National Audit Office

Briefing
by the National Audit Office

HM Treasury, UK Financial Investments, UK Asset Resolution

Introduction to asset-backed securities

NOVEMBER 2016

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Introduction

1 This paper was prepared by the National Audit Office during fieldwork for our report, *The £13 billion sale of former Northern Rock assets*.[1] It is a factual briefing intended to provide the reader with an overview of the securitisation process and market data on securitisation in the UK and Europe.

2 The briefing is structured as follows:

- Part One provides an introduction to securitisation; and
- Part Two includes market data on securitisation in the UK and Europe.

3 The appendix provides further information about the Granite securitisation vehicle, which represented more than 90% of the asset value sold in the transaction.

1 Comptroller and Auditor General, *The £13 billion sale of former Northern Rock assets*, Session 2016-17, HC 513, National Audit Office, July 2016.

Part One

Introduction to securitisation

1.1 Securitisation is a financial process by which an owner of an asset, such as a portfolio of loans, receives cash upfront in exchange for the future cash flows from the asset without selling the asset in a normal contractual sales agreement. This process entails pooling the cash flows and selling them to investors via a special purpose vehicle (SPV), effectively turning 'illiquid' assets that cannot be sold easily into a 'liquid' asset that is tradable. If the income is 'backed' by underlying assets the securities are called 'asset-backed securities' (ABS).

1.2 There are two main reasons for carrying out a securitisation: 1) to obtain funding, because selling the cash flows allows the seller to bring forward the future income of the assets and use it for immediate reinvestment; and 2) to move assets off the balance sheet.

1.3 In principle, any asset with associated cash flows can be securitised, for example mortgages or loans such as credit cards, commercial loans and student loans. Depending on the underlying asset, the securities carry different names as shown in **Figure 1**.

Figure 1
Types of securities

Security name	Description
Residential mortgage-backed security (RMBS)	Backed by mortgages for the purchase of residential real estate. Includes 'prime' mortgages, where borrowers have strong credit histories, 'buy to let' mortgages, or 'non-conforming' mortgages.
Commercial mortgage-backed security (CMBS)	Backed by mortgages for the purchase of commercial property.
Consumer asset-backed security (Consumer ABS)	Backed by personal financial assets such as auto loans, credit cards, student loans and other consumer loans.
Corporate asset-backed security (Corporate ABS)	Backed by the cash flows from receivables such as leases on aircraft or other corporate equipment, small and medium enterprise (SME) loans, trade receivables. Also includes 'whole business' securities (WBS) based on the cash flows of an entire business unit, such as franchise or brand royalties.
Collateralised debt obligation (CDO)	Backed by a mixture of loans/receivables and/or asset-backed securities. Also includes 'collateralised loan obligations' (CLO) backed by loans, often to medium-sized corporates.

Source: National Audit Office

1.4 The assets used in a securitisation can be either 'performing' or 'non-performing'. A performing asset involves underlying loans which are making payments as outlined in the contractual agreements. In relation to securitisations of mortgages, these transaction are sometimes called 'prime mortgages', especially if the borrowers under the mortgage have a strong credit quality (for example, no historic bankruptcy, arrears or County Court judgments). A non-performing asset means the underlying asset is either in default or close to being in default. The market generally considers an asset as non-performing if payments are more than three months in arrears. Once an asset becomes non-performing, the probability that it will be repaid in full is substantially lower, and therefore it negatively affects the value of the asset. The recent £13 billion sale of former Northern Rock assets mainly included performing assets.

1.5 The UK government owns financial assets that could be securitised. It owns these assets as a result of either financial intervention, such as the nationalisation of Northern Rock or Bradford & Bingley, or through government schemes such as Student Loans or Help to Buy. **Figure 2** lists some of these assets.

Figure 2

Government-owned assets that could be securitised

Category	
Residential mortgages	UK Asset Resolution Limited (UKAR) holds £42.3 billion of assets as of May 2016. These are predominantly owner-occupier and buy-to-let type mortgages. UKAR has been actively reducing the assets on its balance sheet since 2014, for example: • the recent £13.3 billion sale of former Northern Rock assets which included securitised loans; and • a £2.7 billion sale of loans in 2014 which did not include a securitisation. The new owner subsequently used these loans in two securitisations.
Consumer loans	The Department for Business, Energy & Industrial Strategy owns £56.9 billion of Higher and Further Education loans as of March 2016 (carrying value).
Corporate loans	The British Business Bank supports £2.3 billion of finance to more than 40,000 smaller businesses and a further £2.9 billion of finance for small mid-cap businesses.[1]

Note

1 British Business Bank annual report 2015. Not all of these assets may qualify for securitisations.

Source: National Audit Office

1.6 In relation to each of these assets, the owner ('originator'/'issuer' in **Figure 3** overleaf) of the asset has the following choices:

- Hold the asset and do nothing. The owner is exposed to the risk of the assets and in return receives income until the loans are either fully repaid by the borrowers or written off.
- Sell the assets. The owner receives cash from the sale, which allows it to pay off debt or use it for other purposes. It reduces the owner's exposure to risk but stops it receiving any income it previously enjoyed from the assets.
- Securitise the assets and sell the securities to investors. The owner receives cash from the securitisation process and income on the stake it retains in the securitisation over the life of the instrument. It retains legal ownership but does not achieve 'off-balance sheet' treatment on the stake it retains.
- If the owner inherited assets that are already securitised, as with Granite, its immediate option to achieve off-balance sheet treatment is a sale of the SPV and subsequent sale of the legal ownership.[2] Alternatively, it can buy back all the securities from the investors and 'unwind' the securitisation to open up the other options explained above.

Simplified securitisation structure

1.7 Figure 3 shows a typical securitisation deal structure and the different parties involved, using mortgages as an example. A company ('originator') sells a pool of assets (mortgages), which it has either originated itself or bought from a third party, to an SPV. The SPV funds this purchase by issuing securities (bonds) to investors. The return to investors on those securities is directly linked to the cash flows on the underlying assets – namely the principal and interest repayments of the mortgages.

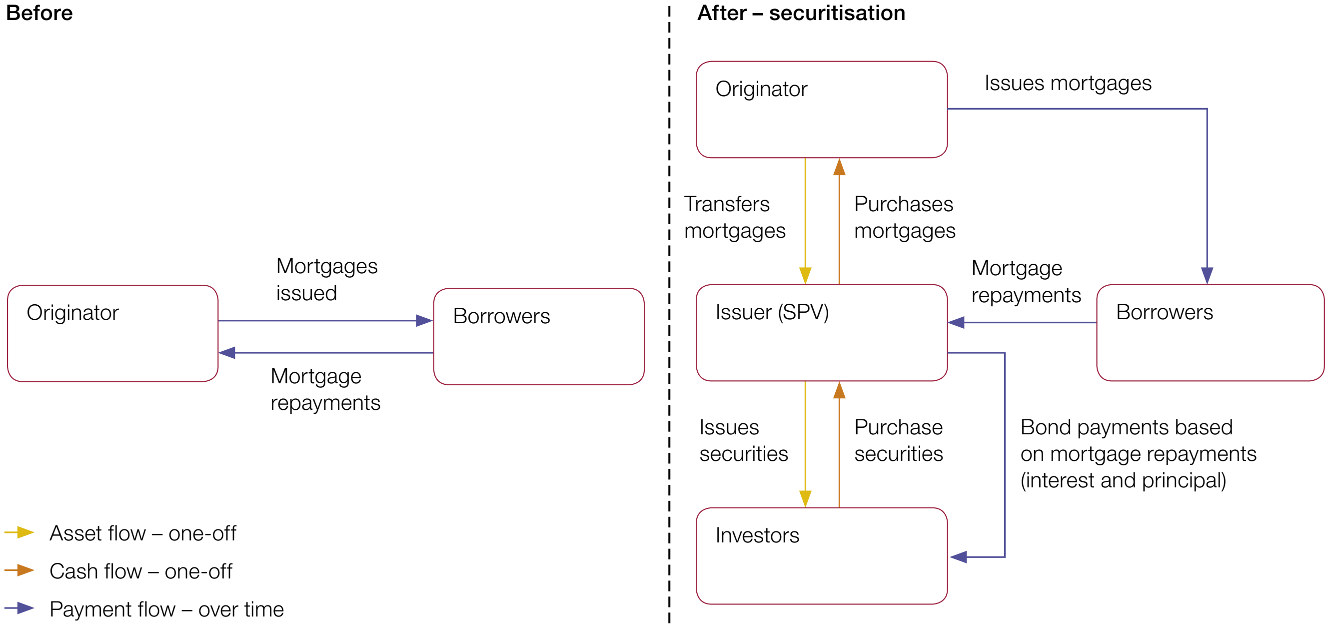
Tranching of securitisations

1.8 The pool of assets in a securitisation generates a cash flow to investors. The cash flow is divided into 'tranches', where each tranche has a different level of priority in the payment of interest and repayment of principal. Each tranche usually requires a credit rating to ascertain the risk associated with the tranche. The structure of the tranches make up the capital structure of the securitisation vehicle.

