

## Special Report

# ABS Investor Reports: Standardisation and Digitisation

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### Executive Summary

*Efforts are currently being made by some regulators, industry associations and central banks to address transparency and data quality issues that can arise in the absence of predefined investor reporting guidelines. European DataWarehouse (ED), the first centralised European platform for uploading and downloading ABS loan level data, finds that the lack of standardisation can lead to significant differences between the information that is reported at loan level and the corresponding investor report. This, in turn, can sometimes lead to confusion surrounding the true performance indicators of underlying assets.*

*ED is strongly in favour of developing standardised investor report templates based on industry evidence as well as recent EU regulations on reporting standards. The standardisation of investor reports will not only increase transparency and improve data quality but it will also greatly facilitate the progression towards digitisation. The quick and easy extraction of investor report information will enable investors to more easily perform due diligence and credit risk assessments. In 2015, ED started to systematically digitise investor reports for the purposes of reconciling loan level and investor report data and intends to make the digitised information available to its data users in 2017.*

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## Introduction

Investor Reports vary widely by jurisdiction and asset class. It is generally the case that originators and trustees are free to determine the format and content as they see fit. The aim of investor reports should be to provide investors with sufficient information on the quality and performance of their underlying assets as well as cash flow and transaction information, enabling them to carry out due diligence and informed credit risk assessments. In some jurisdictions, investor reports are long documents (reaching up to 100 pages) in which valuable information can get overlooked. As a result, the extraction of data can be an onerous and time consuming task. On the other hand, there are jurisdictions in which investor reports are quite short. If valuable information required by investors is not easily available, this can lead to a lack of transparency and a stronger reliance on credit ratings. Efforts have been made to address these issues by central banks such as the Bank of England, regulators including IOSCO and ESMA and Industry associations like the Dutch Securitisation Association and the Association for Financial Markets in Europe.

In order to address matters such as a lack of transparency, insufficient data coverage and poor data quality, European DataWarehouse is in favour of the introduction of a standardised investor report template per asset class. This will, in turn, enable the process of digitisation. While investor reports are already “digitised” in that they exist in digital formats, it is generally the case that they are only available in unstructured formats such as pdf files. Thus, the extraction, transformation and load of data into relational databases is a considerable technical challenge. In this report, we define digitisation as the process of transforming the data into a relational database in order to facilitate extraction and analysis. Digitisation should enhance comparability across loan level data submissions, jurisdictions, asset classes and time series. Such an initiative would also improve data consistency, accessibility and data quality over time.

## Inconsistencies between Investor Reports and Loan Level Data

*European DataWarehouse (ED) is the first centralised European platform for uploading and downloading ABS loan level data (LLD).* As part of the efforts to ensure high standards of data quality, ED frequently performs detailed data consistency and accuracy checks on ABS deals, part of which involves the reconciliation of investor report information with the submitted LLD. Currently, investor reports are the most contractually binding documents that exist for ABS transactions and ED works on the reconciliation in collaboration with issuers, trustees and servicers. The results of this exercise show that there are often inconsistencies in the reporting of data for the same transaction. These can be caused by a number of factors:

- Different definitions in the transaction documentation compared to the LLD taxonomy
- Different accounting or regulatory definitions compared to the LLD taxonomy
- Different pool cut-off dates
- Adjustments to source data which are not consistently applied across investor reports and LLD
- Different reporting formats and standards

In the basic example below, the LLD column refers to a Residential Mortgage Backed Security data file that was submitted to ED for the Pool Cut-off Date (PCD) 29 April 2016. The corresponding investor report shows a PCD of one day later, despite the fact that these dates should always be aligned.<sup>1</sup> It then follows that a number of fields, such as the number of active loans, the current balance, and the weighted average current loan to value ratio do not match, as seen in Table 1. Moreover, in this case there is a significant delta on the reporting of arrears loans, both in terms of number of loans as well as arrears amounts. While the deltas can often be explained, and reconciliations may be possible once the relevant definitions are taken into account, it can be extremely cumbersome for an investor to assess the true performance of a transaction. ED also finds that for many transactions, third-party ABS data providers do not display the same performance data, making the process of obtaining reliable and consistent data even more challenging.

