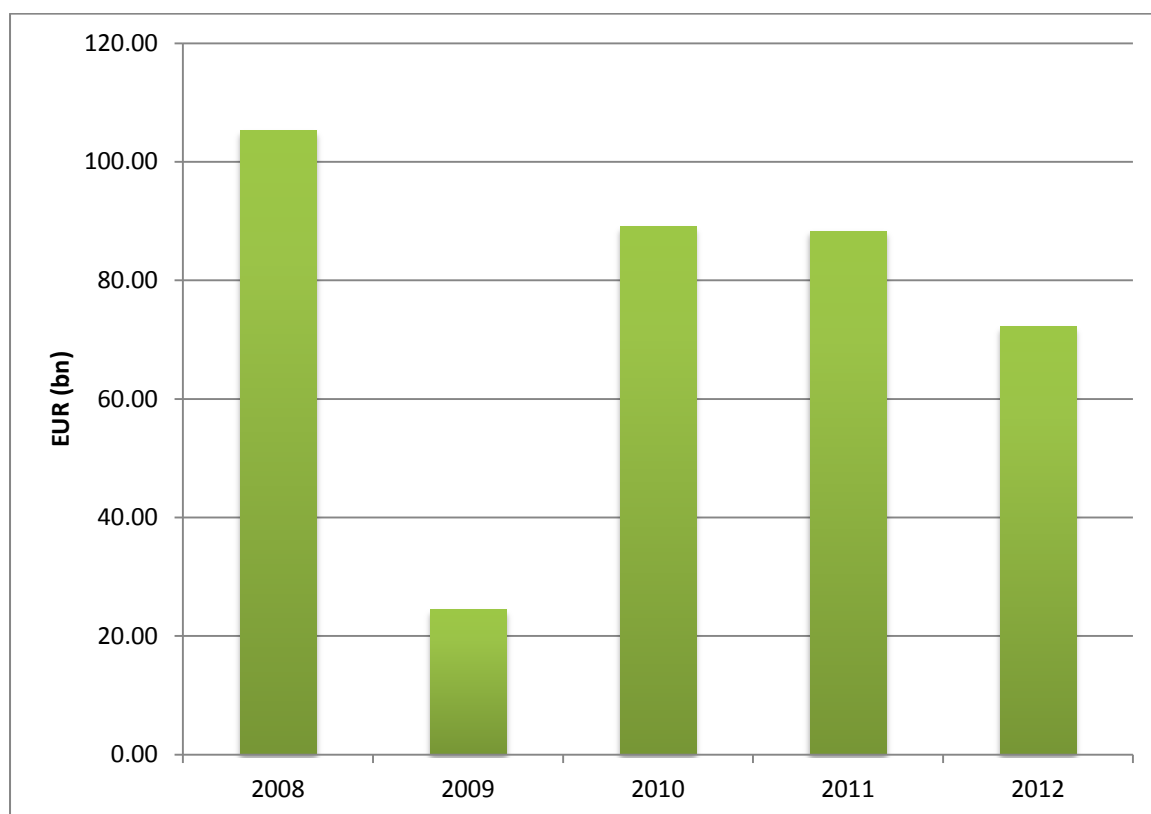
<sup>23</sup> "A first look at structured investment vehicles remaining debt outstanding and their asset portfolio sector allocations", Standard & Poor's, 22 May 2008

<sup>24</sup> "Moody's Update on Structured Investment Vehicles", International Structured Finance: Europe, Middle East Africa: Special Report, Moody's Investor Service, 16 January 2008

