

# EUROPEAN DATAWAREHOUSE



# **FRENCH SECURITISATION EVENT**

**9 JANUARY 2026**



# AT TODAY'S EVENT



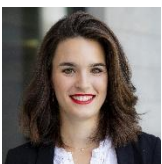
**LUDOVIC THEBAULT**  
**EUROPEAN DATAWAREHOUSE**  
ludovic.thebault@eurodw.eu



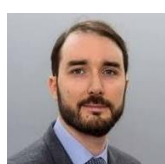
**ANNE-SOPHIE SPIRITO**  
**MOODY'S RATINGS**  
anne-sophie.spirito@moodys.com



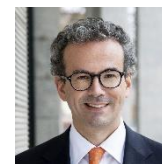
**YANIS BOUZIDI**  
**BANQUE DE FRANCE**  
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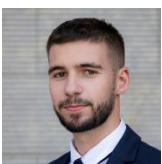
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**VINCENT VERDIER**  
**MOODY'S RATINGS**  
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**BANQUE DE FRANCE**  
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**NN BANK**  
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## AT TODAY'S EVENT (CONTINUED...)



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**MICHELE COSTOLA**

**CA' FORSCARI UNIVERSITY**

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# AGENDA

## 14:30 WELCOME & INTRODUCTION

LUDOVIC THEBAULT, EDW

## 14:35 EDW DATA QUALITY

THIBAUT JAUMOTTE & MARINE MAÎTRE, EDW

## 14:55 THE IMPORTANCE OF DATA QUALITY IN CREDIT ANALYSIS

ANNE-SOPHIE SPIRITO & VINCENT VERDIER, MOODY'S

## 15:10 EDW NEW SOLUTIONS

THIBAUT JAUMOTTE, EDW

## 15:20 COFFEE BREAK

## 15:40 ESMA TEMPLATES AND CLIMATE FIELDS

ANNE-SOPHIE CAVALLO & YANIS BOUZIDI, BANQUE DE FRANCE

## 15:55 RESEARCH UPDATE

LUDOVIC THEBAULT, EDW

## 16:05 GREEN AUTO SECURITISATION (GAS) PROJECT

MARINE MAÎTRE, EDW

## 16:15 ENGAGE FOR ESG INITIATIVE

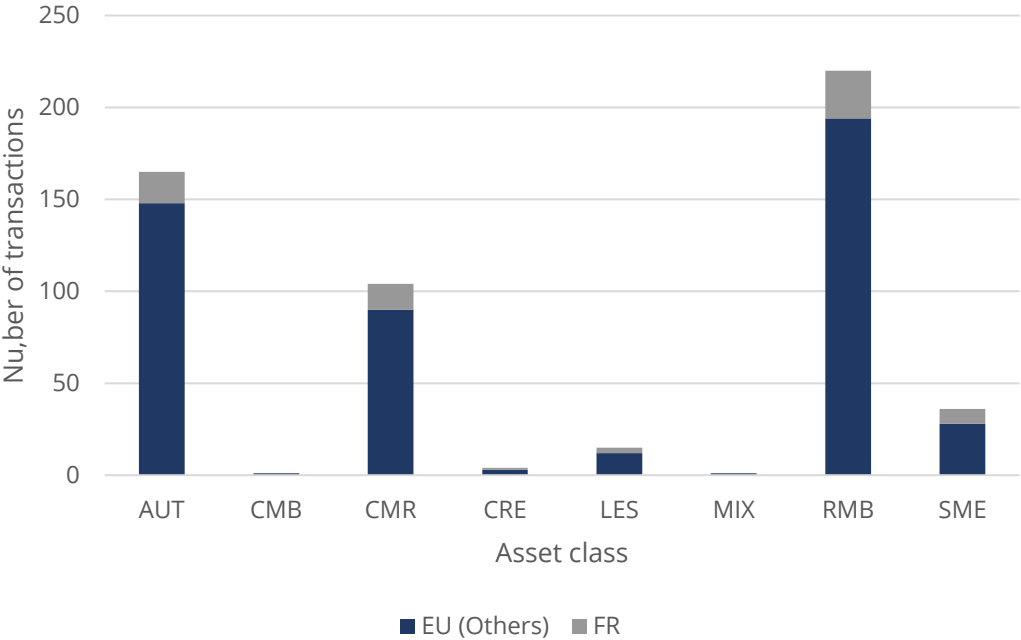
MARCO ANGHEBEN (EDW), MARTIJN BREED (NN BANK), PHILIPPE LAPORTE (UCI),  
IVA HRISTOVA & MICHELE COSTOLA (CA' FOSCARI)

## 16:30 Q&A SESSION & CLOSING REMARKS

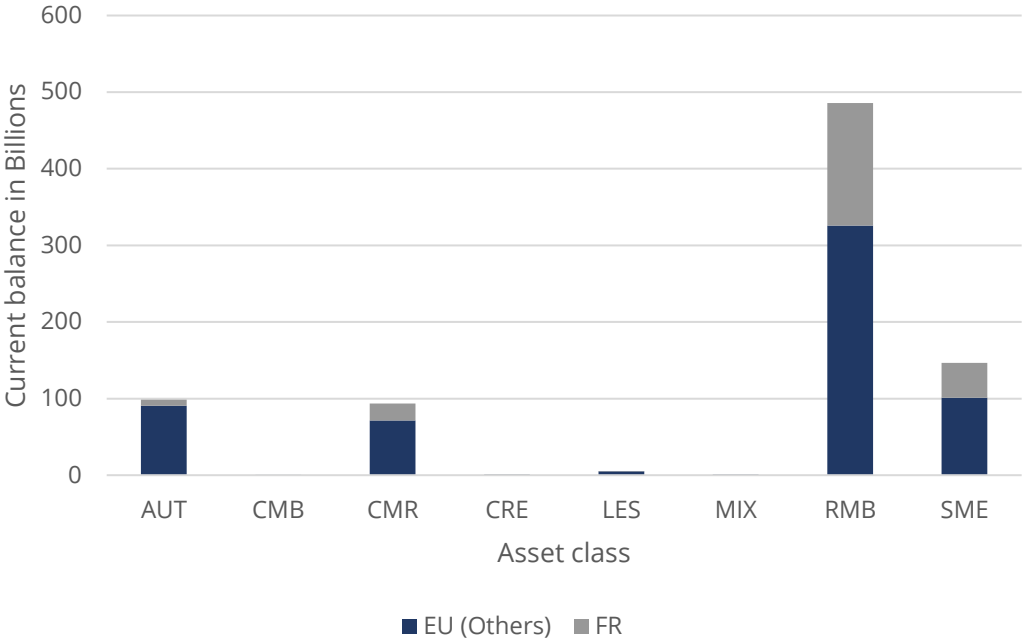
# FRANCE: A KEY MARKET IN EUROPE

FRENCH RMB ACCOUNT FOR A+/- A THIRD OF THE EU RMBS MARKET IN TERMS OF CURRENT BALANCE

Number of Transactions per Asset class



Current Balance per Asset Class



**ESMA PUBLIC LIST AS OF 30 SEPTEMBER 2025**

Source: ESMA ([esma82-402-39 synthetic securitisations designated as sts](#))

# **EDW DATA QUALITY**

**THIBAUT JAUMOTTE & MARINE MAÎTRE,**  
**EUROPEAN DATAWAREHOUSE**

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# FRANCE: DATA QUALITY

# DATA QUALITY SCORE – DQS

## HOW IT'S COMPUTED ?

The Data quality score is based on this formula:

$$\text{DQS ratio} = \frac{\sum(F\_f)}{(n \times MF)}$$

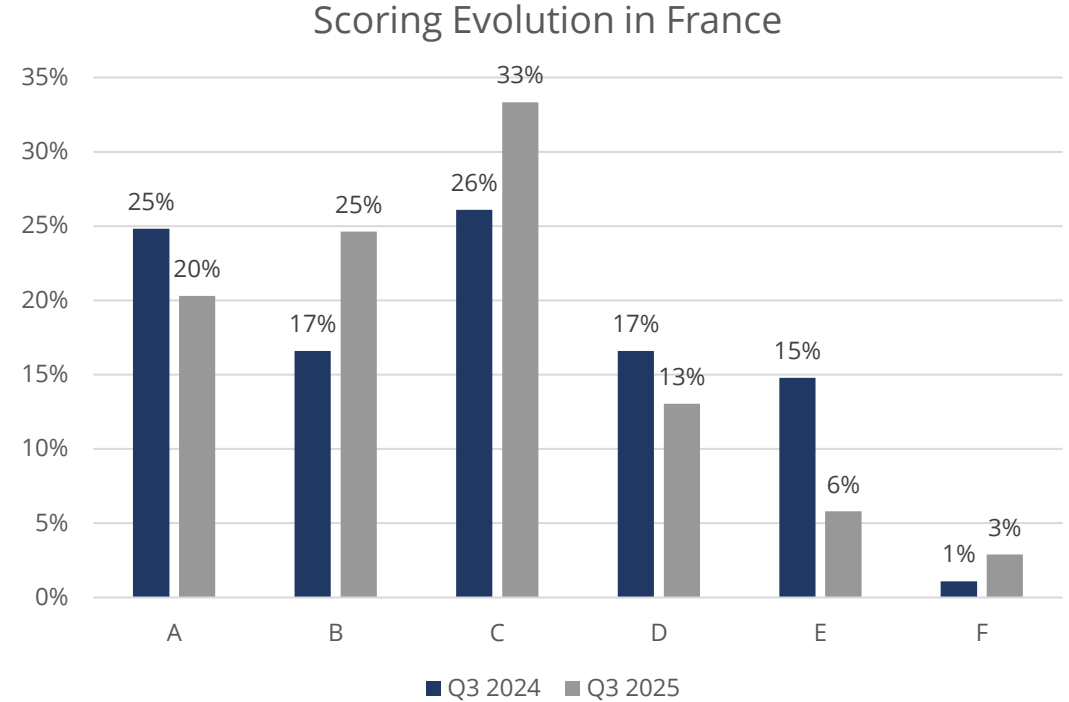
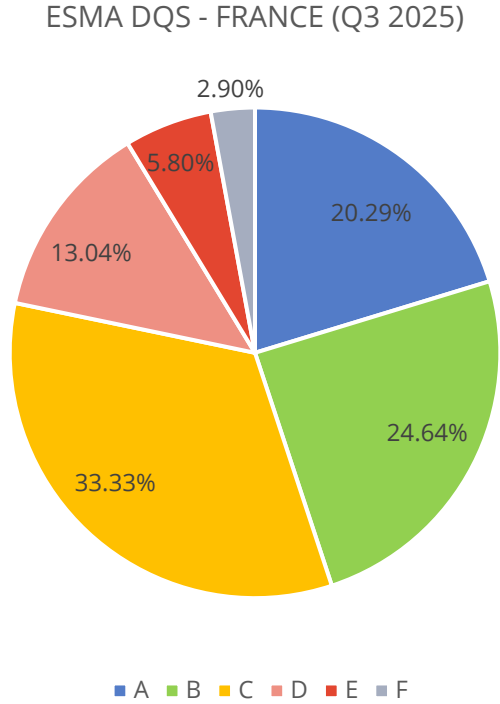
Where:

- $F\_f$  represents a field that failed a rule.
- $n$  is the total number of loans for each mandatory field.
- $MF$  represents the number of unique fields per each asset class with at least one DQS check implemented.

DQS SCORE	Min. Fail ratio	Max. Fail ratio	Ratio
A	0.0000%	0.0001%	Up until 1 in a million
B	0.0001%	0.005%	Up until 5 in 100k
C	0.005%	0.1%	Up until 1 in a thousand
D	0.1%	1%	Up until 1 in a hundred
E	1%	4%	Up until 4 in a hundred
F	4%	100%	> 4 in a hundred

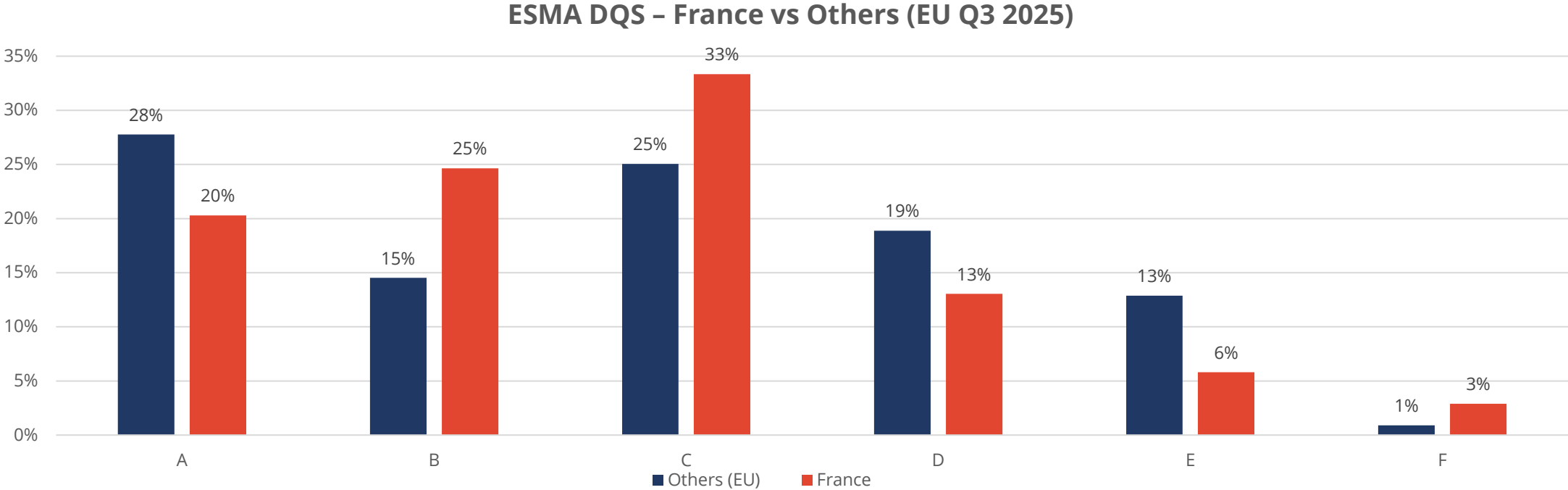
# FRANCE: DATA QUALITY IS IMPROVING

45% OF FRENCH DEALS ARE RATED A OR B AS OF Q3 2025



# FRANCE: DATA QUALITY COMPARED WITH ALL EU-COUNTRIES

FRANCE OUTPERFORMS OTHER COUNTRIES, WITH 21% OF DEALS RATED D, E, OR F VERSUS 43% ELSEWHERE.





# MISSING DATA ON CRITICAL FIELDS USED FOR RMBS PRICING

FEEDBACK FROM BANQUE DE FRANCE, IN CHARGE OF THE EUROSISTEM ABS PRICING

Field Name	Field Code	ND5	Count Zeros	Other
Maturity Date	RREL24	✓		
Interest Rate Type	RREL42	✓		✓
Current Interest Rate Index	RREL44	✓		✓
Current Interest Rate	RREL43	✓	✓	
Current Interest Rate Index Tenor	RREL45	✓		✓
Current Interest Rate Margin	RREL46	✓	✓	
Current Principal Balance	RREL30	✓	✓	
Original Principal Balance	RREL29	✓	✓	
Amortisation Type	RREL35			✓
Scheduled Interest Payment Frequency	RREL38	✓		✓

# MAIN DRIVERS OF THE DQS

ONLY A FEW FIELDS CONTRIBUTE TO THE HIGHEST NUMBER OF DATA QUALITY ISSUES

TOP 10	ESMA FIELD	NO. OF LOANS
1	Origination channel	1,360,681
2	Date Of Updated Residual Valuation Of Vehicle	480,916
3	Default Amount	58,182
4	Default Date	49,389
5	Balloon Amount	385,305
6	Interest Rate Cap	239,541
7	Redemption Date	389,275
8	Credit Impaired Obligor	317,864
9	Number Of Days In Arrears	91,325
10	Allocated Losses	122,636

TOP 10	ESMA FIELD	NO. OF DEALS
1	Number Of Days In Arrears	227
2	Redemption Date	194
3	Current Principal Balance	92
4	Default Amount	128
5	Current Loan-To-Value	27
6	Current Valuation Date	80
7	Reason for Default or Foreclosure	80
8	Maturity Date	63
9	Default Date	92
10	Account Status	57

# **DATA QUALITY: FOCUS ON CDRS & CPRS**

# ANNUALISED CONSTANT DEFAULT RATE (CDR) – DEFINITION

CALCULATION METHOD AS DEFINED BY THE ESMA TAXONOMY

IVSS27	Annualised Constant Default Rate	The annualised Constant Default Rate (CDR) for the underlying exposures based on the periodic CDR. Periodic CDR is equal to the [(total current balance of underlying exposures classified as defaulted during the period) / (total current balance of non-defaulted underlying exposures at the beginning of the period)]. This value is then annualised as follows: $100 * (1 - ((1 - \text{Periodic CDR})^{\text{number of collection periods in a year}}))$ "Periodic CDR" refers to the CDR during the last collection period, i.e. for a securitisation with quarterly paying bonds this will usually be the prior three month period.
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$$CDR = 100 * \left( 1 - \left( 1 - \frac{\text{Current Balance of Defaulted Loans during the Period}}{\text{Current Balance of Non – Defaulted Loans at the beginning of the Period}} \right)^{\text{Number of Collection Periods in a Year}} \right)$$



# ANNUALISED CONSTANT DEFAULT RATE (CDR) – DEFINITION

## OUR DEFINITION OF A LOAN DEFAULT

We classify a loan as defaulted if any of the following apply:

- **Account Status** changes to Default this Period
- **Default Amount** appears this Period
- **Default Date** falls within Reporting Period

# ANNUALISED CDR – RECALCULATION

OUR THREE RECALCULATION METHODS TO MATCH YOURS CLOSELY

Based on the Current Balance, as  
required by ESMA

Based on the Default Amount

Based on Gross Charge-Offs

# ANNUALISED CDR – COMPARISON

RECALCULATED VS. REPORTED CDR: A NUMERICAL COMPARISON

**16%**

of reported CDR aligns with our recalculated CDR  
(Current Balance)  $\pm 10\%$

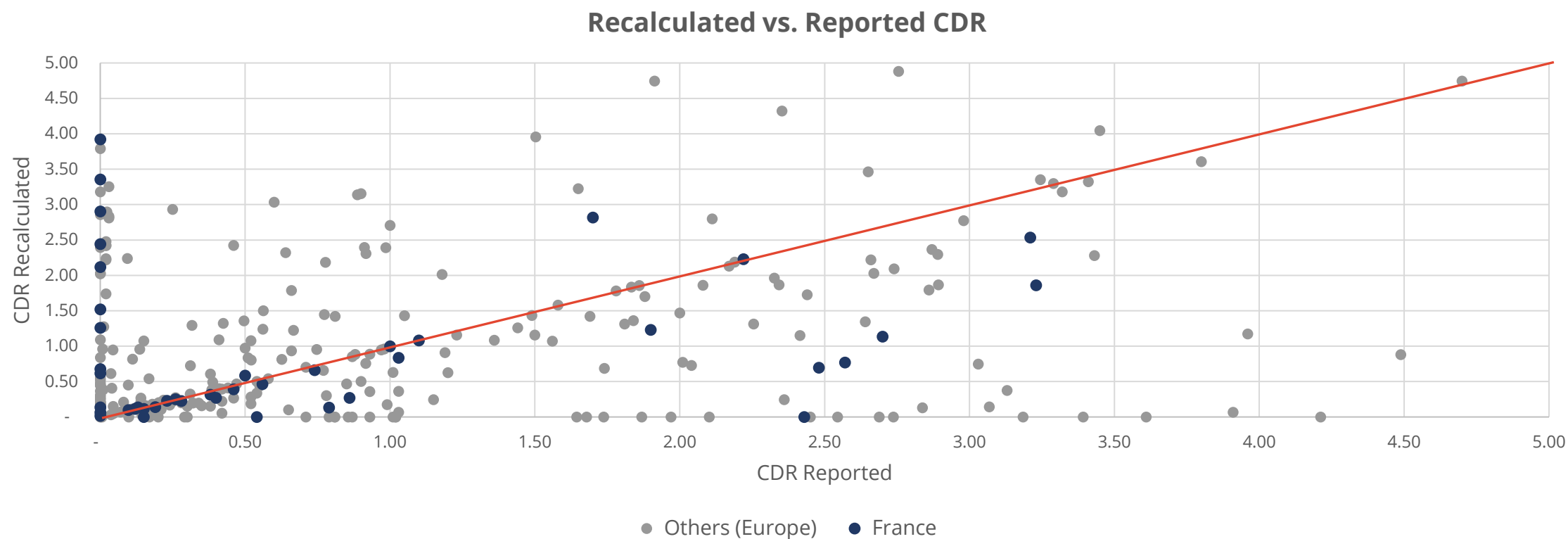
**55%**

of reported CDR aligns with one of our recalculated  
CDR (Current Balance, Default Amount or Gross  
Charge-Offs)  $\pm 10\%$

Sample Data: Latest Pool Cutoff – 326 Public European Active Deals with Defaults

# ANNUALISED CDR - COMPARISON

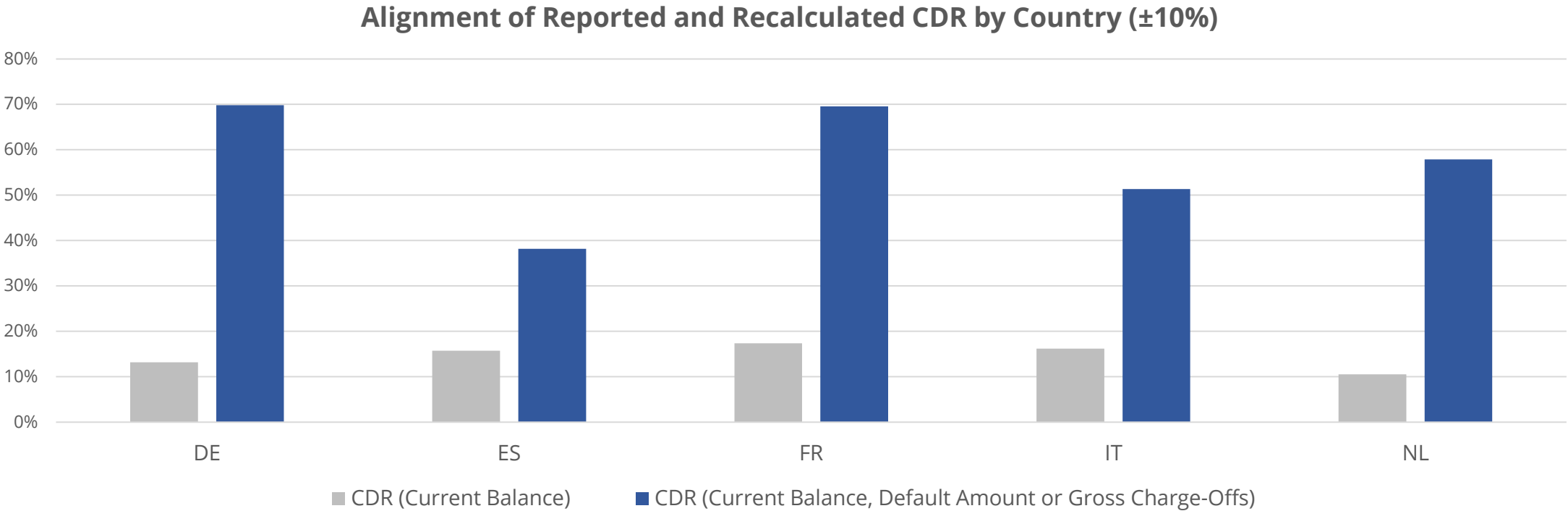
RECALCULATED VS. REPORTED CDR: ILLUSTRATED COMPARISON





# ANNUALISED CDR - COMPARISON

RECALCULATED VS. REPORTED CDR: COMPARISON



Sample Data: Latest Pool Cutoff – 281 Public Active Deals with Defaults

# ANNUALISED CDR – DISCREPANCIES

## COMMON CAUSES FOR DISCREPANCIES

- Not Annualised
- Not expressed as Percentage
- Current Balance of Defaulted Loans reported as Zero
- Some Defaulted Loans are reflected in the followings Period's CDR rather than the current one (timing mismatch)
- Incorrectly Reported Amounts (e.g., Cumulative or Outstanding Defaults)

# ANNUALISED CONSTANT PREPAYMENT RATE (CPR) – DEFINITION

CALCULATION METHOD AS DEFINED BY THE ESMA TAXONOMY AND OUR UNDERSTANDING

IVSS22	Annualised Constant Prepayment Rate	<p>The annualised Constant Prepayment Rate (CPR) of the underlying exposures based upon the most recent periodic CPR. Periodic CPR is equal to the [(total unscheduled principal received at the end of the most recent collection period) / (the total principal balance at the start of the collection period)]. The Periodic CPR is then annualised as follows: <math>100 * (1 - ((1 - \text{Periodic CPR})^{\text{number of collection periods in a year}}))</math> 'Periodic CPR' refers to the CPR during the last collection period i.e. for a securitisation with quarterly paying bonds this will usually be the prior three month period.</p>
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$$CPR = 100 * \left( 1 - \left( 1 - \frac{\text{Unscheduled Principal Received at the end of the Period}}{\text{Principal Balance at the start of the Period}} \right)^{\text{Number of Collection Periods in a Year}} \right)$$

$$CPR = 100 * \left( 1 - \left( 1 - \frac{\sum_{loans} | \text{Cumulative Prepayments}_{PCD} - \text{Cumulative Prepayments}_{PCD-1} |}{\sum_{loans} \text{Current Balance}_{PCD-1}} \right)^{\text{Number of Collection Periods in a Year}} \right)$$