<sup>1</sup> The European Central Bank devised taxonomies, providing information as to how all fields should be reported. These are available from: <https://www.ecb.europa.eu/paym/coll/loanlevel/transmission/html/index.en.html>. Further information is available in the "Frequently Asked Questions" section of the ECB's website. One such FAQ specifically states that "Pool cut-off dates should be aligned with investor reports cut-off dates".

**Table 1: Example of LLD and Investor Report Inconsistencies**

	Investor Report	Loan Level Data
PCD (YYYY-MM-DD)	2016-04-30	2016-04-29
Number of Active Loans	7,459.00	7,460.00
Current Balance €	677,041,746.42	679,236,162.54
Number of (Interest) Arrears – Loans	281	61
(Interest) Arrears - Current Balance €	26,713,453.33	4,476,049.87
Weighted Average Current Loan to Value Ratio	44.97	45.14
Weighted Average Interest Rate	0.6	0.6

Source: European DataWarehouse

## Regulatory Requirements

In September 2014, the Official Journal of the European Union published Regulation 2015/3<sup>2</sup> which stipulates certain technical and reporting standards for structured finance instruments. The aim of the Regulation (and the preceding Regulation (EC) No 1060/2009) is to improve transparency so that investors have sufficient information with which they can assess creditworthiness. The Regulation further stipulates that the European Securities and Markets Authority (ESMA) is responsible for setting up a website through which reporting entities would submit data files, in accordance with predefined templates. The Regulation applies to structured finance instruments where the issuer, the originator or the sponsor is established in the European Union and which are issued after the date of entry into force of the Regulation.

Article 3 of the regulation specifies the information to be reported including:

- loan level information through the standardised disclosure templates provided in the annexes of the Regulation;
- documents such as the final offering document or prospectus and all other relevant contracts and agreements;
- in the absence of a prospectus, a transaction summary/overview document must be provided;
- investor reports

This is the first such Regulation to comment on the substance of investor reports and will help standardise the content of ABS investor reports across Europe. Annex VIII of the regulation, shown below, states the exact information that must be included. As the exact format is not standardised, however, the transition to digitisation will require further efforts.

<sup>2</sup> This Regulation supplements Regulation (EC) No 1060/2009 of the European Parliament and of the Council. For more information, see Official Journal of the European Union: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R0003>

This Regulation was due to come into effect on 01 January 2017, however ESMA has stated that the dedicated website required for the disclosure will not be available at that date. As a result, it is likely that the reporting obligations will be incorporated in the forthcoming Simple, Transparent and Standardised Securitisation Regulation.<sup>3</sup>

**Table 2: Annex VIII of Regulation 2015/3:**

Investor Reports must contain information on:	
(i)	asset performance
(ii)	a detailed cash flow allocation
(iii)	a list of all triggers of the transaction and their status
(iv)	a list of all counterparties involved in a transaction, their role and their credit ratings
(v)	details of cash injected into the transaction by the originator/sponsor or any other support provided to the transaction including any drawings under or utilisation of any liquidity or credit support and support provided by a third party
(vi)	amounts standing to the credit of guaranteed investment contract and other bank accounts
(vii)	details of any swaps (e.g. rates, payments and notionals) and other hedging arrangements to the transaction, including any related collateral postings
(viii)	definitions of key terms (such as delinquencies, defaults and pre-payments)
(ix)	LEI, ISIN and other security or entity identification codes of the issuer and the structured finance instrument
(xi)	contact details of the entity producing the investor report

Source: Official Journal of the European Union Regulation 2015/3

## Current Initiatives and Guidelines

*Some Central Banks, regulators and industry associations recognise the problems that can arise when investor reports are published in the absence of any consistent templates or guidelines.* The Bank of England and some industry associations have made efforts to standardise the content and, in some cases, the format of investor reports.