## Securitisations suffered further price volatility as banks holding SIV assets were bailed-out

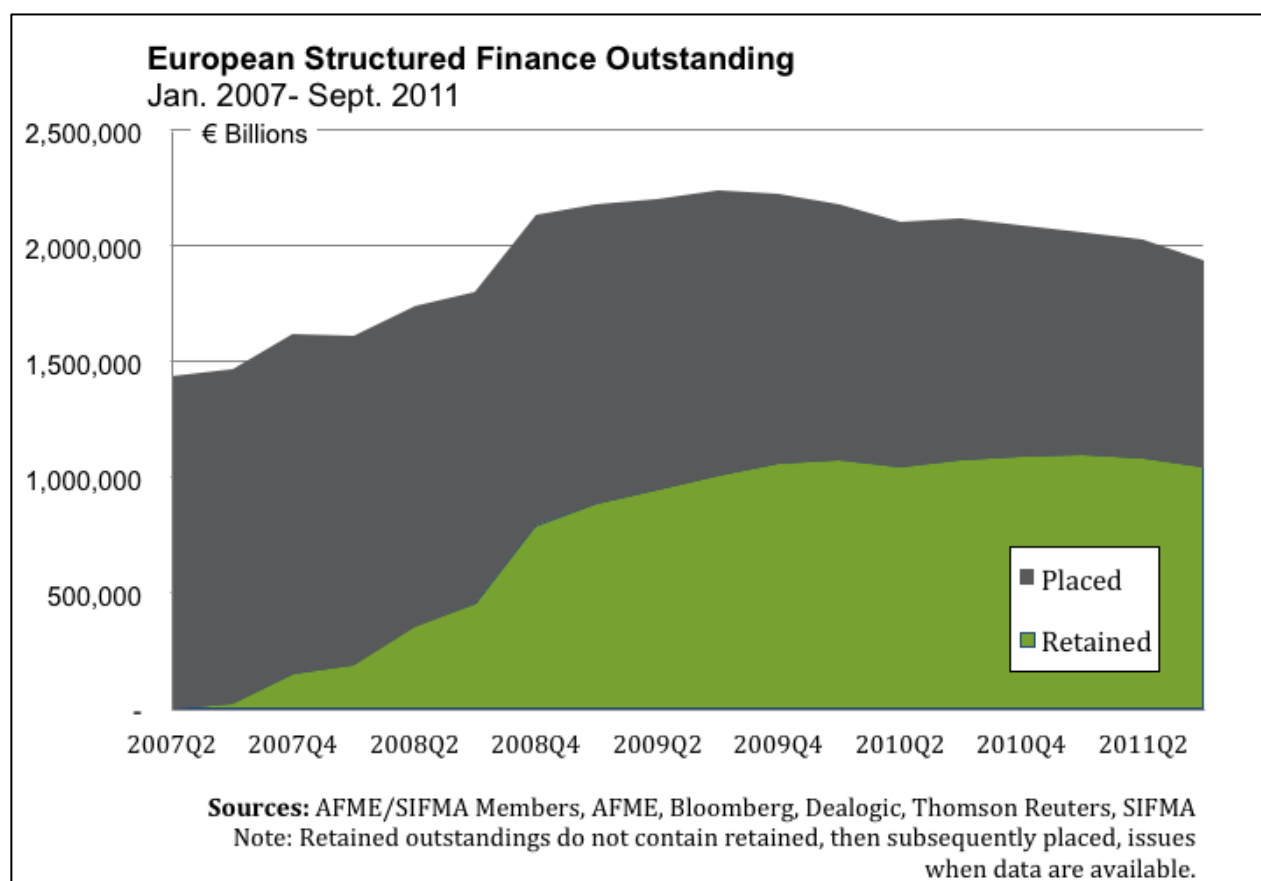
As SIVs liquidated their assets, sponsor/parent banks took a significant portion of these assets on their own balance sheets, usually with the aim of unwinding the positions over time. By 2009, the placed issuance of securitisation decreased by approximately 80%; however, the percentage of outstanding securitisation debt retained on banks' balance sheets increased by 30% from Q1 2008 to Q1 2009. When the banks began to be bailed out from 2007-2009, they began to delever. As a consequence of the large securitisation retention on banks' balance sheets, these events introduced even further price volatility in the securitisation market. Charts 7 and 8 illustrate the change in the volume of placed securitisation issuance from 2008 to 2012 and the volume of retained outstanding securitisation compared to placed outstanding securitisation.