# ANNUALISED CPR – COMPARISON

RECALCULATED VS. REPORTED CPR: NUMERICAL COMPARISON

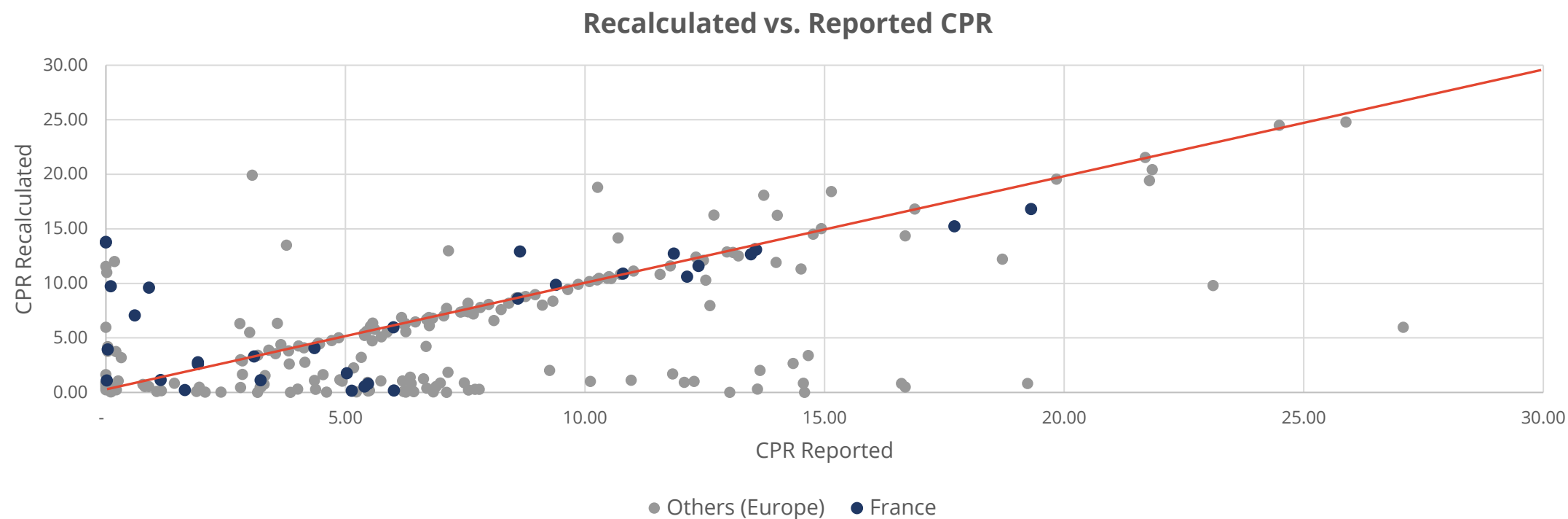
29%

of reported CPR aligns with our recalculated CPR  
 $\pm 10\%$

Sample Data: Latest Pool Cutoff – 276 Public European Active Deals with Prepayments

# ANNUALISED CPR - COMPARISON

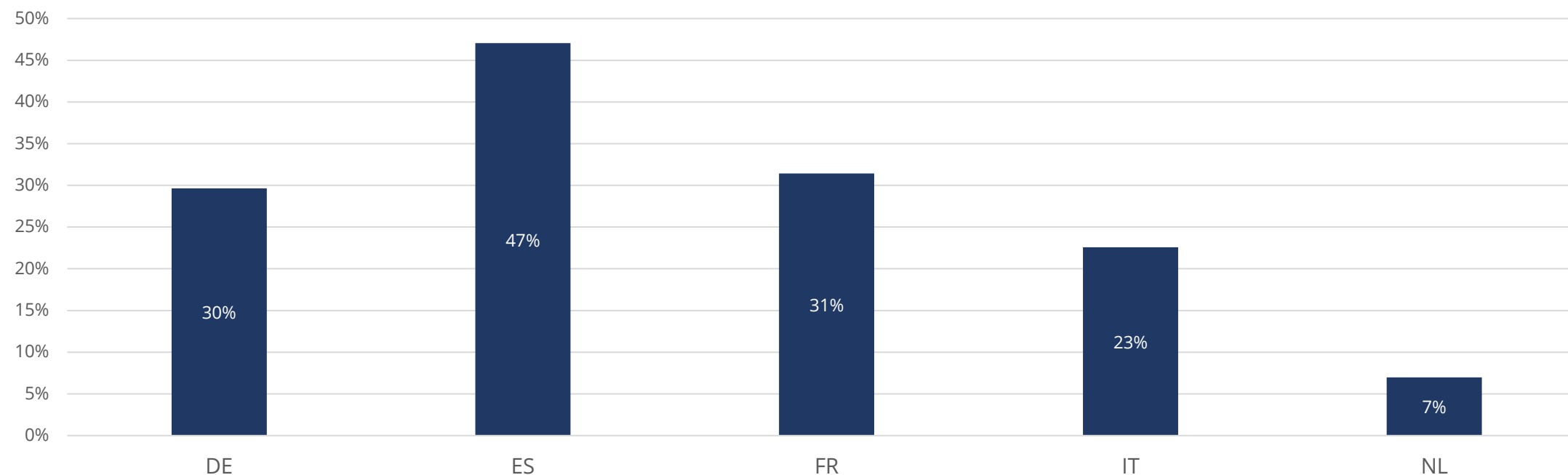
RECALCULATED VS. REPORTED CPR: ILLUSTRATED COMPARISON



# ANNUALISED CPR - COMPARISON

## RECALCULATED VS. REPORTED CPR: COMPARISON

Alignment of Reported and Recalculated CPR by Country ( $\pm 10\%$ )



Sample Data: Latest Pool Cutoff – 252 Public Active Deals with Prepayments

# ANNUALISED CPR – DISCREPANCIES

## COMMON CAUSES FOR DISCREPANCIES

- Not Annualised
- Not expressed as Percentage
- Some Active Loans report Cumulative Prepayments that are lower than in the previous submission (!)
- Calculated once per year and reported multiple times, or in some cases only once at the start of the transaction

# THE IMPORTANCE OF DATA QUALITY IN MOODY'S CREDIT ANALYSIS

ANNE-SOPHIE SPIRITO & VINCENT  
VERDIER, MOODY'S RATINGS

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# EDW NEW SOLUTIONS

THIBAUT JAUMOTTE, EUROPEAN DATAWAREHOUSE

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# PRIVATE SECURITISATIONS IN EDW DATABASE

AN INCREASING NUMBER OF PRIVATE SECURITISATIONS (EU & NON-EU) IS STORED IN THE SECURITISATION REPOSITORY

PRIVATE SECURITISATIONS  
IN EDW DATABASE

**>350**  
TOTAL

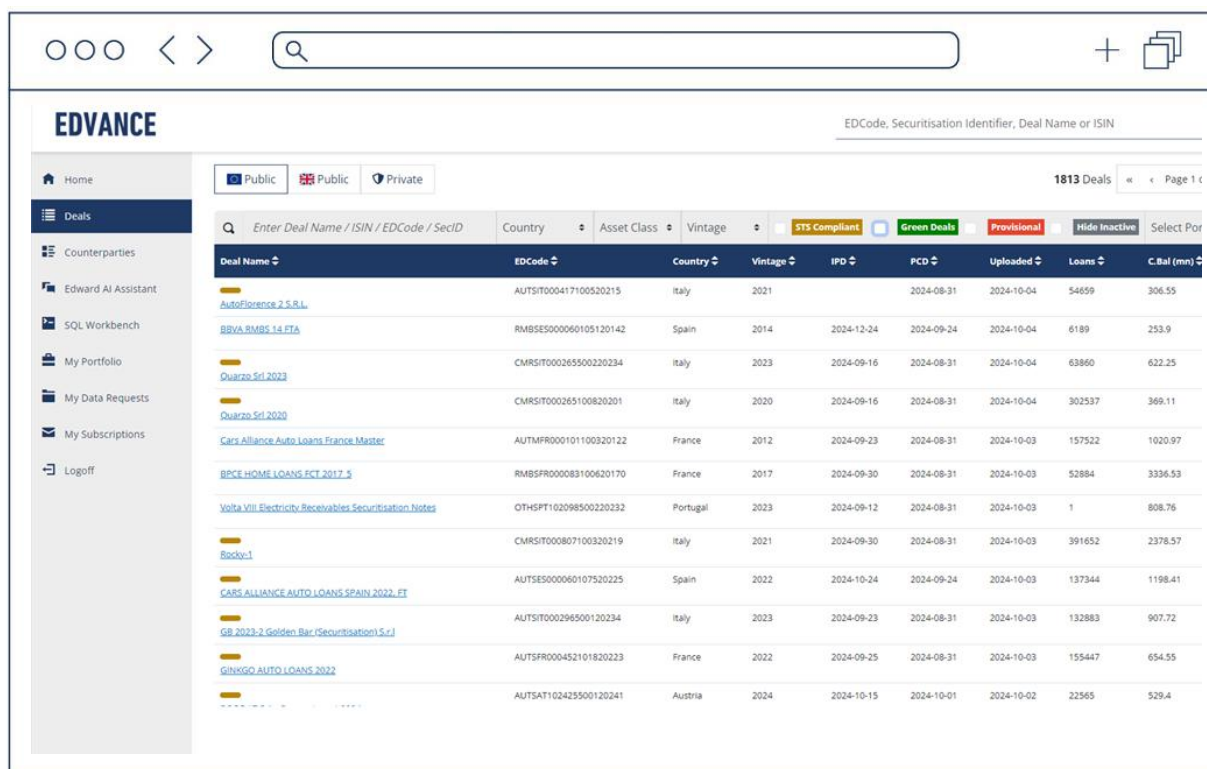
**100+**  
ISSUERS

**19**  
COUNTRIES

**10**  
ASSET CLASSES

# EDVANCE

DISCOVER ALL-IN-ONE DATA ACCESS



EDVANCE

EDCode, Securitisation Identifier, Deal Name or ISIN

Public Public Private 1813 Deals Page 1 of 1

Enter Deal Name / ISIN / EDCode / SecID

Country Asset Class Vintage STS Compliant Green Deals Provisional Hide Inactive Select Port

Deal Name	EDCode	Country	Vintage	IPO	PCD	Uploaded	Loans	C.Bal (mn)
<a href="#">AutoFlorence 2 S.B.L.</a>	AUTSIT000417100520215	Italy	2021		2024-08-31	2024-10-04	54659	306.55
<a href="#">BBVA RMBS 14 FTA</a>	RMBSES000060105120142	Spain	2014	2024-12-24	2024-09-24	2024-10-04	6189	253.9
<a href="#">Quarzo Srl 2023</a>	CMRSIT000265500220234	Italy	2023	2024-09-16	2024-08-31	2024-10-04	63860	622.25
<a href="#">Quarzo Srl 2020</a>	CMRSIT000265100820201	Italy	2020	2024-09-16	2024-08-31	2024-10-04	302537	369.11
<a href="#">Cars Alliance Auto Loans France Master</a>	AUTMFR000101100320122	France	2012	2024-09-23	2024-08-31	2024-10-03	157522	1020.97
<a href="#">BPCE HOME LOANS FCT 2017 S</a>	RMBSEFR000083100620170	France	2017	2024-09-30	2024-08-31	2024-10-03	52884	3336.53
<a href="#">Volta VIII Electricity Receivables Securitisation Notes</a>	OTHSP1102098500220232	Portugal	2023	2024-09-12	2024-08-31	2024-10-03	1	808.76
<a href="#">Blacky1</a>	CMRSIT000807100320219	Italy	2021	2024-09-30	2024-08-31	2024-10-03	391652	2378.57
<a href="#">CARS ALLIANCE AUTO LOANS SPAIN 2022_FT</a>	AUTSE0000060107520225	Spain	2022	2024-10-24	2024-09-24	2024-10-03	137344	1198.41
<a href="#">GB 2023-2 Golden Bar (Securitisation) S.r.l</a>	AUTSIT000296500120234	Italy	2023	2024-09-23	2024-08-31	2024-10-03	132883	907.72
<a href="#">GihxGG AUTO LOANS 2022</a>	AUTSFR000452101820223	France	2022	2024-09-25	2024-08-31	2024-10-03	155447	654.55
<a href="#">AUSTRIA 102425500120241</a>	AUTSAT102425500120241	Austria	2024	2024-10-15	2024-10-01	2024-10-02	22565	529.4

- EDVANCE consolidates features of EDITOR, SQL Access, and Deal Reports, into **one portal**.
- You can **easily** access public & private securitisations, ESMA and FCA templates.
- Manage your portfolios, query and analyse loan data using SQL
- View counterparties and use EDWARD, our **AI Assistant**,

# EDVANCE

## COUNTERPARTY VIEW

EDVANCE

Dashboard
Deals
Counterparties
Edward AI Assistant
SQL Workbench
My Portfolio
My Notebook
My Data Requests
My Alerts
Logout

Counterparty View

Deal View

Q

Enter Counterparty Name

Counterparty Type

Country

Counterparty Name	Roles (#Deals)	Deals	LEI & Address
abcbank GmbH	SBLP (4) SELL (4) SERV (4)	4	5299009502R8B63LN39 Kamekestraße 2 - 8 Köln, 50672 Germany
Banque Internationale à Luxembourg	OTHR (1)	1	9CZ77VMR36CYD5TZB550 69, Route d'Esch Luxembourg, L-1470 Luxembourg
ABN AMRO Bank N.V.	CACB (35) ABNK (26) COLA (12) PAYA (9) IRSP (8) OTHR (7) ABRG (4) ABGR (2) CALC (2) MNGR (1)	35	BFXSSXCH7N0Y05NWXW11 Gustav Mahlerlaan 10 Amsterdam, 1062PP Netherlands
AGOS-DUCATO S.P.A.	ORIG (7) SELL (7) SERV (7) SUBS (7)	6	815600F37471C4E69D64 VIALE FULVIO TESTI, 280 MILANO, 20126 Italy
Barclays Bank UK PLC	CACB (19)	8	213800ULGANOMF9XK769 1 CHURCHILL PLACE LONDON, E14 5HP United Kingdom
BANCA MEDIOCREDITO DEL FRIULI VENEZIA GIULIA S.P.A.	LQPP (1) ORIG (1) SERV (1) SUBS (1)	1	549300HQKCKXWS4Q46 VIA AQUILEIA 1 UDINE, 33100 Italy
ASSET-BACKED EUROPEAN SECURITISATION TRANSACTION FOURTEEN S.R.L.		1	815600CA09E26F515386 VIA V. ALFIERI, 1 .....

685 Counterparties

Showing 1 of 28 pages

Map

Satellite

- View counterparties for all public securitisations.
- Filter per Counterparty type
- Filter per country

# EDWARD

EDWARD HELPS QUERY THE EDW DATABASE WITHOUT SPECIFIC SQL KNOWLEDGE

○○○ < > 🔍 + 📄

EDCode, Securitisation Identifier, Deal Name or ISIN

Hello! I'm Edward.  
I help produce SQL queries to run on EDW data sets

Edward Data Model:

Deals Auto Residential  
Consumer Corporate CreditCard  
Leasing

☒ Use only the latest snapshot

Data Fields Available

Deal Information

Sec\_Id - Uniquely identifies each Deal or Securitisation  
ED\_Code - European DataWarehouse code for the deal  
Deal\_Name - The name of the deal  
Sec\_Type - Type of securitisation  
Vintage - The year of the deal (int)  
Country\_of\_Assets - Country name of the assets  
Data\_Owner - Issuer or data owner  
Data\_Provider - The data provider of the deal  
Is\_Active - Whether the deal is currently active (bit)  
ISIN - International Securities Identification Number  
Asset\_Class - The class of assets (e.g., AUT for Auto, RMB for Residential)

Pre-computed Aggregates

Total\_Loans - Total number of loans in the securitised pool  
Active\_Loans - Number of currently active loans  
Active\_Obligors - Number of active obligors (borrowers)  
Non\_Performing\_Exposures - Total non-performing exposures within the pool  
Total\_Current\_Balance - Total current balance of all

What insights are you looking for from EDW data sets?

Edward can produce incorrect SQL, so please validate your queries.

I want to know the number of active deals in each country

Weighted avg. interest rate for all German auto deals

Average delinquency and default rates for Resi deals per issuer

List the WA CLTV and the WA OLV by country for all RMB deals

- Our **AI assistant** facilitates analysis, data extraction and the production of statistics
- **User friendly**, it saves time and resources
- Accessible in **any language**
- EDWARD helps you improve your queries



# **DEALDOX: EDW'S VIRTUAL DATA ROOM**

## **SHARING RELEVANT INFORMATION IN A SIMPLE, SECURE AND SEAMLESS WAY**


# DEALDOX™

A NEW ERA OF EFFICIENCY AND SECURITY IN DEAL DOCUMENTATION HOSTING


DEALDOX

Let's Get You Started


Join thousands of professionals who trust DealDox for their critical transactions.



**Bank-Grade Security**  
Your data is protected with enterprise-level encryption



**Ready in Minutes**  
Set up your data room and start collaborating instantly



**Expert Support**  
Our team is here to help you every step of the way

Let's Get You Started

What best describes your data room?

Private Securitisation

Public Securitisation

CLO

Covered Bond

Investor Reporting

Generic Room - With Login

Generic Room - No Login

Enter your details


Company Name\*


Company Address\*


Work Email\*


Password\*


Where to store your data?











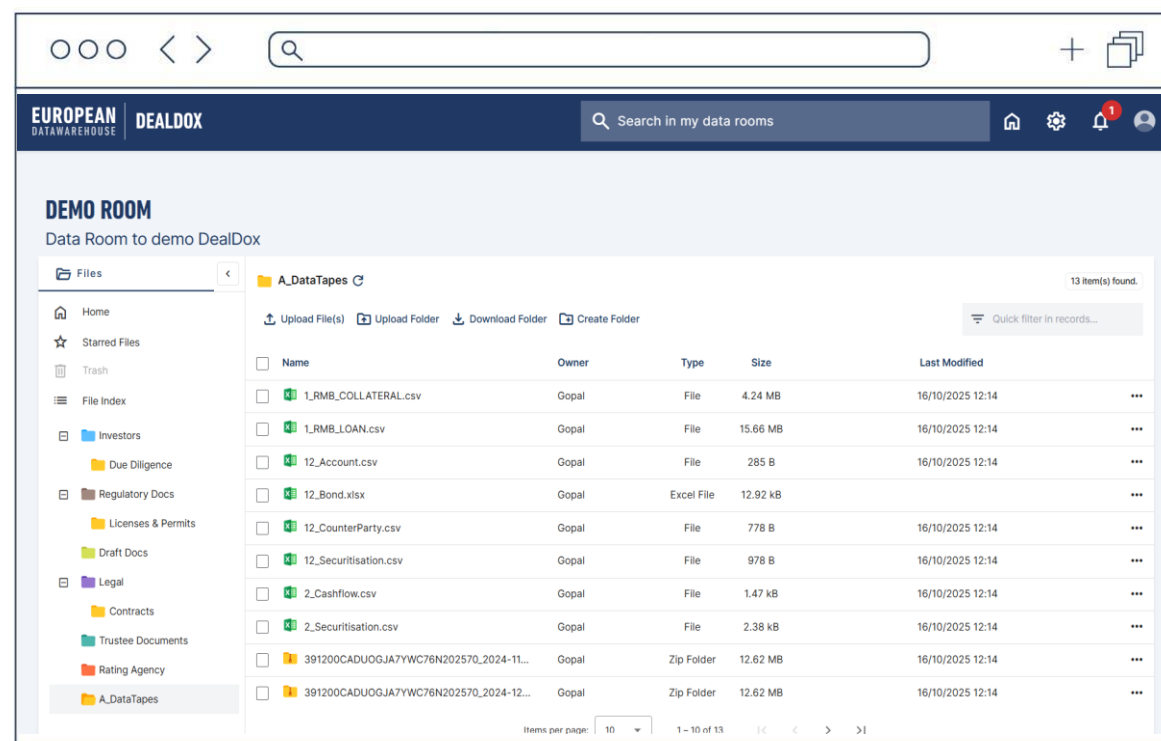


# KEY BENEFITS AND FUNCTIONALITY

NOW YOU CAN WORK FASTER, WORRY LESS, TRUST EVERY CLICK

## Key benefits at-a-glance:

- **Easy-to-use data rooms** with bank grade security
- **User-controlled access** and permissions for secure viewing
- **Comprehensive audit trails** and data user access analytics
- **Secure, interactive workspace**
- Intuitive **drag-and-drop UI**
- Secure hosting **developed and housed in the EU**
- **Redact, annotate, highlight, and even collect signatures** in sensitive files in an interactive PDF viewer





# SIMPLE AND POWERFUL

A NEW ERA OF EFFICIENCY AND SECURITY IN DEAL DOCUMENTATION HOSTING

SAMPLE ROOM

for dev and Qa

Collapse menu

Data Room

Manage

Workspace

Starred Files

Trash

File Index

Root Folder

child folder

Folder 1

sub folder 1

Sub folder 2

child folder

Data Room

Manage

Folder 1

Refresh

Upload File(s)

Download Folder

Create Folder

Sub folder 2

1 item(s) found.

Refresh

Upload File(s)

Download Folder

Create Folder

Quick filter in records...

#	Name	Owner	Type	Size	Last Modified	
<input type="checkbox"/>	SamplePresentation.pptx	Admin	File	2.08 MB	10/06/2025 12:52	<div><div>Download</div><div>Edit</div><div>Make a copy</div><div>View File</div><div>Organize</div><div>File information</div><div>Move to trash</div></div>

Items per page: 10

1 – 1 of 1

CREATE GROUP

Permission groups are used to manage permissions for folders. It is recommended to create a group for each department or team.

Please select required permissions for each folder and then click on Save.

Folder Name	View	Edit	Download	Upload
Folder 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Root Folder	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

< Back

Complete ✓

# SIMPLE AND POWERFUL

A NEW ERA OF EFFICIENCY AND SECURITY IN DEAL DOCUMENTATION HOSTING

### ADD USERS

Be cautious that Users have sufficient permissions can mismanage the data room. Users will be notified when they have at least one permission.

Please select authorized users for the data room and then click on Next.

Authorized Users / Emails\*

Permission Group\*

Cancel

### UPLOAD FILES

You can add more files or press Upload to complete process.

Please click here to select files.

Cancel

Add File(s)

Upload

### Manage Permission Groups

3 group(s) found.

Add New Group

Refresh

Quick filter in records...

No.	Name	Description	Last Modified Date
1	Admin	Full access to manage users, settings, and all documents.	...
2	Viewer	Read-only access to view documents.	...
3	Editor	Can upload, edit, and organize documents.	...

Items per page: 10    1 – 3 of 3

View or Edit Group

Show Group Users

Toggle Suspend Group

Delete Group

EUROPEAN  
DATAWAREHOUSE

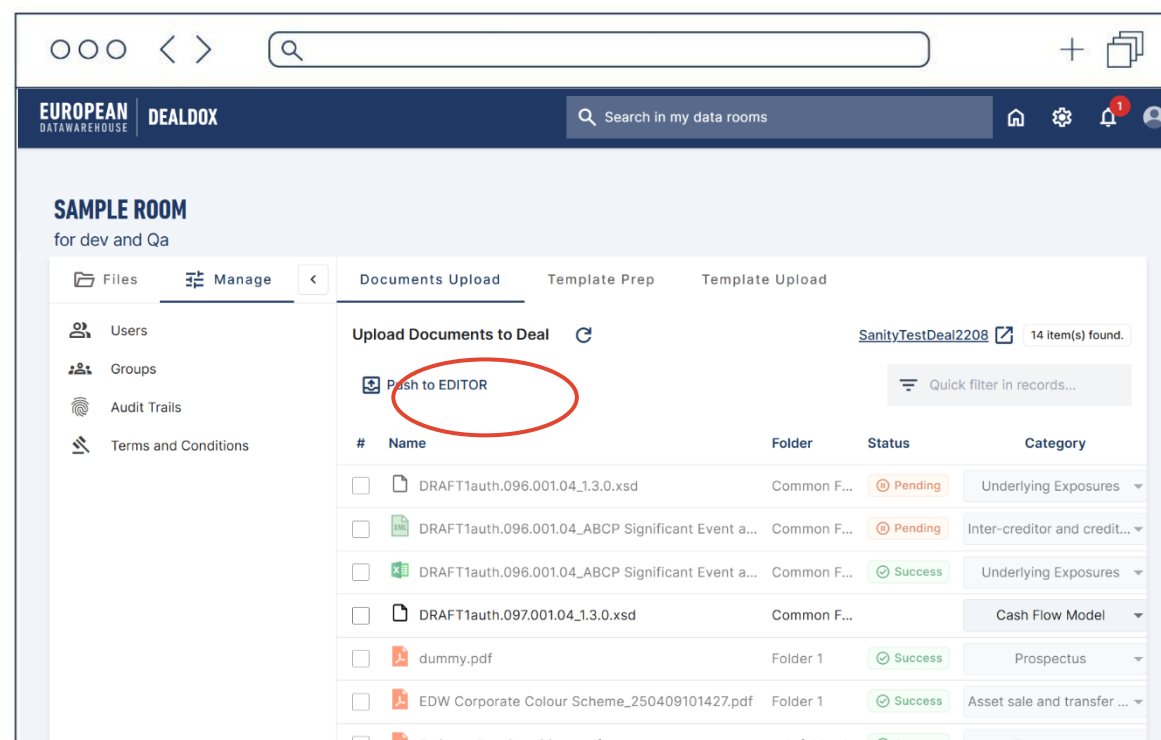
JANUARY 2026

55

# SEAMLESS EDITOR INTEGRATION FOR REGULATORY COMPLIANCE

## PUSH-TO-PUBLISH CONVENIENCE FOR ESMA REPORTING

- Complete **EDITOR integration** enables seamless **ESMA reporting**
- Offers direct access to **EDW's CSV to XML converter**
- First and **only VDR to streamline ESMA workflows** with built-in reporting automation
- Exclusive capability that **eliminates manual file handling and reduces reporting risk**



# ESMA TEMPLATES & CLIMATE FIELDS

**ANNE-SOPHIE CAVALLO & YANIS  
BOUZIDI, BANQUE DE FRANCE**

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# FROM EUROPEAN UNION CLIMATE DIRECTIVES AND REGULATIONS TO ABS RISK MITIGATION

During the last years, the European Union has issued several climate directives and regulations across different sectors: Transport, buildings and construction...

- Automotive industry: CO2 emission performance standards for new passengers and commercial cars (2023)
  - ↳ -55% of emissions by 2030 and -100% by 2035 for new passengers cars
- Real estate industry: Energy performance of buildings applies to residential and non-residential (2024)
  - ↳ Reduction of the emission of buildings : zero emission by 2030 for new buildings and decarbonization of the entire building stock by 2050

These directives and regulations have to be incorporated by EU countries into their national legislation

The underlying assets of the ABSs belonging to the concerned sectors are subjects to these new legislative requirements

- ↳ How could we assess and monitor the potential effects in a context of ABS valuation and risk management?