2 For Granite, this had to be done by selling Northern Rock Asset Management (NRAM), the legal owner of the SPV.

Figure 3

Typical deal structure for mortgage-backed securities (simplified)



Main parties involved in a securitisation

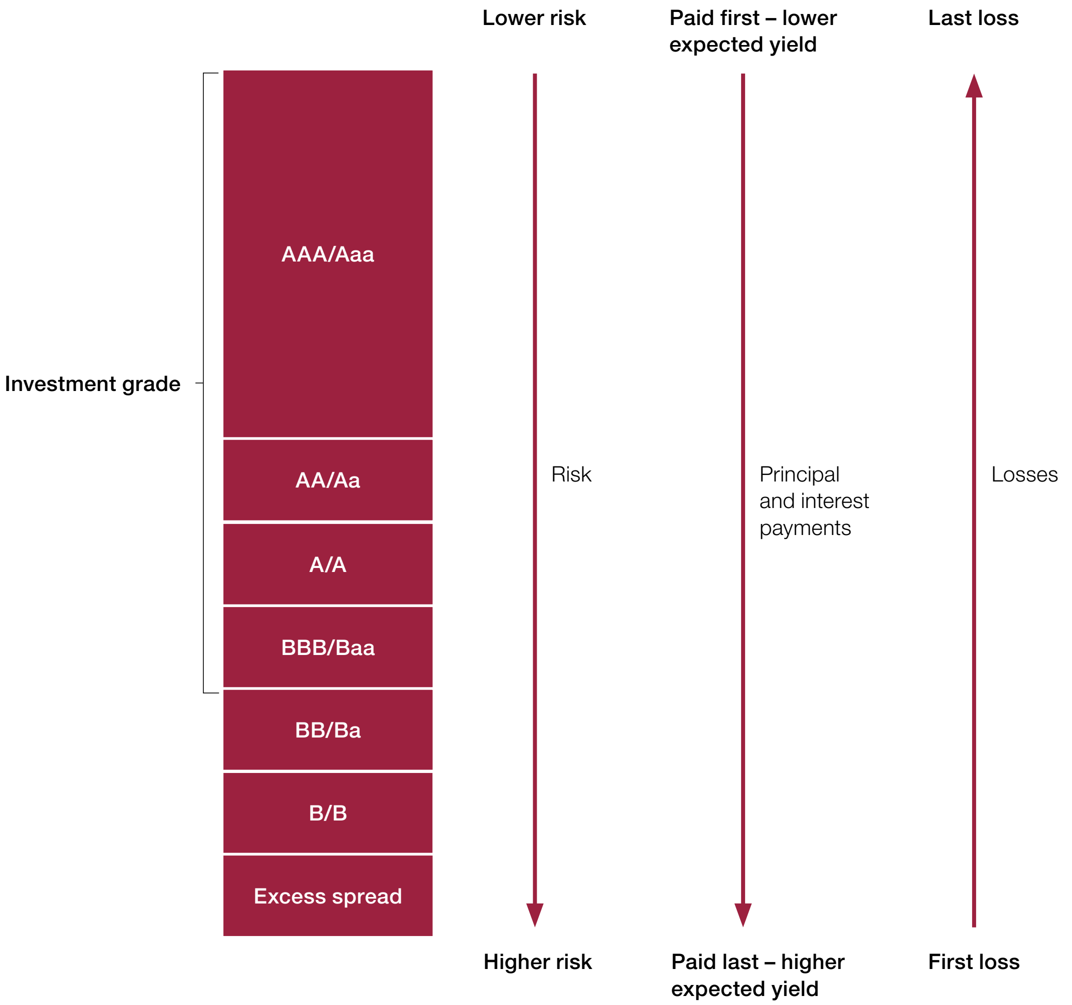
Parties involved	Role
Originator/seller	Bank, financial institution or a company which issued loans or mortgages (the assets) to third parties (borrowers), or acquired a pool of assets which can be securitised. Sometimes referred to as the 'seller'. It sells these assets to be securitised to the issuer (SPV).
Issuer (SPV)	Special purpose vehicle set up specifically to execute the securitisation – that is, to package the cash flows of the assets (for example, loans or mortgages) into securities that it sells to investors. It is a separate legal entity to the originator, which is necessary to achieve 'off-balance-sheet' treatment (as explained in paragraph 1.12). If the issuer does not engage in any lending or a regulated activity, it may not have to be regulated by the Financial Conduct Authority (FCA).
Borrowers	Individuals or companies taking out a loan with a financial institution or a company.
Investors	The purchaser of the securities. For example, asset managers, pension funds, banks or hedge funds.
Additional parties:	
Servicer	Collects repayments on the asset (for example, mortgage interest and principal) and monitors the performance of the pool of assets (for example, by dealing with borrowers who are in arrears). The servicer has to be FCA-regulated.
Rating agencies	Rate the quality of the securities based on the quality of the underlying assets and the structure of the deal.
Third parties	For example, financial guarantors, which allows the originator to reduce the risk of the securities to make them more attractive to investors.
Advisers	Financial and legal advisers to assist in structuring the securitisation and selling the securities to investors.

Source: National Audit Office

1.9 Figure 4 sets out a typical 'tranching' structure where each tranche has a specific risk profile to appeal to investors with different risk appetites. The risk of each tranche is given a credit rating based on the likelihood of payment. All tranches are backed by the same pool of assets, but generally tranche AAA (the lowest risk) gets paid first, tranche AA is paid second and so on, provided there is enough money left after paying the previous tranche. The bottom piece of the capital structure is the 'excess spread', which is the difference between the overall interest rate received on the underlying assets and what is paid out to investors on all tranches. It represents the first buffer against losses for the entire capital structure. This repayment schedule is referred to as the 'waterfall' structure. It is applied to both interest and principal payments.

Figure 4
Illustration of a typical tranching structure

Tranching is the different risk and return for different investors



Notes
1 Higher-grade securities are said to be of 'investment grade'.
2 Lower-grade securities – for example, C grade – can be issued if there is interest from investors.

Source: National Audit Office

1.10 The tranching process creates tranches of securities with a higher credit rating than the average credit risk of the underlying asset pool. Losses are absorbed by the lowest tranche first so as to protect the higher-grade securities. Lower-grade securities are cheaper, but their return is higher to compensate investors for taking on higher risk.

1.11 The performance of the securities depends on that of the underlying assets. There are multiple performance and risk indicators that investors can look at. The main ones in relation to owner-occupier type mortgages include:

- the arrears rate, to know how many borrowers are repaying their mortgages late;
- the default rate, to know the number of homes repossessed each year;
- the constant prepayment rate (CPR), to know how many borrowers are repaying their loans early;[3] and
- the loan-to-value ratio of the mortgage book, to know the value of the loan relative to the value of the underlying property.

Legal structure

1.12 The SPV is typically 'bankruptcy remote', meaning it is separate from the originator. The implications are that if the originator goes bankrupt, the assets held in the SPV will not be handed to the originator's creditors. Equally, if the assets in the SPV perform badly, the originator is more insulated.[4] The bankruptcy remoteness is also a pre-condition if the originator aims to achieve off-balance sheet treatment.

1.13 There are different types of securitisation vehicles. Mainstream securitisations currently set up standalone SPVs for every securitisation transaction. The alternative is a 'master trust', where the originator is able to add mortgages to the trust and/or replace some of the existing ones. The trust can consequently issue multiple batches of securities for as long as it performs according to the contractual terms. Each series is backed by the same pool of underlying assets.

1.14 In a master trust, the originator must retain a minimum share in the securitisation called the 'seller's share'. It pays the originator the 'excess spread' (interest element on the mortgages) illustrated in Figure 4, but only after every other tranche is paid first.