### Bank of England

In 2010, the Bank of England announced an initiative to increase information transparency in relation to asset-backed securities and covered bonds as part of the eligibility criteria for instruments accepted in its collateral operations. A market notice was published stating that ABS and covered bonds must make loan level information publicly available in a

<sup>3</sup> More information on this proposed regulation can be found at: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015PC0472>

format determined by the Bank of England.<sup>4</sup> In addition, a prospectus, closing transaction documents, a transaction summary, a cash flow model and an investor report must be made freely and publicly available. Table 3 shows the specific information that must be included in investor reports, as stipulated by the market notice. More detailed reporting requirements stipulated by the Bank of England are presented in Annex 1.

**Table 3: Bank of England Investor Report Guidelines**

Investor Reports must contain information on:	
(i)	asset performance
(ii)	a detailed cash flow allocation
(iii)	a list of all triggers of the transaction and their status
(iv)	a list of all counterparties involved in a transaction, their role and their credit ratings
(v)	details of cash injected into the transaction by the originator/sponsor or any other support provided to the transaction including any drawings under or utilisation of any liquidity or credit support and support provided by a third party
(vi)	amounts standing to the credit of guaranteed investment contract and other bank accounts
(vii)	details of any swaps (e.g. rates, payments and notionals) and other hedging arrangements to the transaction, including any related collateral postings
(viii)	definitions of key terms (such as delinquencies, defaults and pre-payments)

*Source: Bank of England*

As is the case with the European Regulation, however, the format is not standardised meaning that reporting entities are still free to decide on the layout and length of the investor reports.

## Industry Efforts

In 2012, the International Organization of Securities Commissions (IOSCO) published a report on "Global Developments in Securitisation Regulation"<sup>5</sup> in which it stated that "standardisation of disclosure information and asset data may benefit investors in analysing their investments." It noted, however, that differences in reporting across jurisdictions, structures and assets have developed over time and sometimes, for good reason. Nevertheless, IOSCO views standardisation as a useful means to enhance transparency and is in favour of the development of asset level reporting templates. This follows an earlier report on disclosure of information for ABS which recommends that investors should be provided with regular reports containing sufficient information so that they can "independently perform due diligence in their investment decisions regarding the specific

<sup>4</sup> See: <http://www.bankofengland.co.uk/markets/Documents/marketnotice100719a.pdf>

<sup>5</sup> The report is available from: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD394.pdf>

ABS.<sup>6</sup> Table 4 shows the distribution and pool performance information that should be disclosed.

**Table 4. IOSCO Guidelines on Disclosure of ABS Information**

Asset Information	
(i)	Applicable record dates, accrual dates, determination dates and distribution dates
(ii)	Cash flows received and their sources (including portfolio yield, if applicable)
(iii)	Calculated amounts and distribution of the flow of funds for the period itemized by type and priority of payment, including fees and expenses, payments with respect to enhancement, distributions to security holders and excess cash flow and disposition of excess cash flow
(iv)	Interest rates applicable to the assets and the asset-backed securities, as applicable. Issuers should consider providing interest rate information for pool assets in appropriate distributional groups or incremental ranges
(v)	Beginning and ending principal balances of the asset-backed securities
(vi)	Beginning and ending balances of transaction accounts, such as reserve accounts, and material account activity during the period
(vii)	Amounts drawn on any credit enhancement or other support, as applicable, and amounts still available, if known and applicable
(viii)	Updated pool composition information for the period, such as the number and amount of pool assets at the beginning and ending of each period, weighted average coupon, weighted average life, weighted average remaining term, pool factors and prepayment amounts
Asset Impairment Information	
(i)	Delinquency and loss information for the period
(ii)	The amount, terms and general purpose of any advances made or reimbursed during the period
(iii)	Material modifications, extensions or waivers to pool asset terms, fees, penalties or payments during the distribution period or that have cumulatively become material over time
(iv)	Material breaches of pool asset representations or warranties or transaction covenants
(v)	Information on ratio, coverage or other tests used for determining any early amortization, liquidation or other performance trigger and whether the trigger was met

Source: IOSCO

In order to fulfil such recommendations, the Association for Financial Markets in Europe (AFME) created a Working Group with the aim of standardising investor report practices in Europe with a minimum set of fields and definitions for RMBS transactions.