**Chart 7: Placed issuance of securitisation from 2008-2012**



Source: AFME/SIFMA members, AFME, Bloomberg, Dealogic, Thomson Reuters

**Chart 8: Securitisation placed outstanding compared to retained outstanding**

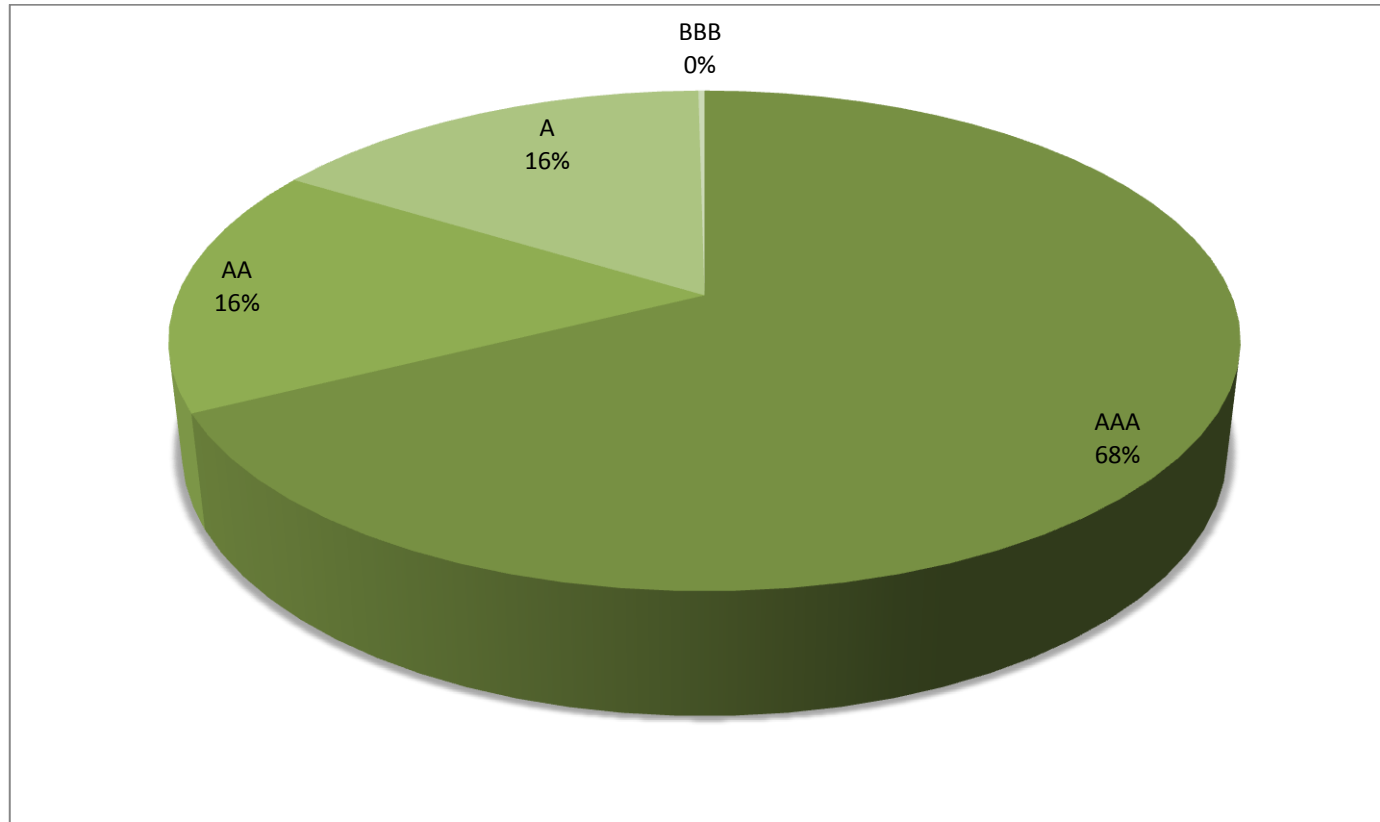


## Regulatory reform

As explained above, there were many market practices, unrelated to the quality of securitisation that resulted in the dramatic price volatility of securitisations from 2007-2009. AFME believes that as a result of regulatory reform, circumstances similar to those explained above are extremely unlikely to recur. Governments and regulatory authorities have implemented or are in the course of developing a number of prudential regulations that would prevent such practices, including, amongst others: the introduction of the Liquidity Coverage Ratio (Basel III/CRR), Net Stable Funding Ratio (Basel III), recovery and resolution directive (BRRD), Fundamental Review of the Trading Book (Basel) and Shadow Banking Recommendations. **AFME's Regulatory Reform Map (March 2014)** illustrates the specific ways in which these and other regulations mitigated for both securitisation-specific issues and market practices unrelated to securitisation (for SIV and other similar vehicles-related issues, see – Refinancing Risk).