3 To compensate for prepayment risk, there is often a penalty imposed on borrowers repaying early. In relation to the £13 billion sale of former Northern Rock asset, UKAR abolished early repayment fees on borrowers, and the winning bidder is required to keep this in place for one year.

4 This separation is, however, never absolute because the originator is required by law to retain a stake in the SPV (explained in paragraph 1.16 in this Briefing). In addition, when the originator is the servicer of the loans, the structure remains exposed to the originator's performance despite the assets being physically separate from it.

1.15 There are two main ways in which a master trust can go wrong:

- **Breach of the 'asset trigger'**

  This trigger is breached when the performance of the underlying loans falls below a threshold. When this happens, both the investors and the seller (through the seller share) see their interest and principal payments adjusted down on a pro rata basis.

- **Breach of the 'non-asset trigger'**

  This happens when default events occur which are unrelated to the performance of the assets in the securitisation. For example, insolvency of the issuer, absence of servicer, or breach to maintain the minimum seller's share. In this case, the originator irreversibly loses rights to its share of the principal repayments until the investors are entirely repaid. This is to say that the seller's share of principal repayments is deferred but preserved. Additionally, if the originator breaches its seller share, it loses the ability to sell additional mortgages to the SPV to issue more securities. When this occurs, the securitisation is said to be in 'pass through' mode.

1.16 Regulations introduced following the financial crisis legally require originators of a securitisation to retain a minimum 5% share of risk in it. This risk retention ratio applies to all SPV structures and is designed to align incentives between the originator and the investors.

Part Two

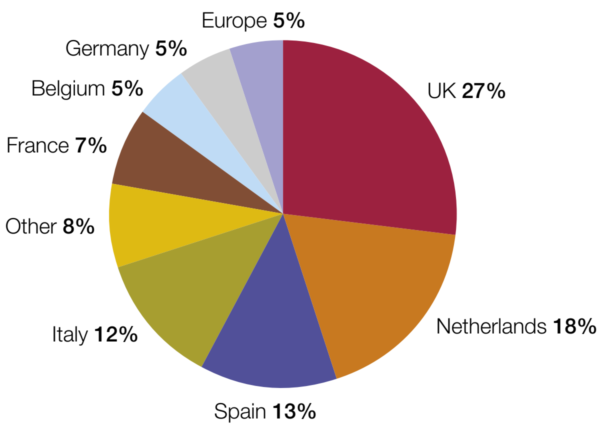
Securitisation in Europe and the UK

2.1 The UK is the largest player in the European securitisation market. At the end of the fourth quarter 2015 the total market of outstanding securitisations in Europe was £865 billion. **Figure 5** shows that the UK represented nearly 30% of this market. The second-largest market is the Netherlands, with an 18% share.

Figure 5

Geographical split of outstanding asset-backed securities in Europe as at the end of 2015

The UK has the largest market share



Notes

1 Europe: European cross-border deals. Other: Austria, Finland, Greece, Ireland, Portugal and some other European countries not specified in the original data source.

2 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

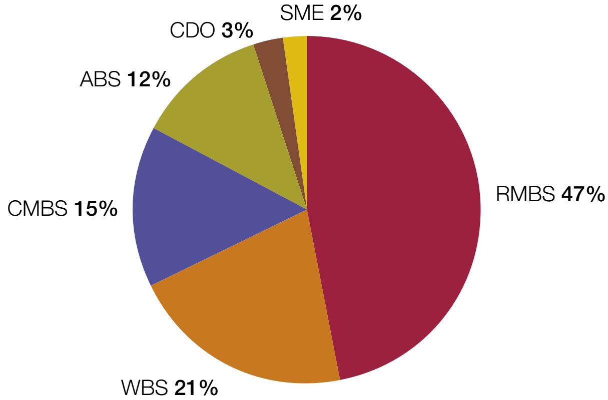
Source: Association for Financial Markets in Europe; National Audit Office analysis

2.2 Retail mortgage-backed securities (RMBS) make up the largest part of the market. They constitute 60% of Europe's market as a whole, and 47% of the UK's, as shown in **Figure 6**. Other large categories are 'whole business securitisation' (WBS) and commercial mortgage-backed securities (CMBS).

Figure 6

Composition of the asset-backed securities outstanding in the UK as at the end of 2015

Retail mortgage-backed securities make up 50% of the UK market



Notes

1 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

2 WBS stands for 'whole business securitisation', where the cash flows of an entire business are used in the securitisation process.

Source: Association for Financial Markets in Europe; National Audit Office analysis

Issuance

2.3 The issuance of securities is still very low compared to pre-financial crisis levels. **Figure 7** shows that there was a significant slow-down in the market after the crisis, reaching a low point in 2013. 2014 and 2015 fared better, but just marginally. In 2015, a total of £141.4 billion of securities were issued in Europe.

2.4 The UK was the largest issuer in 2015, issuing £36.8 billion of securities. It also ranked highly in previous years. **Figure 8** on page 16 shows that Germany was the second-largest player in 2015, mainly owing to large issuances from car manufacturers.

2.5 The majority of the UK's activity was focused on RMBS, as shown in **Figure 9** on page 16. This focus was also the case for the majority of the other countries in Europe.

2.6 Since 2013, the average size of European transactions of RMBS has been increasing, as shown in **Figure 10** on page 17. The Granite sale contributed to a substantial part of the Quarter 1 2016 increase as Cerberus issued £6.2 billion of notes through the securitisation vehicle Towd Point; £6.2 billion is more than three times larger than the average size of other deals in that period.

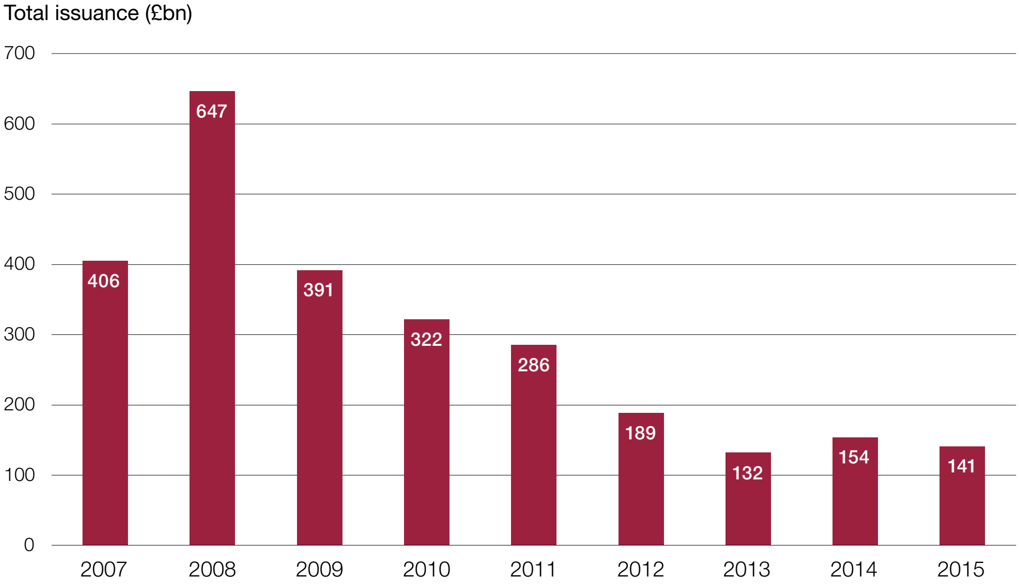
2.7 **Figure 11** on pages 18 to 21 shows the main financial advisers involved in a lead role ('bookrunner') in European securitisations, ranked by the volume of issuance by year. Credit Suisse advised on the sale of Granite.