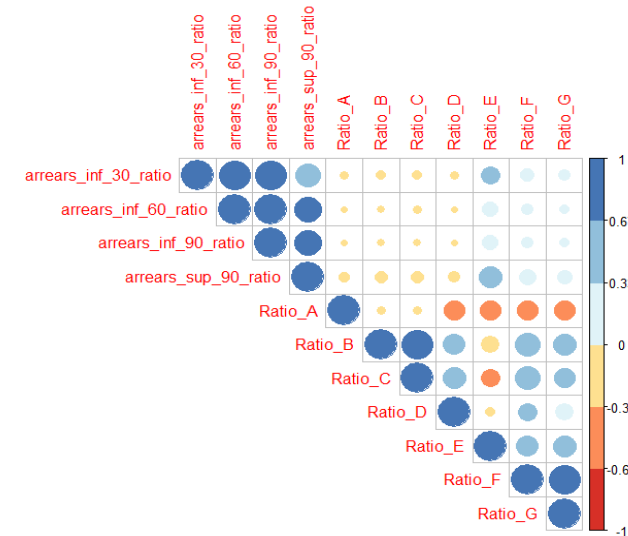
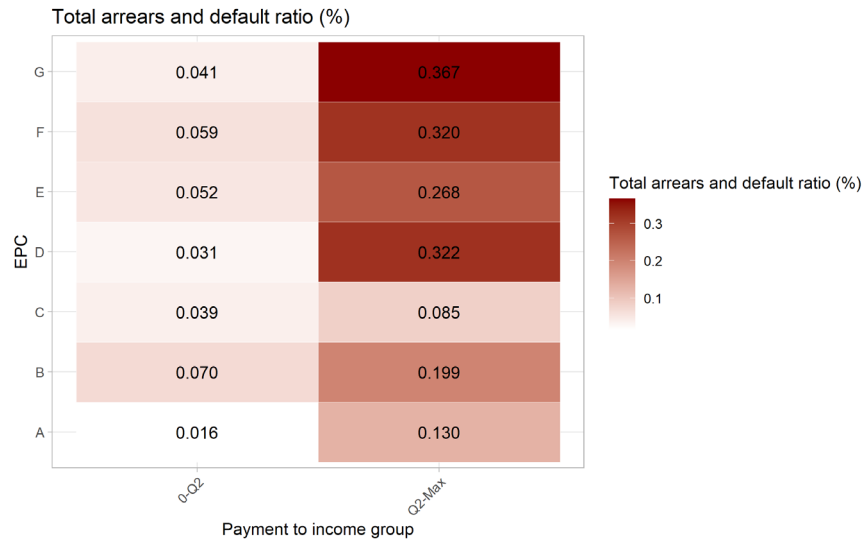
# CLIMATE FIELDS IN THE ESMA TEMPLATES

- The new templates for ABS were established at the end of 2021 by ESMA
- The new templates include several fields that were already present in the ECB template. It also introduced some new ones : primary income type, collateral type and Energy performance certificate etc..
- The climate-related field is EPC : it ranks the underlying asset (for example, a property or a cars) from A to G, where A is the best rating. Consumers, Autoloans and RMBS are the ABSs that include this field in their respective templates
- EPC field is not mandatory to fill in the ESMA template
- Since October 2024, reporting in ESMA template is an eligibility criterion for refinancing operations
- Based on this new variable, we initiated climate-related analyses on ABS eligible perimeter

# EPC INFORMATION AND RISK ANALYSIS

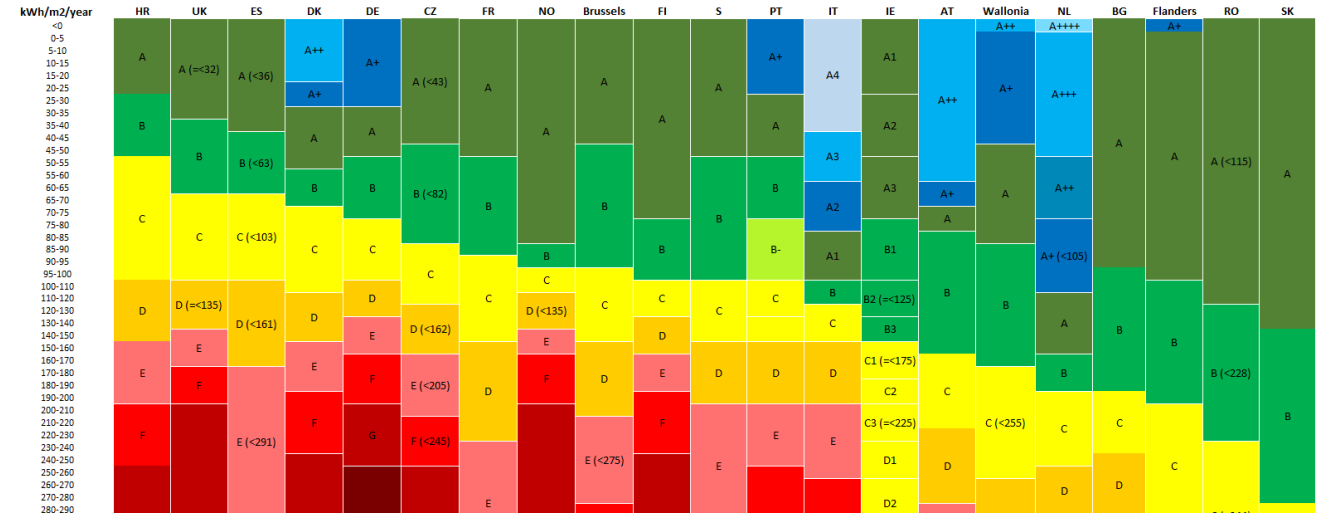
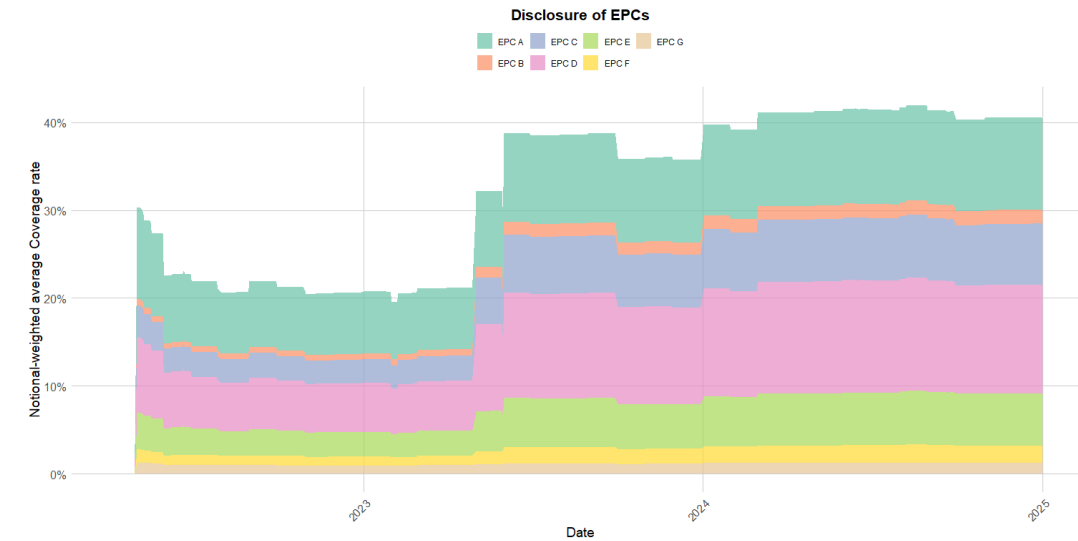
- Payment defaults and arrears in an ABS deals have repercussion on asset prices

↳ Could the loan's EPC category explains/predicts a default or an arrear in future payments?



- Internal analyses on RMBS eligible perimeter show that :
  - The correlation between the arrears categories and EPC ratios shows that the correlation is negative for the best EPC and turns positive for the lowest EPC rating
  - The table of % arrears and default by payment\_to\_income / EPC shows a relation between the EPC and arrears even when we control by the debt burden
- These results encourage to investigate further on this direction by conducting more analyses at the pool level or in a more granular manner (Guin et al. (2022): Energy efficiency is a significant predictor of mortgage arrears in the UK)

# LIMITATIONS OF THE EPC FIELD : RMBS ELIGIBLE PERIMETER



- The average of the EPC disclosure by ISIN is around 40% for the eligible RMBS at the end of 2024. It remains at the same level by the end of 2025 (41%), there are 93 ISINs with positive disclosure and 136 ISINs without disclosure
- The EPC threshold table shows that the ranges of energy consumption used to define EPC ratings are not harmonized across European countries, making any comparison difficult
- The improvement of the disclosure and the homogenization of the EPC classes could enhance the quality of future work



# BDF STANCE ON CLIMATE FIELDS AS PART OF THE SECURITISATION REGULATION REVIEW

BDF stance shared publicly thanks to the ESMA template consultation in march 2024 and the Securitisation regulation review consultation in December 2024

The current templates and submitted data do not allow for an assessment of ABS climate-related risks, because climate-related data are scarcely available so far.

- Therefore, BDF is in favour of the **reduction and simplification of reporting requirements**
  - But BDF deems essential that **some additional risk indicators related to climate change** that can support the EU efforts to improve sustainability disclosures are included
  - This would support our efforts to **assess the impact of “greenness of ABS” and our risk analyses.**
- 
- The Commission proposal mid 2025 however did not mention this aspect
  - But the ECB legal opinion published end of 2025 did, as did some respondents to the end 2024 consultation on the securitisation review.

# BDF STANCE ON CLIMATE FIELDS AS PART OF THE SECURITISATION REGULATION REVIEW

## BDF supports the introduction of additional risk indicators related to climate change in the templates:

- Indicators **corresponding to those used in other EU legal acts** (less burdensome)
- Would allow supervisors and other stakeholders to understand and **better manage financial risks related to sustainability**.
- To ensure data quality, an adequate **phase-in period** could be designed to allow for reporting agents to adapt to those potential new requirements, not weighing too much on the ABS markets functioning : **optional then compulsory fields**
  - Particularly relevant for ABS categories for which IT costs are higher or data centralization is more challenging (easier for auto ABS than for RMBS).
  - Estimates could be accepted for legacy loans for which the data is not readily available.
- Moreover, **comparability** across jurisdictions should be ensured.
- Examples of **such new fields**:
  - RMBS: primary energy demand (kWh/m<sup>2</sup> per year) alongside EPC
  - Auto ABS: information on tailpipe emissions (gCO<sub>2</sub>/km) for vehicles
  - Corporate ABS : taxonomy metrics scope 1 to 3
  - For green ABS benefitting from the EU GBS, information at transaction level about requirements for issuers of green ABSs.

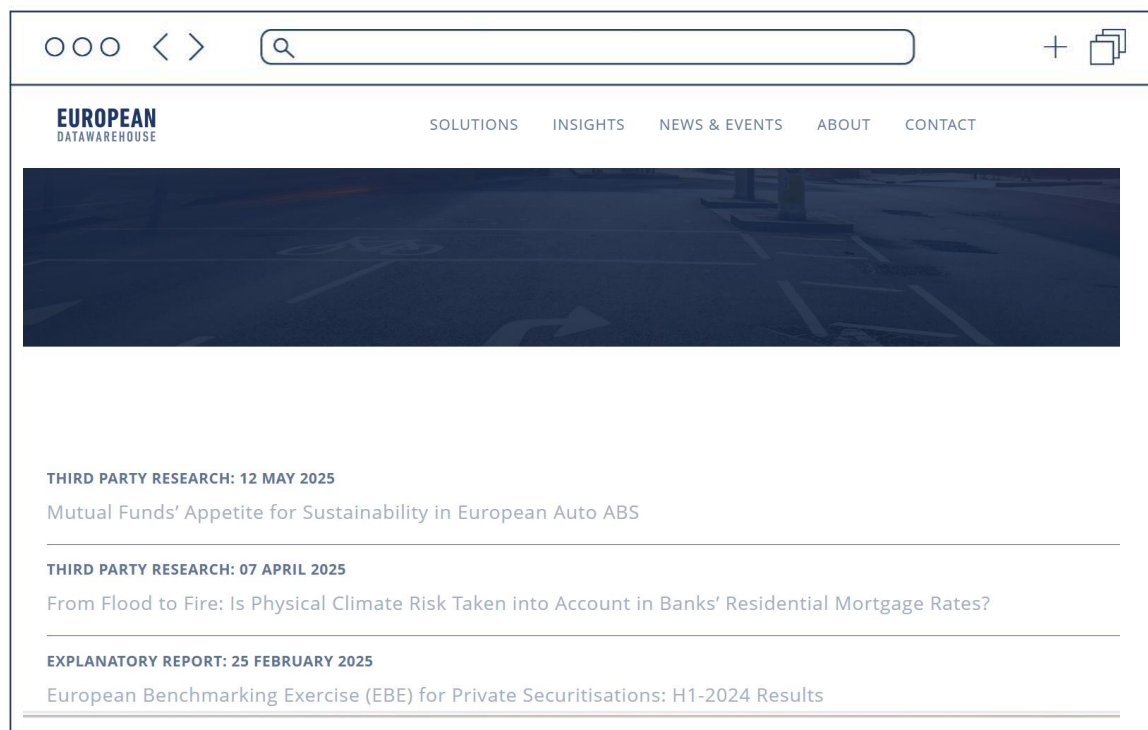
# RESEARCH UPDATE

LUDOVIC THEBAULT, EUROPEAN DATAWAREHOUSE

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# EDW RESEARCH PUBLICATIONS

THIRD PARTY PUBLICATIONS USING OUR DATA: [HTTPS://EURODW.EU/KNOWLEDGE/RESEARCH/](https://eurodw.eu/knowledge/research/)

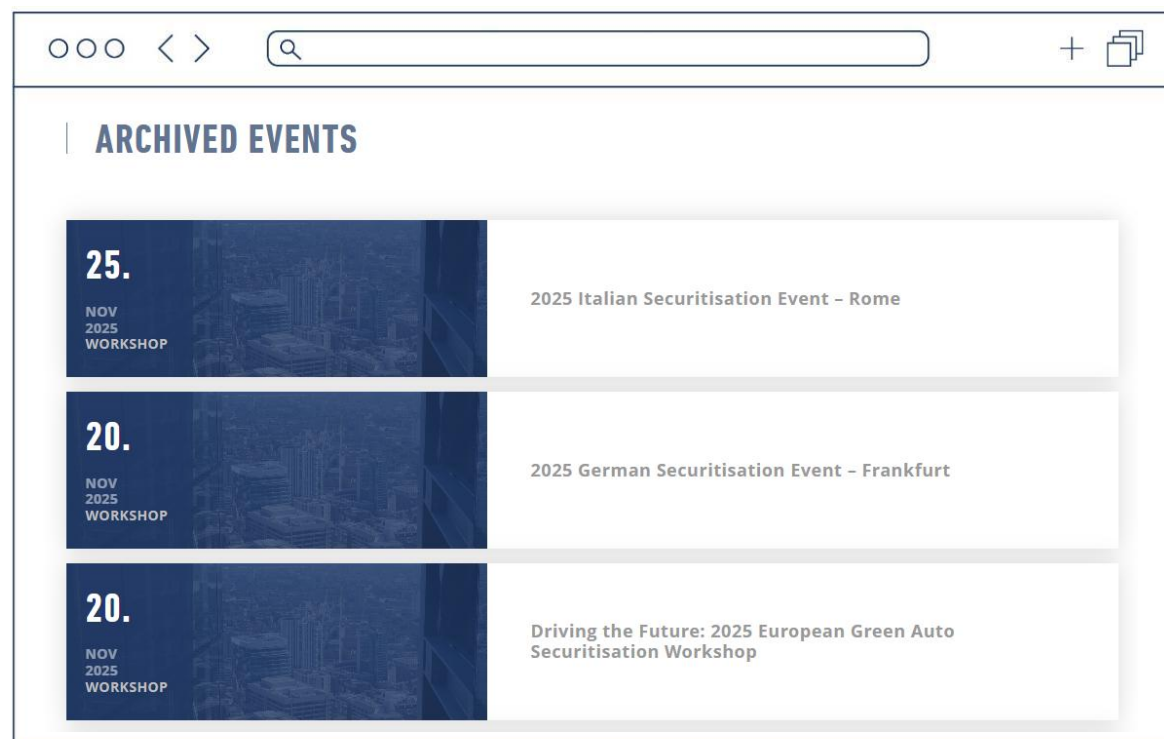


## Latest publications

- A Standardised Methodology to Calculate Vehicle Emissions with CO2 (GAS related publication)
- European Benchmarking Exercise (EBE)

# ARCHIVED EVENTS

RECORDS AND SLIDES OF PAST WEBINARS: [HTTPS://EURODW.EU/NEWS-EVENTS-AND-MULTIMEDIA/EVENTS/](https://eurodw.eu/news-events-and-multimedia/events/)



## German Securitisation Event

- Download the slides of the 20 November 2025 German Securitisation Event [HERE](#)

# BLOG

SHORT ARTICLES ON CURRENT TOPICS: [HTTPS://EURODW.EU/KNOWLEDGE/MAGAZINE//](https://eurodw.eu/knowledge/magazine//)

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## LATEST BLOGS

DATA IN USE | 16.12.2025  
Attachment Points in Focus:  
Insights from EDW Data

COMPANY BULLETIN | 27.11.2025  
Key Takeaways From the  
ECB's Opinion on Proposed  
Revisions to the EU  
Securitisation Regulation

COMPANY BULLETIN | 24.11.2025  
Key Insights from a Market in  
Transition: EDW & LSEG Yield  
Book Hold Third Annual UK  
Securitisation Summit

DATA IN USE | 08.10.2025  
Auto ABS in Focus:  
Comparing Loans vs Leases  
and Captives vs Non-  
Captives

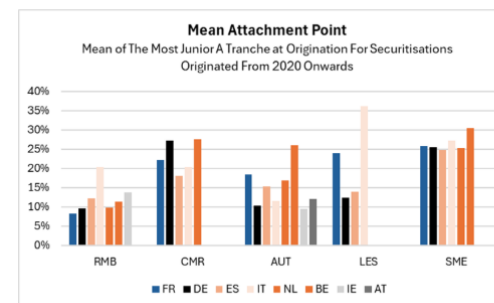
COMPANY BULLETIN | 02.10.2025  
5 Benefits of Using a  
Securitisation Repository for  
Private Securitisations

SECURITISATION REGULATION |  
23.09.2025  
EDW Releases Position Paper  
on the EU's Proposals to  
Revise the Reporting  
Framework

## Latest publications

- Attachment Points in Focus: Insights from EDW data

Exhibit 1: Mean "Class A" Attachment Points



Source: European DataWarehouse

# LIST OF RESEARCH PUBLICATIONS

OUR OWN PUBLICATIONS PLUS THIRD-PARTY RESEARCH: MEDIA LIBRARY - EUROPEAN DATAWAREHOUSE (EURODW.EU)


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European DataWarehouse named "ESG Service Provider of the Year" by Structured Credit Investor



European DataWarehouse named "2023 Securitization Data Provider of the Year"

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INVENTORY OF EDW-RELATED PUBLICATIONS


YEAR	MONTH	TITLE	PUBLISHER	PUBLICATION TYPE - KEYWORDS	ACCESSIBILITY	EDW/THIRD PARTY
2022	July	Bankster Systemic Risk Board (SRB) Monitoring Systemic Risk	ESRB	Central bank publication Systemic risk, securitisation	Direct	Central bank
2022	June	Spring 2022 Research Webinar	EDW (Guest speaker from University of Waterloo)	Loan performance, data availability, energy performance, adjusted database	Direct	EDW
2022	June	Deutsche Bundesbank discussion paper on the implications	Deutsche Bundesbank	Central bank publication ABS SME, revolving transactions	Direct	Central bank
2022	May	Wendy's Analysis: Securitisation ESG Scores and Loans Data Quality by Wendy's	EDW	Data comment ESG reporting standards	Restricted	Rating agency
2022	April	Introducing the EDW adjusted database	EDW	Adjusted database	Direct	EDW
2022	February	Sea Year 2022 Research Webinar	EDW	Webinar Loan performance, energy performance, adjusted database, COVID	Direct	EDW
2022	February	APRIE Report: ESG securitisation issuance increases 27% from APRIE	APRIE	Data comment ESG, sustainable finance, data availability	Direct	Others
2021	December	Winter 2021 Research Webinar	EDW (Guest speaker from European Central Bank)	Loan defaults, machine learning, RABs prepayments, forecasting	Direct	EDW
2021	November	Winter 2021 - From the IMF-ECB European Mortgage Forum	IMF ECB EDW in HYPOTAT	COVID impact COVID impact, mortgages	Direct	Others
2021	October	Journal of Financial Economics: Forecasting Loan Defaults in	Journal of Financial Economics	Academic publication mortgage defaults, machine learning	Direct	Academic Publication
2021	September	Summer 2021 Research Webinar	EDW	Webinar COVID, mortgage, credit risk and COVID	Direct	EDW
2021	May	Spring 2021 Research Webinar	EDW	Webinar Data availability, COVID, energy efficiency, payment holidays	Direct	EDW
2021	May	Journal of Real Estate Finance & Economics: Building Energy	The Journal of Real Estate Finance	Academic publication mortgage defaults, energy efficiency	Direct	Academic Publication
2021	May	Data Availability Report Q4 2020	EDW	Data comment Data availability	Direct	EDW
2021	March	Monitoring the Impact of COVID-19 Q4 2020 RABs Tracker	EDW	COVID impact COVID impact, mortgages	Direct	EDW
2021	February	Sea Year 2021 Research Webinar	EDW (Guest speaker from European Central Bank)	COVID, RABs performance, loan amortisation, cover your assets	Direct	EDW
2021	February	Monitoring the Impact of COVID-19 Q4 2020 RABs Tracker	EDW	COVID impact COVID impact, mortgages	Direct	EDW
2020	December	COVID-19 Outlook	EDW	Webinar COVID, loan performance, payment holiday, reporting practices	Direct	EDW
2020	December	COVID-19: Who has benefited most from COVID-19? AUCI	EDW	COVID impact COVID impact, auto loans, mortgages	Direct	EDW
2020	December	COVID-19: Survey of Payment Holiday Reporting Practices in EU	EDW	COVID impact COVID impact, mortgages	Direct	EDW
2020	November	Wendy's Analysis: COVID-19 2020 View of the Dutch Mortgage	Wendy's	COVID impact COVID impact, mortgages	Restricted	Rating agency
2020	November	Wendy's Analysis: Continued Stress of the U.S. Mortgage Market	Wendy's	Credit research COVID impact, mortgages	Restricted	Rating agency
2020	November	Monitoring the Impact of COVID-19 Q4 2020 RABs Tracker	EDW	COVID impact COVID impact, mortgages, auto loans	Direct	EDW
2020	September	Credit Performance Review	EDW	COVID impact COVID impact, implied payment holidays	Direct	EDW
2020	August	Monitoring the Impact of COVID-19 Q3 2020 RABs Tracker	EDW	COVID impact COVID impact, mortgages	Direct	EDW
2020	July	Market Outlook and Market Developments: The Impact of COVID-19	Academic Publication	Academic publication security design, asset-backed securities, reinvestment, moral hazard	Direct	Academic Publication
2020	June	Thomas Hoenes: Systemic Risk and the Role of the Bank Capital	Academic Publication	Academic publication TFRD, Unconventional Monetary Policy, Credit Risk, Bank Capital	Direct	Academic Publication
2020	June	Monitoring the Impact of COVID-19 Q2 2020 Report	EDW	COVID impact First-time delinquencies, auto, consumer, leases, RABs	Direct	EDW
2020	February	Data Feeding and Timeliness	EDW	Data comment Reporting lag, data timeliness	Direct	EDW
2019	December	Gap analysis version 3.0 and 3.1	EDW	Data comment EDW data vs ECB data	Direct	EDW
2019	November	After index insight from European DataWarehouse	EDW	Data comment BPH index Spain	Direct	EDW
2019	November	Italian SME index	EDW	SME performance Italy SME, performance	Direct	EDW
2019	October	ECB: The Impact of Lending Standards on Default Rates of SMEs	ECB	Central bank publication loan defaults, lending standards, residential real estate, loan loss	Direct	Central bank




# IMPACT OF COVID ON MORATORIA: HYPOSTAT 2021 ARTICLE

USING LOAN LEVEL DATA, WE MONITORED THE SPIKE IN MORATORIA DURING THE COVID CRISIS...







**MONITORING MORATORIA  
THROUGH COVID-19**

## Monitoring Moratoria Through COVID-19 – The Impact of Payment Holidays on Europe’s Securitised Mortgages

By Ludovic Thébault and Usman Jamil, European DataWarehouse

From mid-March 2020, most European governments enacted social distancing measures to limit the spread of the COVID-19 pandemic. These measures, as well as changes in consumer behaviour<sup>1</sup>, led to severe economic disruption. Hotels, restaurants, entertainment/leisure industries, and retailers were particularly affected. Governments thus stepped in to mitigate the effects of social distancing on the economy, in many cases encouraging lenders to temporarily grant moratoria<sup>2</sup> (or payment holidays) to borrowers in an effort to prevent defaults<sup>3</sup>. In some countries, regulation even made the granting of moratoria mandatory to borrowers who faced repayment difficulties due to the crisis.

In this article, we use EDW’s loan-level database of securitised European mortgages to explore the effects of COVID-19 -related moratoria. We found that:

- Despite the severity of the crisis, delinquencies barely increased in 2020. This is most likely due to loans benefitting from moratoria that would
- As per other asset classes, self-employed borrowers were more likely than pensioners and civil servants to need and obtain moratoria.
- The borrowers exposed to the most severely affected economic sectors were more likely to temporarily see their income drop, but credit risk prior to the crisis still played a key role in explaining the use of moratoria.