<sup>6</sup> The report is available from: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD372.pdf>



The Dutch Securitisation Association delivered a country specific solution when it published standardised investor report templates for the Dutch ABS market, with the latest version released in September 2016.<sup>7</sup> In addition to the content, the report format for all transactions within an asset class was agreed upon. As part of the initiative, more performance data was added to the reports: key dates; delinquencies; foreclosure statistics; performance ratios; transaction specific information; stratification tables; glossary and contact information. In addition, a monthly reporting frequency was imposed and reports would be made available in both PDF and XLS so that data can be more easily extracted. Two segments of the predefined template are shown in Exhibit 1 below.

## Exhibit 1. Extract from the Dutch Securitisation Association Investor Report Template

[ISSUER] B.V.						
Monthly Investor Report: [ ] - [ ]						
Key Dates						
Note Class*	Senior Class A1	Senior Class A2	Mezzanine Class B	Mezzanine Class C	Junior Class D	Subordinated Class E
<b>Key Dates</b>						
Closing Date	[•]	[•]	[•]	[•]	[•]	[•]
First Optional Redemption Date	[•]	[•]	[•]	[•]	[•]	[•]
Step Up Date	[•]	[•]	[•]	[•]	[•]	[•]
Original Weighted Average Life (expected)	[•]	[•]	[•]	[•]	[•]	[•]
Final Maturity Date	[•]	[•]	[•]	[•]	[•]	[•]
Portfolio Date	[•]	[•]	[•]	[•]	[•]	[•]
Determination Date	[•]	[•]	[•]	[•]	[•]	[•]
Interest Payment Date	[•]	[•]	[•]	[•]	[•]	[•]
Principal Payment Date	[•]	[•]	[•]	[•]	[•]	[•]
Current Reporting Period	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]
Previous Reporting Period	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]	[•] - [•]
Accrual Start Date	[•]	[•]	[•]	[•]	[•]	[•]
Accrual End Date	[•]	[•]	[•]	[•]	[•]	[•]
Accrual Period (in days)	[•]	[•]	[•]	[•]	[•]	[•]
Fixing Date Reference Rate	[•]	[•]	[•]	[•]	[•]	[•]

\* Transaction specific note structure to be inserted

<sup>7</sup> See: <https://www.dutchsecuritisation.nl/investor-reporting>. In addition to an Investor Report template, templates for a Notes and Cash Report and a Portfolio and Performance Report were also published.

[ISSUER] B.V.

Monthly Investor Report: [ ] - [ ]