Figure 7

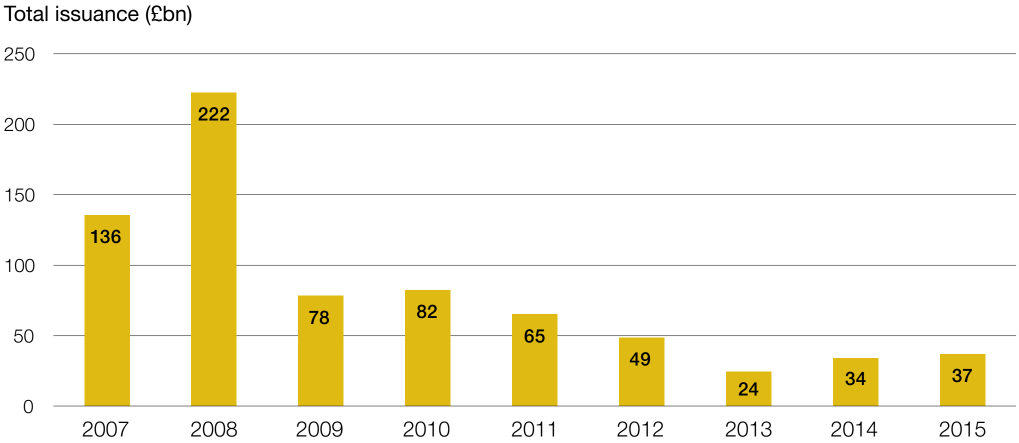
Total European and UK issuance of asset-backed securities between 2007–2015 (£ billion)

Issuance volumes dropped substantially between 2008 and 2013

Europe



UK



Notes

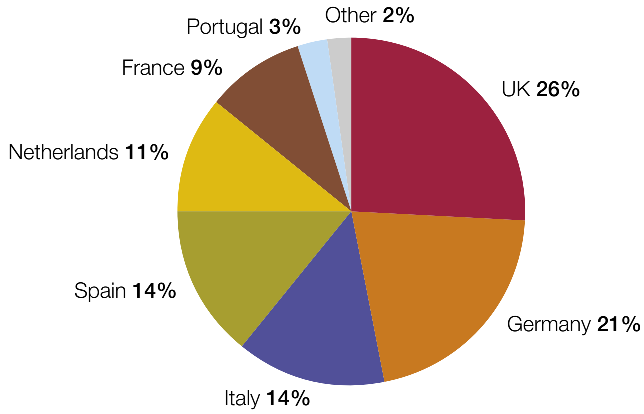
1 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

2 Europe includes: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, UK and some cross-border deals involving at least one European country. Not all of these countries issued in all of the years.

Source: J.P. Morgan data; National Audit Office analysis

Figure 8
2015 issuance of asset-backed securities by European country

The UK issued more than 25% of securities in Europe



Notes

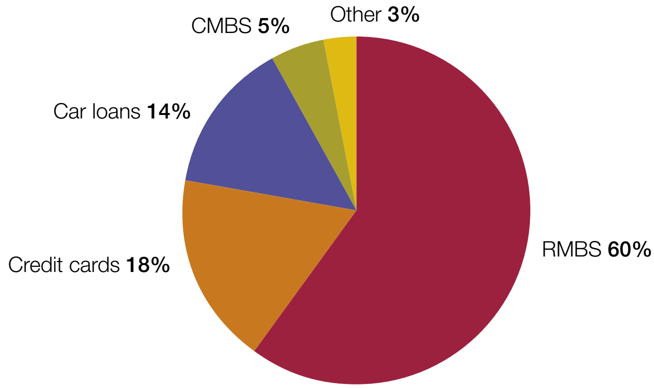
1 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

2 Other: Belgium, Switzerland, Ireland, Norway, Sweden, Finland, Austria and a small amount of European cross-border deals.

Source: J.P. Morgan data; National Audit Office analysis

Figure 9
Types of securities issued by the UK in 2015

Retail mortgage-backed securities represents 60% of UK's securitisation market



Note

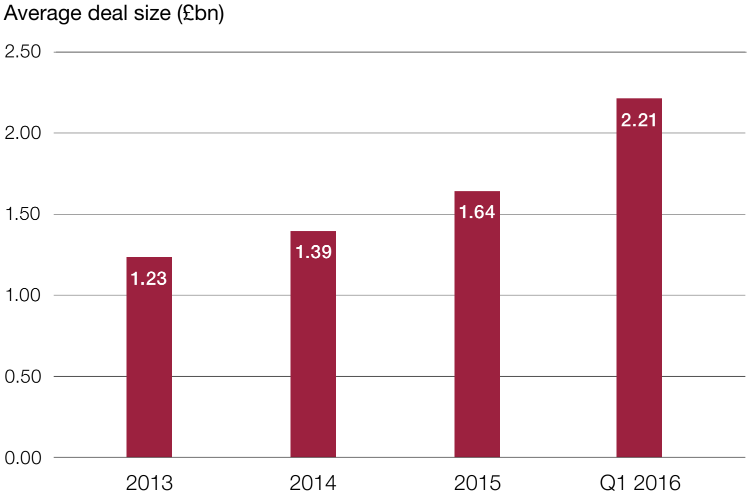
1 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

Source: J.P. Morgan data; National Audit Office analysis

Figure 10

Average size of European retail mortgage-backed securities deals

Average deal size increased since 2013



Notes

1 This includes both retained and distributed securities. 'Retained' securities are those that the issuer holds on to. 'Distributed' securities are those that the issuer sells to the market.

2 This includes both prime, buy-to-let and non-conforming mortgages.

3 Each transaction can be made up of several tranches issued as part of the same series.

Source: J.P. Morgan data; National Audit Office analysis

Figure 11

2013 to Q2 2016 ranking of firms executing European and UK securitisations

2013 – Q2 2016 European Asset-backed Securities (ABS) and Mortgage-backed Securities (MBS) bond bookrunner ranking for top 10

Q1-2 2016

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Lloyds Banking Group	7,894	13	14.7
2	Bank of America Merrill Lynch	5,823	12	10.8
3	Citi	5,400	12	10.0
4	Credit Suisse	3,410	8	6.3
5	Morgan Stanley	2,398	4	4.5
6	HSBC	2,357	8	4.4
7	UniCredit	1,849	4	3.4
8	Natixis	1,837	3	3.4
9	JPMorgan	1,799	3	3.4
10	BNP Paribas	1,623	7	3.0
	Subtotal	**34,391**	**74**	**64.0**
	Total	**53,772**	**69**	**100.0**

Q1-4 2015

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	HSBC	8,375	12	9.4
2	Commerzbank Group	7,721	9	8.7
3	Bank of America Merrill Lynch	7,286	26	8.2
4	Citi	5,626	18	6.3
5	Barclays	5,493	11	6.2
6	Morgan Stanley	3,745	11	4.2
7	Deutsche Bank	3,663	12	4.1
8	Lloyds Banking Group	3,576	12	4.0
9	UniCredit	3,455	8	3.9
10	Credit Agricole CIB	3,249	11	3.7
	Subtotal	**52,188**	**130**	**58.8**
	Total	**88,813**	**139**	**100.0**

Q1-4 2014

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	JPMorgan	10,743	21	13.2
2	Citi	5,972	15	7.3
3	Bank of America Merrill Lynch	5,755	15	7.1
4	Deutsche Bank	5,184	16	6.4
5	Barclays	4,840	15	5.9
6	HSBC	4,483	12	5.5
7	Lloyds Banking Group	3,800	11	4.7
8	Credit Suisse	3,562	9	4.4
9	Rabobank	3,307	7	4.1
10	Credit Agricole CIB	3,270	8	4.0
	Subtotal	**50,914**	**129**	**62.5**
	Total	**81,454**	**115**	**100.0**

Q1-4 2013

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	JPMorgan	10,746	16	14.3
2	Barclays	5,608	13	7.5
3	Bank of America Merrill Lynch	5,378	13	7.2
4	SG Corporate & Investment Banking	5,289	11	7.0
5	Deutsche Bank	4,944	11	6.6
6	Citi	3,709	12	4.9
7	Rabobank	3,620	6	4.8
8	HSBC	3,312	13	4.4
9	RBS	3,034	13	4.0
10	Credit Suisse	2,502	11	3.3
	Subtotal	**48,142**	**106**	**64.0**
	Total	**75,274**	**116**	**100.0**

2013 – Q2 2016 UK ABS and MBS bond bookrunner ranking for top 10

Q1-2 2016

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Lloyds Banking Group	6,962	12	29.1
2	Bank of America Merrill Lynch	3,157	7	13.2
3	Credit Suisse	2,903	5	12.1
4	Citi	2,379	7	9.9
5	Morgan Stanley	2,015	3	8.4
6	Natixis	1,774	2	7.4
7	HSBC	1,054	4	4.4
8	Barclays	874	3	3.7
9	Deutsche Bank	656	2	2.7
10	Wells Fargo Securities	500	1	2.1
	Subtotal	**22,275**	**46**	**93.0**
	Total	**23,961**	**25**	**100.0**