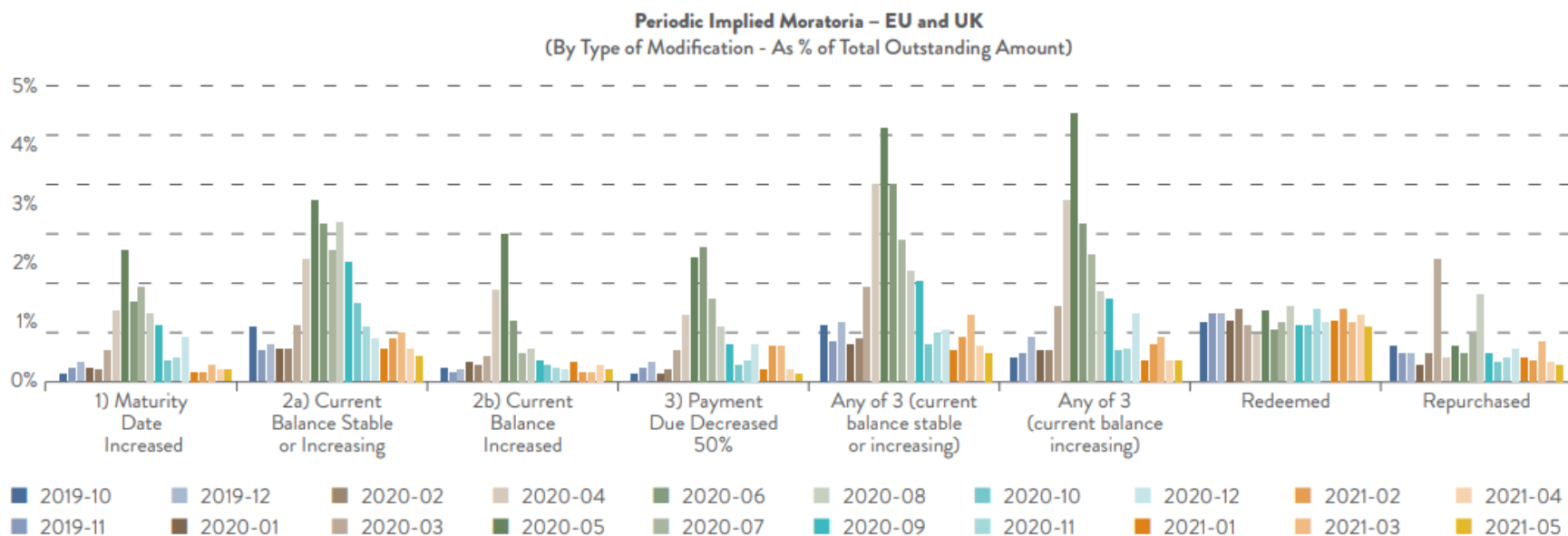
Despite the severity of the COVID-19 crisis, European mortgage delinquencies increased only moderately in Q1 and Q2 2020, receding to pre-crisis levels in most countries afterwards. Exhibit 1 demonstrates that delinquencies generally returned back to pre-crisis levels in Q4 2020<sup>4</sup>. To a large extent, this apparent performance improvement is due to the immediate and substantial policy response to the crisis, as well as the widespread use of moratoria to avoid a wave of defaults.



# HYPOSTAT 2021 ARTICLE

## USING THREE DIFFERENT CRITERIA TO IDENTIFY MORATORIA

### EXHIBIT 3a | FIRST-TIME MORATORIA PEAKED IN SPRING 2020 AND RECEDED AFTERWARDS<sup>6</sup>




Source: European DataWarehouse

# ENERGY EFFICIENCY AND CREDIT RISK: HYPOSTAT 2024 ARTICLE

EXPLORING EDW EPC DATA AND THE EPC VS RISK RELATION

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## IS ENERGY EFFICIENCY CREDIT RELEVANT?

### Is Energy Efficiency Credit Relevant?

By Ludovic Thebault, PhD and Usman Jamil, European DataWarehouse

*In this article, using a sample of securitised mortgages from France and the Netherlands, we find evidence that the energy efficiency rating of properties is credit relevant to some extent, particularly for borrowers in the lower income categories. We believe that the implementation of the European Parliament's new Energy Performance of Buildings Directive will make it even more so.*

*The Energy Performance of Buildings Directive (EPBD) aims to decarbonise the European building stock. Considering that "Buildings account for 40% of final energy consumption in the Union and 36% of its energy-related greenhouse gas emissions while 75 % of Union buildings are still energy-inefficient",<sup>1</sup> the new EPBD aims to pave the way for a wave of renovations and includes stringent environmental criteria for future new buildings. The most striking goal stated in the EPBD is that "all new buildings should be zero-emission buildings by 2030, and existing buildings should be transformed into zero-emission buildings by 2050". This ultimate drive for energy efficiency follows from a long history starting with the oil shocks in the 1970s, when the main goal was to reduce reliance on energy imports*

*owners.<sup>2</sup> As for the disincentives, increasing constraints will apply to the worst-rated buildings, including letting bans for the most inefficient properties.<sup>3</sup> Letting bans interrupt the stream of income for 'buy to let' properties and force borrowers to borrow an extra lump amount to upgrade the property (a credit negative). Properties' Energy Performance Certificate (EPC)<sup>4</sup> ratings will thus become more relevant when originating new mortgages. In this article however, we argue that EPCs may already have been relevant so far, particularly for the most vulnerable households.*

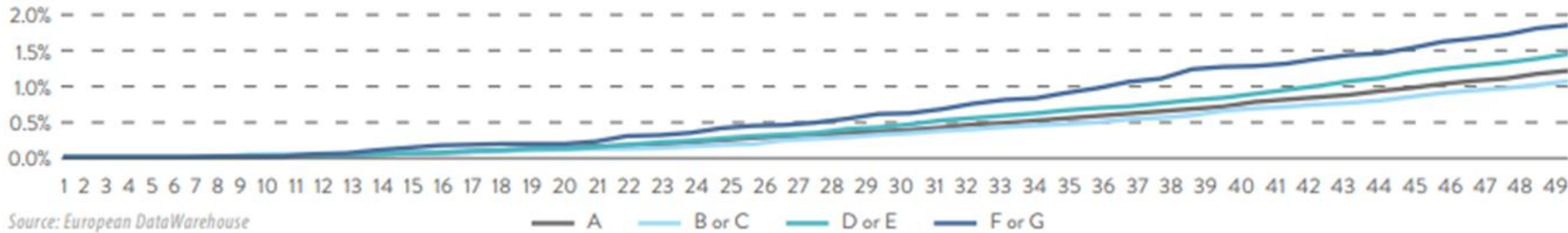
*EDW hosts data for European securitised mortgages and recently started to collect EPC ratings.<sup>5</sup> We focus this study on the Netherlands and France, which are the countries where this data is the most available. We did not want to mix EPCs across countries, because the EPC mix can be radically different from one country' to the next and because EPCs can have very different meanings across countries; in France, a property with an EPC-A rating can use up to 70 kWh/m<sup>2</sup>/year vs. up to 160 kWh/m<sup>2</sup>/year in the Netherlands.<sup>6</sup>*

# HYPOSTAT 2024 ARTICLE

## WORST EPC CATEGORIES MORE LIKELY TO GO IN ARREARS

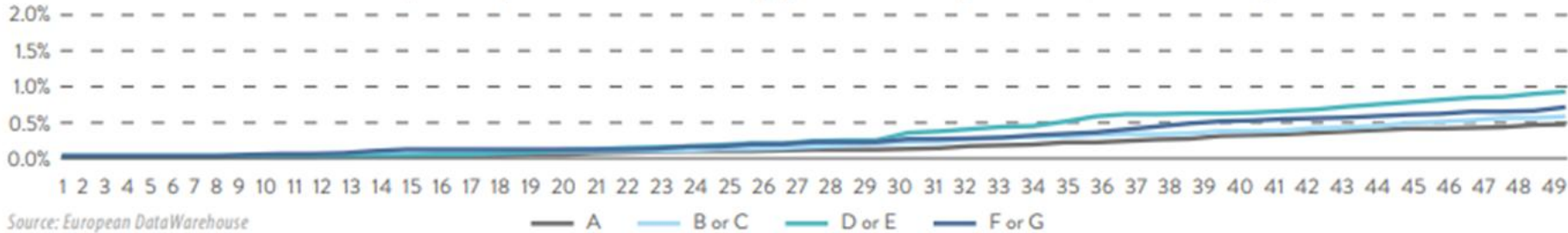
### EXHIBIT 1a | MORTGAGES FINANCING THE LEAST EFFICIENT PROPERTIES PERFORM WORST IN FRANCE

Cumulative delinquencies by EPC (France - Mortgages) — As % of Original Balance, Months after Origination



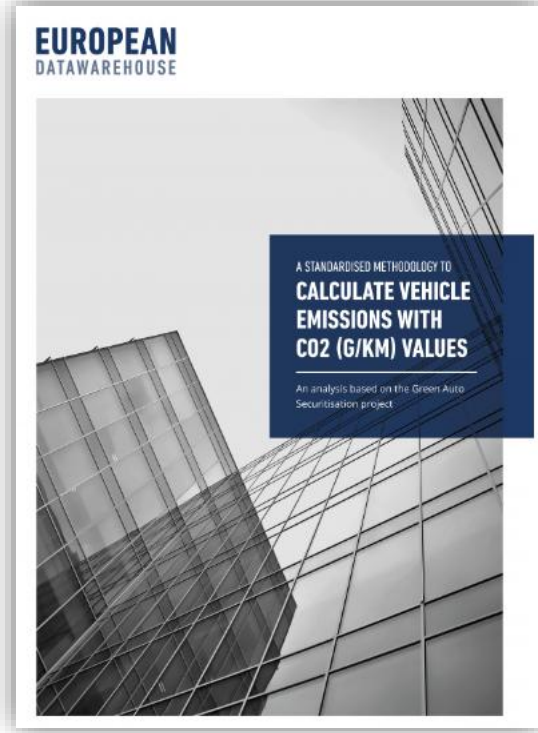
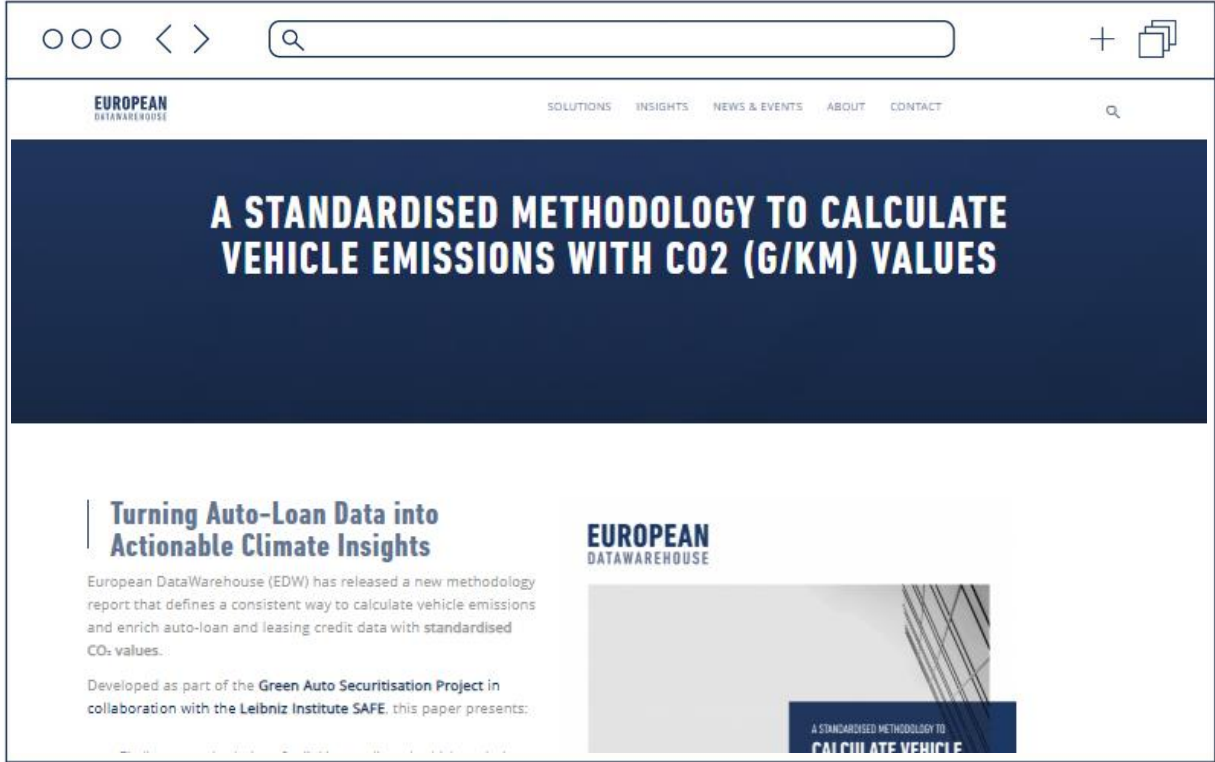
### EXHIBIT 1b | PAYMENT INCIDENTS IN THE NETHERLANDS ARE ALSO MORE COMMON FOR EPC D-G

Cumulative delinquencies by EPC (Netherlands - Mortgages) — As % of Original Balance, Months after Origination



# GAS-RELATED PUBLICATION

## A STANDARDISED METHODOLOGY TO CALCULATE VEHICLE EMISSIONS WITH CO2 VALUES - EUROPEAN DATAWAREHOUSE



# EUROPEAN BENCHMARKING EXERCISE UPDATE



# RECENT PUBLICATIONS: H1-2025 EBE REPORT

REPORT ON PRIVATE SECURITISATIONS COAUTHORED BY EDW, AFME AND TSI

- The report provides aggregated transaction-level data from 12 banks across 6 European countries on a voluntary basis.
- Its purpose is to enhance the quality and usefulness of disclosure in the private cash securitisation market, both ABCP and balance-sheet financed in the EU and the UK.
- Scope of the study:
  - NOT private CLOs (collateralised Loan Obligations)
  - NOT private NPL (nonperforming loans)
  - NOT synthetic SRT deals (significant risk transfer)
- Private ABS only (most of which are used for ABCP collateral)

[https://eurodw.eu/wp-content/uploads/EDW\\_EBE\\_2025-H1\\_Report\\_20251215.pdf](https://eurodw.eu/wp-content/uploads/EDW_EBE_2025-H1_Report_20251215.pdf)



# RECENT PUBLICATIONS: H1-2025 EBE REPORT

REPORT ON PRIVATE SECURITISATIONS CO-AUTHORED BY EDW, AFME AND TSI

Table 1 – Overview

		2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
Number of Participants	#	12	12	12	12	12	12	12	12	12	0.0%
Number of Commitments	#	631	637	595	610	610	556	525	527	504	-0.9%
Number of Transactions	#	465	453	435	457	443	433	412	387	404	2.6%
Committed Amount	Million EUR	82,630	86,841	79,288	79,424	78,590	73,182	67,241	65,064	62,814	-4.8%
Funded Amount	Million EUR	64,181	64,112	60,197	59,111	57,748	60,502	56,400	53,009	50,205	0.1%
Utilisation	%	77.7%	73.8%	75.9%	74.4%	73.5%	82.7%	83.9%	81.5%	80.0%	5.2%
Total Asset Amount	Million EUR	226,516	220,265	207,646	203,859	195,524	184,159	183,326	173,016	177,329	2.8%
Based on delivered data:											
Estimated Market Size	Million EUR	256,718	249,634	232,236	231,040	209,400	195,669	194,784	183,830	188,412	2.8%

$\Delta_p$ =growth in last period

Table 4 – Asset Type (Committed Amounts)

	2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
Trade Receivables	46,059	50,904	45,684	46,784	47,505	42,523	40,682	38,966	35,689	-10%
Auto Loan or Leasing	13,879	12,918	13,075	11,986	11,023	11,132	10,162	11,187	13,985	7%
Equipment Leasing	6,873	6,692	6,130	5,598	4,830	5,096	4,327	4,183	3,417	3%
Consumer Loans	5,383	5,087	4,879	5,580	5,115	4,891	4,704	3,760	3,197	6%
Diverse	10,437	11,238	9,520	9,476	10,117	9,540	7,366	6,968	6,527	-7%
Total	82,630	86,841	79,288	79,424	78,590	73,182	67,241	65,064	62,815	-5%

$\Delta_p$ =growth in last period

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# RECENT PUBLICATIONS: H1-2025 EBE REPORT

## REPORT ON PRIVATE SECURITISATIONS HIGHLIGHTS

### Mostly ABCP, mostly STS...

- 85% of the volume is ABCP funded, 64% of the transactions have the STS label...

Table 2 – Funding Type (Committed Amount)

	2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
ABCP	70,070	74,922	68,889	69,833	69,635	65,235	59,412	57,491	55,524	-6%
BS	12,559	11,919	10,399	9,591	8,954	7,947	7,829	7,573	7,291	5%
Total	82,630	86,841	79,288	79,424	78,590	73,182	67,241	65,064	62,815	-5%

$\Delta_p$ =growth in last period

Table 3 – Evolution of STS share (Committed Amount)

	2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
STS share (in % by Committed Amount)	63.8%	61.6%	63.2%	61.2%	58.6%	56.6%	56.7%	55.0%	ND	4%
Committed Amounts	52,706	53,521	50,084	48,571	46,090	41,452	38,140	35,784	ND	-2%
No. of STS commitments	397	387	371	366	356	305	275	256	ND	3%

$\Delta_p$ =growth in last period

[https://eurodw.eu/wp-content/uploads/EDW\\_EBE\\_2025-H1\\_Report\\_20251215.pdf](https://eurodw.eu/wp-content/uploads/EDW_EBE_2025-H1_Report_20251215.pdf)



# RECENT PUBLICATIONS: H1-2025 EBE REPORT

## REPORT ON PRIVATE SECURITISATIONS HIGHLIGHTS

### Transaction ratings

- 82%+ of transaction ratings are above or equal to A

Table 13 – Transaction Rating Distribution

	2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
AAA	29.2%	27.6%	30.3%	26.3%	29.0%	22.3%	22.6%	22.4%	20.2%	6%
AA	38.2%	34.9%	35.6%	36.2%	34.0%	35.2%	39.8%	38.8%	34.3%	9%
A	14.4%	19.1%	16.5%	20.4%	19.6%	25.9%	21.9%	23.9%	21.0%	-24%
BBB	11.7%	11.7%	11.0%	11.2%	12.3%	11.4%	11.1%	10.0%	9.6%	0%
BB and lower	0.3%	0.3%	0.2%	0.2%	0.3%	0.4%	0.5%	0.4%	0.5%	6%
Undisclosed	6.1%	6.4%	6.3%	5.6%	4.7%	4.9%	4.1%	4.6%	14.4%	-4%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	

[https://eurodw.eu/wp-content/uploads/EDW\\_EBE\\_2025-H1\\_Report\\_20251215.pdf](https://eurodw.eu/wp-content/uploads/EDW_EBE_2025-H1_Report_20251215.pdf)

# RECENT PUBLICATIONS: H1-2025 EBE REPORT

## REPORT ON PRIVATE SECURITISATIONS HIGHLIGHTS

### *Seller Ratings*

- Whereas seller ratings are mostly much lower. Private securitisation allow the sellers to access funding more cheaply.

Table 17 – Seller Rating Distribution (relative)

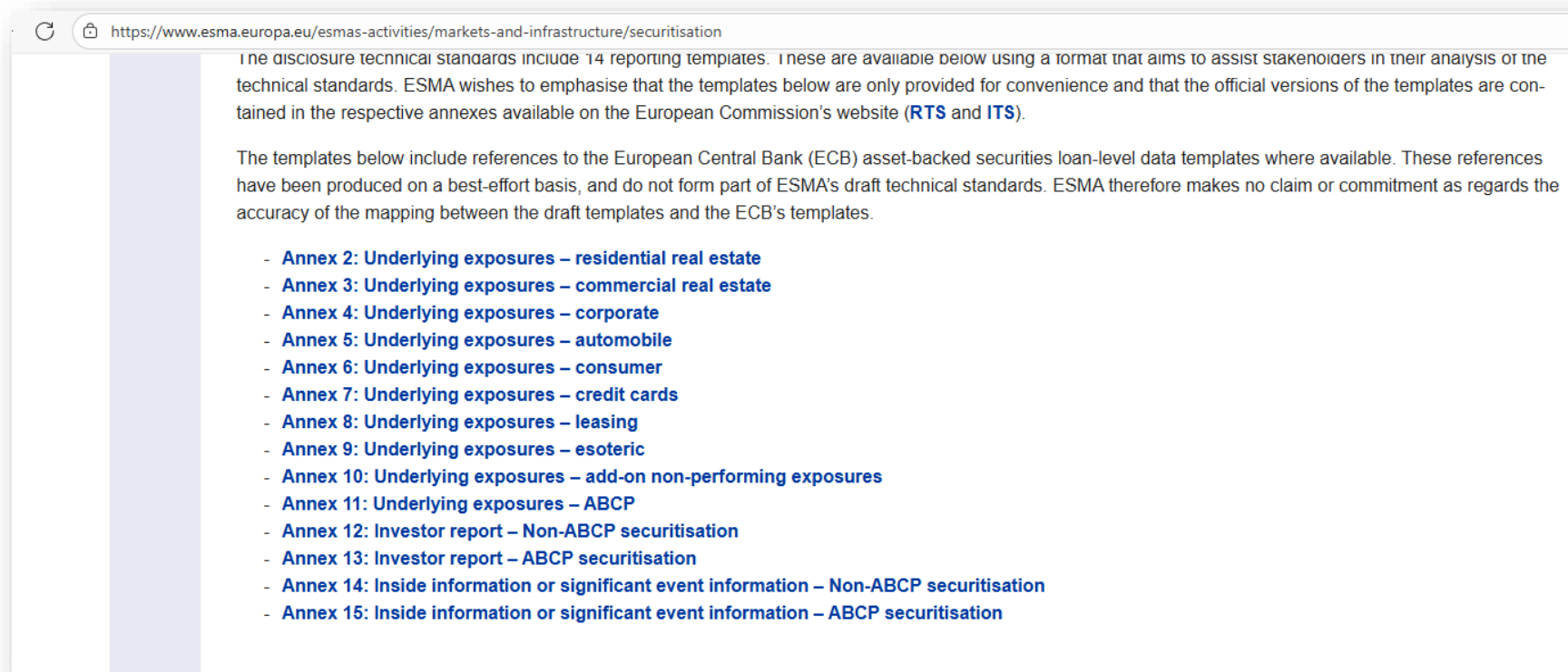
	2025-06	2024-12	2024-06	2023-12	2023-06	2022-12	2022-06	2021-12	2021-06	$\Delta_p$
AAA	4.2%	3.9%	3,7%	1.3%	1.4%	1.1%	1.3%	1.3%	2.7%	7%
AA	4.4%	3.6%	4,8%	1.9%	0.5%	0.6%	0.0%	0.0%	1.3%	22%
A	21.9%	21.5%	23,6%	11.4%	9.6%	7.5%	7.4%	6.5%	16.3%	2%
BBB	32.3%	29.7%	34,0%	35.6%	37.2%	41.8%	41.2%	40.6%	43.0%	9%
BB and lower	19.2%	24.4%	18,5%	17.9%	18.2%	17.2%	20.7%	20.4%	22.8%	-21%
NR or undisclosed	18.0%	16.9%	15,5%	32.0%	33.1%	31.8%	29.3%	31.1%	13.9%	6%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	

[https://eurodw.eu/wp-content/uploads/EDW\\_EBE\\_2025-H1\\_Report\\_20251215.pdf](https://eurodw.eu/wp-content/uploads/EDW_EBE_2025-H1_Report_20251215.pdf)



# **EDW AGGREGATE DATA (FROM ESMA ANNEX 12 AND ANNEX 14)**

# ANNEX 12 AND ANNEX 14



# ANNEX 12 AND ANNEX 14

ANNEX 12 AND 14 ARE NON-LOAN LEVEL DATA

## Annex 12 contains investor report data such as:

- Reporting entity contacts (IVSS5,6,7)
- Risk retention method (IVSS8) and holder (IVSS9)
- Trigger ratios (IVSS12) and trigger information (IVSR fields)
- Interest collections (IVSS17), principal collections (IVSS16) and recoveries
- Annualised CPR (IVSS22) and CDR (IVSS27)
- Aggregate risk metrics, performance information, delinquency rates (IVSS38 – IVSS44)
- Position by position cash flow info (IVSF type fields)

## Annex14 contains “Inside information or significant event information”

- Securitisation info fields (SESS field series) such as No longer STS (SESS3) Current waterfall type (SESS8), swap details (SESS17 – SESS24)
- Tranche level information, Tranche Name (SEST5), ISIN (SEST4)
- Attachment Point and credit enhancement related (SEST31 – SEST35)
- Account level info (SESA fields) and Counterparty level information (SESP1)...

