

Debt Instruments and Eurosystem Eligible Assets – A Revisit

By Diarmuid Murphy*

ABSTRACT

European capital markets currently include a wide variety of debt instruments issued by institutions and corporations, which form part of their risk management strategies while also being a source of funding over the short-, medium- and longer-term. On the back of increased financial innovation in certain classes of debt instruments, the Eurosystem, as a holder of collateral, has amended its eligibility criteria in relation to the acceptance of certain debt instruments in order to increase transparency. The present article first explores the possible rationale behind the selection of the specific eligibility criteria in relation to asset-backed securities (ABS). It then examines the specific structures and quantities of euro denominated marketable assets included by the Central Bank and Financial Services Authority of Ireland (CBFSAI) in the ECB's Single List of eligible collateral and compares the number of instruments included against the quantity reported by other national central banks (NCBs).

1. Introduction

Issuance of debt instruments in Ireland has changed dramatically in recent times (Doran and Murphy, 2005) and in the last two years Ireland has firmly established itself as a major centre in terms of international debt instrument issuances. Listings of debt instruments on the Irish Stock Exchange (ISE) have reached record levels as various entities avail of the funding and regulatory advantages (in the case of banks) associated with the issuance of particular instruments. One debt instrument class that has notably evolved in recent years is that of off-balance-sheet securitisation.

Off-balance-sheet securitisation is a method whereby a company can raise capital by using some or all of its assets to 'back' an asset-backed security (ABS) issued to the marketplace. The main parties to a securitisation are the originator of the underlying assets and the issuer of the ultimate securities (often referred to as a Special Purpose Vehicle (SPV)). There are two broad forms of securitisation. The first is often termed *traditional*, where the underlying portfolio is sold, typically without recourse, to the issuer of the ABS instruments, ensuring the 'true sale' of the credit risk embedded in the assets. The second form is *non-traditional* securitisation, where the originator uses credit

* The author is an economist in the Collateral Policy Section of the Financial Markets Department (FMD). The views expressed in this article are the personal responsibility of the author and are not necessarily those held by the CBFSAI or the European System of Central Banks (ESCB). The author would like to thank colleagues in FMD for invaluable assistance in compiling the data included in this analysis. The author would also like to thank Pat Treanor, Peter Sinnott, Paul McBride, David Doran, and Benedict Weller (European Central Bank), for extremely helpful comments. Queries relating to eligible assets and in particular the Single List can be addressed to the Eligible Assets Unit at eligibleassets@centralbank.ie.

derivatives to achieve the same credit-risk transfer as *traditional* ABS, but without physically transferring the assets from the balance sheet of the originator to the security issuing entity (SPV).

The European Central Bank's Eligible Asset Database (EADB) – an online database of the Single List¹ of assets, which are eligible for use as collateral in Eurosystem credit operations – includes marketable assets from a range of issuing entities, with varying maturities and risk profiles. On 13 January 2006, the European Central Bank (ECB) amended its criteria in relation to ABS and now only accepts instruments which correspond with the first category of securitisation above, i.e. 'true sale'. The amended criteria now stipulate that there must be an irrevocable sale of the cash generating assets, moving them off the balance sheet of the originator to the issuer; and secondly, following this sale, that the assets are put beyond the reach of the originator and any associated parties.

The remainder of this paper is structured as follows. The next section provides a brief description of the different ABS structures currently in the marketplace, while also examining the ECB's amended eligibility criteria for ABS. Section Three examines the type and structure of instruments currently included by the Central Bank and Financial Services Authority of Ireland (CBFSAI) on the Single List of collateral. Following on from this analysis, Section Four undertakes a broad comparison of marketable debt instruments added to the EADB by country of reference market while also identifying specific trends compared to 2005. The final section concludes.

2. Brief Analysis of ABS Structures and Rationale for the Amended ECB Eligibility Criteria

2.1 Brief Analysis of ABS

There are two broad categories of ABS transactions. The first is termed *traditional* securitisations, which are essentially securities backed by large homogenous asset pools, such as residential/commercial mortgages, credit card and auto loan receivables. On the other hand, *non-traditional* securitisations (where *Collateralised Debt Obligations* (CDOs) make up the majority of issuances) are backed by smaller pools of more heterogeneous assets, including corporate bonds, and 'pieces' of

¹ On 1 January 2007, the Single List replaced the two-tier collateral system, which had been in place since the beginning of Monetary Union. Under the old framework, tier one assets consisted of marketable debt instruments that fulfilled uniform euro-area-wide eligibility criteria specified by the ECB. Tier two assets, on the other hand, consisted of additional assets, both marketable and non-marketable, which were of particular importance to national financial markets and banking systems and for which eligibility criteria were established by the national central banks (NCBs), subject to the minimum eligibility criteria established by the ECB.

other ABSs and other CDOs. The market for CDOs has developed in Europe over the last number of years², and various institutions have developed innovative structures with the ultimate goal of exploiting arbitrage opportunities, availing of regulatory arbitrage, improving risk management or simply reducing the cost of funding.

Across both categories an important distinction is made by the way the credit risk of the underlying portfolio is transferred from the originator (seller) to the issuer of the security. This credit risk transfer can either be carried out through the sale of the underlying portfolio or through credit derivatives referencing names or assets included in the portfolio. One possible way of classifying both these *traditional* and *non-traditional* categories is to examine the purpose of the transaction, the securitisation method used, and the portfolio backing the transaction.

2.1.1 Traditional ABS Transactions

– Purpose of the Transaction

Traditional ABS transactions serve the purpose of reducing the balance sheet of the originator of the assets (normally banks) in order to manage their economic capital and avail of regulatory arbitrage, while also off-loading unwanted credit exposures. In addition, these structures provide a means for the originator of the securitised assets to benefit from their origination skills, where for example, a bank can sell all or a portion of its mortgage book in order to obtain funds to extend more mortgages.

– Securitisation Method

This method of securitisation involves the legal transfer of obligations (such as mortgages) to a third party, normally an SPV, which in turn issues debt instruments (ABS) backed by these obligations. This securitisation structure is commonly referred to as true sale (also called 'cash' structure) where if this isolation is not achieved, the debt financing cannot, under normal circumstances, be rated higher than the seller's secured on-balance-sheet obligations.

– Assets Backing the Transaction

Traditional asset-backed securitisation can be broken down into two broad categories, namely, those backed by 'corporate-related' assets and those backed by 'consumer-related' assets. The underlying pools backing 'corporate-related' assets are generally trade receivables, corporate performing and non-performing loans, leases, whole-business assets, commercial

² The CDO securitisation category was the second largest securitisation type in 2006 with issuance levels at €88.0 billion (ESF, 2007a). Issuance volumes in the first quarter of 2007 are already three times the issuance volumes of the first quarter in 2006 (see ESF, 2007b).

assets and commercial mortgages³. On the other hand, the underlying pools of 'consumer-related' assets can be subdivided into residential mortgages, consumer loans, auto loans and credit card receivables.

2.1.2 Non-traditional ABS Transactions

– Purpose of the Transaction

The purpose of the transaction very much dictates the nature of the CDO in question. Balance sheet CDOs serve the purpose of reducing the balance sheet of the originator of the assets (by removing these assets or the risks associated with them). Arbitrage CDOs on the other hand are created to serve the purpose of taking advantage of achieving a potential yield arbitrage between the underlying portfolio and the cost of funding the CDO through the issuances of the notes. Arbitrage CDOs can be statically or actively managed, whereby the underlying pool in actively managed transactions is not fixed but can evolve over the lifetime of the transaction as the CDO's collateral manager reinvests the proceeds of assets that have matured.

– Securitisation Method

Balance sheet CDOs and Arbitrage CDOs can be created as cashflow transactions or synthetic securitisations. In the case of a cash transaction the CDO is collateralised by a portfolio of cash assets, where principal and interest payment flows from the underlying pool are used to pay the noteholders. On the other hand, in a synthetic structure there is no transfer of the underlying portfolio and instead credit derivatives are used to transfer the credit risk inherent in the underlying assets. Examining the liability side of the structure, synthetic CDOs can be funded, unfunded or partially funded in structure. In the case of a funded transaction, the SPV sells protection on the underlying portfolio (via a credit default swap (CDS)) and issues notes which are linked to the credit quality of the underlying portfolio. The proceeds of these credit-linked notes are invested in high quality securities, such as government bonds, where the principal and interest received, along with the premium received from the originator for the protection are then paid to the noteholders. The transaction is termed 'funded' as the noteholders pay funds for each note tranche⁴ up front and at maturity receive the remaining notional that has not been used to compensate for credit losses beyond some predefined level.