		Current Period		Previous period	
		Number of loans	Amounts	Number of loans	Amounts
<b>Net Principal Balance at the beginning of the Reporting Period</b>		[*]	[*]	[*]	[*]
Scheduled Principal Payments	-/-	[*]	[*]	[*]	[*]
Unscheduled Principal Payments	-/-	[*]	[*]	[*]	[*]
Reversed Principal Payments	-/-				
Other Redemptions	-/-	[*]	[*]	[*]	[*]
Further Advances		[*]	[*]	[*]	[*]
Defaults (principal part)	-/-	[*]	[*]	[*]	[*]
Additional Loan Receivables (principal part) (new pledge)		[*]	[*]	[*]	[*]
Release Loan Receivables (principal part) (pledge release)	-/-	[*]	[*]	[*]	[*]
Closed	-/-	[*]	[*]	[*]	[*]
<b>Net Principal Balance at the end of the Reporting Period</b>		[*]	[*]	[*]	[*]
<b>Total Interest Balance at the beginning of the Reporting Period</b>		[*]	[*]	[*]	[*]
Capitalized Interest		[*]	[*]	[*]	[*]
Accrued Interest		[*]	[*]	[*]	[*]
Interest received	-/-	[*]	[*]	[*]	[*]
Reversed Interest Payments					
Defaults (Interest part)	-/-	[*]	[*]	[*]	[*]
Additional Loan Receivables (interest part) (new pledge)		[*]	[*]	[*]	[*]
Release Loan Receivables (interest part) (pledge release)	-/-	[*]	[*]	[*]	[*]
Closed	-/-	[*]	[*]	[*]	[*]
<b>Total Interest Balance at the end of the Reporting Period</b>		[*]	[*]	[*]	[*]

Source: <https://www.dutchsecuritisation.nl/investor-reporting>

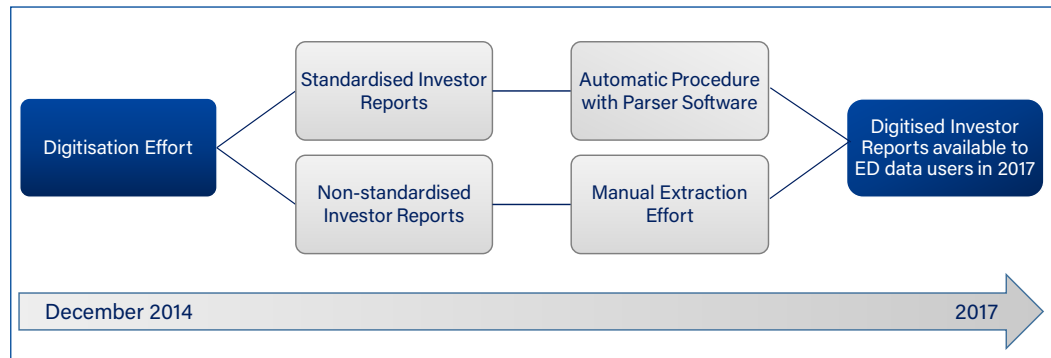
## ED Investor Report Digitisation Process

*In addition to carrying out data quality checks, ED performs cash flow, loan and bond level consistency and inter-submission checks as well as the reconciliation of investor report information with LLD.* Over the past year, the focus has been on the latter. Prior to this, there was no systematic way of tracking the discrepancies between the values stated in the investor report and the LLD. In order to quantify such discrepancies, ED created a database in which the values of key fields stated in the investor report are entered and compared against the respective values in the LLD.<sup>8</sup> Deviations beyond a certain threshold are communicated to the reporting entity and explanations are sought. It is often the case that the definitions or calculations used in the investor report differ to those used in the LLD, and, as a result, various adjustments are required in order to reconcile the information. If reconciliation is not possible, the reporting entity may be asked to amend the investor report or the LLD. The most significant deviations tend to occur in the performance related fields while the information on the number of loans, balances and interest rate does not display substantial differences.

In order to improve the availability and dissemination of investor report information, ED embarked on a project in 2015 to digitise the documents. The aim of the project is to increase transparency by making the digitised reports available to ED's data users in 2017. The pool of investor reports from which ED extracts data contains approximately 150 types (layouts) of documents across three asset classes: RMBS; SME and Auto. In total, over 300 data fields are extracted. As Exhibit 2 shows, two alternative methodologies have been adopted in this effort:

<sup>8</sup> For this purpose, ED uses its Cloud Pro database. The ED Cloud Pro can be accessed through an excel frontend interface, SQL server or other business intelligence tools. For more information, see: <https://eurodw.eu/ed-cloud-pro/>. Annex 2 shows the stratification tables that are currently available in the ED Cloud Pro.