Q1-4 2015

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Bank of America Merrill Lynch	5,280	17	19.3
2	Barclays	3,790	5	13.8
3	Citi	3,548	12	13.0
4	Morgan Stanley	2,888	9	10.5
5	Lloyds Banking Group	2,192	7	8.0
6	Goldman Sachs	1,853	3	6.8
7	Deutsche Bank	1,566	5	5.7
8	Credit Suisse	1,276	3	4.7
9	RBS	806	3	2.9
10	JPMorgan	762	3	2.8
	Subtotal	**23,961**	**67**	**87.5**
	Total	**27,385**	**40**	**100.0**

Q1-4 2014

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	JPMorgan	6,113	6	22.6
2	Lloyds Banking Group	2,600	7	9.6
3	Bank of America Merrill Lynch	2,524	7	9.3
4	Deutsche Bank	2,461	7	9.1
5	Citi	2,111	5	7.8
6	Credit Suisse	2,089	6	7.7
7	HSBC	1,889	5	7.0
8	RBS	1,061	3	3.9
9	Barclays	827	3	3.1
10	Goldman Sachs	823	2	3.0
	Subtotal	**22,498**	**51**	**83.0**
	Total	**27,096**	**41**	**100.0**

Q1-4 2013

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Barclays	3,684	6	23.6
2	Deutsche Bank	1,772	4	11.4
3	Lloyds Banking Group	1,708	7	11.0
4	RBS	1,191	6	7.6
5	Bank of America Merrill Lynch	1,131	5	7.3
6	Credit Suisse	1,073	4	6.9
7	JPMorgan	914	3	5.9
8	Morgan Stanley	849	3	5.5
9	Goldman Sachs	643	2	4.1
10	Santander	522	2	3.4
	Subtotal	**13,487**	**42**	**86.5**
	Total	**15,585**	**28**	**100.0**

Figure 11 *continued*

2013 to Q2 2016 ranking of firms executing European and UK securitisations

2013 – Q2 2016 European Residential Mortgage-backed Securities (RMBS) bond bookrunner ranking for top 10

Q1-2 2016

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Lloyds Banking Group	5,956	8	20.9
2	Bank of America Merrill Lynch	4,331	6	15.2
3	Citi	3,046	6	10.7
4	Morgan Stanley	2,015	3	7.1
5	JPMorgan	1,799	3	6.3
6	Natixis	1,774	2	6.2
7	Credit Suisse	1,753	2	6.2
8	Banco de Sabadell SA	1,535	1	5.4
9	Rabobank	1,449	3	5.1
10	HSBC	909	3	3.2
	Subtotal	**24,568**	**37**	**86.4**
	Total	**28,446**	**20**	**100.0**

Q1-4 2015

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Barclays	4,256	7	13.5
2	Bank of America Merrill Lynch	3,822	14	12.1
3	Citi	2,866	8	9.1
4	Morgan Stanley	2,674	8	8.5
5	Rabobank	2,172	4	6.9
6	Credit Suisse	1,705	4	5.4
7	Deutsche Bank	1,598	5	5.1
8	JPMorgan	1,483	6	4.7
9	UniCredit	1,437	4	4.5
10	RBS	1,270	4	4.0
	Subtotal	**23,283**	**64**	**73.6**
	Total	**31,616**	**39**	**100.0**

Q1-4 2014

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Rabobank	2,682	5	18.9
2	JPMorgan	1,874	5	13.2
3	RBS	1,338	4	9.4
4	Citi	970	2	6.8
5	Barclays	856	3	6.0
6	Natixis	788	4	5.6
7	ABN AMRO Bank	749	2	5.3
8	HSBC	733	2	5.2
9	Lloyds Banking Group	645	4	4.5
10	Deutsche Bank	620	3	4.4
	Subtotal	**11,255**	**34**	**79.3**
	Total	**14,200**	**19**	**100.0**

Q1-4 2013

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	JPMorgan	8,711	8	34.7
2	Rabobank	2,164	5	8.6
3	Deutsche Bank	1,776	3	7.1
4	ING	1,640	2	6.5
5	RBS	1,543	6	6.2
6	SG Corporate & Investment Banking	1,403	3	5.6
7	Barclays	1,209	4	4.8
8	Lloyds Banking Group	980	5	3.9
9	Morgan Stanley	813	2	3.2
10	Citi	749	3	3.0
	Subtotal	**20,988**	**41**	**83.7**
	Total	**15,585**	**28**	**100.0**

Notes

1 ABS and MBS include RMBS, CMBS, mortgage-backed agencies, commercial mortgages, CDOs and CLOs including consumer loan type securitisations. UK RMBS excludes CMBS. Transactions where issuer and investor are related parties are included subject to Dealogic's discretion.

2 Where appropriate we have rounded totals. Total row takes into account all deals, subtotals are for top 10 only.

Source: Data from Dealogic

2013 – Q2 2016 UK RMBS bond bookrunner ranking for top 10

Q1-2 2016

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Lloyds Banking Group	5,956	8	31.9
2	Bank of America Merrill Lynch	2,796	5	15.0
3	Morgan Stanley	2,015	3	10.8
4	Natixis	1,774	2	9.5
5	Credit Suisse	1,753	2	9.4
6	Citi	1,511	5	8.1
7	HSBC	909	3	4.9
8	Deutsche Bank	656	2	3.5
9	Barclays	475	2	2.5
10	BNP Paribas	332	2	1.8
	Subtotal	**18,179**	**34**	**97.5**
	Total	**18,926**	**14**	**100.0**

Q1-4 2015

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	Barclays	3,790	5	22.3
2	Bank of America Merrill Lynch	3,141	11	18.5
3	Morgan Stanley	2,402	7	14.2
4	Citi	2,195	7	12.9
5	Deutsche Bank	1,115	3	6.6
6	Credit Suisse	1,002	2	5.9
7	Lloyds Banking Group	825	5	4.9
8	RBS	712	2	4.2
9	HSBC	542	2	3.2
10	Banco de Sabadell SA	278	1	1.6
	Subtotal	**16,001**	**45**	**94.3**
	Total	**17,185**	**19**	**100.0**

Q1-4 2014

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	HSBC	733	2	13.3
2	JPMorgan	715	2	12.9
3	Barclays	567	2	10.3
4	RBS	494	2	8.9
5	Lloyds Banking Group	425	3	7.7
6	Deutsche Bank	367	2	6.6
6	Bank of America Merrill Lynch	367	2	6.6
6	Santander	367	2	6.6
9	UniCredit	352	1	6.4
10	UBS and BNP Paribas	448	2	8.2
	Subtotal	4,835	20	87.5
	Total	**5,527**	**9**	**100.0**

Q1-4 2013

Rank	Bookrunner parents	Deal value (Proceeds, $m)	Number	Share (%)
1	JPMorgan	914	3	16.5
2	Barclays	896	3	16.2
3	RBS	794	3	14.3
4	Deutsche Bank	744	2	13.4
5	Lloyds Banking Group	464	3	8.4
6	Credit Suisse	448	2	8.1
7	National Australia Bank	209	1	3.8
8	Natixis	191	1	3.5
9	Bank of America Merrill Lynch	189	1	3.4
9	Santander	189	1	3.4
	Subtotal	5,038	20	90.9
	Total	**5,699**	**12**	**100.0**

Performance

2.8 Figure 12 shows the performance of the UK RMBS market compared with the other largest player in the market, the Netherlands. Specifically, it shows the spreads of AAA retail mortgage-backed securities. The spread is the interest rate of an asset over and above a benchmark cost of borrowing. Spreads are inversely correlated to the price. An increase in spread reflects worsening market conditions as it means the investors are asking for higher compensation compared to a benchmark rate (a higher rate of interest) to take on risk. Conversely, a low spread reflects that investors are asking for less compensation to take on risk, which means they are more confident in the market so will pay more for it. Figure 12 shows that conditions for MBS dramatically worsened during the financial crisis, peaking at the end of 2008. They subsequently improved but remained high until 2012 with a high level of volatility. From early 2012, the spreads decreased further, reaching a new low since the crisis at the end of 2014. However, during the second half of 2015 market conditions slightly worsened again due to a decline in commodity prices and softer economic growth and currency devaluation in China.