³ A non-performing loan is a loan that is in default for 3 months or close to being in default, depending on the terms of the loan agreement.

⁴ A tranche or what is often termed a 'class' of a transaction is essentially referring to a slice of a securitisation, which forms part of the overall securitisation deal. Securitisations can have many tranches, ranging from senior tranches, which are more resilient to credit losses (normally rated AAA) to junior/unsecured tranches, which are more exposed to credit events which is reflected in their rating (normally BB). Generally, the senior tranche has first claim on the collateral's cash flows to cover its interest and principal payments, with the junior tranche having second claim and the equity tranche claiming the residual.

On the other hand, in the case of an unfunded transaction, the structure is entirely backed by a credit default swap, leaving the structure open to counterparty risk as, should a credit event occur, the ability of the SPV to compensate the originator depends solely on the credit worthiness of the buyers of the CDOs. A partially funded transaction is a combination of both a funded and unfunded transaction, where the credit risk is transferred via a CDS and through issued securities.

A further distinction can be made in relation to arbitrage CDO issuances. The first is what is termed a cash flow CDO where the manager is not allowed to trade actively in the underlying assets but instead the primary focus is on satisfying the structure's payment obligations. In contrast, in a market value CDO, payments to investors are ultimately determined by gains made on the marked-to-market value of the collateral pool, therefore implying specific focus by the manager on maximizing the portfolio's value.

– *Assets Backing the Transaction*

In contrast to *traditional* ABS instruments, CDOs are not standardised but instead are tailored to individual needs of originators and investors, where they can be backed by a pool of corporate debt and/or synthetic instruments⁵. Portfolios can comprise investment and non-investment grade corporate securities, hybrid corporate securities, loans to corporate entities in connection with leveraged buyouts or mergers and acquisitions, and CDO notes backed by assets of emerging market sovereigns and blue chip corporates.

2.2 The Amended ECB Eligibility Criteria in Relation to ABS

In the formulation of the Eurosystem collateral framework at the start of Monetary Union, no specific consideration was given to the ABS market as the European securitisation market was only beginning to establish itself as a presence in European bond markets. However, over the intervening years the market has grown rapidly⁶ and in response on 13 January 2006, the Eurosystem sought to refine its eligibility criteria in order to increase transparency for market participants (see ECB, 2006a). Since 1999, ABS fell under the broad definition of debt instruments stipulated in chapter 6.2 of the General Documentation (ECB, 2004). The two general eligibility rules which ABS instruments had to meet from 1999 were, first, the requirement to have 'a fixed, unconditional principal amount' and, second, the requirement that the structure be 'not

⁵ See Moody's (2003) for detailed analysis of the different motivations for entering a CDO.

⁶ At the end-2006, volumes outstanding of European ABS issuance broke the one trillion euro mark for the first time, with €390bn in new issuances. (Barclay's Capital, 2007, p. 2).

subordinated'⁷. The first requirement was, in the past, interpreted by the Eurosystem to rule out ABS with synthetic structures where the credit risk has been transferred to the SPV via the use of credit derivatives rather than via the sale of the underlying assets. As a collateral holder, the second requirement ensures that the Eurosystem's claims to the collateral in the event of issuer default rank above those of any other noteholder.

Market participants, however, expressed a desire for greater clarity in the eligibility criteria. In particular the requirement of a 'fixed unconditional principal amount' seemed to have created scope for interpretation and introduced a degree of ambiguity with regard to the criteria. The fundamental feature of ABS is that the payment of principal and interest to noteholders is conditional upon the performance of the underlying portfolio backing the transaction, which in effect implies that there is no defined fixed unconditional principal amount over the life of the notes issued. Therefore, unlike plain vanilla corporate bonds, government bonds and other such debt instruments that the Eurosystem accepts, if this criterion was interpreted strictly it could have been argued that all ABS would not have met this eligibility criterion. Discussions with market participants have shown that for lead managers/issuers who contact the NCBs, gaining ECB eligibility is often an important factor in ensuring liquidity/marketability in the primary or secondary market for these particular assets. On foot of this, it was clear that the market participants saw the need for transparent criteria in order to aid them structure these transactions in order to improve liquidity for these assets in the marketplace.

The overall goal of the amended eligibility criteria is to make it more transparent that the Eurosystem only accepts ABS that have been structured by what is known as a 'true sale' of the assets from the seller to the issuing SPV, and not synthetically transferred. But why is this the case?

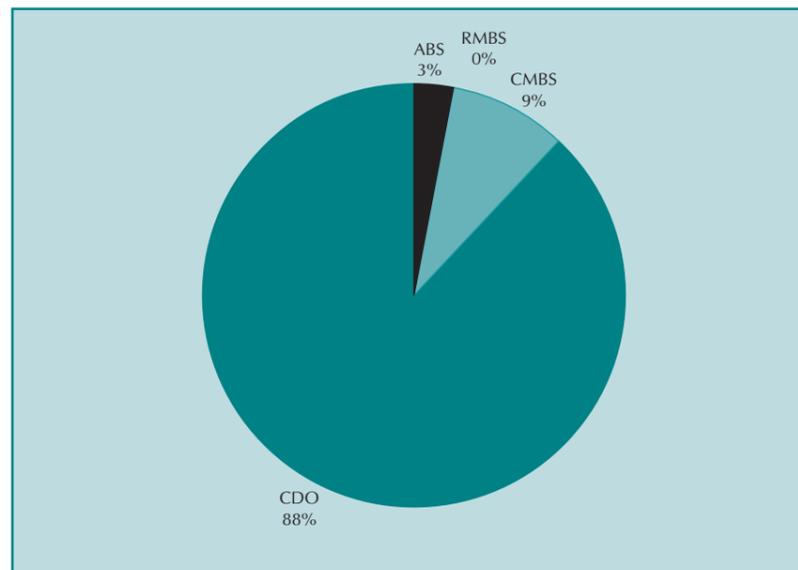
2.3 Rationale for the Amended ECB Eligibility Criteria

In addition to providing greater clarity for market participants as outlined above, there are four main reasons behind the adoption of the ECB's true sale criterion:

- the rating methodology is more reliable;
- collateral valuation;
- structural innovations in asset classes;
- regulatory developments and policies of other monetary authorities.

⁷ Subordination can take two forms, both prior to bankruptcy of the issuer and post bankruptcy of the issuer. Examining the latter, the waterfall structure of principal and interest payments for the transaction is distributed to subordinated tranches prior to default; however, this changes post bankruptcy where this is lost to the more senior tranches when the performance of the underlying assets deteriorates.

Chart 1: Moody's EMEA Securitisation Downgrades Year-end 2006



Source: Moody's, 2007a.

2.3.1 The Rating Methodology is More Reliable

Traditional securitisations, such as those backed by residential mortgage assets, are subject to a low level of idiosyncratic risk as they are backed by granular portfolios⁸ and can therefore be rated by use of so-called 'tried and tested statistical analysis' of historical data. This analysis is well established and has proved to be rather reliable with a very low level of rating downgrades where conservative investors would now consider the senior tranches of *traditional* ABS to be a very safe investment. At the other end of the spectrum are CDOs, which are subject to more idiosyncratic risk. In the past, synthetic CDOs – because of their higher leverage⁹, complexity and default rate assumptions – have experienced much higher rating volatility compared to other asset securitisation structures. Chart 1 shows the percentage breakdown of European¹⁰ transactions rated by Moody's that were downgraded in 2006. As is evident, there were no downgrades in Residential Mortgage Backed (RMBS) transactions which fall under the *traditional* ABS category. For CDOs, which represent *non-traditional* transactions, there were 158 actions of which 83 were upgrades, while 75 were

⁸ Granularity is a decisive factor in the overall risk profile of securitisation transactions. Granularity refers to the number of exposures in the underlying portfolio. The higher the granularity, the more positions are in the underlying portfolio. This implies a higher degree of diversification in the portfolio, which in turn reduces concentration risk of the overall portfolio. Granularity within a pool of exposures is an important determinant of how risk is distributed across tranches: securitisations of non-granular pools shift greater amounts of systematic risk to more senior tranches compared to highly granular pools. Less granular pools will tend to exhibit greater probabilities of experiencing relatively high loss rates.