**Exhibit 2: European DataWarehouse Digitisation of Investor Reports**



## Automatic Procedure

A specific type of parser software has been developed and customised for the extraction process from a third party on behalf of ED. Using OCR language, the parser is calibrated for over 60 types of investor reports, including the standardised Dutch reports. This requires a template containing a guideline for expected values and their location within the text. Extractions can be done in bulk or file by file and are processed almost immediately.

## Manual Effort

In cases where the automatic procedure is not suitable, ED has outsourced the data extraction process to a team of dedicated analysts that read and manually fill in a template designed by ED. The extraction team documents and stores the source of every single extracted value from both the loan and bond level data. A customised piece of software checks for formatting errors and consistency with historical extractions.

## Future Developments

*ED welcomes the efforts that are currently being made by regulators, standart setters, industry associations and central banks to address the transparency and data quality issues that are currently being experienced due to the lack of a common investor reporting template in Europe.* ED is strongly in favour of the introduction of such a template and is currently planning to undertake a project that will enable its development. The template should be based on industry evidence as well as the specifications of Annex VIII of Regulation 2015/3 and the upcoming Simple Transparent and Standardised Securitisation Regulation. ED will continue to provide input and support to the efforts that are currently underway and it will liaise with market participants in order to seek input on the content, layout and format of investor reports suitable for each asset class and jurisdiction.

Moreover, the standardisation of investor reports will increase transparency by addressing information gaps, enabling the alignment of information with the LLD and providing investors with sufficient data on asset quality and performance. In turn, it will greatly

facilitate the progression towards digitisation. The quick and easy extraction of investor report information is something that is long overdue and will ease the process of gathering data in order to perform due diligence and credit risk assessments. The standardisation and digitisation of investor reports will also streamline the reporting process for reporting entities, enhance comparisons, benchmarking and minimise data quality issues. In 2014 ED began the process of digitising investor reports and will make the digitised information available to its data users in 2017.

## Annex

### 1. Bank of England RMBS Investor Reporting Requirements

In order for a transaction to be eligible for use as collateral at the Bank, the following will be required to be included in monthly investor reports (where applicable and available) for RMBS. In due course (where applicable), the Bank expects all the below data to be provided.

#### 1. Transaction Details

- Reporting date
- Reporting period start
- Reporting period end
- Accrual period
- Next payment date
- Contact details – names, addresses, email addresses and telephone numbers in case of queries related to the report
- Web link(s) to applicable transaction information (glossary, transaction documents, loan-level data, cash flow models)

#### 2. Asset Details

##### Portfolio characteristics

Summary information on the asset pool, including:

- Aggregate principal balance at the beginning and end of the period
- Aggregate number of mortgages
- Details of the number and balances of loans added to/removed from the pool and any repurchases or substitutions during the period
- Mortgage collections (scheduled and unscheduled principal, and interest) during the period
- Current weighted average seasoning, remaining term and yield (pre-swap)
- Details of any additional collateral
- Repossessions in the relevant reporting period and to-date, the current stock of repossessions (both by number and balance) and recoveries from sales (balance)
- Current period and cumulative defaults and losses (following any sales or recoveries) (all by number and balance)

##### Performance Ratios

- Principal Payment Rate (PPR), the payment rate for total principal repayments, for the current month and as a 3-month average
- Constant Prepayment Rate (CPR), the principal payment rate for unscheduled repayments, for the current month and as a 3-month average

- Constant Default Rate (CDR) (for standalones) for the current month, a 3-month average and to date

### Stratification Tables

Stratification tables showing a breakdown of the mortgage pool for certain key characteristics by number of mortgages, % of total number, current principal balance, and % of total balance. For all stratification tables with numerical values (e.g. loan-to-values (LTVs), seasoning) the maximum, minimum and weighted average values for the given variables should also be shown with the tables. Alternatively, these numbers could be included in the portfolio characteristics section above.