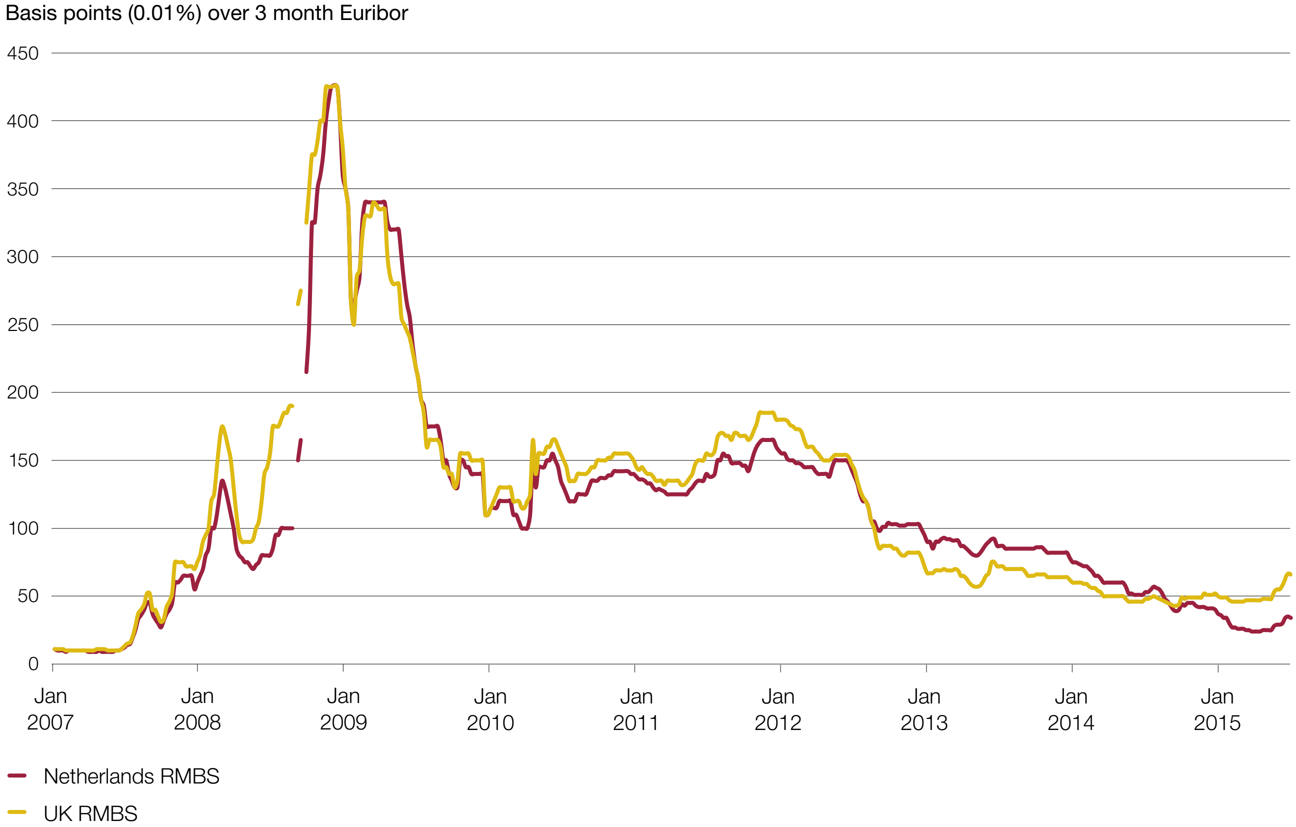
2.9 Figure 13 on page 24 shows that other types of assets performed similarly in recent years – namely conditions were improving until the second half of 2015, at which point they started worsening again with the exception of the Dutch RMBS market. Riskier securities such as those backed by commercial property and buy-to-let mortgages worsened more than the RMBS market.

2.10 Figure 14 on page 25 shows that Granite securities also followed a similar pattern. Triple A and B tranches of Granite outperformed the market until mid-2014, followed by some increase in volatility until the end of the first quarter of 2015. In the second half of 2015 spreads worsened again due to the weaker overall market conditions.

Figure 12

Comparative performance of AAA retail mortgage-backed securities between 2007 and 2015

Market conditions for mortgage-backed securities dramatically worsened during the financial crisis but have recovered since



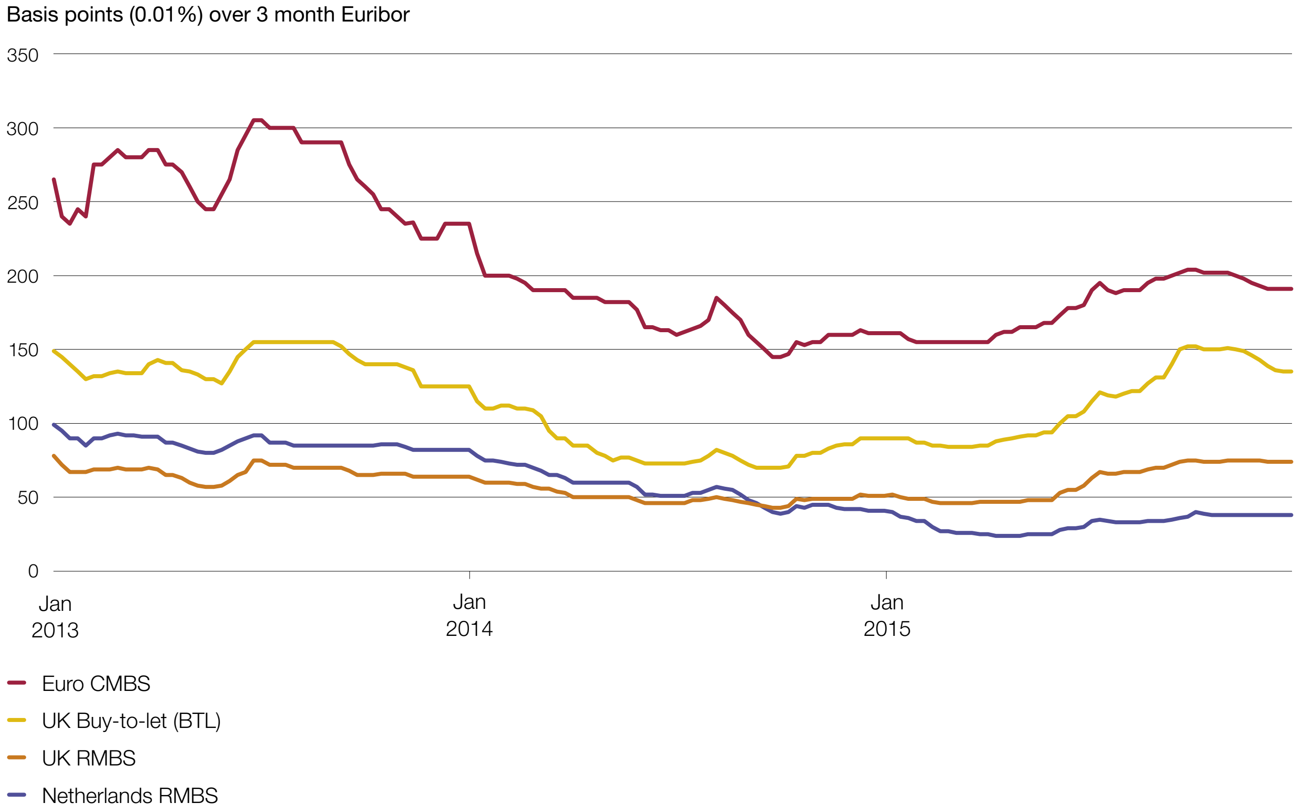
Note

1 The spreads for Euro-denominated securities are calculated against the three-month Euribor rate. Those for UK securities against the GBP three-month Libor rate.