⁹ The motivation behind synthetic CDOs typically comes from a party seeking credit exposure to a portfolio of names it cannot obtain other than by entering into a credit derivative. This derivative provides a means for the party to amplify its exposure to credit risk for a given capital commitment, hence implying leveraged exposure.

¹⁰ European securitisations are not analysed independently and are instead included under the sector heading 'European Middle-East and Africa' (EMEA) by Moody's.

downgrades. 148 rating changes were in relation to synthetic tranches, where of the 77 upgrades, 63 were funded, 14 were unfunded, while of the 71 downgrades, 42 were funded and 29 were unfunded. 10 rating adjustments were in relation to cash transactions, of which six were upgraded while four were downgraded. Of the six upgrades two were classified as arbitrage transactions while the remaining four were classified as balance sheet cash flows. Of the four downgrades, one was classified as an arbitrage transaction while the remaining three were classified as CDO transactions backed by high-yield loans.

So far, none of the rating agencies' models have been sufficiently tested in the view of various recent publications by the Committee on the Global Financial System (CGFS), Bank for International Settlements, Banque de France and the ECB¹¹. The CGFS working group concluded that the methodology of rating agencies for *traditional* ABS instruments (including transactions backed by large pools of loans of small and medium sized enterprises) appears to be quite robust. However, it found for CDOs backed by portfolios with a relatively high individual obligor concentration, the rating process appears to be far less robust and tested. Due to the innovative nature of synthetic products, the group found that the techniques used by rating agencies tend to lag behind those used by the market.

Looking at historical trends, Table 1 examines the rating volatility of Moody's rated EMEA transactions over the period 1988-2006. Higher volatility is clearly evident in the CDO sector; however, data were not available to analyse the types of CDOs that experienced the most rating volatility.

Table 1: Summary of European Securitisation 12-Month Rating Transitions

Asset type	Rating Volatility ¹² (1988-2006)
ABS	8.39%
CDO	35.66%
CMBS	13.06%
RMBS	9.59%

Source: Moody's, 2007b.

Moreover, recent studies have shown that volatility varies within the CDO category, where managed CDOs are seen to sustain less rating volatility than static CDOs. Fitch states that a manager

¹¹ See CGFS (2005), Fender and Mitchell (2005), Cousseran and Rahmouni, (2005), ECB (2005).

¹² Rating volatility is composed of the weighted upgrade weight plus the weighted downgrade weight. An example of a weighted downgrade weight is when a security is downgraded from Aaa to Aa3 (three downgrades in the weighted calculation), while a downgrade from Aaa to Aa3 is counted as only one downgrade in an unweighted calculation.

in an actively managed CDO contributes more to ratings stability and that managed transactions appear less likely to have their ratings downgraded compared to static transactions (Fitch Ratings, 2006a).

2.3.2 Collateral Valuation

In *traditional* ABS markets, in particular in the RMBS market, the bulk of securities are issued by large and well-established issuers (so-called 'benchmark' issuers) and price availability, in particular for the triple-A rated tranche, is now rather comprehensive. The level of complexity associated with synthetic CDOs, on the other hand, makes them very difficult to price with in-house theoretical models. Elements such as credit-spread movements in the underlying credit default swaps, the quality of the underlying CDS contracts and default correlation (see Fitch, 2006b) add to the complexity in deriving accurate prices for these instruments.

2.3.3 Structural Innovations in Asset Classes

Differentiating between true sale and synthetic transactions allows the Eurosystem to monitor the performance of these new asset classes and acquire an understanding of their complex structures and inherent risks. As European investors search for higher returns, arrangers and lead managers now seek to provide other sources of yield enhancement, using innovative structures such as step-up subordination CDOs, constant maturity credit default swaps (CMCDS), constant proportion debt obligations (CPDO), and forward starting CDOs¹³.

2.3.4 Regulatory Developments and Policies of other Monetary Authorities

Recent 'special treatment' with regard to true sale is also reflected in developments at both a regulatory level and in the policy of certain central banks. Under Basel I, securitisation had become a common way for banks to reduce regulatory capital. Basel II aims to better align regulatory capital with economic capital and distinguishes between true sale and synthetic securitisations. Moreover, Basel II makes a clear distinction between these two types of securitisation techniques in order to apply an appropriate regulatory treatment, where traditional (retail) forms of securitisation qualify for lower risk ratings¹⁴.

The Eurosystem is not the only monetary authority to accept true sale securitisation structures as part of their collateral framework. The Bank of Japan has also adopted the requirement that the asset-backed securities that it accepts in its repurchase operations must be of a 'true sale' structure, where also the SPV is bankruptcy remote¹⁵.

¹³ Please refer to glossary of terms for a brief description of each of the structures described.

¹⁴ See Basel Committee on Banking Supervision, (2004a) and (2004b).

¹⁵ See 'Guideline on Eligible Collateral', Bank of Japan.

3. Trends in Irish Debt Instruments and the CBFSAI's Eligible Assets

3.1 A Brief Examination of Some Trends in the Irish Debt Instrument Industry

International securities statistics compiled by the Bank for International Settlements (BIS) illustrate the growth in debt instruments' amount outstanding by residence of issuer, over the period 1996-2006¹⁶. Table 2 illustrates a growing issuance trend for international bonds and notes: Ireland was seventeenth of 23 developed countries in terms of amount outstanding in bonds and notes in 1996, but since 2004 has always been in the top ten. In terms of volume outstanding, Irish issuance grew from a base of USD26 billion in 1996 to USD659 billion at end-2006.

Table 2: International Bonds and Notes by Residence of Issuer: All Issuers

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	USD billion										
All countries	3,081	3,431	4,179	5,109	5,996	7,197	8,832	11,136	13,277	13,961	17,562
Developed countries	2,190	2,393	2,975	3,805	4,594	5,722	7,191	9,292	11,265	11,925	15,048
Ireland	26	33	39	44	47	58	81	167	278	368	659
Rank	17th	13th	14th	14th	14th	14th	14th	12th	9th	8th	8th

Source: BIS.

Note: Amounts outstanding are at year-end. 'All Issuers' includes financial institutions, corporate issuers and government.

Examining the growth across categories, Table 3 shows that a significant portion of the growth in recent years can be attributed to the increased activity of the 'financial institution' sector, where Irish financial institutions now account for 96 per cent of debt issuances, compared to just 56 per cent in 1996. This corresponds with the growth in popularity of the IFSC as a major financial centre along with the enactment of legislation governing on-balance sheet securitisation in Ireland (*Asset Covered Securities Act 2001*) making the issuance of these instruments possible. The increased use of MTNs and covered bonds as a source of funding for these institutions is reflected in the increased number of these assets included by the CBFSAI on the EADB in recent years.

Table 3: International Debt Securities by Category of Irish Nationality Issuer

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Percentages										
Issuers	100	100	100	100	100	100	100	100	100	100	100
Fin. Instit.	56	62	71	76	81	73	78	87	93	95	96
Corp. Issuers	2	5	2	2	4	9	11	10	6	4	3
Government	42	32	27	21	14	18	11	3	1	0	0

Source: BIS.

Note: Data is based on the sector of the borrower itself and not on the sector of the parent company of the borrower or any guarantor. Amounts outstanding are at year-end. 'All Issuers' include financial institutions, corporate issuers and government.

¹⁶ Country of residence is determined by the residence of the borrower. Nationality of issuer is determined by the country of incorporation of the parent company of the borrower.