Given the Bank's requirement for detailed loan-level data to be made available on a quarterly basis, the Bank does not consider it necessary also to require a large number of mandatory stratification tables in the investor reports. The list of required stratification tables below therefore includes only a relatively small number of key stratification tables. However, the Bank would not expect issuers that already report additional stratification tables to stop reporting them, and issuers should continue to include all stratification tables that they consider appropriate or that may be required by other investors.

- Arrears (to include details on extent (i.e. balance and/or %) of capitalised arrears)
- Current (indexed) LTV (using latest valuation)
- Current principal balance
- Seasoning
- Mortgage maturity date or remaining term

### 3. Structure and Liabilities Details

- Details of all outstanding issuance, including: series name; issuer (for master trusts); issue date; full capital structure; ratings (original and current); currency; issue size; applicable exchange rates; outstanding amount; bond coupon; current rate; expected maturity date; legal final maturity date; bond structure (e.g. hard bullet/ soft bullet/ pass-through); identifier (e.g. ISIN); stock exchange listing; CRD II retained amount and method of retention (if applicable).
- The above information must also be reported for privately placed or unlisted bonds, with the exception of the coupon information, for which a weighted average of the coupon on all private placement or unlisted bonds can instead be reported as outlined in paragraph 24. Where such transactions pay interest on a different basis, different weighted averages should be reported, each covering all the privately-placed or unlisted bonds that pay interest on the same basis.
- For each class of notes, the credit enhancement and liquidity support derived from different supporting components (e.g. note subordination, over-collateralisation and reserve funds). List of all key parties and their current ratings (both short-term and long-term) together with any related trigger levels. Examples of counterparties to be

included are: issuer, servicer, cash manager, account bank(s), guaranteed investment contract provider(s), liquidity facility provider(s), swap provider(s) and any related back-up/standby providers.

- Details of any swaps, including: counterparty and notional, applicable rates, payments made/received, any collateral postings. For private placements and unlisted bonds, bands within which the payments made/received sit can be provided in lieu of the actual payment legs.
- Details of scheduled and actual principal and interest distributions to each note and any current period and cumulative shortfalls.
- Details of all payments made according to any applicable “waterfalls” (referring to the prospectus for details if appropriate) and any excess spread.
- A breakdown of all the available funds for the transaction, and a list of all pertinent ledgers (e.g. principal deficiency ledgers, reserve funds), transaction accounts and liquidity facilities, showing their opening balances, any aggregated debits/credits for each period, targeted values and closing balances. For any accounts from which investments are made, the average balance of investments in different asset classes, for example: cash, sovereigns, own name securities, RMBS, ABS, commercial paper.
- List of all material triggers/events referred to in the prospectus, such as counterparty-related triggers (which might be incorporated into the above list of key parties), performance triggers and issuer events of default etc, including a brief summary of the consequences if it is breached (referring to the prospectus for details if appropriate), and the current status of the trigger/event.
- Details of any tests, such as yield and pre-maturity tests, including details of calculations (if applicable).
- Transferor/Seller and Funding/Investor shares (master trusts only).

#### 4. Glossary

A glossary of all definitions used in the report. Examples of terms for which definitions should be provided include, but are not restricted to:

- Arrears and how the number of months in arrears is calculated
- Default definitions (e.g. 90/180/360 days or when a borrower is classified as insolvent)
- Constant Prepayment Rate (CPR), Principal Payment Rate (PPR) and Constant Default Rate (CDR)
- LTVs – whether these include capitalised interest or fees. For indexed LTVs, the method used for indexing
- An explanation of the arrears capitalisation policy

Source: <http://www.bankofengland.co.uk/markets/Documents/marketnotice101130abs.pdf>