Source: J.P. Morgan data; National Audit Office analysis

Figure 13
Comparative performance of securities

The performance weakened in the second half of 2015



Note

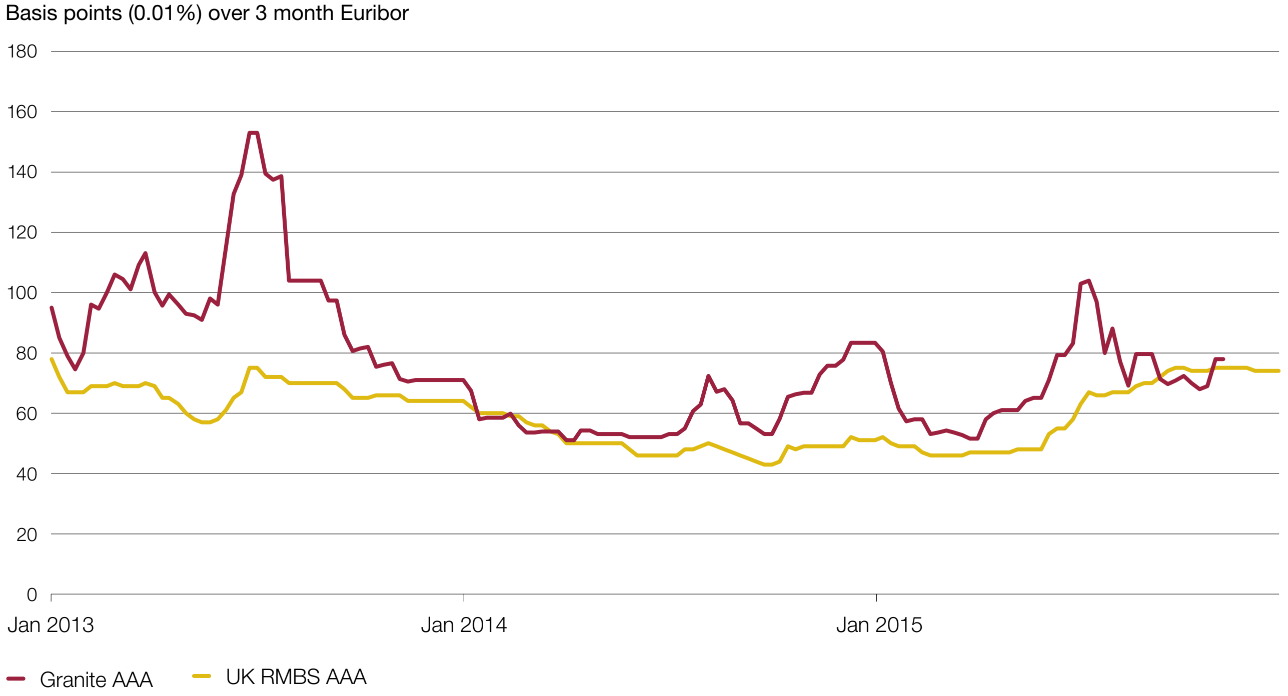
1 The spreads for Euro-denominated securities are calculated against the three-month Euribor rate. Those for UK securities against the GBP three-month Libor rate.

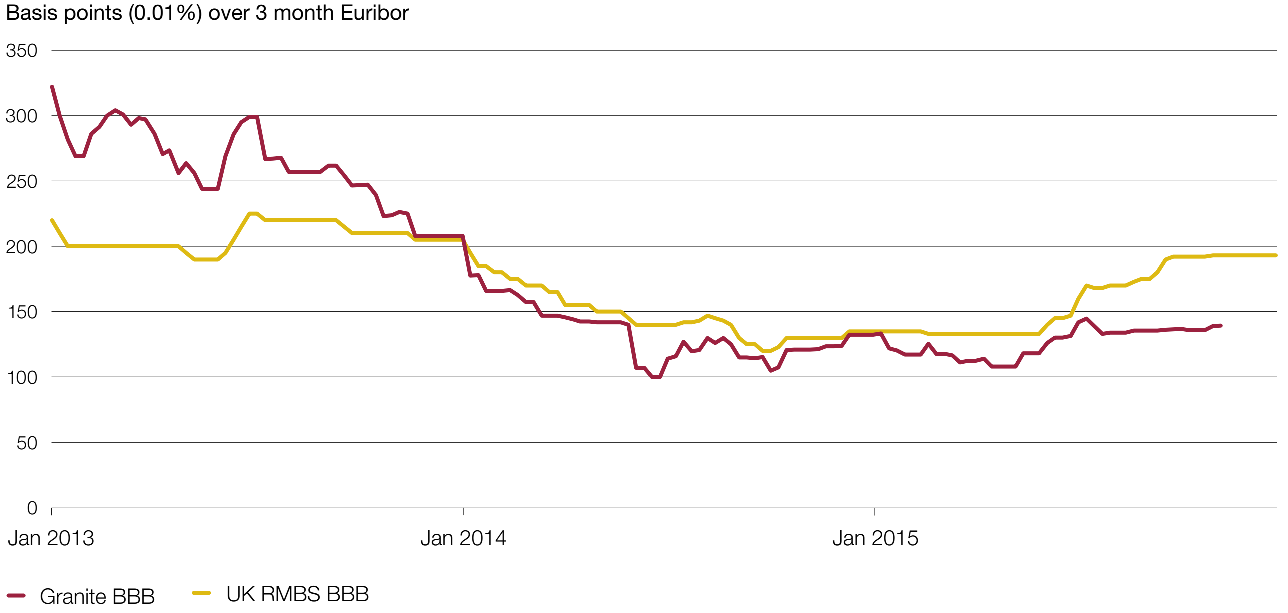
Source: J.P. Morgan data; National Audit Office analysis

Figure 14

Performance of Granite securities compared to the UK RMBS market

Granite securities slightly outperformed the market





Note

1 The Granite spreads are for the Euro-denominated tranches so they are calculated against the three-month Euribor rate. The UK RMBS spreads are calculated against the three-month GBP Libor rate.

Source: J.P. Morgan data; National Audit Office analysis

Appendix One

Granite Securitisation

Introduction

1 'Granite Master Trust' is the SPV that Northern Rock set up in 2001 to issue 'Granite' securities from a pool of underlying residential mortgages. As a master trust, it was able to issue several batches of securities across the years. Prior to the nationalisation of Northern Rock, Granite would buy mortgages from Northern Rock using funds raised from issuing securities. The investors would then be paid using the interest and principal repayments on the mortgages held within Granite.

2 Northern Rock obtained regular payments from Granite through its seller's share. However, in November 2008, it failed to keep up its seller's share at the appropriate level, causing it to breach the 'non-asset trigger' (explained in paragraph 1.15). Consequently, Granite moved into 'pass-through' mode, meaning that Northern Rock Asset Management would not receive principal repayments until 2020.[5] When Northern Rock was nationalised in 2008, the UK government inherited this seller's share. As at 30 June 2015, the seller's share percentage was 36.37%.

Overview of the Granite assets

3 In 2015, UKAR sold 270,808 loans totalling nearly £13.3 billion, which was reported on by the National Audit Office in *The £13 billion sale of former Northern Rock assets*.[6] Of the value of the portfolio, 91% was made up of Granite mortgages from the Granite securitisation vehicle, as shown in **Figure 15**.

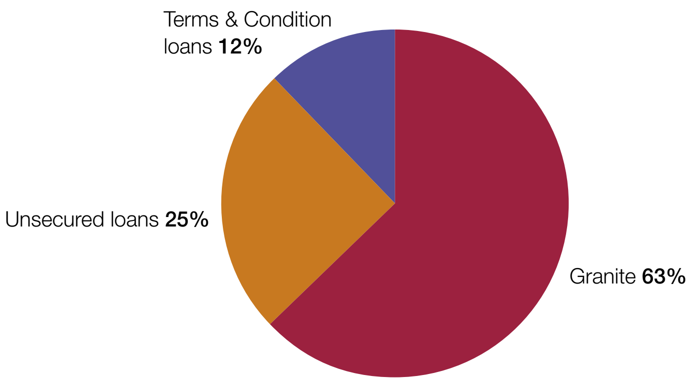
4 The performance of the Granite mortgages has improved since the end of 2012. They performed better on average than other NRAM (Northern Rock Asset Management) assets held by UKAR but worse than the market average calculated by the Council of Mortgage Lenders (CML).[7] Typically, a mortgage is considered to be in arrears if the borrower is behind with repayments by three months or more. At as 30 June 2015, 2.94% of the mortgages were in arrears by three months or more. **Figure 16** on page 28 shows the trend over time, including repossessions (0.05% of properties had been repossessed in the month of June).

5 Assuming the investors continue to be paid off at the current rate.
6 Comptroller and Auditor General, *The £13 billion sale of former Northern Rock assets*, Session 2016-17, HC 513, National Audit Office, July 2016.
7 The market average includes new lending, which NRAM, B&B and Granite are not allowed to do.