3.2 Analysis of Debt Instruments Reported by the CBFSAI to the ECB's EADB

The CBFSAI is responsible for including on the EADB all euro denominated debt issuances listed on the ISE that meet the Eurosystem's eligibility criteria. Table 4 provides a detailed breakdown of the type of assets added to the EADB by the CBFSAI as at 20 March 2007 and some specific features of the instruments. The first column shows the ECB classification of the assets along with a further disaggregated asset class description. The second column shows the number of individual assets issued in each category that have been added to the EADB by Ireland. The third column shows the aggregate amount outstanding of the assets in each category as at 20 March 2007. The final three columns demonstrate the location and type of issuer and identify how many of the assets have been issued by the Irish Government, SPVs located in Ireland, non-Irish issuers and non-SPV Irish issuers.

Table 4: Marketable Assets Added by the CBFSAI by Category and Country of Reference Market (as at 20 March 2007)

Asset type	No. of Issues	Amount Outstanding € million	No. of Issuers			
			Irish Government	Irish SPV	Irish non-SPV	Non-Irish
Bonds	14(18)	34,557	11(10)	0	3(7)	0(1)
–Government Bonds	5	24,600	5	0	0	0
–Agency ¹⁷	1	95	0	0	1	0
–Debentures	6	6,862	6	0	0	0
–Floating Rate Bond	2	3,000	0	0	2	0
Medium Term Notes	277(23)	55,671	0	0	231(20)	46(3)
Treasury Bill/ Commercial Paper	54(57)	534	51(50)	0	3(7)	0
Pfandbriefe	30(5)	22,286	0	0	30(5)	0
–Traditional style	20	1,286	0	0	20	0
–Jumbo style	10	21,000	0	0	10	0
Other Securitised Assets	176(70)	90,034	0	85(39)	0	91(31)
–Mortgage Backed Securities (MBS)	97	44,427	0	44	0	53
–Commercial Mortgage Backed Securities (CMBS)	49	19,348	0	28	0	21
–Asset Backed Securities (ABS)	22	24,901	0	9	0	13
–Other	8	1,358	0	4	0	4
Total	551(173)	203,082	56(60)	85(39)	273(39)	137(35)

Source: CBFSAI, ECB's EADB, Bloomberg, Doran and Murphy (2005), 2005 figures in parentheses.

The 551 assets reported as at 20 March 2007 represent a 218 per cent increase on the number of assets listed by the CBFSAI in 2005¹⁸; however, some similarities remain over the period. An examination of the *Bonds* category shows that these issuances continue to remain low (down four issuances compared with 2005), while in comparison to the previous study, all issuers are now Irish resident. Notwithstanding this, volumes outstanding are slightly higher (€34.5 billion compared with €31.4 billion in 2005), mainly due to the inclusion of two large floating rate instruments over the period.

¹⁷ Agency classification refers to the Housing Finance Agency Plc, where the "principal objectives of the company are (a) to advance funds to local authorities to be used by them for any purpose authorised by the Housing Acts and, (b) to borrow or raise funds for these purposes" (see www.hfa.ie).

¹⁸ See Doran and Murphy, 2005.

Similar trends are also reflected in the *Treasury Bills/Commercial Paper* category, with issuance numbers broadly similar to those in 2005 (57). This category continues to post the lowest amount in terms of volumes outstanding, down slightly on 2005 figures (€0.34 billion).

Three categories exhibit substantial changes in relation to the number of assets included in 2005. The first of these is the *Pfandbriefe* category. Under the *Asset Covered Securities Act (ACS) 2001*, to issue an ACS, an institution must first be assigned a special banking status. 30 ACS issuances (from the four approved Designated Credit Institutions) have now been added to the EADB by the CBFSAI, which represent an increase of 25 on 2005 figures and now represent roughly 11 per cent of the total volume outstanding of all Irish EADB assets with a combined nominal outstanding of just over €22 billion. The second category which has seen marked change is that of *Medium-term notes (MTNs)*. The number of assets included in this category has grown substantially since 2005 and MTN issuances now account for just over 50 per cent of all assets included on the EADB by the CBFSAI. 20 per cent of MTN issuances included by the CBFSAI on the EADB are from non-Irish resident issuers (see Table 5), which is an increase on 2005 figures (13 per cent).

Table 5: Medium-term Note Issuers and Issuances reported by the CBFSAI (as at 20 March 2007)

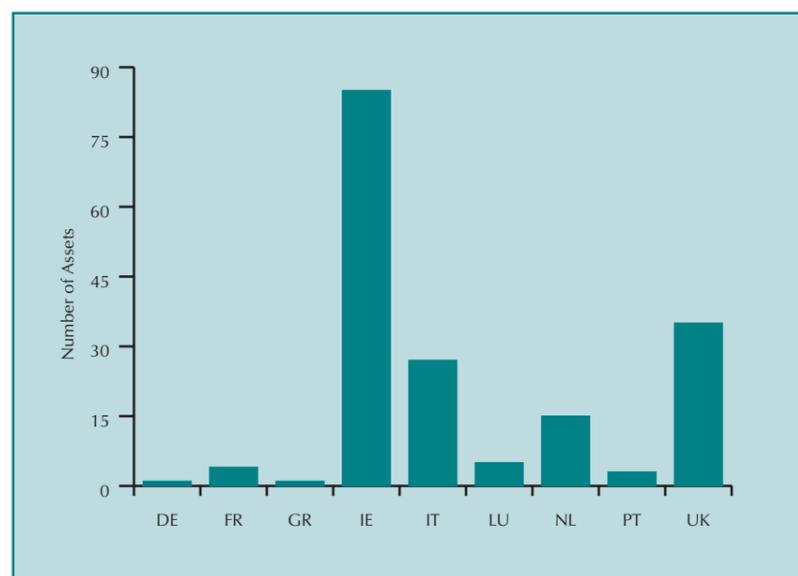
MTN Issuer	Place of Incorporation of Issuer	Number of Transactions	Total volume (EUR Bln)
AEGON Global Inst. Markets plc	IE	1	0.60
Allied Irish Banks plc	IE	27	10.40
Anglo Irish Bank Corporation plc	IE	45	4.81
Banca Intesa Spa	IT	17	3.60
Banesto Financial Products plc	IE	37	3.08
Bank of Ireland	IE	31	4.52
CR di Firenze Spa	IT	3	0.20
Danske Bank A/S	DK	11	5.32
DEPFA ACS Bank	IE	4	0.13
DEPFA Bank plc	IE	19	0.54
EBS Building Society	IE	20	1.80
European Investment Bank (EIB)	Supra-national	1	0.03
GE Capital European Funding	IE	17	11.50
Hypo Real Estate Bank International AG	DE	10	0.36
Intesa Sanpaolo Spa	IT	2	1.30
JPMorgan Chase & Co.	US	1	0.10
Permanent tsb	IE	15	0.76
Lehman Brothers Holdings Inc.	US	1	1.50
Sachsen LB Europe plc	IE	14	1.70
Sanpaolo IMI Bank Ireland plc	IE	1	3.50
Total		277	55.75

Source: CBFSAI, ECB's EADB.

MTN issuances are by far the largest category of assets reported by the CBFSAI; however, in terms of volume outstanding (€55.75 billion) it is not the largest category, as the *Other Securitised Assets* category continues to account for the largest proportion

(€90 billion) or 44 per cent of the Irish total. 176 securitisation issuances were included by the CBFSAI on the EADB as at 20 March 2007, which represents a 151 per cent increase on the number eligible in 2005. It is interesting to note that Irish resident issuers no longer dominate this category as 52 per cent of issuers are now non-Irish, up from 44 per cent in 2005. RMBS continues to represent the majority of issuances in this category, accounting for 55 per cent of issuances and 49 per cent of volume outstanding¹⁹. Examining in greater detail these 176 securitisation transactions provides some interesting results in terms of the residences of the issuers and the origins of the underlying portfolios backing each transaction.

Chart 2: ABS included by the CBFSAI on the EADB by Issuer Residence (as at 20 March 2007)



Source: ECB's EADB.

Chart 2 shows the different jurisdictions out of which SPVs issue ABS included by the CBFSAI on the EADB. 48 per cent of issuers are Irish resident, while of the remaining issuers, the United Kingdom represents 20 per cent, followed by Italy with 15 per cent and then the Netherlands (8.5 per cent). In all, there are nine resident issuers represented in the ABS category reported by the CBFSAI on the EADB. In conjunction with Chart 2, Table 6 examines the origins of collateral across the different broad categories of ABS²⁰. In all there were 12 distinguishable areas of origin, along with a 'mixed' category for a portfolio originating in more than one jurisdiction. The majority of underlying portfolios are originated in Italy and 'mixed nationalities' (16.5 per cent), followed by Ireland (16 per cent) and Germany (15 per cent).