# EDW DEAL REPORT – BASED ON ANNEX 12 (1)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12

EDITOR

HOME

EU DEALS

UK DEALS

TICKETS

FINDINGS

DQM OVERVIEW

CSV TO XML CONVERTER

Deals / AUTSDE000115500420233

Bavarian Sky S.A., Compartment German Auto Loans 12

Information

Data & Documents

Insights

ESMA Template

Documents

Selected PCD : 2025-11-30

PERFORMANCE

Arrears

Performing

Redeemed

DELINQUENCY

>= 180 days

1 - 29 Days

120 - 149 Days

30 - 59 Days

150 - 179 Days

Zero Days

60 - 89 Days

90 - 119 Days

EDW REPORT

Deal Report

(Based on ESMA Template)

ANALYST INFORMATION

Gisela Herkner

# EDW DEAL REPORT – BASED ON ANNEX 12 (2)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12

## EUROPEAN DATAWAREHOUSE

### DEAL REPORT

Bavarian Sky S.A., Compartment German Auto Loans 12

D2OIGPB6E66YOBJ9GT20N202301

2025-11-30  
(Pool Cut-Off Date)

2025-12-22  
(IPD)

2025-12-09  
(Report Date)

#### EUROPEAN DATAWAREHOUSE GMBH

Walther-von-Cronberg-Platz 2  
60594 Frankfurt am Main

[enquiries@eurodw.eu](mailto:enquiries@eurodw.eu)  
+49 (0) 69 50986 9017

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# EDW DEAL REPORT – BASED ON ANNEX 12 (3)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12

## BOND REPORT

	A-1	B-1
ISIN	XS2583638924	XS2583641803
Type	Soft Bullet	Soft Bullet
Currency	EUR	EUR
Original Balance	900,000,000	75,100,000
Current Balance	133,861,613.51	75,100,000
Issue Date	2023-03-20	2023-03-20
Maturity Date	2030-03-20	2030-03-20
IPD	2025-12-22	2025-12-22
Paym.Freq	Monthly	Monthly
Current Coupon (%)	2.31	3
Margin / Spread (%)	0.70	0
Current Int. Rate Floating	1.61	3
Step Up/Dn Coupon	-	-
Step Up/Dn Date	-	-
Coupon Floor (%)	0	0
Coupon Cap (%)	-	-
Current Int. Rate Index	Euribor	Euribor
Next Call Date	-	-
Next Put Date	-	-
Pool Factor (%)	14.87%	100.00%
Curr.Attch Point (%)	43.10	8.67
Orgl.Attch Point (%)	8.70	1.00
Curr. Cred Enhcmnt (%)	43.10	8.67
Org. Cred Enhcmnt (%)	8.70	1.00
Protection Type	-	-
Unpaid PDL	-	-



# EDW DEAL REPORT – BASED ON ANNEX 12 (4)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12

## SWAP INFORMATION

	Notional	Benchmark	Maturity
Interest Rate SWAP	154,695,849.62	EURI	2030-03-20

	Notional	Currency - Payer	Currency - Receiver	Exchange Rate	Maturity
Currency Rate SWAP	-	-	-	-	-

## ACCOUNT INFORMATION

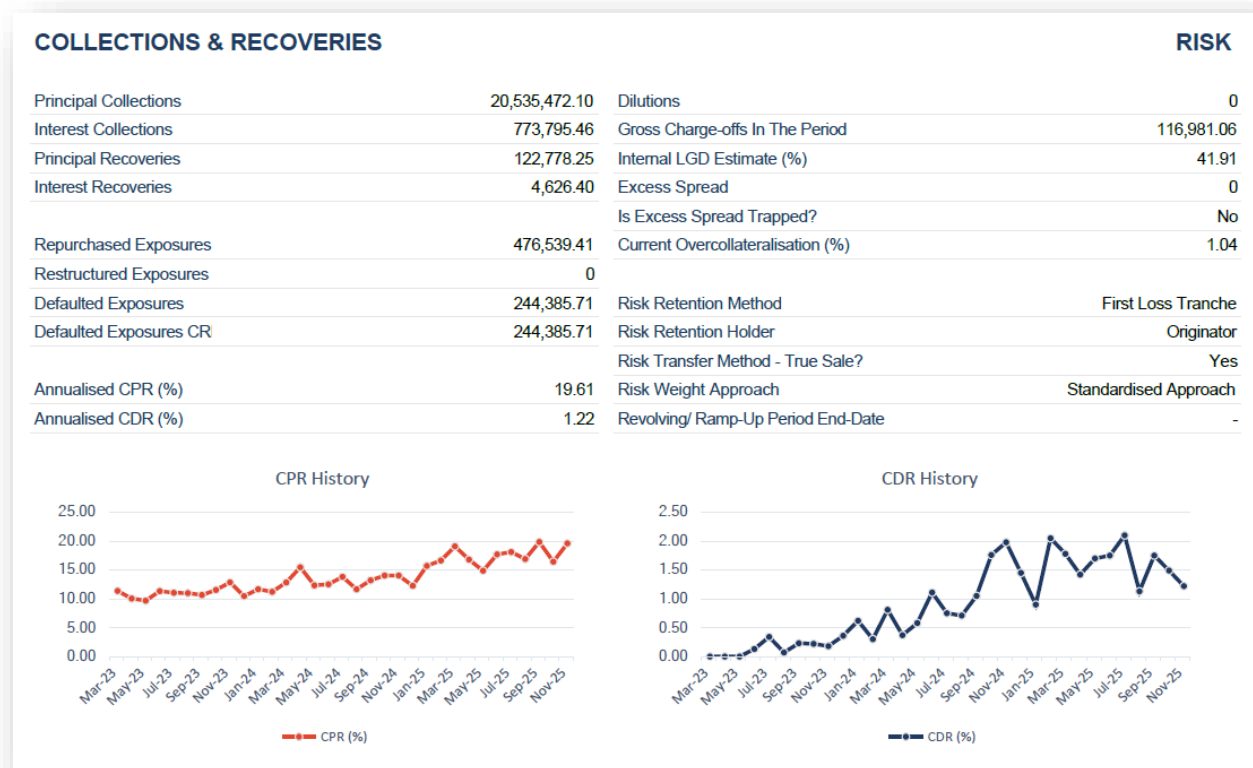
Account Type	Amortising?	Ccy	Target Balance	Actual Balance
Cash Reserve Account	No	EUR	9,751,000	9,751,000
Commingling Reserve Account	No	EUR	0	0

## COUNTERPARTY INFORMATION

Counterparty Name	LEI Code	Type	Rating
Bavarian Sky S.A.	529900CITCOV0AQI3K03	Issuer	NR;NR (Fitch)
BMW Bank GmbH	D2OIGPB6E66YOBJ9GT20	Arranger Originator Seller Servicer	NR;NR (Fitch)
BNY MELLON CORPORATE TRUSTEE SERVICES LIMITED	2138009FOQYJ464QNK39	Trustee	NR;NR (Fitch)
CSC Global Solutions (Luxembourg) S.à r.l.	6354003I2W2IDTGB7D74	Administration Agent	NR;NR (Fitch)
DBRS Ratings GmbH	54930033N1HPUEY7I370	Other	NR;NR (Fitch)
FITCH RATINGS LTD	2138009F8YAHVC8W3Q52	Other	NR;NR (Fitch)

# EDW DEAL REPORT – BASED ON ANNEX 12 (5)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12



# EDW DEAL REPORT – BASED ON ANNEX 12 (6)

EDW “DEAL REPORTS” ARE ACCESSIBLE IN EDITOR AND USE DATA FROM ANNEX 12

## WATERFALL INFORMATION

Serial Number	Cashflow Item	Amount Paid During Period	Available Funds Post
1	Amounts standing to the credit of the Cash Reserve	9,751,000.00	0.00
2	Total Principal Collections incl. Repurchases(CSEOM process+ user adjustments)	20,535,472.10	0.00
3	Interest Collections(CSEOM process+ user adjustments)	773,795.46	0.00
4	Late Recoveries(CSEOM process+ user adjustments)	-22,984.21	0.00
5	Amounts standing to the credit of the Replenishment Fund	0.00	0.00
6	Deemed Collection (user manual input)	13,889.13	0.00
7	Net Swap Receivable	0.00	0.00
8	Tax Payment made by the Seller and/or Servicer to the Issuer(user manual input)	0.00	0.00
9	Investment Income (Replenishment account) (user manual input)	0.00	0.00
10	Investment Income (Commingling, Indemnity, Cash Reserve, Set-Off Reserve accounts) (user manual input)	0.00	0.00
11	Indemnity Reserve Draw - Covering shortfall during Servicer Termination Event(user manual input)	0.00	0.00
12	Commingling Reserve Draw - Covering Shortfall during Servicer Termination Event (user manual input)	0.00	0.00
13	Set-Off Reserve Draw - Covering Shortfall during Servicer Termination Event (user manual input)	0.00	0.00
14	Available Distribution Amount	31,051,172.48	0.00
15	Available Distribution Amount	0.00	31,051,172.48
16	Taxes	0.00	31,051,172.48
17	Trustee Payment	0.00	31,051,172.48
18	Senior Expenses	-13,570.00	31,037,602.48
19	Swap Net Payment	-134,636.96	30,902,965.52
20	Class A Interest	-317,520.00	30,585,445.52
21	Cash Reserve	-9,751,000.00	20,834,445.52
22	Replenishment Amount	0.00	20,834,445.52
23	Class A Principal	-20,834,236.11	209.41
24	Class B Interest	0.00	209.41
25	Class B Principal	0.00	209.41
26	Swap Termination Event	0.00	209.41
27	Subordinated Loan Interest	0.00	209.41
28	Subordinated Loan Principal	0.00	209.41
29	Seller	-209.41	0.00

# ATTACHMENT POINTS – FROM ANNEX 14 (1)

ATTACHMENT POINTS, ORIGINAL AND CURRENT ARE PART OF THE ANNEX 14 REPORTING, JUST AS

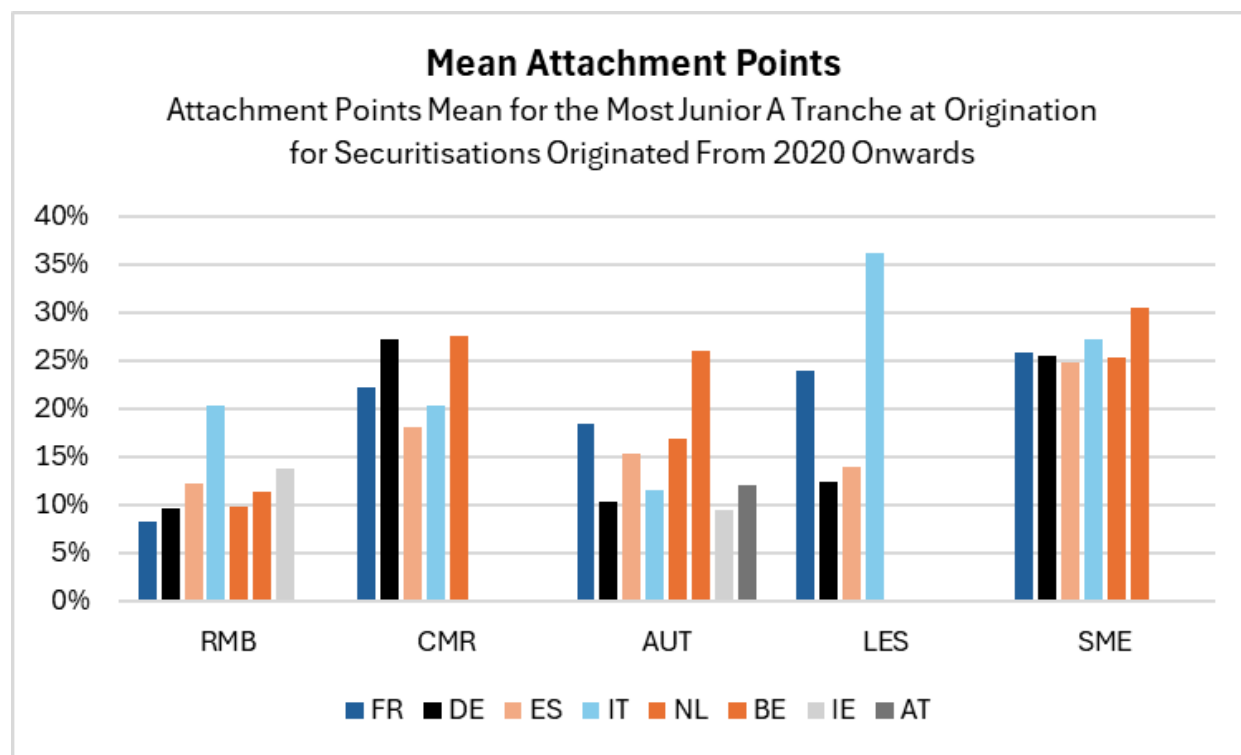
## Attachment points

- Refer to article 256 of EU Regulation 575/2013 for definition of attachment points
- Attachment points have become a “talking point” lately, due to the “resilient securitisation” proposals...
- 579 deals have reported using Annex 14 in 2025, 571 with an identified A Class
- In 341 cases, the attachment point can be easily recalculated using available information, for 33 deals, there are decimal point type errors (values 100 times smaller than should be), for another 33 ND values are displayed...

## Calculation

	Amount	% of Total	Attachment Point
Class A	500,000,000	74.07%	25.93%
Class B	32,500,000	4.81%	21.11%
Subordinated	142,500,000	21.11%	0.00%
	675,000,000	100.00%	

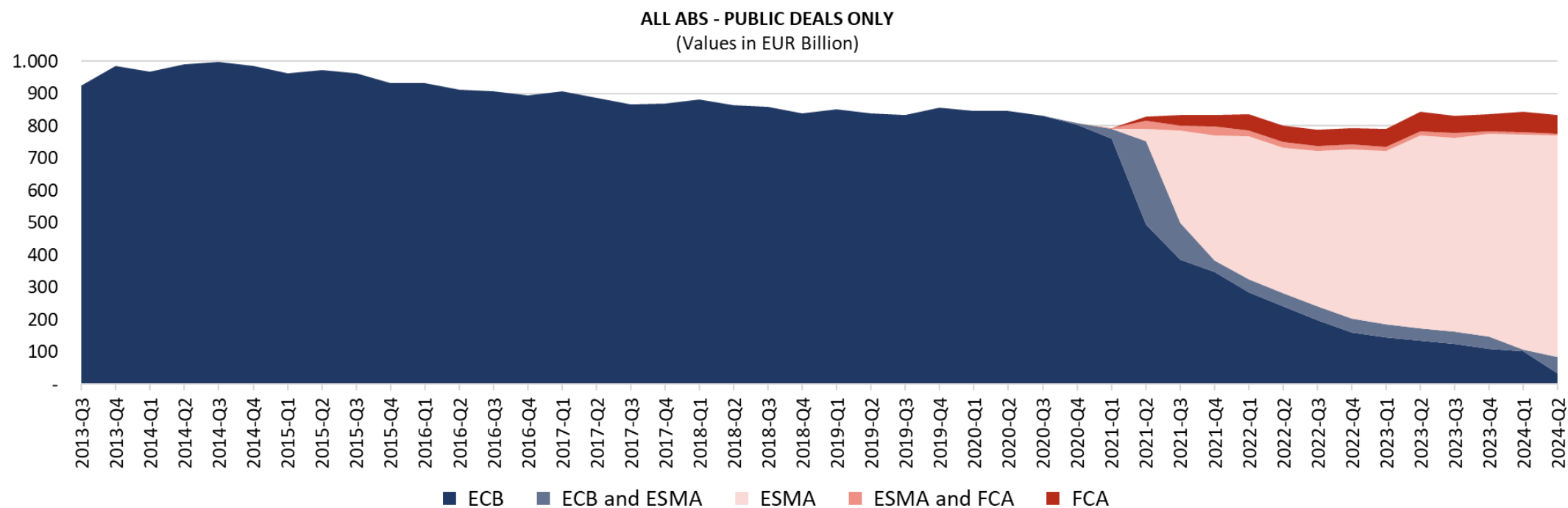
## ATTACHMENT POINTS – FROM ANNEX 14 (3)



Source: EDW calculations, please contact [enquiries@eurodw.eu](mailto:enquiries@eurodw.eu) for more information

# **ALL IN ONE DATABASE: USING A DATA SAMPLE..**

# ECB VS ESMA VS FCA DATA AVAILABILITY



# PRELIMINARY ALL IN ONE DATABASE METHODOLOGY

CONTACT US FOR A COPY

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📄

EUROPEAN  
DATAWAREHOUSE

**All-in-One Database Methodology (Beta Version)**

European DataWarehouse (EDW) will offer a beta version of its All-in-One database (AIO), which merges ECB and ESMA data and thus preserves the time series from Q1 2013 to Q2 2024, for the six main asset classes. The AIO is a more user-friendly product than other databases, because:

- Many existing errors affecting the ECB and ESMA databases are corrected in the AIO<sup>1</sup>
- The AIO also features calculated fields to improve user experience
- Field formats are optimised to make queries faster

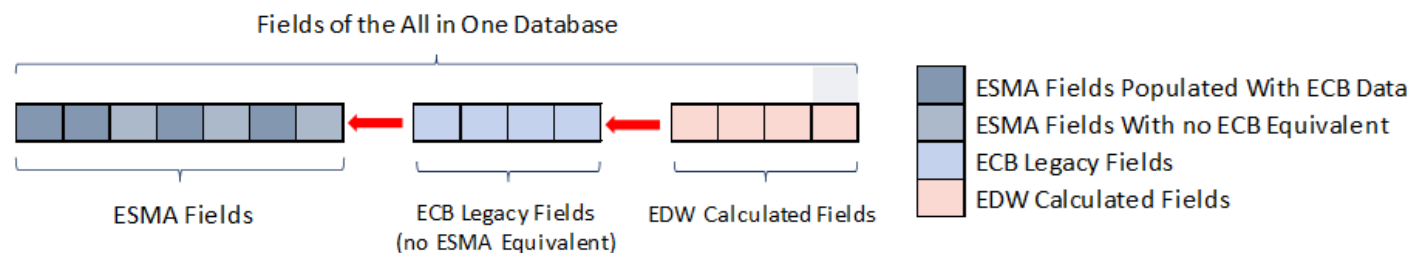
This is the AIO methodology as of 30/09/2024; we intend to review it regularly to reflect future upgrades. Some of the amendments discussed in this document are “work in progress”, and will be implemented overtime if client demand justifies it.

*DISCLAIMER: This is a draft document. As it is a work in progress it may be incomplete, contain preliminary conclusions and may change. You must not rely on, disclose or refer to it in any document. European DataWarehouse GmbH and ENGAGE Consortium accept no duty of care or liability to you or any third party for any loss suffered in connection with the use of this document.*

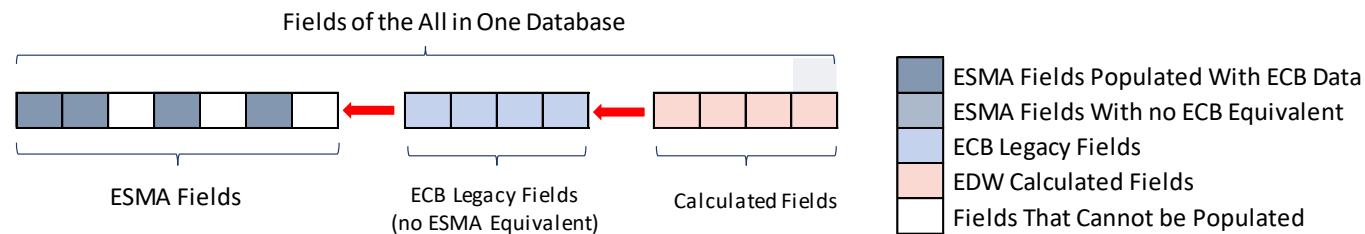


# STRUCTURE

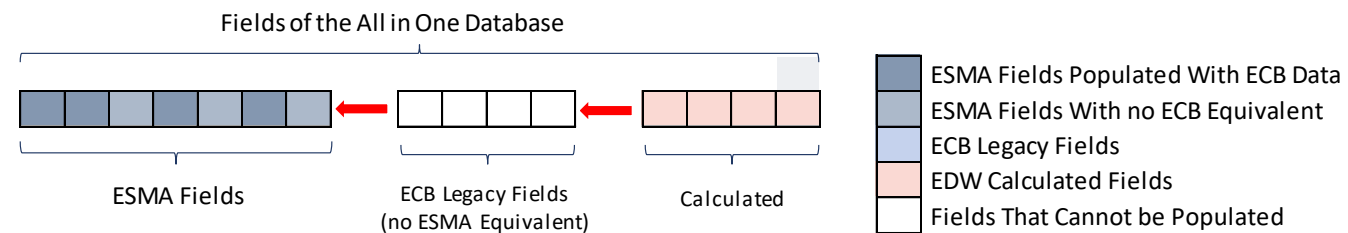
## COMPOSITION OF THE ALL IN ONE DATABASE



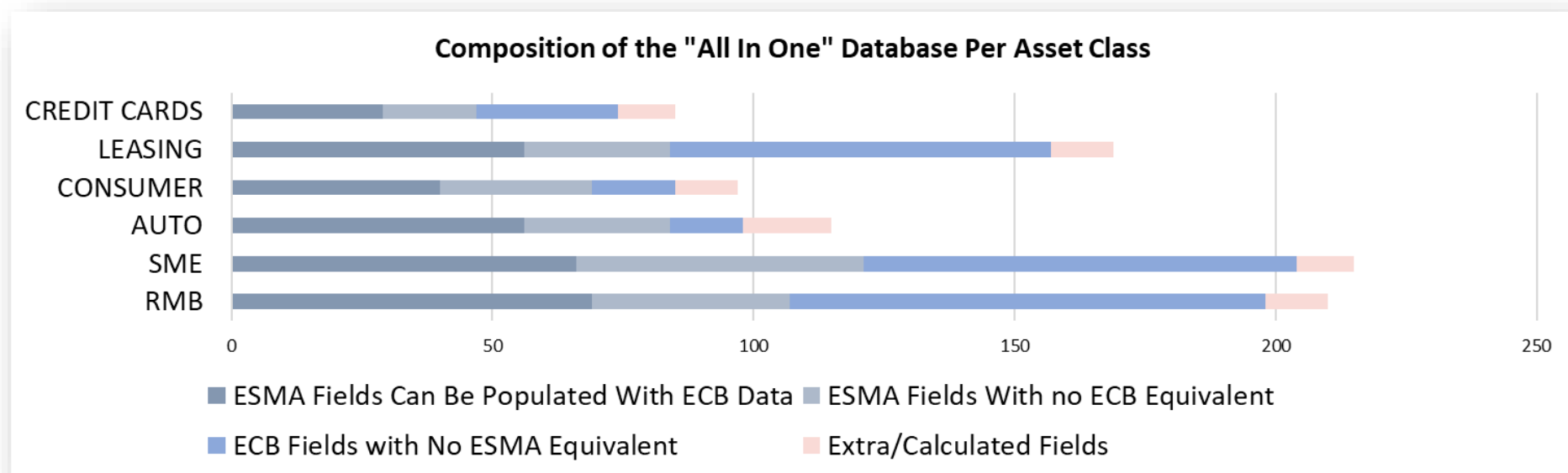
## WHEN ECB DATA IS IMPORTED IN THE ALL IN ONE DATABASE



## WHEN ESMA DATA IS IMPORTED IN THE ALL IN ONE DATABASE

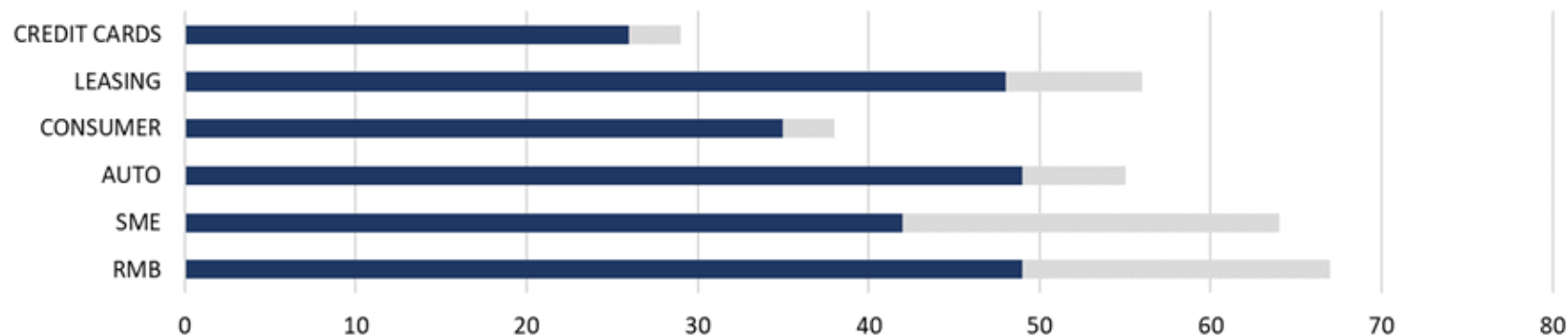


# COMPOSITION OF THE TABLES BY ASSET CLASS (1)

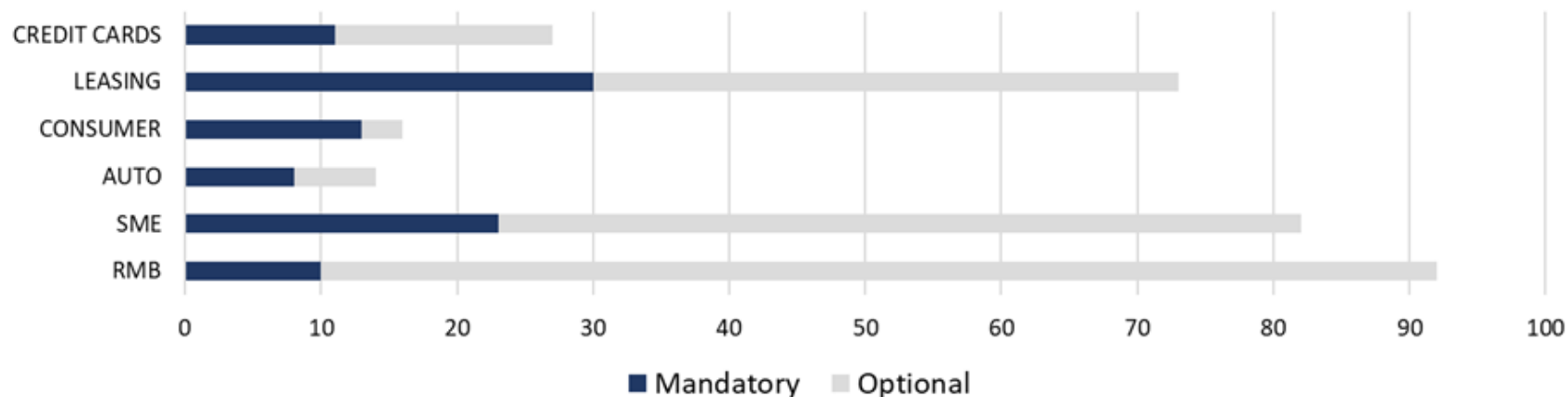


# DATA CONTINUITY MANDATORY VS OPTIONAL FIELDS

ESMA Fields Populated With ECB Data Of which...









ECB Fields With No ESMA Equivalent Of Which...



# ECB TO ESMA TRANSLATION

- Some ECB fields have the same name and the same options as their ESMA equivalent and can therefore be translated 1-to-1.
- Data from the field AR58 goes 1 to 1 in the corresponding options of field RREL26 of the “All in One Database”

ECB		ESMA	
Origination Channel (AR58)		Origination Channel (RREL26)	
Office / branch network	1	 BRAN	Office or Branch Network
Central / Direct	2	 DRCT	Central or Direct
Broker	3	 BROK	Broker
Internet	4	 WEBI	Internet
Packager	5	 TPAC	Package
Third channel but underwriting processes performed 100% by the Originator	6	 TPTC	Third Party Channel but Underwriting Perfomed Entirely by the Originator

# PROXY DATA STUDIES

# PROXY DATA PROCESS

## 5 STAGE PROCESS DESIGNED FOR DATA SET OPTIMISATION

### INITIAL COMMUNICATION

EDW and the client identify and discuss any extraordinary characteristics of the desired pool to be securitised. For instance:

- Origination years
- Occupancy type
- Interest rate type
- Guarantee type etc.