## Appendix 1

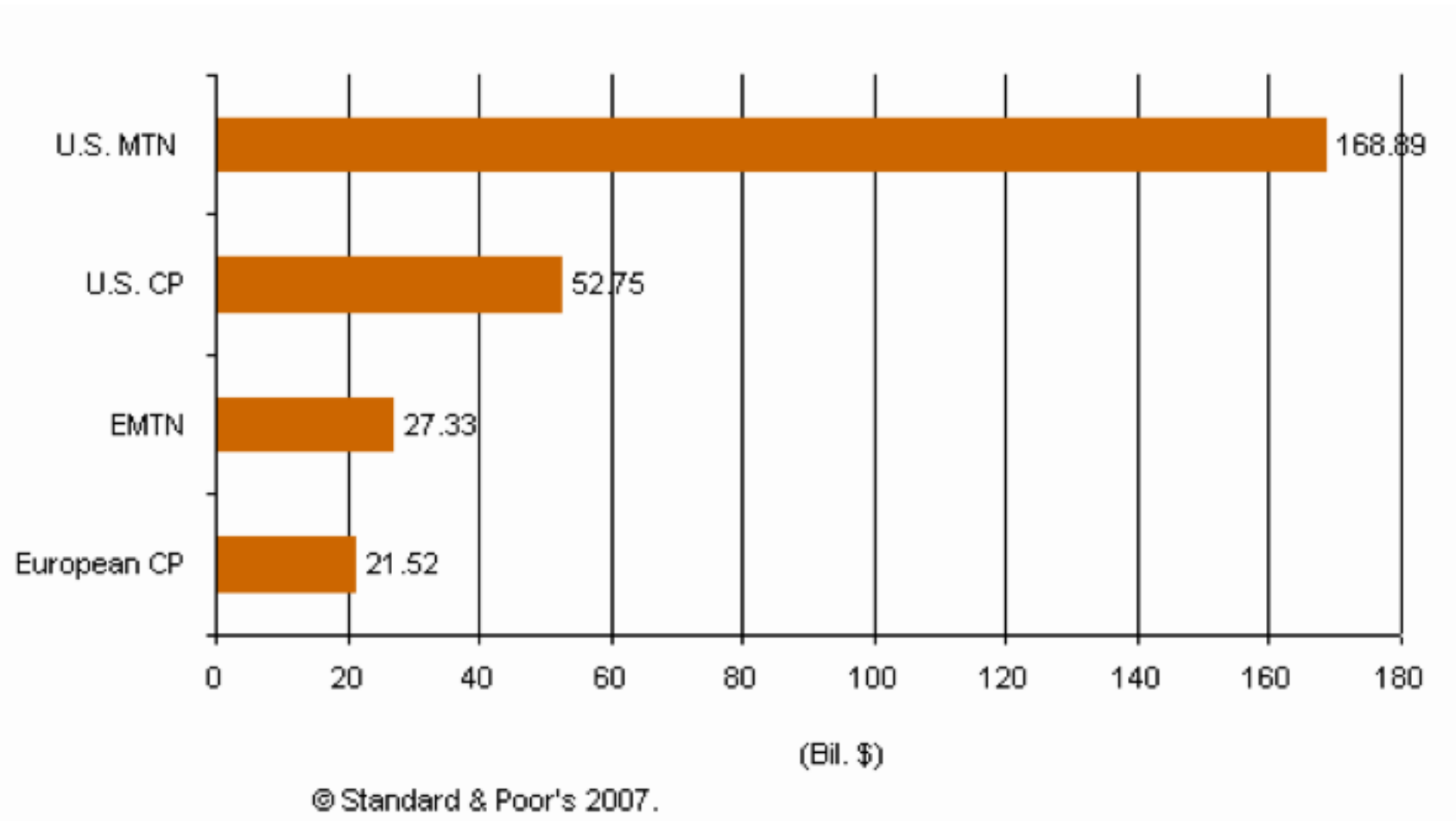
Chart 9: Rating of SIV assets (as at February 2007)



Source: Standard & Poor's

## Appendix 2

Chart 10: Outstanding SIV senior debt (as at February 2007)