¹⁹ In 2005, commercial and residential issuances were included in the same category; therefore, a direct comparison is hard to quantify. However, it is worth noting that commercial mortgage backed transactions account for 28 per cent of issuances in the securitisation category and 22 per cent in terms of volume outstanding.

²⁰ In carrying out this analysis the author examined the prospectus of each transaction and assigned each asset to a relevant collateral group as outlined in Table 6.

Collateral originated in the United Kingdom backed just under 14 per cent of ABS transactions included by the CBFSAI on the EADB. Korea (KR) and South Africa (ZA) are the sole non-European originating jurisdictions, accounting for two transactions.

Table 6: Categorisation of ABS included by the CBFSAI on the EADB and Collateral Country (as at 20 March 2007)

ABS	ABS Collateral Country	CMBS	CMBS Collateral Country	RMBS	RMBS Collateral Country	CDO	CDO Collateral Country
Auto – Prime (2)	IT (2)	Housing Association Loans/Multi-family (2)	FI (1) DE (1)	RMBS – First Mortgage (1)	KR (1)	CDO – Preferred Stock (1)	Mixed (1)
Health Care Receivables (1)	IT (1)	Large Multi-borrower (32)	AT (1), DE (6), FR (3), IT (2), Mixed (20)	RMBS Prime (51)	DE (1), UK (5), GR (5), IE (17), IT (8), NL (5), PT (10)	CDO – Small and Middle Market (6)	Mixed (4), DE (2)
Leases – Small Ticket (4)	IT (4)	Net Lease (2)	UK (1), DE (1)	RMBS Sub-Prime (9)	UK (7), IE (2)	CDO-Other (1)	Mixed (1)
Auto Leases (1)	Mixed (1)	Single Borrower (5)	DE (2), IE (1), FR (1), Mixed (1)	Other (35)	DE (2), UK (10), GR (3), IE (8), IT (4), Mixed (1), NL (2), PT (5)		
Consumer-Other (2)	IT (2)	Commercial Pool – Mixed (2)	DE (1), IT (1)				
Performing assets (4)	IT (4)	Other (6)	DE (3), IT (1), GR (1), Mixed (1)				
ABS Other (8)	DE (7) ZA (1)						

Source: ECB, Bloomberg and individual transaction prospectuses.

4. Comparison of Eligible Marketable Debt Instruments Included on the EADB by Country of Reference Market

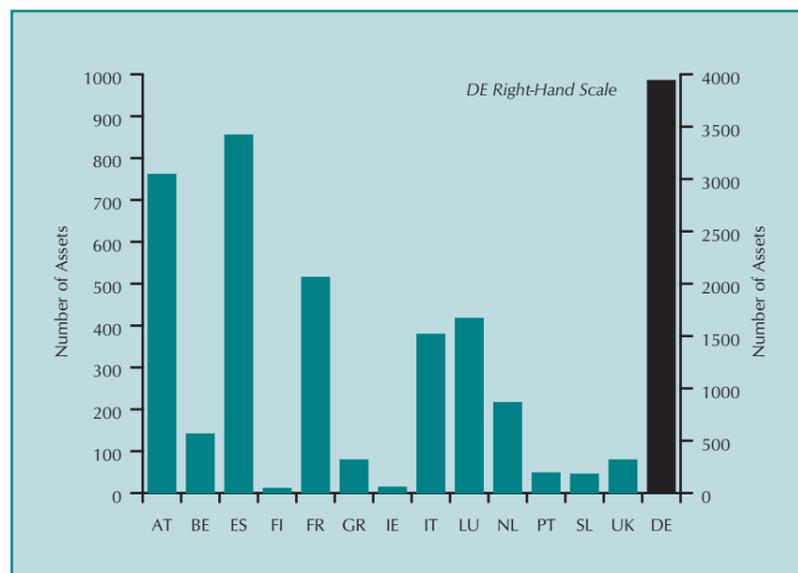
This section compares the number of marketable debt instruments on the Single List of collateral by reporting NCB. Use is made of data available from the ECB website on the assets provided to the EADB by each country of reference market location where each NCB is responsible for reporting eligible assets listed on regulated and non-regulated acceptable markets within their own jurisdiction²¹. Some charts in this section illustrate certain countries' assets on an alternative right hand scale where this number of assets is particularly high in comparison to the other reporting countries. Assets included as at 20 March 2007 are compared with the number of assets included in 2005²², under respective EADB debt instrument headings²³.

21 Regulated markets are those published by the European Commission in the Official Journal of the European Union. Non-regulated acceptable markets are those non-regulated markets that were positively assessed by the Eurosystem, based on the three principles of safety, transparency and accessibility. (see, www.ecb.int).

22 See Doran and Murphy, 2005.

23 Figures include assets reported by all euro area countries along with the United Kingdom. Doran and Murphy in 2005 did not include the United Kingdom in their analysis; therefore, for consistency with their figures, United Kingdom and Slovenian issuances (Slovenia joined the euro area on 1 January 2007) are excluded in any comparison with their figures unless otherwise stated.

**Chart 3: EADB Bonds by Country of Reference Market
(as at 20 March 2007)**

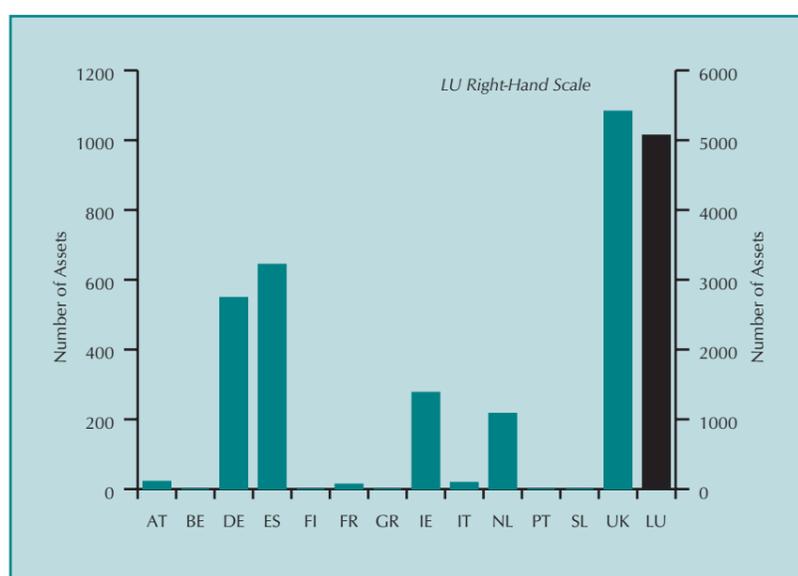


Source: ECB's EADB.

4.1 Bonds

Chart 3 shows the number of *bonds* included on the EADB by each euro area (and the United Kingdom) country of reference market location. Germany, as was the case in 2005, continues to be the largest contributor to this category, accounting for 3,941 instruments which is a 40 per cent increase over the period. Euro area NCBs report 7,422 issuances in this category which is a substantial increase of 49 per cent from 2005 (5,125 bonds). Similar to 2005, Ireland again is the second lowest contributor (14) of all euro area countries. As was the case in 2005, all countries report assets within this category, with Slovenia now reporting 45 bonds.