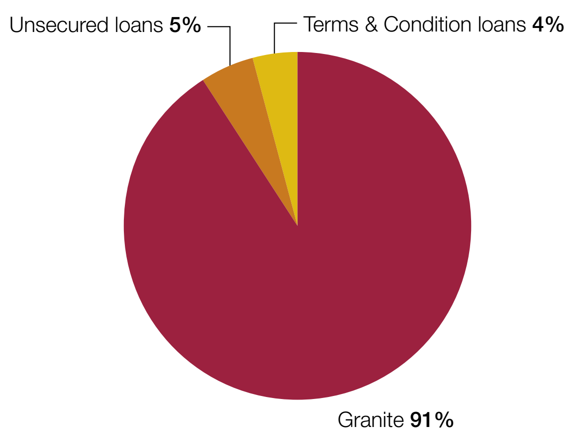
Figure 15
Composition of the £13.3 billion portfolio sold

Granite made up 60% of the number of loans in the portfolio and made up 90% of the loans by value

Breakdown of the number of loans in the portfolio
270,808 loans made up of:



Breakdown of the value of the portfolio
£13.26 billion made up of:



Notes

1 Data from 30 June 2015.

2 The Granite mortgages are 'secured loans' because they are backed by an asset, namely residential property. Unsecured loans are not backed by any assets.

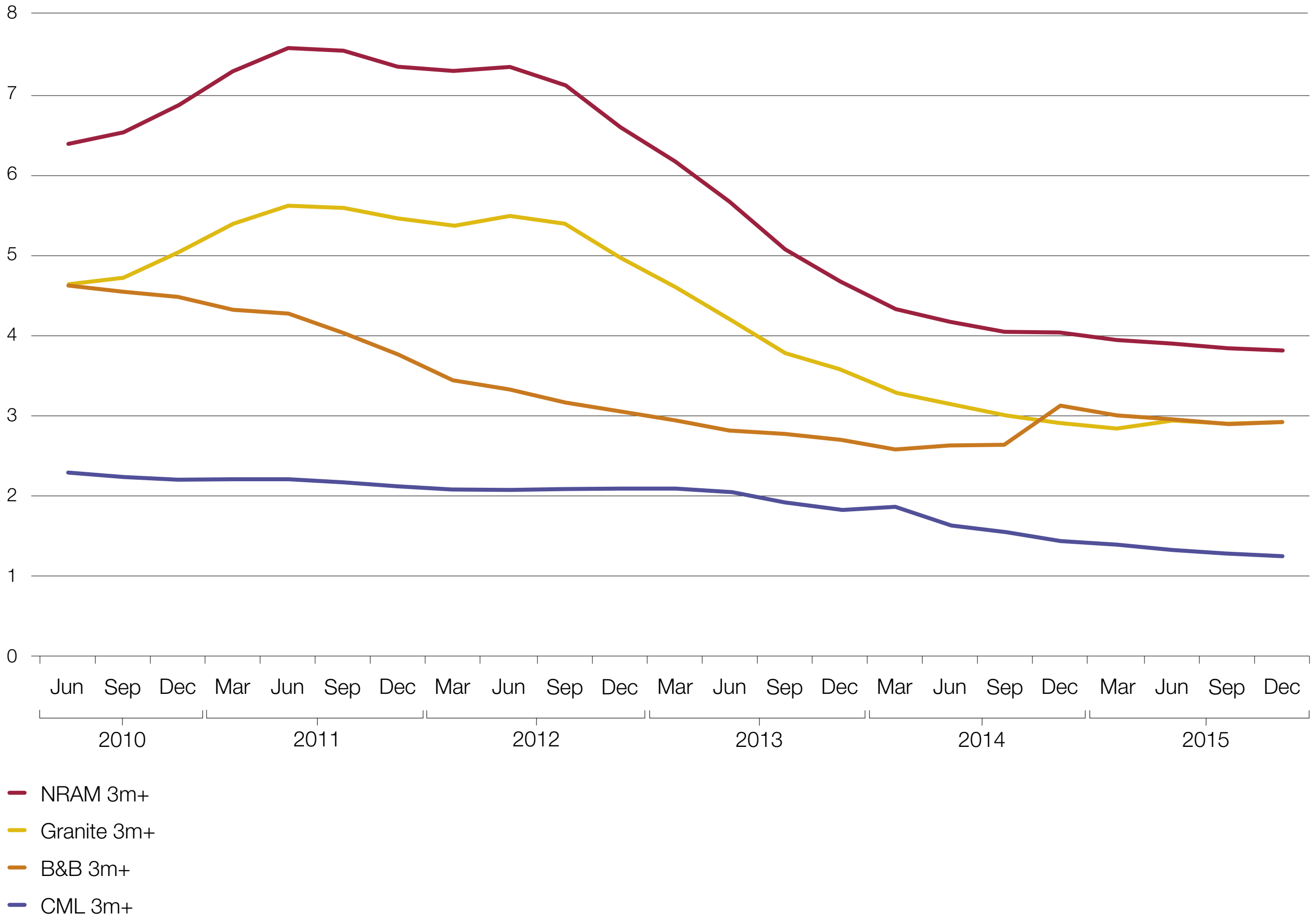
Source: National Audit Office analysis

Figure 16

Historic payment arrears of the market versus Granite

Payment arrears in Granite improved substantially over time

Percentage of loan more than 3 months in arrears



Notes

1 CML: Council of Mortgage Lenders. This includes new lending, which NRAM, B&B and Granite are not allowed to do.

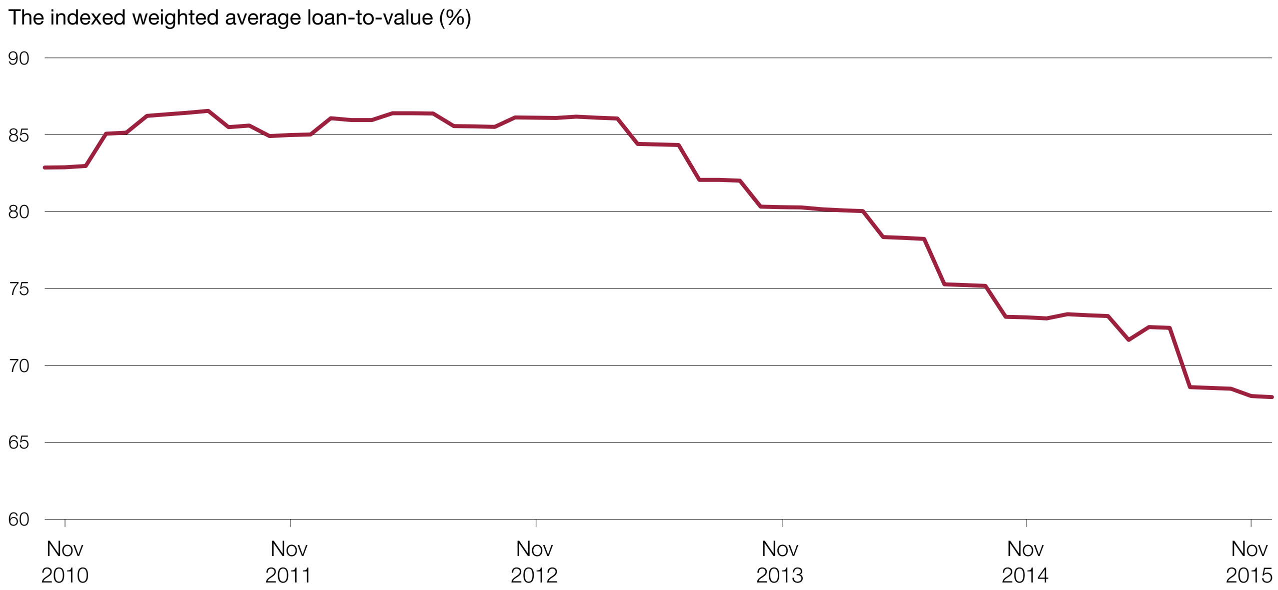
2 The NRAM and B&B (Bradford & Bingley) loans are also owned by UKAR.

Source: UK Asset Resolution (UKAR) analysis

5 In line with the above, the average loan-to-value (LTV) of the loans has been decreasing since the end of 2012, as shown in **Figure 17**. As at 30 June 2015, the indexed weighted average LTV was 72.44%, which means that, on average, borrowers still owe 72.44% of the current value of their home. A lower LTV is better as it translates into a greater likelihood that the mortgages will be paid off – borrowers with less money to repay have a greater motivation to maintain their repayments, and even if their home has to be repossessed, the bank is more likely to recover the amount outstanding on the mortgage.

Figure 17
Granite's loan-to-value ratio

Since 2012 Granite's loan-to-value ration has improved



Notes

1 The data represents the position at the end of each month.

2 Indexed to take into account house price inflation. Each loan LTV is weighted by the relative size of the loan.

Source: National Audit Office analysis

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