## Appendix 3

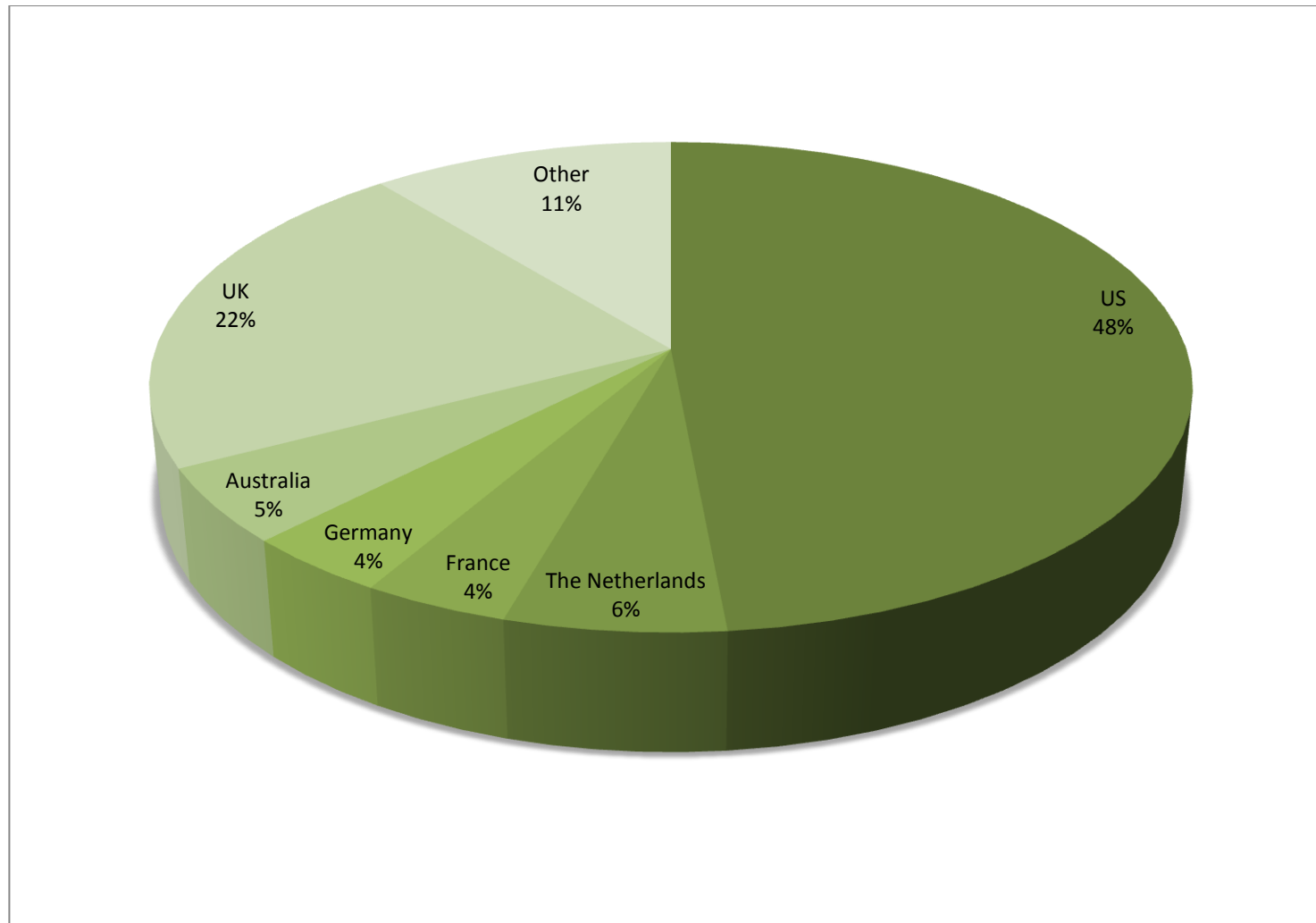
**Table 3: Securitisation default rates from mid-2007 to Q3 2013**

|                           | Original Issuance (EUR billion) | Default Rate (%) |
|---------------------------|---------------------------------|------------------|
| <b>Europe</b>             |                                 |                  |
| Credit Cards              | 33.2                            | 0.00             |
| RMBS                      | 755.7                           | 0.08             |
| Other consumer ABS        | 68.0                            | 0.13             |
| Leveraged loan CLOs       | 71.3                            | 0.1              |
| Other ABS                 | 71.3                            | 0.16             |
| Corporate Securitisations | 65.8                            | 0.34             |
| Synthetic Corporate CDOs  | 254.3                           | 2.76             |
| CMBS                      | 163.2                           | 9.08             |
| Other CDOs                | 77.8                            | 6.37             |
| CDOs of ABS               | 28.9                            | 40.21            |

Source: Standard & Poor's

## Appendix 4

**Chart 11: Country composition of SIV assets (2 November 2007)**



Source: Moody's Investment Services