**Chart 4: EADB MTNs by Country of Reference Market
(as at 20 March 2007)**

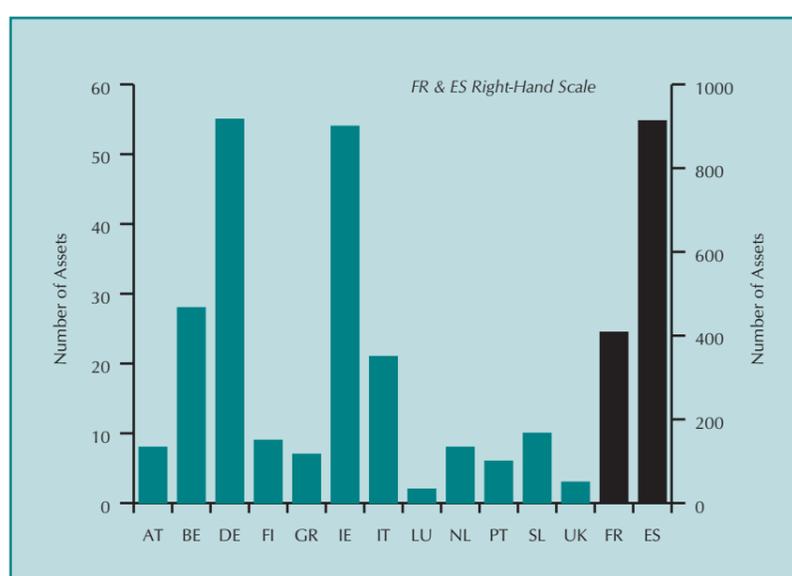


Source: ECB's EADB.

4.2 Medium-Term Notes (MTNs)

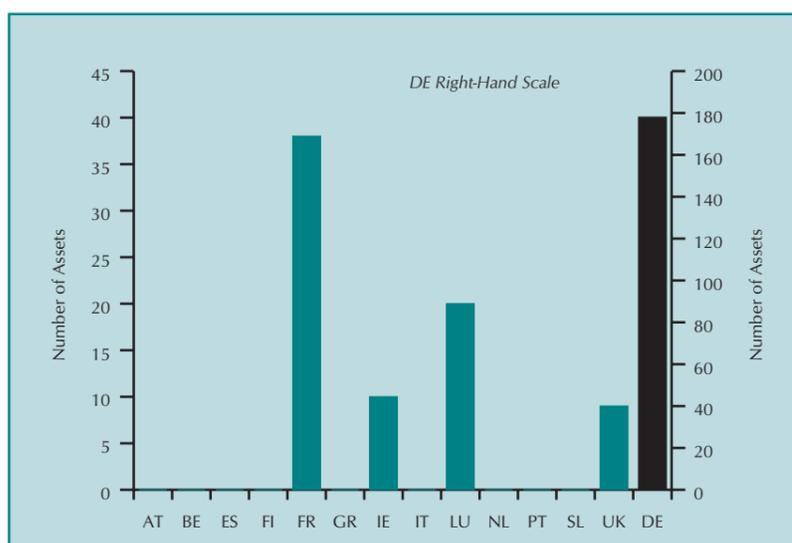
The number of *MTNs* reported to the EADB is displayed in Chart 4. As in 2005, Luxembourg continues to dominate this category²⁴, with 5,071 issuances, accounting for close to 65 percent of all EADB MTN issuances. This is a 62 per cent increase from 3,127 assets included by Luxembourg in 2005. Ireland is the fifth largest contributor of nine countries for this category of asset. The CBFSAI now report 277 MTNs which is a substantial increase from the 23 issuances included in 2005.

Chart 5: EADB T-Bill/CP by Country of Reference Market (as at 20 March 2007)



Source: ECB's EADB.

Chart 6: EADB Jumbo Pfandbriefe-Style Instruments by Country of Reference Market (as at 20 March 2007)



Source: ECB's EADB.

²⁴ For a number of possible reasons behind the growth in issuances of these instruments out of Luxembourg, see ECB, (2002).

4.3 Treasury Bill/Commercial Paper/Certificate of Deposit

Chart 5 shows the number of assets included on the EADB under the category of *Treasury Bill/Commercial Paper*. In 2005 France dominated this category, but now Spanish assets account for 60 per cent of the 1,532 issuances included in this category.

Of the fourteen countries contributing to this category, Ireland is the fourth largest contributor with 54 assets, behind Spain (913), France (408) and Germany (55). In 2005 Ireland was the third largest contributor with 57 assets included on the EADB.

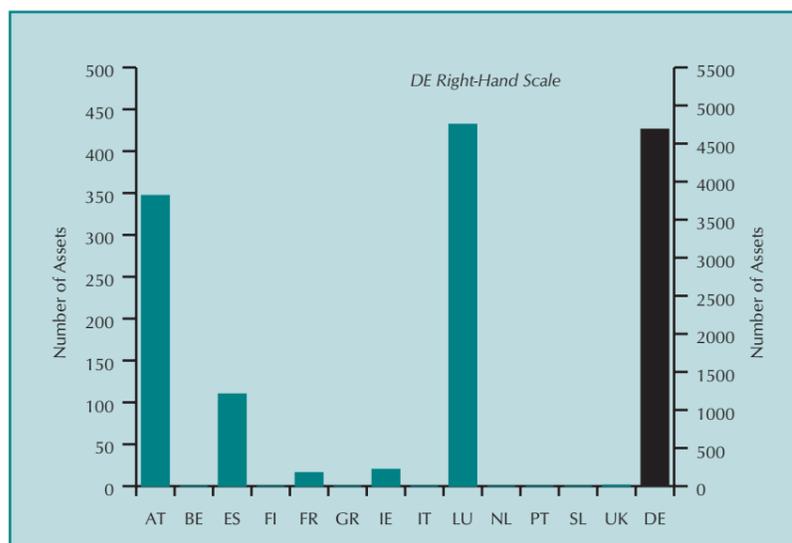
4.4 Jumbo Pfandbriefe-style Instruments

The ECB adopted some minor refinements to its covered bond eligibility criteria with the publication of the General Documentation in 2006 (ECB, 2006b). This change was in relation to the definition of a 'jumbo pfandbriefe-style' instrument, as it became apparent that the Eurosystem's criteria were not reflecting the minimum standards which are now used in defining jumbo-style products in markets across Europe²⁵.

The number of covered bonds assets included under the *Jumbo Pfandbriefe-style* category on the EADB is highlighted in Chart 6. Germany continues to dominate this category, reporting 70 percent (178) of all assets included. However, this total is a decrease of 67 percent from the figure Germany reported in 2005 (297). A number of possible reasons can account for this change. The passing of covered bond legislation in some European jurisdictions has helped increase competition across pfandbriefe markets contributing to the fact that "... the German share has fallen over the past two years, reflecting higher issuance mainly in Spain and Italy (and to a smaller extent in France)" (Barclay's Capital, 2007, p. 110). In addition, on foot of the Eurosystem revising its criteria in relation to the classification of pfandbriefe-style products as mentioned above, a number of Jumbo pfandbriefe issuances would have been re-classified as Traditional-style issuances (described below) under the new criteria. From an Irish point of view, the CBFSAI has doubled its inclusion on the EADB from the 5 assets reported in 2005.

²⁵ Under the previous version of the ECB's General Documentation (ECB, 2004), the Eurosystem only accepted pfandbriefe-style products in the 'Jumbo Pfandbriefe' category of assets provided they met two institutional criteria (in addition to the debt security being UCITS compliant): (i) the issuance volume must be greater than €500 million and (ii) the security must have at least two market makers. In September 2006 (ECB, 2006b) this 'jumbo' threshold was increased from €500 million to €1 billion in order to bring the ECB's criteria more in line with the definition of a 'jumbo' covered bond in European markets. In addition, it was also sought, in reflection of the different covered bond legislations across Europe, that the number of required market makers be increased to three. This change is also reflected in the proposed standardised Jumbo covered bond criteria, formulated by the Euro Debt Market Association (AMTE). AMTE state that there should be "an absolute minimum of three market makers on any bond" (AMTE, 2005). The market-making commitment is often seen as the core feature of the 'Jumbo model', allowing for enhanced liquidity for the instruments and transparency for investors.