### DEALS SELECTION

EDW selects a list of deals based on:

- **completeness of data**
- **results of data quality checks**
- **the pool characteristics discussed**

The list of deals is then shared, and modified based on client feedback

### PROXY LOANS SELECTION

A subset of the underlying loans (based on the characteristics portfolio to be securitised) from the selected deals are taken as proxy loans.

Their historical performance data is compiled.

ndcode	deal name	vintage
RMBSXX12345678912XXXX1	ABC 2014	2014
RMBSXX12345678912XXXX1	XYZ 2014	2014
RMBSXX12345678912XXXX1	ABC 2015	2015
RMBSXX12345678912XXXX1	XYZ 2015	2015
RMBSXX12345678912XXXX1	ABC 2016	2016
RMBSXX12345678912XXXX1	XYZ 2016	2016
RMBSXX12345678912XXXX1	ABC 2017	2017
RMBSXX12345678912XXXX1	XYZ 2017	2017
RMBSXX12345678912XXXX1	ABC 2018	2018
RMBSXX12345678912XXXX1	XYZ 2018	2018
RMBSXX12345678912XXXX1	ABC 2019	2019
RMBSXX12345678912XXXX1	XYZ 2019	2019

### ADJUSTMENTS TO THE DATA

Dataset from each selected deal is scrutinised further for quality

Any idiosyncratic reporting practices in a deal are adjusted to one standard.

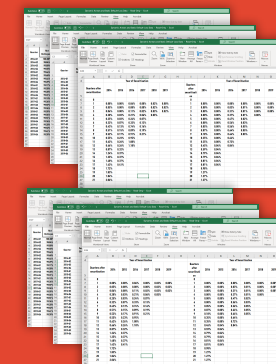
Any outlying results are investigated and discussed with the relevant EDW analyst

### FINAL PERF. DATASET

First generation EDQC launched

**Rules based LLD analysis implemented** for all asset classes

### RESULT: PROXY DATA



# RESULT: FINAL PROXY DATA SAMPLE

The image displays three overlapping Excel spreadsheets. The top spreadsheet, titled 'Dynamic Arrears and Static Default-Loss Data - Read-Only - Excel', shows a table with columns 'Quarter' and 'Not Delinquent'. The middle spreadsheet, also titled 'Dynamic Arrears and Static Default-Loss Data - Read-Only - Excel', shows a table with columns 'Quarters after securitisation' and 'Year of Securitisation'. The bottom spreadsheet, also titled 'Dynamic Arrears and Static Default-Loss Data - Read-Only - Excel', shows a similar table with more data points.

Quarter	Not Delinquent
2014-01	100.00%
2014-02	98.84%
2014-03	99.80%
2014-04	99.55%
2015-01	99.44%
2015-02	99.68%
2015-03	99.44%
2015-04	99.29%
2016-01	99.17%
2016-02	99.50%
2016-03	99.28%
2016-04	99.31%
2017-01	99.10%
2017-02	99.36%
2017-03	99.57%
2017-04	99.36%
2018-01	99.59%
2018-02	99.56%
2018-03	99.51%
2018-04	99.36%
2019-01	99.28%
2019-02	99.52%
2019-03	99.41%
2019-04	99.39%

Quarters after securitisation	2014	2015	2016	2017	2018	2019
0						
1	0.00%	0.00%	0.06%	0.00%	0.02%	0.00%
2	0.05%	0.00%	0.08%	0.00%	0.02%	0.02%
3	0.06%	0.00%	0.11%	0.02%	0.03%	0.02%
4	0.20%	0.03%	0.21%	0.06%	0.05%	
5	0.25%	0.03%	0.24%	0.07%		
6	0.32%	0.07%	0.33%	0.13%		
7	0.43%	0.13%	0.74%	0.16%		
8	0.51%	0.15%	0.89%	0.19%		
9	0.52%	0.17%	0.91%	0.21%		
10	0.55%	0.23%	0.95%			
11	0.62%	0.26%	1.08%			
12	0.66%	0.26%	1.18%			
13	0.87%	0.32%				
14	1.24%	0.37%				
15	1.25%	0.37%				
16	1.40%	0.37%				
17	1.43%	0.41%				
18	1.72%					
19	1.83%					
20	1.84%					
21	2.06%					

Quarters after securitisation	2014	2015	2016	2017	2018	2019
0						
1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	0.00%	0.00%	0.03%	0.01%	0.00%	0.00%
3	0.00%	0.00%	0.31%	0.01%	0.00%	0.00%
4	0.00%	0.00%	0.37%	0.01%	0.00%	
5	0.00%	0.00%	0.47%	0.02%		
6	0.00%	0.00%	0.56%	0.03%		
7	0.05%	0.00%	0.56%	0.05%		
8	0.07%	0.00%	0.64%	0.05%		
9	0.18%	0.00%	0.64%	0.05%		
10	0.35%	0.00%	0.64%			
11	0.35%	0.00%	0.72%			
12	0.45%	0.04%	0.84%			
13	0.59%	0.04%				
14	0.79%	0.04%				
15	0.79%	0.04%				
16	0.81%	0.04%				
17	0.81%	0.04%				
18	0.98%					
19	1.27%					
20	1.27%					
21	1.27%					

# GREEN AUTO SECURITISATION (GAS) PROJECT

MARINE MAÎTRE, EDW

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# GAS DATABASE: EDW AND EEA DATA WITH EXPANDED FIELDS

A MORE COMPREHENSIVE DATABASE INCLUDING KEY FIELDS NEEDED FOR RELIABLE STATISTICAL ANALYSIS

EUROPEAN  
DATAWAREHOUSE

## Loan-Level Data

ECB/ESMA  
Standard Fields  
(All in One DB)

Standardised Auto  
Attributes



## European Environment Agency

EEA Fields (incl.  
CO<sub>2</sub> Emissions)

Standardised Auto  
Attributes

## Calculated Fields

Geographic  
Location

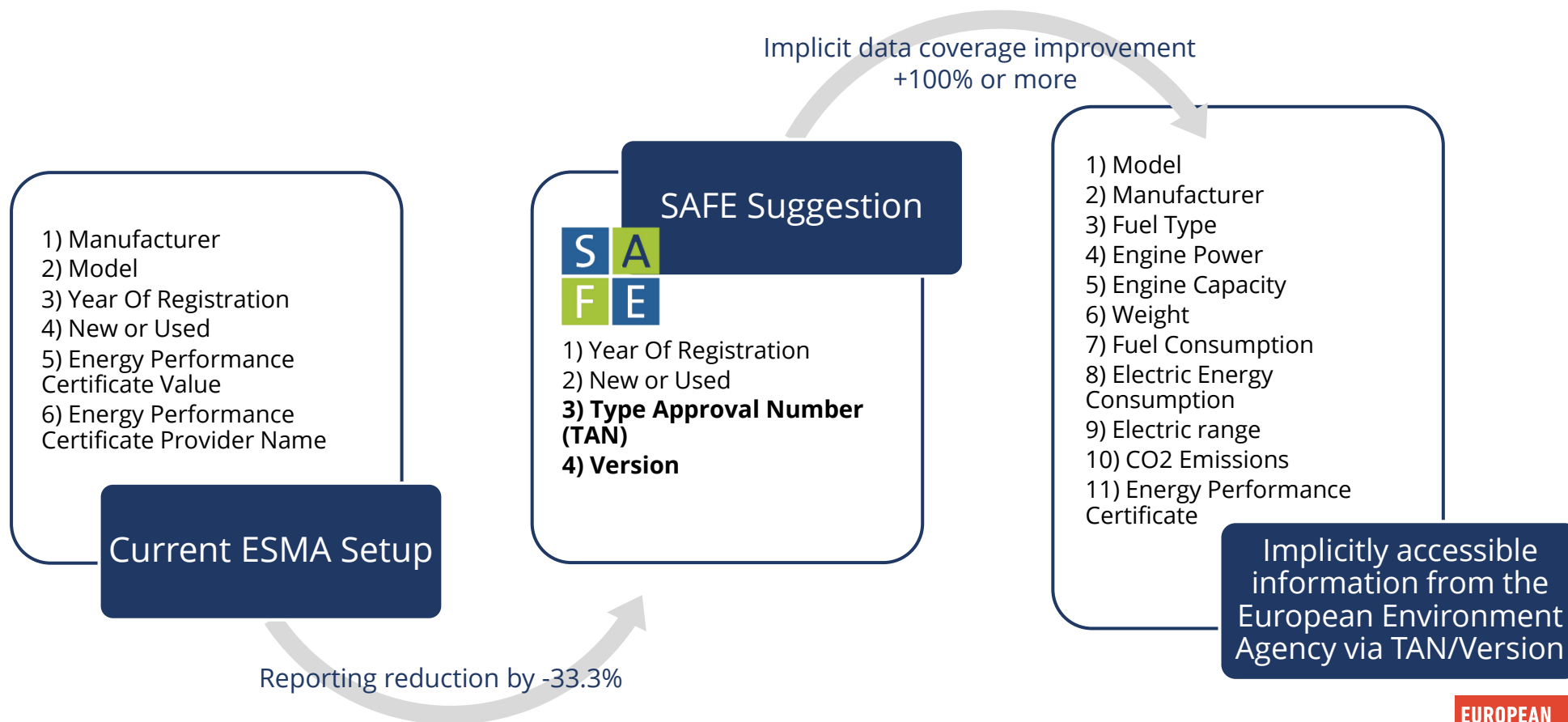
Fuel Type

Car Segment

Engine Size

# PROPOSED REVISIONS TO THE SECURITISATION REGULATION (EU) 2017/2402

THE EUROPEAN COMMISSION AIMS TO CUT SECURITIES REPORTING FIELDS BY AT LEAST 35% — OUR TAKE: LESS IS MORE



# IDENTIFYING VEHICLES IN THE EEA DATABASE WITH TAN OR VERSION

TWO IDENTIFIERS POINT TO A SPECIFIC VEHICLE...

Zulassungsbescheinigung Teil I  
(Fahrzeugschein)

29.01.2018 1313 GOP000032

M1 AE

WMB4534911K265594 3

smart

451

54E5Z0

**ZZBAA201**

fortwo cabrio ed

Daimler (D)

Fz.z.Pers.bef.b. 8 Spl.

Kabrio-Limousine

715/2007\*2016/646ZX

459/2012;reine Elektrofz

Elektro

0004 30ZX

BATTERIEKAPAZITÄT:17.7KWH\*\*

Frankfurt am Main  
04/2024 12.04.2022

2 1 41/--- 130

2740-2740 1672-1672

1552-1552 1115-1115

1320 1320

595 765

595 765

66

165/65 R15 81T

185/60 R15 84T

Grau/Blau 7/5

**e1\*2001/116\*0413\*36**

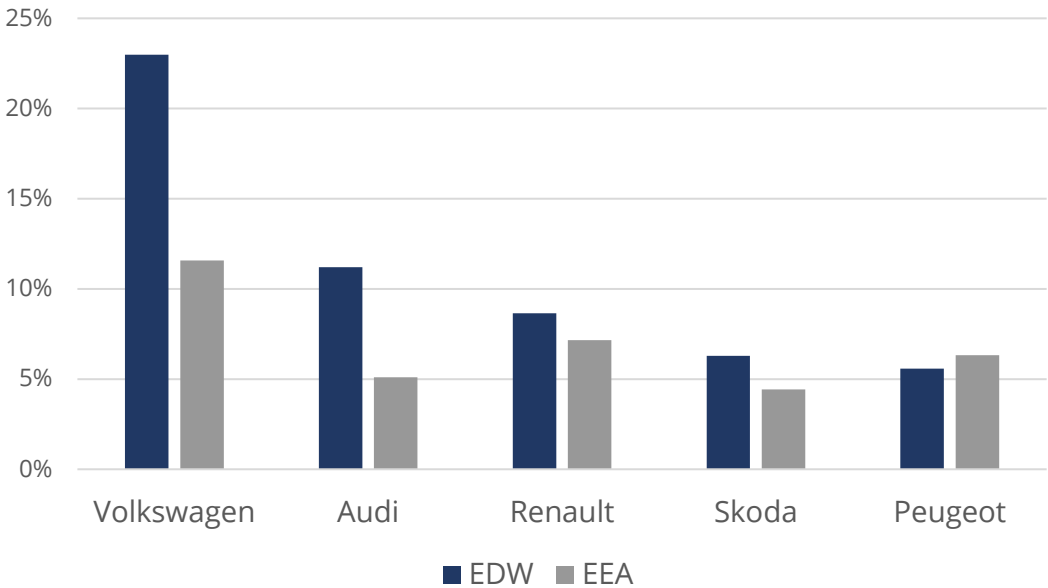
29.05.2017 K EW202480

100 %																					
Results		Messages																			
	Man	MMS	Tan	T	Va	Ve	Mk	Cn		Ct	Cr	r	m (kg)	Mt	Enedc (g/km)	Ewtp (g/km)	W (mm)	At1 (mm)	At2 (mm)	Ft	
1		DAIMLER AG	SMART	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	
2	NZ AG	MERCEDES-BENZ AG	DAIMLER AG	E1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	0	1873	1471	1431	ELECTRIC	
3		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	54E5Z0	ZZBAA201	SMART	FORTWO CABRIO ED	M1	M1	1	1115	NULL	0	0	1873	1471	1431	electric	
4		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	54E5Z0	ZZBAA201	SMART	FORTWO	M1	M1	1	1115	NULL	0	NULL	1873	1471	1471	Electric	
5		DAIMLER AG	DAIMLER (D	E1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	0	1873	1471	1431	ELECTRIC	
6		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
7		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
8		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	
9		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	54E5Z0	ZZBAA201	SMART	FORTWO	M1	M1	1	1115	NULL	0	NULL	1873	1471	1471	Electric	
10		DAIMLER AG	SMART	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	
11		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	
12		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	
13		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
14		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
15		DAIMLER AG	DAIMLER (D	E1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	0	1873	1471	1431	ELECTRIC	
16		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
17		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
18		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	54E5Z0	ZZBAA201	SMART	FORTWO	M1	M1	1	1115	NULL	0	NULL	1873	1471	1471	Electric	
19		DAIMLER AG	DAIMLER AG	e1*2001/116*0413*36	451	53E5Z0	ZZBAA201	SMART	fortwo coupe ed	M1	NULL	1	1085	NULL	0	NULL	1873	1471	1431	ELECTRIC	
20		DAIMLER AG	SMART	E1*2001/116*0413*36	451	53E5Z0	ZZBAA201	smart	FORTWO COUPE ED	M1	M1	1	1085	NULL	0	NULL	1873	1471	1431	Electric	

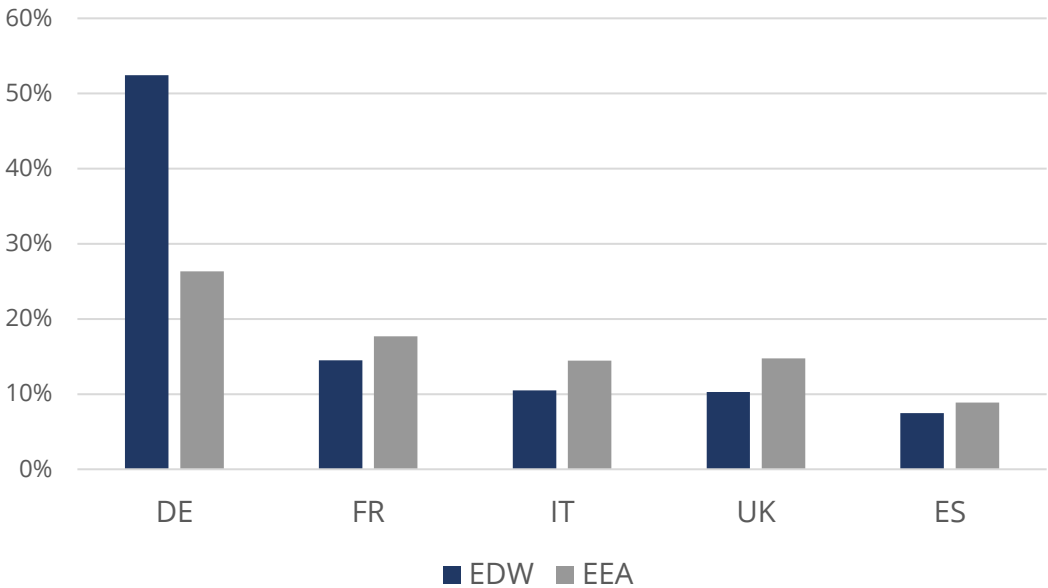
# SECURITISED PORTFOLIOS VS. EEA DATABASE: A REPRESENTATIVE SAMPLE

MANUFACTURER AND COUNTRY RANKINGS ALIGN CLOSELY

Most Represented Manufacturers in Securitised Portfolios vs. EEA Database



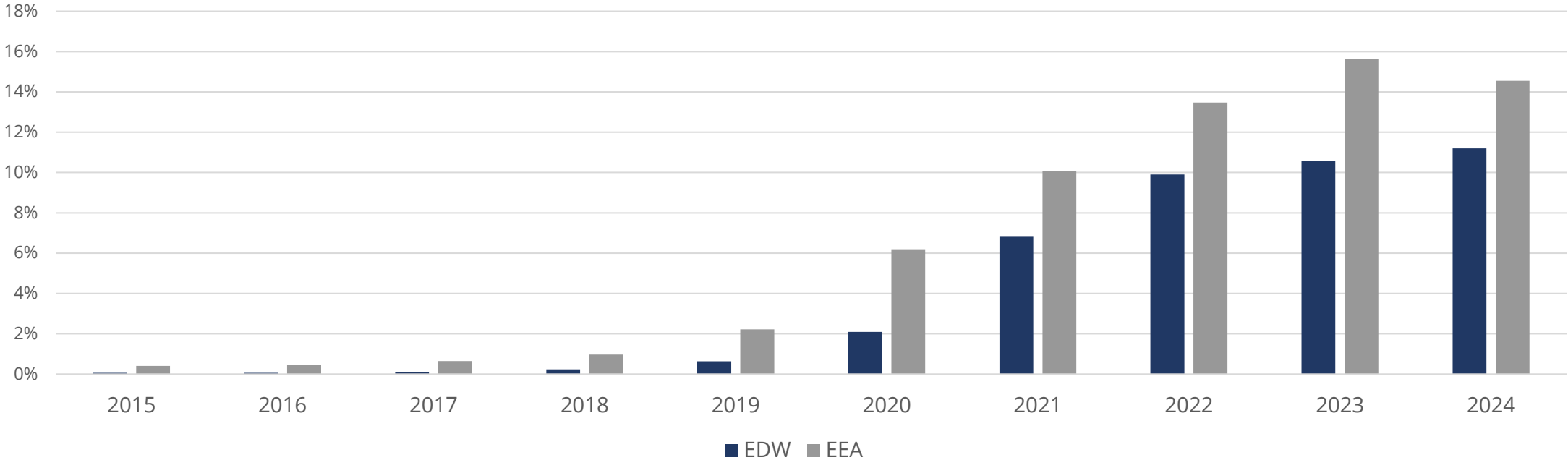
Most Represented Countries in Securitised Portfolios vs. EEA Database



# SECURITISED PORTFOLIOS VS. EEA DATABASE: A REPRESENTATIVE SAMPLE

ELECTRIC VEHICLES NOW ACCOUNT FOR MORE THAN 10% OF ALL VEHICLES SOLD

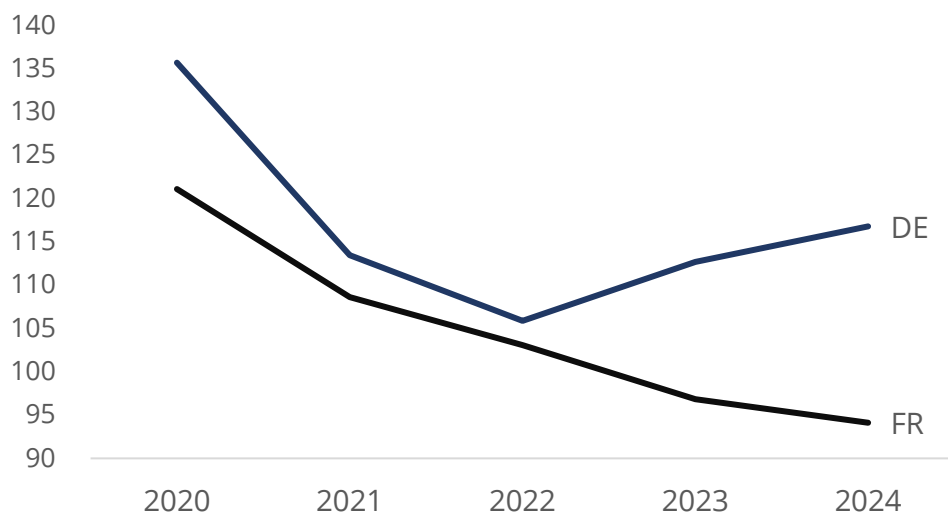
Electric Vehicle Share Over Time: Securitised Portfolios vs. EEA Database



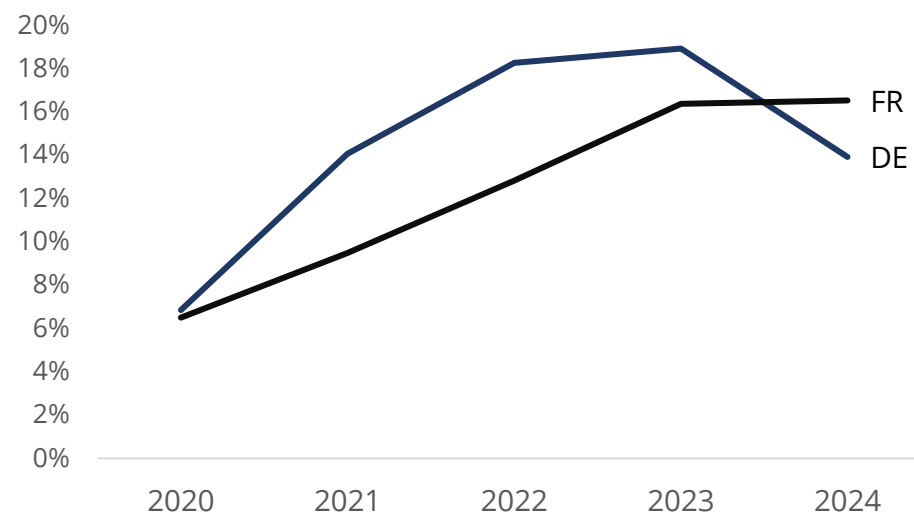
# GERMANY VS. FRANCE - DIVERGING PATHS ON CO<sub>2</sub> EMISSIONS AND EV ADOPTION

THE GERMAN SLOWDOWN CONTRASTS WITH CONTINUED FRENCH PROGRESS

## CO<sub>2</sub> Emissions going up in Germany



## EV share fell in Germany



## WHAT'S THE MOST POPULAR EV IN GERMANY AND FRANCE?



GERMANY – TESLA MODEL Y



FRANCE – RENAULT ZOE

49,034	← CAR VALUE →	23,432
511	← MONTHLY INSTALLMENT →	185
116,012	← BORROWER INCOME →	41,347
5.3%	← MONTHLY DTI →	5.5%

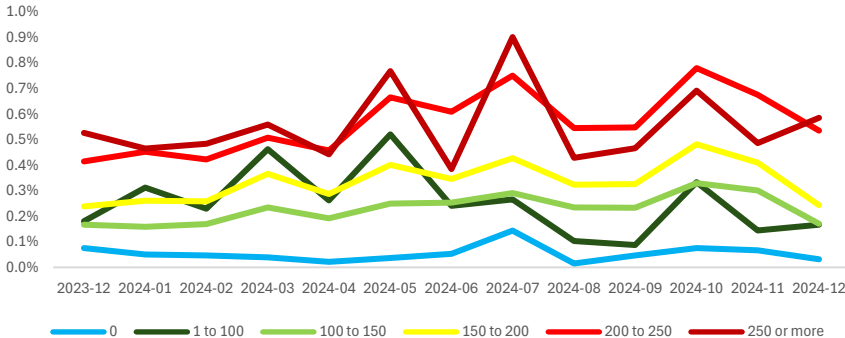
TESLA FOR THE FEW!

ZOE FOR THE MANY!