## 2. ED Cloud Pro Stratification Tables

EUROPEAN DATAWAREHOUSE Stratification Tables & Comparisons									
	C1			C2			C3		
	Loans	Cbal	Perc	Loans	Cbal	Perc	Loans	Cbal	Perc
<b>Account Status (AR166)</b>									
Performing (1)	5,188	478,705,622	92.42	119,847	99,619,602,092	96.48	170,683	17,641,328,290	93.36
Arrears (2)	67	7,172,922	1.38	3,425	3,227,608,687	2.99	5,204	566,330,977	3
Default (3)	479	32,079,392	6.19	1,934	216,218,563	0.53	14,877	688,302,504	3.64
Redeemed (4)	913	0	0	20,714	0	0	45,766	0	0
Repurchased (5)				1,820	0	0	1,903	0	0
Other (6)				112	0	0	87	0	0
ND				261	0	0			
<b>Total</b>	<b>6,647</b>	<b>517,953,836</b>	<b>100</b>	<b>148,103</b>	<b>41,063,429,342</b>	<b>100</b>	<b>238,520</b>	<b>18,895,961,871</b>	<b>100</b>
<b>Months in Arrears (AR170)</b>									
Zero	4,803	442,746,237	85.48	118,686	37,473,059,778	91.26	171,928	15,324,050,723	81.1
One	310	28,160,970	5.44	1,801	1,131,221,327	2.75	4,022	429,139,601	2.27
Two	69	6,990,316	1.35	712	893,210,197	2.18	1,093	121,224,366	0.64
Three	23	2,207,365	0.43	203	195,094,839	0.48	528	58,685,455	0.31
Three - Six	25	2,211,798	0.43	251	77,762,315	0.19	544	57,501,360	0.3
Six - Twelve	32	4,056,096	0.78	301	91,086,401	0.22	762	87,064,867	0.46
Twelve - Eighteen	35	4,914,497	0.95	261	27,092,115	0.07	704	80,548,506	0.43
Eighteen +	217	26,664,998	5.15	2,217	124,442,066	0.3	7,061	562,218,915	2.98
ND	1,133	0	0	24,671	1,050,460,303	2.56	51,878	2,175,428,058	11.51
<b>Total</b>	<b>6,647</b>	<b>517,953,836</b>	<b>100</b>	<b>148,103</b>	<b>41,063,429,342</b>	<b>100</b>	<b>238,520</b>	<b>18,895,961,871</b>	<b>100</b>
<b>Interest Rate Type (AR107)</b>									
Loans				Loans			Loans		
5,514	517,953,836	100	62,942	35,351,229,841	86.09	148,800	15,586,364,869	82.38	
Floating rate loan (for IFR) (1)			54,855	4,431,342,141	10.79	19,605	1,629,240,505	8.62	
Floating rate loan (linked to Libor, Euribor etc.)			132	3,065,615	0.01	2,184	110,132,073	0.58	
Fixed rate loan (for IFR) (3)			9,533	1,170,520,151	2.85	3,881	366,777,936	1.94	
Fixed rate loan (with future periodic resets) (4)			12	1,302,893	0	889	121,928,670	0.65	
Fixed rate (compulsory future switch to floating)			3,001	106,668,701	0.26	11,894	1,100,784,906	5.83	
Capped (6)									
Discount (7)									
Other (8)	1,133	0	0	17,648	0	0	2	132,911	0
ND									
<b>Total</b>	<b>6,647</b>	<b>517,953,836</b>	<b>100</b>	<b>148,103</b>	<b>41,063,429,342</b>	<b>100</b>	<b>238,520</b>	<b>18,895,961,871</b>	<b>100</b>

- Ability to view aggregates and stratification tables for up to 10 selections
- Comparison of deals by series, issuer, vintage and country
- Comparison of external loan level data with ED data
- Ability to slice any table by several parameters, such as:
  - Account Status
  - Months in Arrears
  - CLTV
  - Active loans
- Ability to visualise time series & evolution of data fields
- Quick visualisation of stratification tables using Excel charts

Source: ED Cloud Pro, available from <https://eurodw.eu/ed-cloud-pro/>



## **IMPORTANT DISCLOSURES:**

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