Chart 7: EADB Traditional Pfandbriefe-Style Instruments by Country of Reference Market (as at 20 March 2007)

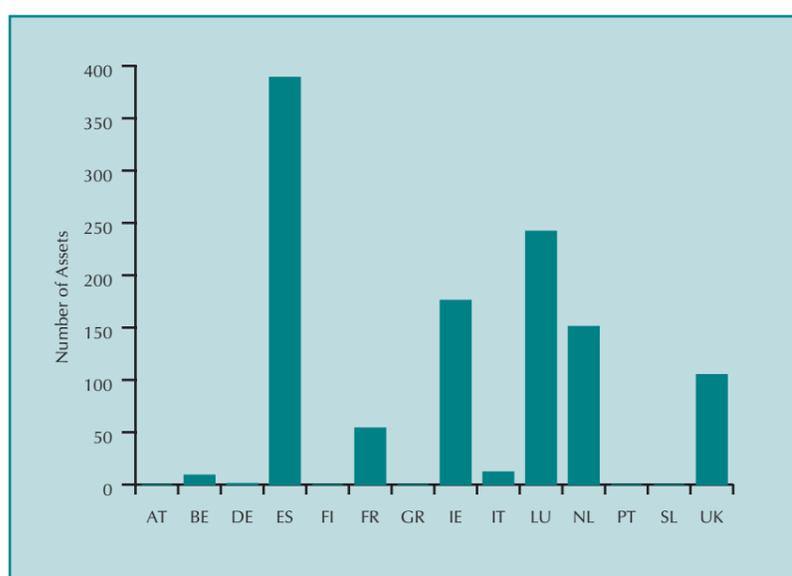


Source: ECB's EADB.

4.5 Traditional Pfandbriefe-Style Instruments

Closely related to Chart 6 is the inclusion of assets in the category of *Traditional Pfandbriefe-style instruments* outlined in Chart 7. This category includes pfandbriefe-style assets included by each euro area country of reference market which have issuance volumes of less than €1 billion. The number of Irish assets included has grown four-fold. However, as was the case in 2005, German reported assets make up the bulk of assets included in this category (84 per cent). Moreover, as with Section 4.4, a decrease in German reported pfandbriefe-style assets is also reflected in this category in 2007. In the two-year period since 2005, there has been a

Chart 8: EADB ABS by Country of Reference Market (as at 20 March 2007)



Source: ECB's EADB.

decline of 1,344 traditional pfandbriefe assets reported by Germany (from 6,032 in 2005). Luxembourg has increased inclusions since 2005 by 107 per cent.

4.6 Other Securitised Assets/ABS/MBS

Chart 8 shows that there are nine countries reporting assets under this category. In the last two years, the CBFSAI has increased the number of ABS it includes on the EADB by 106 assets (see Section 3.2). Luxembourg is no longer the largest contributor of assets as Spain now reports the greatest number (389).

4.6.1 Analysis of ABS Instruments Included on the EADB

Examining the specific ABS structures being reported by NCBs to the ECB provides some interesting results. The composition of underlying portfolios of all ABS transactions rated by Moody's as at 20 March 2007 (944 assets), which accounted for 83 per cent of the total number of ABS included on the EADB at 20 March 2007, were examined by the author. As this percentage is quite high, the analysis of Moody's rated assets should give a good representation of the type of ABS structures and diversity of underlying portfolios included on the EADB²⁶. Analysis shows 551 assets, or 58 per cent, of Moody's rated assets included on the EADB fall into the RMBS category. Commercial related portfolios made up 15 per cent of Moody's rated assets, with loans to small and medium enterprises accounting for 10 per cent. Portfolios falling under the ABS category included auto loans, consumer loans, leases, credit card and health receivables and made up 13 per cent of assets reported. Moody's classified the remaining 14 per cent of assets under the ABS-other category, with structured covered bonds accounting for nearly half of these assets. Table 7 provides a breakdown by collateral group of all these Moody's rated assets. The dominant collateral category in Spanish, British, Irish and Dutch reported transactions are residential mortgage portfolios. Luxembourg does not report one dominant asset category, as collateral pools are spread across auto-loans, leases and a variety of collateral pools that fall under the 'ABS other' category. Similar to Luxembourg, a large number of French and Italian portfolios fall under the 'ABS other' category as assigned by Moody's, where portfolios comprise housing loans for French listed assets, and social security receivables and personal loans to civil servants in the case of Italian listed assets.

²⁶ In carrying out the categorisation, the pre-sale report/new-issuance report for each transaction was analysed or where neither document was available, the general classification given on the Moody's website for each transaction was used. A pre-sale report is in essence a summary of the transaction aimed at an investor audience, which is published prior to the issuance of the ABS. Should any elements in relation to the transaction be amended prior to issuance, these are reflected by Moody's in the new-issuance report which is released after the transaction is issued.

Table 7: Categorisation of all Moody's Rated EADB Eligible ABS Transactions, by Country of Listing (as at 20 March 2007)

Country of Listing	BE	ES	FR	UK	IE	IT	LU	NL
Asset type	Percentages							
ABS	50	43	65	17	19	64	66	5
–Auto	0	1	15	2	1	0	13	1
–Consumer Loans	0	2	8	0	1	0	9	1
–Small Business Loans	0	24	0	2	0	0	3	1
–Leases	0	0	0	0	3	0	15	0
–Credit Cards	0	0	4	13	0	0	0	0
–Health Care Rec.	0	0	0	0	1	0	5	0
–Other	50	16	38	0	13	64	21	2
CMBS	0	1	0	0	22	26	2	5
RMBS	50	56	35	83	59	0	32	90
Total	100	100	100	100	100	100	100	100

Source: ECB's EADB, Moody's Investors Service.

5. Conclusion

This paper examined two main aspects of debt instruments that are included in the Single List of eligible collateral. The first related to the ABS category of eligible assets. Following a brief discussion of the different types of ABS structures currently in the market place, the author outlined some of the ambiguities associated with the ECB's 'old' eligibility criteria for debt instruments and outlined why the market sought clarification in relation to the eligibility criteria for ABS structures. Amongst other criteria, all debt instruments accepted as being an ECB eligible asset must meet the requirement that the asset must have a 'fixed unconditional principal amount'. However in an effort to make the Eurosystem's eligibility criteria more transparent in the case of these transactions, the ECB published amended criteria on 13 January 2006. The amended criteria state that the securitisation structure in the case of an ABS transaction must be 'true sale' in nature, and the entity issuing the ABS notes must be bankruptcy remote from the activities of the originator of the underlying portfolio of assets. Four possible reasons for choosing this 'true sale' criterion were proposed, relating to the rating volatility of *traditional* and *non-traditional* transactions, along with developments both on a regulatory level and in other central banks.

The remainder of the article analysed the marketable instruments included in the EADB and a comparison with the assets included by the CBFSAI. The number of marketable assets included on the EADB by the CBFSAI has continued to grow in recent years. Compared with 2005, *Medium-term notes* has replaced *Other securitised assets* as the most significant category, accounting for just over 50 per cent of assets included by the CBFSAI on the EADB. This increased inclusion of *Medium-term notes* reflects the growing prominence of financial institutions as issuers in the Irish

debt market. Notwithstanding this, the number of ABS included on the EADB has continued to grow, with Ireland now being the third largest contributor to this category. The clear majority of assets included by the CBFSAI under this category is that of RMBS-style instruments, which now account for 55 per cent of all ABS added by the CBFSAI. In addition, it is interesting to note that there has been a two-fold increase in the number of Irish SPVs issuing these ABS instruments. The specific characteristics associated with the ABS issuances reported by the CBFSAI were examined, revealing diverse portfolios of collateral along with an assorted originating profile, where it was shown that ABS were issued out of a total of nine countries. Finally, an examination of trends across assets reported by other NCBs showed that the levels of bonds, medium-term notes, short-term paper instruments and ABS instruments continued to grow in prominence. However, the number of traditional pfandbriefe and jumbo pfandbriefe instruments included on the EADB by all NCBs declined since 2005.

Glossary of Terms

ABS: SPV issuances generated in order to transform illiquid assets of the originator into transferable securities.

ACS: An Irish Asset Covered Security – the pool of loans underlying the covered bond remain on the balance sheet of the originator but are ‘ring-fenced’ from the claims of other creditors.

AMTE: The Euro Debt Market Association, a European organisation involving market participants representing issuers, financial intermediaries, investors and other market professionals.

Arbitrage CDO: A collateralised debt obligation (see CDO) created to exploit the credit spread differential between high yield collateral and the highly rated issued notes.

CBFSAI: Central Bank and Financial Services Authority of Ireland – <http://www.centralbank.ie>

CDO: Collateralised Debt Obligation – A securitisation that transfers the credit risk of a reference portfolio of assets. These instruments can be backed by ABS, bonds, loans and even other CDOs.