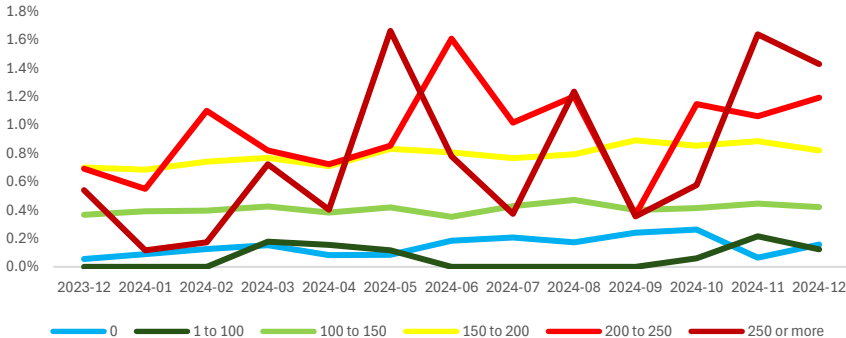
# 30 TO 60 DAY DELINQUENCIES BY CO<sub>2</sub> EMISSIONS

POLLUTING CARS HAVE HIGHER DELINQUENCIES

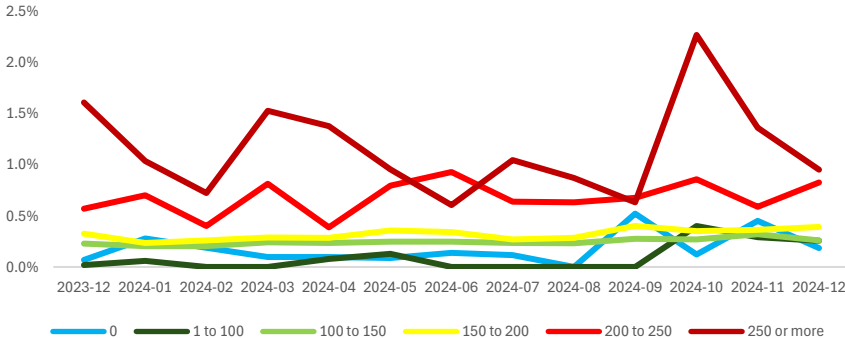
Germany



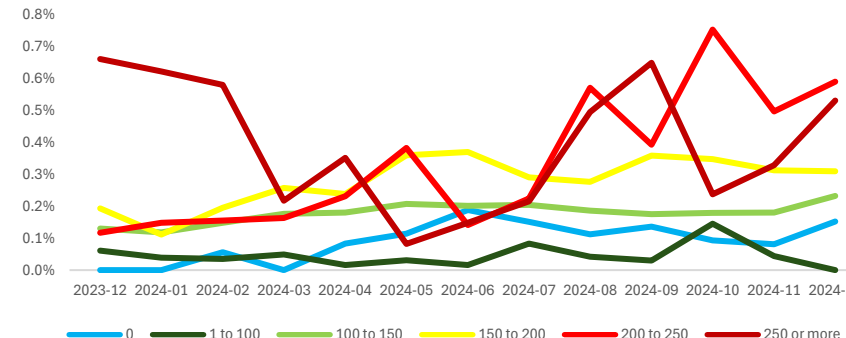
France



Spain



Italy



Note: Only using data for employed borrowers



# ENGAGE FOR ESG INITIATIVE

MARCO ANGHEBEN, EDW

PHILIPPE LAPORTE, UCI

MARTIJN BREED, NN BANK

MICHELE COSTOLA, CA' FOSCARI

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# Trends towards the simplification of ESG reporting

Banque de France, Paris  
Friday, 9 January 2026



Co-funded by the  
European Union







# Introduction of the ENGAGE for ESG initiative

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Marco Angheben

European DataWarehouse





# Energy Poverty in France

Arrears on utility bills	Inability to keep house adequately warm	Dwelling with leaking roof, damp walls or rotten frames
7.5 %	12.1 %	21.1 %

- **7.5%** of the total population was having arrears on their utility bills.
- **12.1%** of the total population was not able to keep their home adequately warm over the cold periods of the year.
- About **21.1%** of the total population was living in a dwelling with leaking floor, damp walls or rotten windows, frames or floor.

Source: Data as of 2023, [European Building Stock Observatory](#)



Co-funded by the  
European Union



# ENGAGE for ESG initiative

**EUROPEAN**  
DATAWAREHOUSE

 **HYPOPORT**

**UCI**

**woonnu**



Università  
Ca'Foscari  
Venezia

  
**DEXAI**  
ARTIFICIAL ETHICS

- Launched in November 2022 and co-funded by the European Union with a LIFE grant.
- The ENGAGE for ESG initiative aims to provide a simple solution for ESG reporting for mortgages and home renovation loans.



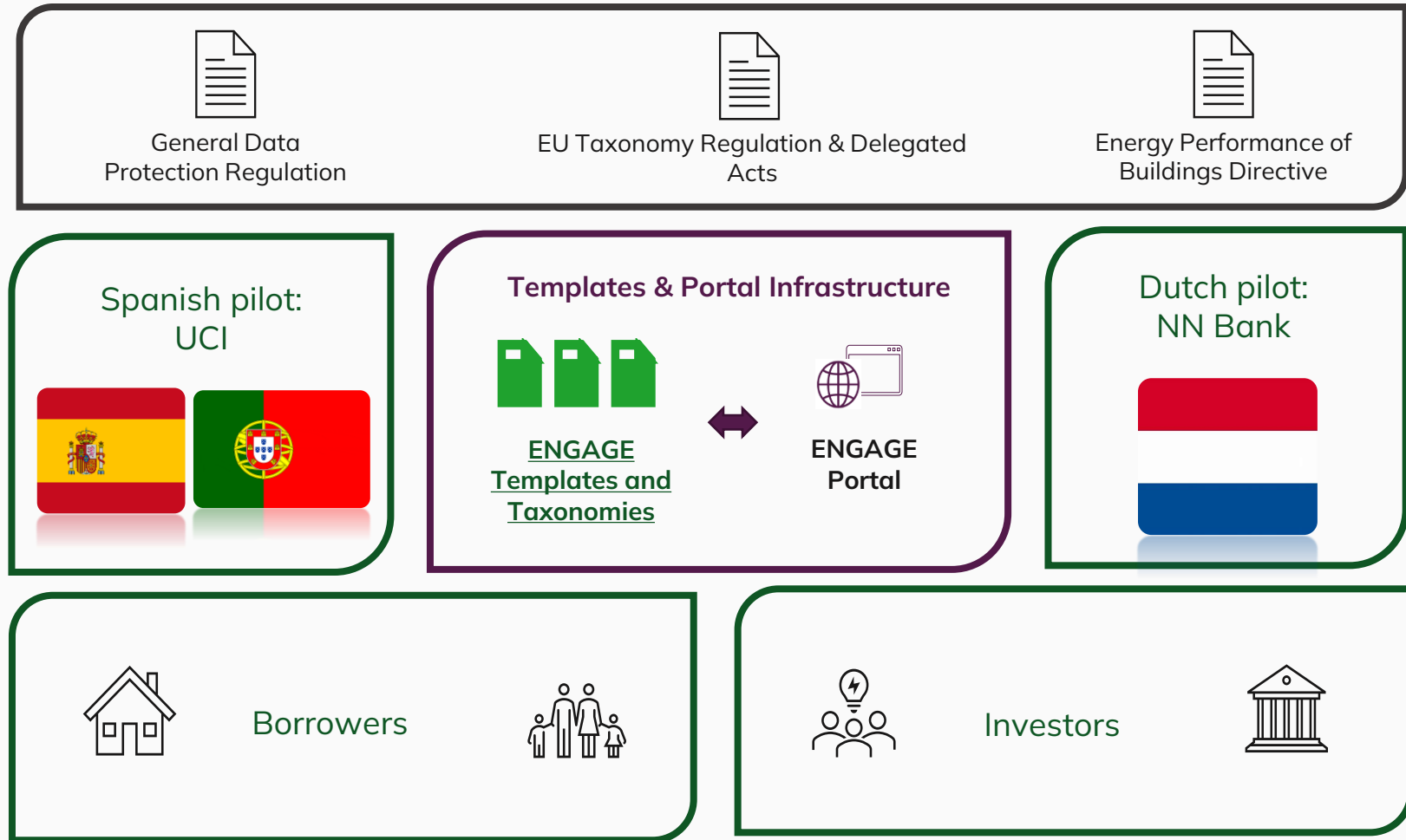
Co-funded by the  
European Union



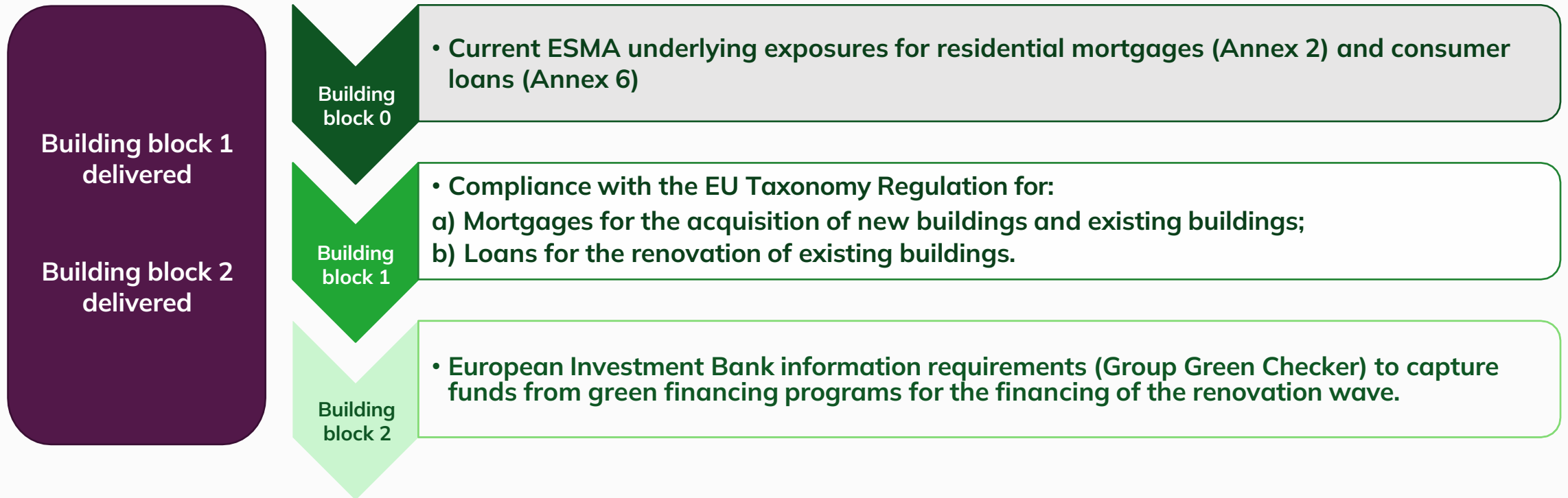
# ENGAGE for ESG initiative description

## Two main pillars:

1. A **disclosure template** for residential real estate data;
2. A **portal** to assess EU Taxonomy alignment and data quality.



# The ENGAGE Templates: structure







## The ENGAGE proposal: a limited number of data fields to check EU Taxonomy compliance

**Green:** the minimum data needed for SCC checks

**Purple:** minimum data for the DNSH check

**Blue:** PCAF / CO2 financed emissions

	FIELD CODE	CONTENT TO REPORT	Section 7.7.1 - EPC class A	Section 7.7.1 - Top 15%	Section 7.7.2 10% lower NZEB
Identifiers	EREC1	Unique Identifier			
	EREC2	Underlying Exposure Identifier Building block 0			
	EREC3	Collateral Identifier Building block 0			
	EREC4	General Activity Designation	Y	Y	Y
SCC 7.7	EREC5	Construction Year	Y	Y	Y
	EREC6	Construction permit application date			
	EREC7	Energy Performance Certificate (EPC) Class	Y		
	EREC8	Estimated or officially produced EPC	Y		
	EREC9	Issuance date of most recent EPC	Y		Y
	EREC10	EPC original Validity	Y		
	EREC11	EPC Methodology			
	EREC12	Energy Performance Certificate (EPC) Status			
	EREC13	EU-Equivalent EPBD-Regime			
	EREC14	Primary Energy Demand (PED) of the building			Y
	EREC15	Estimated or officially produced Primary Energy Demand (PED)			
	EREC16	Primary Energy Demand (PED) Based on Reference Building			
	EREC17	Primary Energy Demand (PED) Based on Building or Building unit			
	EREC18	Nearly zero-energy building (NZEB) threshold			Y
	EREC19	Climatic zone code			
	EREC20	Geographic Region - climatic zone			
	EREC21	Building unit in top 15% indicator		Y	
	EREC22	Top 15% Explanatory Variable			
	EREC23	Top 15% Object Reference Value		Y	
	EREC24	Top 15% Object Threshold Value		Y	
DNSH	EREC25	DNSH EO2 Indicator	Y	Y	Y
	EREC26	DNSH EO3 Indicator			
	EREC27	DNSH EO4 Indicator			
	EREC28	DNSH EO5 Indicator			
	EREC29	DNSH EO6 Indicator			
Renovation SCC	EREC30	Balance for renovation of existing buildings			
	EREC31	Balance of IMR of EE equipment			
	EREC32	Balance of IMR of RE equipment			
	EREC33	Balance of EE equipment			
	EREC34	Balance of RE equipment			
	EREC35	Large new constructions			
Financed Emissions	EREC36	Financed CO2-emission	Y	Y	Y
	EREC37	Surface Area	Y	Y	Y
	EREC38	GHG Data Score	Y	Y	Y
	EREC39	GHG Emission Factor	Y	Y	Y

11

10

10



Co-funded by the European Union





# The ENGAGE Portal: high-level overview

- The ENGAGE Portal enables lending institutions to **upload and assess the alignment of their loan portfolios with the EU Taxonomy**.
- The Portal incorporates detailed **loan and collateral level checks**.
- Access to multiple stakeholders (internal reporting, rating agencies, investors, regulatory supervisors, etc.) upon invitation.
- The ENGAGE Portal allows users to assess multiple portfolios based on the EU Taxonomy.
- The Portal output is twofold:
  1. The **data quality feedback**;
  2. The **EU Taxonomy alignment report**.
- **Trial access** available subject to a standard legal arrangement (available upon request).

The screenshot displays the ENGAGE Portal interface. At the top, the ENGAGE logo is on the left, and navigation links 'LOG OFF | GET IN TOUCH | [LinkedIn icon] | CHANGE PASSWORD' are on the right. Below the logo, 'Programs' and 'Administrator' are listed. The main header is 'PROGRAMS' with a 'HOME | PROGRAMS' breadcrumb. A sidebar on the left shows a dropdown menu with 'Hypoport B.V.' selected, and below it, 'ENGAGE', 'Unión de Créditos Inmobiliarios', and 'Woonnu'. The main content area shows 'HYPOPORT B.V. ENGAGE' and a dropdown for 'ENGAGE PILOT PORTFOLIO'. Below this, a table lists 'Asset type' (RMBS), 'Country' (The Netherlands), 'Status' (Current), and 'Closing date' (11-2024). There is a section for 'ENGAGE Data Templates' with a file 'PoolABC\_2024-10-20.zip', a 'Download report' button, and a date '10-2024'. An 'Add file' button is at the bottom right. The footer is divided into three columns: 'ENGAGE SOLUTION' (with links: FAQs, DISCOVER ENGAGE, GET IN TOUCH), 'LEGAL INFO' (with links: PRIVACY POLICY, TERMS & CONDITIONS, IMPRINT), and 'LOGIN AREA' (with links: LOGIN, LOGIN REQUEST). At the very bottom, there is a European Union logo, a disclaimer about funding, and a copyright notice: '© Copyright 2022-2024 Engage for ESG Activation Investments. All Rights Reserved.'



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European Union



# ENGAGE EU Taxonomy alignment report

**Portfolio Name** Example Portfolio 2024  
**Portfolio Date (DD-MM-YY)** 01-08-2024

Total # of Loans 1300  
Total # of Building Units 1100  
Total Balance €444,600,000.00  
TSC passed % **50.94%**

			TSC assessment*								
Section	Economic Activity	Subsection	SCC (check passed)			DNSH* (check) passed			TSC Passed (SCC + DNSH)		
			# of loans	# of Building Units	Balance	# of loans	# of Building Units	Balance	# of loans	# of Building Units	Balance
7.7(1)	Acquisition and ownership of buildings	Buildings built before 31 December 2020: building has at least an Energy Performance Certificate (EPC) class A.	460	411	€133,400,000.00	414	370	€120,060,000.00	411	363	€119,190,000.00
7.7(1a)		Buildings built before 31 December 2020 - Alternative: building is within Top 15%	392	301	€113,680,000.00	353	271	€102,370,000.00	349	301	€101,210,000.00
7.7(2)		Buildings built after 31 December 2020	23	22	€6,670,000.00	21	20	€6,090,000.00	21	22	€6,090,000.00
Total			875	734	€253,750,000.00	788	661	€228,520,000.00	781	686	€226,490,000.00

This block displays the Technical Screening Criteria (TSC) assessment, per Economic (Sub) Activity. This section of the report displays the absolute number of loans, building units and corresponding balance that passed these checks.



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# ENGAGE EU Taxonomy alignment report

Portfolio Name	Example Portfolio 2024
Portfolio Date (DD-MM-YY)	01-08-2024
Total # of Loans	1300
Total # of Building Units	1100
Total Balance	€444,600,000.00
TSC passed %	50.94%

TSC pass Total Portfolio

SCC (check passed)			DNSH (check) passed			TSC Passed (SCC + DNSH)		
% of all loans	% of total Building u	% of total Balance	% of total loans	% of total Building u	% of total Balance	% of total loans	% of total Building u	% of total Balance
35.38%	37.36%	30%	31.85%	33.64%	27%	31.62%	33.00%	27%
30.15%	27.36%	26%	27.15%	24.64%	23%	26.85%	27.36%	23%
1.77%	2.00%	2%	1.62%	1.82%	1%	1.62%	2.00%	1%
67.31%	66.73%	57.07%	60.62%	60.09%	51.40%	60.08%	62.36%	50.94%

This block displays the Technical Screening Criteria (TSC) assessment, per Economic (Sub) Activity. This section of the report displays the relative (vis-à-vis the portfolio) number of loans, building units and corresponding balance that passed these checks.





# ENGAGE for ESG: a tool for investors, rating agencies, regulators, and auditors

✓ The ENGAGE solutions help you:



Gain insights into RMBS, covered bonds, and residential real estate mortgage and home renovation loan portfolios



Collect granular ESG information to produce your ESG ratings



Access granular information to prepare reports and policy recommendations



Co-funded by the  
European Union



# Free ENGAGE trial period until July 2026

Request  
ENGAGE  
Templates

- Version 1.2 of the ENGAGE Templates available now through [Request for Access to the ENGAGE Templates](#)
- **80 institutions** have requested access to the ENGAGE Templates

ENGAGE  
Demonstration

- The ENGAGE Team is available for clarifications

Submission to  
ENGAGE  
Portal

- Signature of a [standard legal arrangement](#) for the safe processing of the data
- Possibility to submit the ENGAGE sample files various times enriching the information

Output  
Reports

- For each sample file submission two reports are generated: 1) a data quality report; 2) an EU Taxonomy alignment report.





# Stay Informed

- Scan the QR code to stay up to date on ENGAGE for ESG with all initiative updates, research insights, and upcoming events;
- Visit our [website](#);
- And follow us on [LinkedIn](#)!





# The ENGAGE experience of UCI and NN Bank

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Philippe Laporte (UCI)

Martijn Breed (NN Bank)







# UCI At-A-Glance

## More than 35 years of experience

Founded in 1989 and presence in Spain, Portugal and Brazil.

## Our way of work

Transparency, quality, responsibility, accessibility and proximity define the way in which UCI works, with over 190,000 customers having placed their trust in the entity.

## Recognised in the Real Estate Industry

A main recognised actor in the Real Estate Intermediation Industry.

Spain

Portugal

Brasil

Owned equally  
by BNP Paribas  
Group and Banco  
Santander.

UCI







# Since 2017, we've been boosting sustainability through a clear ESG roadmap

Aligned with the European Green Deal and the Paris Agreement, we've focused on helping to decarbonize the real-estate stock by promoting energy-efficient renovations through innovative financial solutions such as the Green Mortgage and condominium Loans.

We are leaders in the Spanish RE sustainable finance market.

Our approach demonstrates that achieving environmental goals is, at the same time, a responsible and profitable business model.





# More than 30 years of experience in the Iberian Securitisation experience

More than € 17 bn placed issues, among which 16.6 bn of Spanish RMBS - the Prado and previous UCI programs- and 0.7 bn of Portuguese RMBS – the Belem programs.

All UCI RMBS transactions are available on European DataWarehouse.

**Fondo de Titulización**  
**RMBS GREEN PRADO XI**  
PROSPECTUS  
**€ 490,000,000**

	up to the Step-Up Date (included)	from the Step-Up Date (excluded)	DBRS	Fitch
Class A: Secured Green Standard Bonds € 352,800,000	*EURIBOR 3M + 0.60 %	**EURIBOR 3M + 1.10 %	AAA(sf)	AAA(sf)
Class B Notes: Secured Green Standard Bonds € 78,400,000	*EURIBOR 3M + 1.00 %	**EURIBOR 3M + 1.00 %	AA(high) (sf)	AA+(sf)
Class C: € 26,900,000	2.00%		A(high) (sf)	A+(sf)
Class D: € 31,900,000	3.00%		NR	NR

\* Floating Rate Notes: Eurobor means: (i) until the Step-up Date (included), the Reference Interest Rate, and (ii) from the Step-up Date onwards, the Capped Reference Interest Rate.  
\*\* Eurobor: Capped Reference Interest Rate is the lower of: (i) the Reference Interest Rate, and (ii) 6.00 per cent. per annum.

BACKED BY CREDIT RIGHTS ASSIGNED BY  
**UNIÓN DE CRÉDITOS INMOBILIARIOS S.A.,**  
**ESTABLECIMIENTO FINANCIERO DE CRÉDITO**

**UCI**

JOINT LEAD MANAGERS AND JOINT LEAD ARRANGERS AND GREEN AGENTS

**BNP PARIBAS** **Santander**  
Corporate & Investment Banking

Back Up Servicer Facilitator **Santander** Paying Agent and Fund Account Provider **BNP PARIBAS**

Fund managed by:  
 **SANTANDER DE TITULIZACIÓN, S.G.F.T., S.A.**

Prospectus registered in the Registers of the Comisión Nacional del Mercado de Valores (CNMV) on 23rd of March 2023

**Term Verification Checklist**  
Fondo de Titulización  
RMBS GREEN PRADO XI  
  
PRADO COLLATERALISED SECURITISATION PROGRAM S.A.S.  
07 March 2023

**CRR ASSESSMENT**  
Fondo de Titulización  
RMBS GREEN PRADO XI  
  
PRADO COLLATERALISED SECURITISATION PROGRAM S.A.S.  
07 March 2023

**LCR ASSESSMENT**  
Fondo de Titulización  
RMBS GREEN PRADO XI  
  
PRADO COLLATERALISED SECURITISATION PROGRAM S.A.S.  
07 March 2023

European Securities and Markets Authority

Deal included in ESMA's list of notified STS Securitisations

Deal reported in European Datawarehouse, Securitisation Repository under the EU Securitisation Regulation



# With the Highest Score



Deals / RMBSE000088101620237  
**RMBS GREEN PRADO XI**

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-13

File Name & Size Limit | Upload New | Publish

Download Feedback

**Score**  
A1  
ESMA Score

**A**  
Data Quality Score  
(Only visible to Data Owners & Providers)

**Submission Status:**  
Your files have been Accepted with Warnings (WARN)

**Next Steps:**  
No further action required.

**Processing Steps**

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

**Quick Statistics**

**ND Threshold Report**

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

**Performance Data**

UCI has consistently achieved the highest score in every quarterly assessment for all its uploaded RMBS deals since the ESMA templates became mandatory

Deals / RMBSE000088101620237  
**RMBS BELEM No. 2**

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 43340000LJ0E0V0Y0CAN202301 | Selected PCD: 2023-08-31

File Name & Size Limit | Upload New | Publish

Download Feedback

**Score**  
A1  
ESMA Score

**A**  
Data Quality Score  
(Only visible to Data Owners & Providers)

**Submission Status:**  
Your files have been Accepted with Warnings (WARN)

**Next Steps:**  
No further action required.

**Processing Steps**

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

**Quick Statistics**

**ND Threshold Report**

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

**Performance Data**

Deals / RMBSE000088101620237  
**RMBS GREEN BELEM No. 1**

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 43340000LJ0E0V0Y0CAN202301 | Selected PCD: 2023-08-31

File Name & Size Limit | Upload New | Publish

Download Feedback

**Score**  
A1  
ESMA Score

**A**  
Data Quality Score  
(Only visible to Data Owners & Providers)

**Submission Status:**  
Your files have been Accepted with Warnings (WARN)

**Next Steps:**  
No further action required.

**Processing Steps**

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

**Quick Statistics**

**ND Threshold Report**

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

**Performance Data**

Deals / RMBSE000088101620237  
**FT RMBS PRADO X**

Information Data & Documents Insights ECB Template ESMA Template Documents

Securitisation Identifier: 95980020140005209368N202301 | Selected PCD: 2023-09-13

File Name & Size Limit | Upload New | Publish

Download Feedback

**Score**  
A1  
ESMA Score

**A**  
Data Quality Score  
(Only visible to Data Owners & Providers)

**Submission Status:**  
Your files have been Accepted with Warnings (WARN)

**Next Steps:**  
No further action required.

**Processing Steps**

- Underlying Exposures (Published)
- Signature Validation
- File Validation
- Data Extraction
- PCD
- Trigger Data Processing Pipeline

**Quick Statistics**

**ND Threshold Report**

Asset Class	Threshold 1	Threshold 2	Result
Residential	0 / 30	0 / 30	ACPT

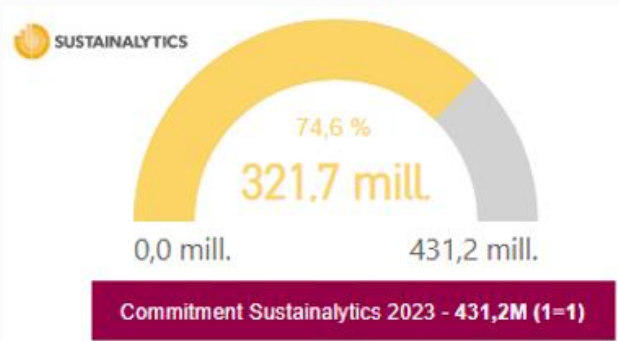
**Performance Data**





# Delivery Status of Commitments

## Active commitments (as of Nov-25)



## Completed commitments

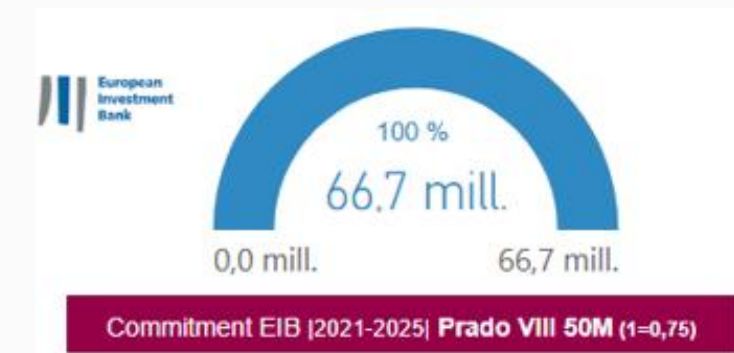
Completed Q4. 2023



Completed Q4. 2023



Completed Q4. 2024





With the backing of our investors, we developed a strategy based on solid commitments to launch and expand the Green Plan within the real-estate sector, with the aim of growing our business.

## Green Belém

In 2020, we reached an agreement with EIB for the first issuance designed to boost our Green mortgage origination in Spain and Portugal.

## Green portfolio

We are expanding our Green portfolio, with around 25% of new business origination aligned with the EU Taxonomy.

New RMBS Issue in Portugal:



## RMBS Green Belém No.1



### Investors

There is strong market appetite for sustainable products.