CDO Balance Sheet Cashflows: A cashflow CDO where the underlying portfolio are bonds or loans held by the issuer.

CDO Resecuritisation: A CDO that invests, either in cash or synthetically, in other structured products such as CDOs, ABS or RMBS etc.

CDS: Credit Default Swap – A swap designed to transfer the credit exposure of an underlying security between parties.

Essentially, the risk buyer (seller of the swap) agrees to pay the risk seller (buyer of the swap) a pre-determined amount (normally the par value of the security) if there is a default in the underlying security. In return, the risk buyer receives a fixed periodic coupon for the life of the agreement.

CMBS: Commercial Mortgage Backed Security – A mortgage-backed security backed by commercial mortgages.

CMCDS: Constant Maturity Credit Default Swap – Similar to a regular CDS, but has instead of a fixed premium, a periodic floating premium that is reset periodically (e.g. at a percentage) based on the then current level of the reference CDS, implies that the value of a CMCDS is less sensitive to changes in the levels of credit spread. (See Nomura, 2005)

CPDO: Constant Proportion Debt Obligations – A CDO backed by a credit index such as Itraxx.

Covered Bond: A debt instrument secured by a cover pool of mortgage loans or public-sector debt where investors have a preferential claim in the event of default. ACS and Pfandbriefe are also termed covered bonds, with the only difference between them being elements of their legal structure.

Designated Credit Institution: This is the status which a credit institution must obtain from the Regulator in order for the institution to issue ACS.

EADB: Eligible Asset Database of the Eurosystem's Single List of collateral.

ECB: European Central Bank – <http://www.ecb.int>

EMEA: Europe, the Middle East, and Africa.

ESCB: European System of Central Banks – Comprises the European Central Bank and the national central banks of the EU Member States.

ESF: European Securitisation Forum – A Forum set up to promote growth and the continued development of securitisation throughout Europe – <http://www.europeansecuritisation.com>.

Euro area: The area encompassing the 13 EU Member States in which the euro has been adopted as the single currency.

Forward Starting CDOs: CDO notes in which the investor is only exposed to the risk of the reference portfolio after a certain period of time.

Funded Transaction: To hedge its exposure on its portfolio, the originator buys protection on this portfolio by entering into a credit default swap with the SPV. The SPV issues notes equivalent to 100 per cent of the reference portfolio, the proceeds of which are invested in riskless securities such as government debt. In essence, the investors in the issued notes 'fund' the structure: should a credit event occur the SPV compensates the originator by selling the riskless assets.

ISE: Irish Stock Exchange – <http://www.ise.ie>.

Jumbo Pfandbriefe: An extension of traditional pfandbriefe. Jumbos are a highly liquid international debt instrument with a minimum value of €1 billion.

Moody's: Moody's is an External Credit Assessment Institution that is an independent and external body providing impartial credit ratings.

MTN: Medium-term Note – Debt instruments issued at fixed or floating rates of interest, as part of an overall medium-term note programme. Used by institutions as a source for medium-term funding.

Pfandbriefe: German covered bonds where the underlying mortgages stay on the balance sheet of the credit institution.

Prime Mortgage: Mortgages to borrowers who meet stringent credit quality requirements with regard to credit history.

Sub-prime Mortgage: Mortgages to borrowers who have a poor credit record.

Subordination: In terms of ABS, relates to the priority of principal and interest payments in the ownership of specific tranches.

RMBS: Residential Mortgage Backed Security – Mortgage backed security backed by residential mortgages.

SPV: Special Purpose Vehicle – This is an independent, legally and bankruptcy remote entity, which is set up to issue asset backed securities in order to protect investors from possible bankruptcy of the originator.

Step-up Subordination CDOs: CDO notes incorporating a feature designed to retain ratings stability. (See RSM Robson Rhodes, 2007)

Synthetic Structure: The use of credit derivatives to achieve the same credit-risk transfer as a traditional securitisation structure, but without physically transferring the assets.

Tranche: Related slices of a securitisation structure. They are generally paid sequentially from the most senior down to the most subordinate.

True Sale: Legal sale of an underlying portfolio of securities from the originator to the issuing SPV which is legally viewed as a true sale, implying that investors in the issued notes are not vulnerable to claims against the originator of the assets.

UCITS: Directive on Undertakings for Collective Investments in Transferable Securities – Article 22(4) of this Directive defines the minimum requirements that provide the basis for the treatment of covered bonds under the Eurosystem collateral framework.

Unfunded Transaction: Similar to a funded transaction, except the investors do not pay proceeds up front. The investors receive periodic payments as a protection seller and must compensate the originator should a credit event occur.

References

Bank of Japan, “Guideline on Eligible Collateral”, Bank of Japan, <http://www.boj.or.jp/en/about/basic/yoryo/yoryo18.htm>.

Barclay’s Capital, (2007), “The AAA Handbook 2006: Tasting Notes”, Research, www.barx.com.

Basel Committee on Banking Supervision, (2004a), International Convergence of Capital Measurement and Capital Standards: A Revised Framework, June.

Basel Committee on Banking Supervision (2004b), “Changes to the Securitisation Framework”, Basle Committee Publications No. 105, 30 January.

Committee on the Global Financial System Bank for International Settlements (CGFS), (2005) “The role of ratings in structured finance: issues and implications”, Number 23.

Cousseran Olivier and Rahmouni Imène, (2005), “The CDO market: functioning and implications in terms of financial stability”, Banque de France Financial Stability Review, no. 6, June.

Doran, David and Murphy, Diarmuid, (2005), ‘ Debt Instruments and Eurosystem Eligible Assets – Some Developments from an Irish Perspective’, CBFSAI Quarterly Bulletin, Number 1, pp 115-148.

Deutsche Bank, (2004), “CMCDS: The Path to Floating Credit Spread Products”, Global Markets Research: Credit Strategy, 16 March.

- ECB, (2002), Report on Financial Structures, European Central Bank, Frankfurt am Main, December.
- ECB, (2004), The Implementation of Monetary Policy in the Euro Area: General Documentation on Eurosystem Monetary Policy Instruments and Procedures, February.
- ECB, (2005), "Has the European collateralized debt obligation market matured?", Financial Stability Review, June 2005, pp 140-146.
- ECB, (2006a), "Amendments to 'The implementation of monetary policy in the euro area: General documentation on Eurosystem monetary policy instruments and procedures' relating to asset-backed securities" Press Release, 13 January.
- ECB, (2006b), The Implementation of Monetary Policy in the Euro Area: General Documentation on Eurosystem Monetary Policy Instruments and Procedures, September.
- Euro Debt Market Association (AMTE), (2005) "Improving Unification of Euro Debt Markets: A concrete case study of covered bonds", October.
- European Securitisation Forum (ESF), (2007a), ESF Securitisation Data Report, Winter 2007.
- European Securitisation Forum (ESF), (2007b), ESF Securitisation Data Report, Spring 2007.
- Fender, Ingo and Mitchell, Janet, (2005) "Structured finance: complexity, risk and use of ratings", Bank for International Settlements (BIS) Quarterly Review, June.
- Fitch Ratings, (2006a), "Managed Synthetic CDOs", CDOs/Europe Special Report, 3 April.
- Fitch Ratings, (2006b), "Understanding and Hedging Risks in Synthetic CDO Tranches", Special Report, 4 August.
- Moody's, (2003), ' Moody's Approach To Rating Synthetic CDOs', Rating Methodology, July.
- Moody's, (2007a), "EMEA Structured Finance: Strong Volume Growth in 2006, Driven Mostly by CDOs, RMBS and CMBS; Moderately Slower Growth Expected in 2007 Supported by All Asset Classes", Special Report, January.
- Moody's, (2007b), "European Structured Finance Rating Transitions: 1988-2006", Special Comment, February.

Nomura, (2005), "Constant Maturity CDS (CMCDS) – A Guide",
Nomura Fixed Income Research, 20 May.

RSM Robson Rhodes, (2007), "Structured Products Update: RSM
Robson Rhodes Securitisation Industry Newsletter", Issue 13,
February.