We structured and launched the first green securitisation fund (RMBS Belém 1), STS, Sustainability-labelled, and part of the EMF's EEMi initiative in collaboration with the EIB.

“Use of proceeds”.

A shift in the way mortgages and loans are marketed, ensuring they are aligned with sustainable criteria..

### Business

UCI



# UCI & EIB Journeys

## May '20

EIB and Unión  
de Créditos Inmobiliarios:  
Portuguese RMBS Green  
Belém No.1

Euronext 2021  
Sustainable  
Finance award



## April '21

EIB and Unión  
de Créditos Inmobiliarios:  
Spanish RMBS Prado VIII

## June '22

The European Commission  
and EIB provide UCI with  
€2.6 M to mobilize €46.5 M  
for energy efficient housing.  
ENGAGE for ESG project is  
launched



## March '23

Spain and Portugal: EIB  
Group and ICO invest in UCI  
securitisation fund (RMBS  
Green Prado XI) for  
renovating and building  
residential homes using  
sustainable criteria





# The UCI Experience: Benefits and Challenges



## BENEFITS

- Serves for **self-assessment** and to verify the percentage of information we have about these relevant points.
- **Enhances our data quality and accuracy.**
- Increases our **market visibility and reputation.**
- The Templates **mitigate our reporting process operational risk.**
- Gives us leverage to ask Spanish and Portuguese authorities to update mandatory property information.
- **Transparency, standardization, simplification,** EU taxonomy and EPBD aligned



## CHALLENGES

The Spanish challenge is to release to the financial sector information needed to calculate certain classifications.

Spanish public information about the energy certification of buildings can be found at <https://www.miteco.gob.es/>.

The **Portuguese challenge** is aligning our internal data systems and processes with the ENGAGE Templates.

This requires an investment in IT infrastructure and human resources to map, extract, transform, and load our data into the ENGAGE Templates.

Portuguese public information about the energy certification of buildings can be found at <https://www.sce.pt/>.



# Relevant case studies







# Traffic Lights Classification



Economic Activity information	General Activity Designation	Construction Year	Top15 Denominator	Top15_Explanatory Variable	Top15 Methodology Description	Building unit in top-15% indicator	Top15_Object Reference Value	Energy Performance Certificate (EPC) class	Energy Performance Certificate (EPC) Validity Length
Energy Performance Certificate (EPC) Status	Primary Energy Demand (PED) of the building	Primary Energy Demand (PED) Based on Building or Building unit	Top15 Document Geographic Scope	Top15 Numerator	Description on how Minimum Safeguards are complied with	Estimated or officially produced (EPC)	Certificate (EEU-Equivalent EPC) Method / EPBD-Regime	Issuance date of most recent available (EPC) registration	Energy Performance Certificate (EPC) Methodology
Climatic zone code	Geographic Region - Climatic zone	Estimated or officially produced Primary Energy Demand (PED)	URL towards MSS Issuer Statement	Environmental Objective	Link alignment with the OECD Guidelines for Multinational Enterprises		Nearly zero-energy building (NZEB) threshold	Construction permit application date	
Top15_Document URL	Top15_Document Issuance Date	Top15_Object Threshold Value	Link towards UN Guiding Principles on Business and Human Rights	Link towards eight fundamental conventions	Top15_Document Name		Waiting for a unique definition/ Unification of criteria	Not available Some of the data was extracted manually for the case studies	

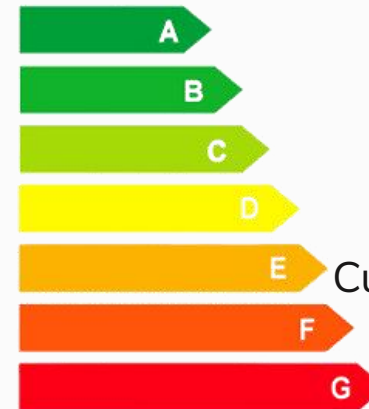


## Building in Madrid

- External thermal insulation system (ETICS) on façades and courtyard walls.
- Accessibility improvements and conservation works in the ground floor entrance hall.



- Which section of the ENGAGE Templates is most relevant in this case and how do we see the actual data in the ENGAGE Templates?



Current EPC

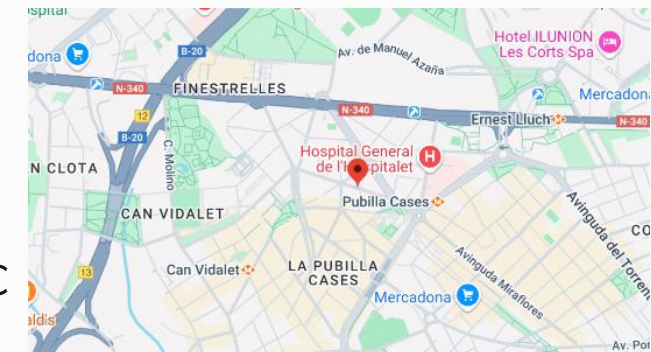
Previous EPC





## Building in Barcelona

- Repair of deficiencies and improvement of energy efficiency on the main façade, courtyard, party wall, general roof, common terraces, and attic.
- Sanitation system installation.







## Building in Valencia

- Structural rehabilitation: reinforcement of secondary structural elements and waterproofing of the roof.
- Replacement of windows and doors in common areas and the attic apartment (owned by the homeowners' association), external insulation of all façades, insulation of the main roof and rooftop utility room, and installation of solar panels for photovoltaic energy.
- Conservation repairs and accessibility improvements.





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UCI

# Public-private collaboration, key of success/OSS





# NN Bank - Introduction



- Introduction: Martijn Breed, 50yrs old, recently from C -> A+++
- 25 years of experience in the financial sector
- 20 years of experience in structured finance
- Started at NN Bank in 2012 as senior legal counsel
- Co-founder of Woonnu, the sustainable mortgage label of Nationale-Nederlanden Bank
- Current focus on ESG-related topics
- Representing NN Bank in several external ESG committees





# Only a limited number of data fields are actually needed!

## Only a limited number of data fields are actually needed!

In this example, of the ENGAGE v1.2 EREC file we see that only a limited number of data fields is needed for the economic activity 7.7 assessment checks:

- In green the minimum data needed for SCC checks
- In purple the DNSH check
- In light blue the PCAF / CO2 financed emissions

	FIELD CODE	CONTENT TO REPORT	Section 7.7.1 - EPC class A	Section 7.7.1 - Top 15%	Section 7.7.2 10% lower NZEB	DSA P&P 2.1	Available in EP-Online
Identifiers	EREC1	Unique Identifier					
	EREC2	Underlying Exposure Identifier Building block 0					
	EREC3	Collateral Identifier Building block 0					
	EREC4	General Activity Designation	Y	Y	Y		
SCC 7.7	EREC5	Construction Year	Y	Y	Y	Y	Y
	EREC6	Construction permit application date					
	EREC7	Energy Performance Certificate (EPC) Class	Y			Y	Y
	EREC8	Estimated or officially produced EPC	Y				Y
	EREC9	Issuance date of most recent EPC	Y		Y	Y	Y
	EREC10	EPC original Validity	Y				Y
	EREC11	EPC Methodology					Y
	EREC12	Energy Performance Certificate (EPC) Status					Y
	EREC13	EU-Equivalent EPBD-Regime					Y
	EREC14	Primary Energy Demand (PED) of the building			Y	Y	Y
	EREC15	Estimated or officially produced Primary Energy Demand (PED)					Y
	EREC16	Primary Energy Demand (PED) Based on Reference Building					Y
	EREC17	Primary Energy Demand (PED) Based on Building or Building unit					Y
	EREC18	Nearly zero-energy building (NZEB) threshold			Y		Y
	EREC19	Climatic zone code					
	EREC20	Geographic Region - climatic zone					
	EREC21	Building unit in top 15% indicator		Y		Y	
	EREC22	Top 15% Explanatory Variable					
	EREC23	Top 15% Object Reference Value		Y			
	EREC24	Top 15% Object Threshold Value		Y			
DNSH	EREC25	DNSH EO2 Indicator	Y	Y	Y		
	EREC26	DNSH EO3 Indicator					
	EREC27	DNSH EO4 Indicator					
	EREC28	DNSH EO5 Indicator					
	EREC29	DNSH EO6 Indicator					
Renovation SCC	EREC30	Balance for renovation of existing buildings					
	EREC31	Balance of IMR of EE equipment					
	EREC32	Balance of IMR of RE equipment					
	EREC33	Balance of EE equipment					
	EREC34	Balance of RE equipment					
	EREC35	Large new constructions					
Financed Emissions	EREC36	Financed CO2-emission	Y	Y	Y		
	EREC37	Surface Area	Y	Y	Y		
	EREC38	GHG Data Score	Y	Y	Y		
	EREC39	GHG Emission Factor	Y	Y	Y		



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European Union

# Deze woning heeft energielabel

# A<sup>+</sup>



- 8.3 million homes
- 61% valid EPC
- 35% energy label A or better (A+, A++, A+++)



# Initiatives in the Dutch market

- Legislation allowing higher loans for sustainability
- Availability of low or no-interest loans (Warmtefonds)
- Government and local subsidies
- Mortgage interest discount for energy label A
- Online tools for cost indication of sustainability
- Banks highlighting the benefits of sustainability
- Banks assisting in finding sustainability partners





woonnu

- Interest rate discount per label improvement
- Pilot for full support in making homes sustainable
  - Customer journey from energy advice -> contractors -> new energy label -> subsidies
  - Immediate benefitting label A interest rate discount
  - Quote in advance guaranteeing costs
- Too little interest from financial advisers and customers



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# Lack of willingness

Subsidies



Lower interest  
rates



Lower energy costs



Comfortable living

~~Sustainable house~~

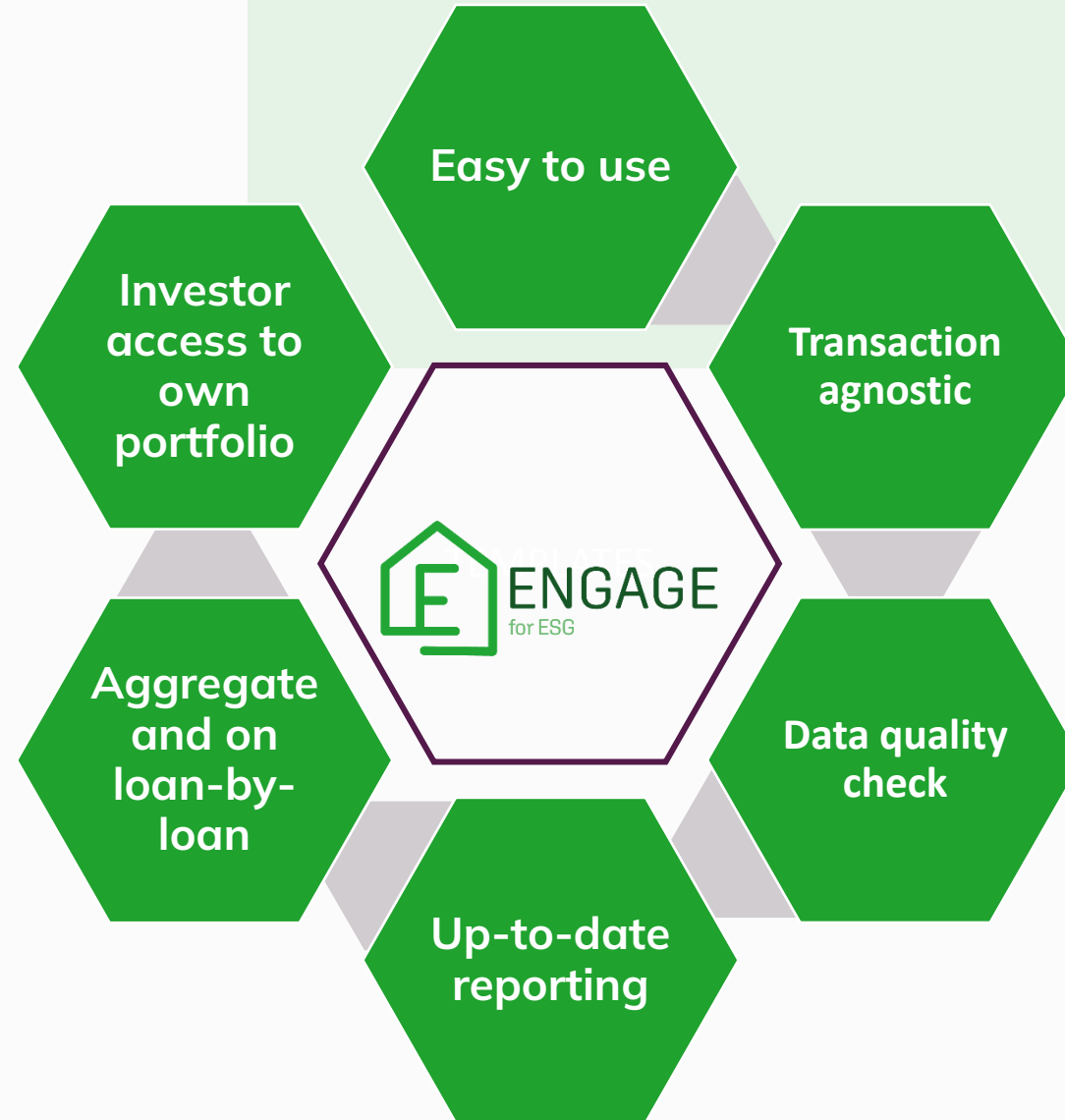


# Green premiums for a better business case

- A lot of homes in the Netherlands need to be refurbished to a better energy label.
- Higher discounts on interest rates are needed to incentivize the customer and improve the business case.
- Green premiums from investors are needed and therefore, benefits should be created for investors (i.e. lower capital charges, guarantee schemes).
- Reliable reporting is needed to prove a mortgage loan (portfolio) qualifies as green.
- ENGAGE for ESG provides the ideal tooling to do so.
- We believe that ENGAGE for ESG can be an important piece of the puzzle towards an energy neutral housing stock in Europe.



# ENGAGE for ESG – the solution to prove a portfolio is green



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# Technical Report on Risk Mitigation Correlation Analysis

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Iva Hristova Pegoraro & Michele Costola  
Università Ca' Foscari Venezia



# Technical report on risk mitigation correlation analysis

## Key features for France

**Objective of the report:** to provide empirical evidence on the relevance of property's EE in predicting mortgage default risk.

### Specifics of the French sample

**EPC categories:** D-ranked properties predominant; defaults concentrated in F, G and "other" category.

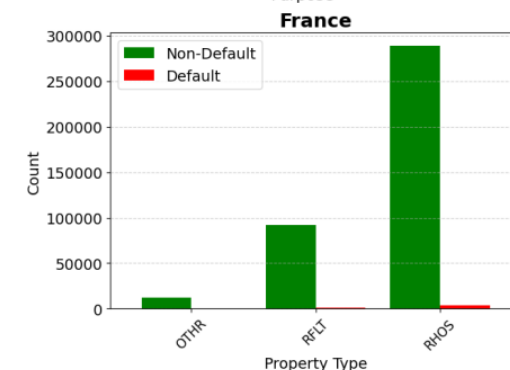
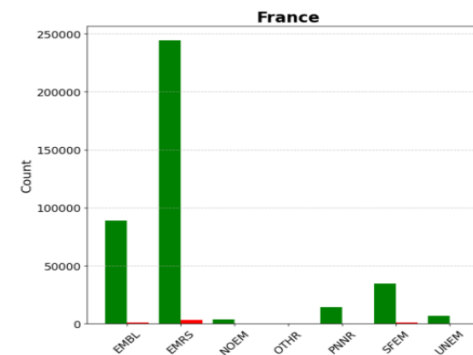
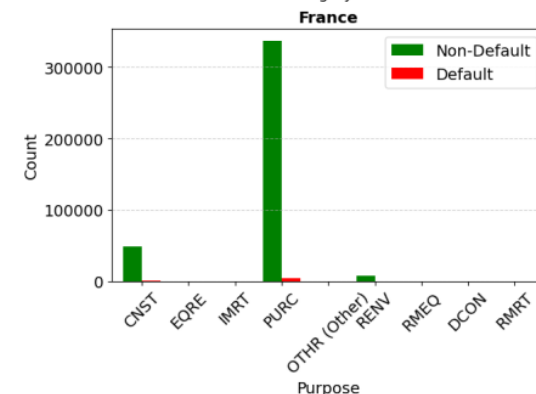
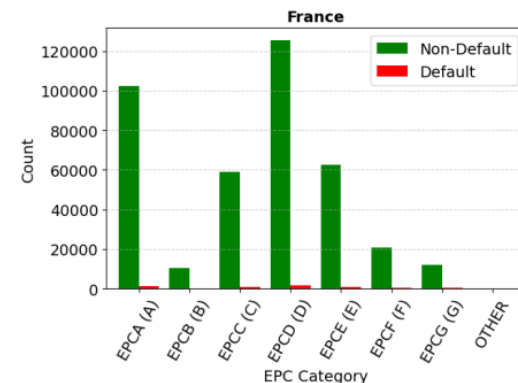
**Mortgage purpose:** mainly purchase and construction, limited share for renovation, presenting highest default levels.

**Property type:** mainly detached or semi-detached houses, highest default degree.

**Employment status:** mainly private sector employees; highest default rates for unemployed and self-employed categories.

### General trends in French mortgage market 2022-2023:

rising interest rates, fewer new loans, lower granted amounts, longer maturities, increase in defaults  
(Inflation and higher property-related costs (ACPR, 2024)).





# Technical report on risk mitigation correlation analysis

## Key results

- **Logit Regression Results**

⇒ Higher EPC value associated with lower probability of default.

- **Survivor Functions – Kaplan-Meier estimation**

⇒ Higher EE related to longest survival time.

- **Cox Proportional Hazards model**

⇒ Loans secured by low- efficiency properties faced a 43% higher default risk.

EE Value	Median Survival Time (Months)
High	47.0
Medium	39.0
Low	29.0
Other	18.0

Type	Variable	Name Variable	$\beta$ (with EE)	$\beta$ (without EE)
Constant	Constant		-4.2857 *** [0.96181]	-4.0139 *** [0.63081]
RREC10	Energy Performance Certificate Value	EE	-0.6944 *** [0.1741]	
Maturity– Origination Date	Maturity-Origination Date	(Maturity- Origination Date_4)	-0.8021 * [0.4524]	-0.7252 – [0.4519]
Property Type	Property Type	Residential Flat or Apartment	0.7908 *** [0.1377]	0.8818 *** [0.1353]
	Property Type	Multifamily House	0.4181 ** [0.1519]	0.3950 ** [0.1518]
Employment Status	Employment Status	Self Employed	1.1283 *** [0.3421]	1.1286 *** [0.3404]
	Employment Status	No Employment	-0.6444 ** [0.2876]	-0.6947 ** [0.2858]
	Employment Status	Student	0.3929 ** [0.1828]	0.3806 ** [0.1821]
	Employment Status	Other	1.5378*** [0.4562]	1.5067 *** [0.4549]
Primary Income	Primary Income	Primary obligor annual income	-0.2272*** [0.0675]	-0.2638*** [0.0592]
Interest Rate Type	Interest Rate Type	Fixed with future periodic resets	0.8693*** [0.2601]	0.8957 [0.2582]

# Technical report on risk mitigation correlation analysis

## Key results : relevance of EE variable

- **Comparison of the explanatory power of chosen models (“with EE” vs “without EE” specification)**

⇒ Higher pRs: **greater explanatory power of the EE model.**

⇒ Less negative log-likelihood: **greater accuracy of EE model in predicting the probability of default.**

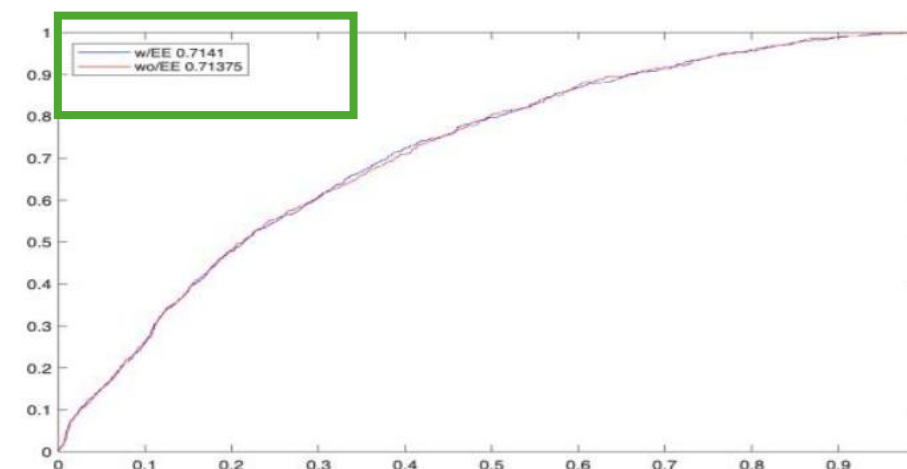
- **Model’s performance (France)**

Model with EE: higher AUC  
⇒ better discriminatory power = improved performance.

- **Cox Proportional Hazards (PH) model**

⇒ Model 5 (includes EE, loan characteristics, FE) better model.

Types of models	Model with EE specification		Model without EE specification
Number of Observations	256603		
Number of Events	350		
pRs	0.02686865		0.01717916
Loglikelihood	-2587.3952		-2613.1579



	(1)	(2)	(3)	(4)	(5)
Summary Statistics					
Observations	10690	10690	10690	10690	10690
Events observed	5345	5345	5345	5345	5345
SE	Rob.	Rob.	Rob.	Rob.	Rob.
C-index	0.61	0.63	0.65	0.67	0.69
Partial AIC	92345.43	92281.13	91816.49	90672.66	90020.15
log-likelihood r. test	747.11 on 3 df	813.41 on 4 df	1284.04 on 7 df	2435.87 on 11 df	3104.38 on 19 df

---

## Thank you

**EUROPEAN**  
DATAWAREHOUSE

 **HYPOPORT**



Università  
Ca' Foscari  
Venezia

**UCI**

**woonnu**

  
**DEXAI**  
ARTIFICIAL ETHICS



# Q&A



# **Q&A FOR RESEARCH**



# THANK YOU

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**THANK YOU**



# APPENDIX

# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

```
SELECT
  [EDCODE]
  ,[Sec_Id]
  ,[data_origin]
  ,[Select_Unique]
  ,[PCD]
  ,[QTR]
  ,[COUNTRY]
  ,sum(AUTL30) as Current_Bal

FROM [res].[aio_aut_ES_FR_Trial]
GROUP BY
  [EDCODE]
  ,[Sec_Id]
  ,[data_origin]
  ,[Select_Unique]
  ,[PCD]
  ,[QTR]
  ,[COUNTRY]
ORDER BY
  [EDCODE]
  ,[Sec_Id]
  ,[data_origin]
  ,[Select_Unique]
  ,[PCD]
  ,[QTR]
  ,[COUNTRY]
```

## DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

1	EDCODE	Sec_Id	data_origin	Select_Uniq	PCD	QTR	COUNT	Current_Bal
86	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2020-11-30	NULL	FR	1,162,792,037
87	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2020-12-31	2020-Q4	FR	1,167,942,391
88	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-01-31	NULL	FR	1,179,081,996
89	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-02-28	NULL	FR	1,191,744,473
90	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-03-31	2021-Q1	FR	1,205,562,978
91	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-04-30	NULL	FR	1,229,404,309
92	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-05-31	NULL	FR	1,234,749,666
93	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-06-30	2021-Q2	FR	1,232,794,693
94	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-07-31	NULL	FR	1,256,876,674
95	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-08-31	NULL	FR	1,274,880,831
96	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	0	2021-08-31	NULL	FR	1,274,880,831
97	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-09-30	2021-Q3	FR	1,283,251,939
98	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-10-31	NULL	FR	1,292,501,876
99	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-11-30	NULL	FR	1,312,807,809
100	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-12-31	2021-Q4	FR	1,329,092,078
101	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-01-31	NULL	FR	1,340,178,158
102	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-02-28	NULL	FR	1,342,774,770
103	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-03-31	2022-Q1	FR	1,341,005,762
104	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-04-30	NULL	FR	630,167,837
105	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-05-31	NULL	FR	643,365,297
106	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-06-30	2022-Q2	FR	650,775,582
107	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-07-31	NULL	FR	666,638,463
108	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-08-31	NULL	FR	681,672,668

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96	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA		0	2021-08-31	NULL	FR	1,274,880,831
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1	EDCODE	Sec_Id	data_origin	Select_Uniq	PCD	QTR	COUNT	Current_Bal
86	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2020-11-30	NULL	FR	1,162,792,037
87	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2020-12-31	2020-Q4	FR	1,167,942,391
88	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-01-31	NULL	FR	1,179,081,996
89	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-02-28	NULL	FR	1,191,744,473
90	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-03-31	2021-Q1	FR	1,205,562,978
91	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-04-30	NULL	FR	1,229,404,309
92	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-05-31	NULL	FR	1,234,749,666
93	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-06-30	2021-Q2	FR	1,232,794,693
94	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-07-31	NULL	FR	1,256,876,674
95	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ECB	1	2021-08-31	NULL	FR	1,274,880,831
96	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	0	2021-08-31	NULL	FR	1,274,880,831
97	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-09-30	2021-Q3	FR	1,283,251,939
98	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-10-31	NULL	FR	1,292,501,876
99	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-11-30	NULL	FR	1,312,807,809
100	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2021-12-31	2021-Q4	FR	1,329,092,078
101	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-01-31	NULL	FR	1,340,178,158
102	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-02-28	NULL	FR	1,342,774,770
103	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-03-31	2022-Q1	FR	1,341,005,762
104	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-04-30	NULL	FR	630,167,837
105	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-05-31	NULL	FR	643,365,297
106	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-06-30	2022-Q2	FR	650,775,582
107	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-07-31	NULL	FR	666,638,463
108	AUTMFR000101100320122	96950001WI712W7PQG45N201201	ESMA	1	2022-08-31	NULL	FR	681,672,668



## DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

```
SELECT top 1000 *  
FROM [res].[aio_aut_ES_FR_Trial]  
WHERE EDCODE = 'AUTMFR000101100320122' AND PCD = '2021-08-31' AND AUTL30 > 0  
ORDER BY AUTL2,[data_origin] -- Exposure identifier
```



# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
6	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
8	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
6	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
8	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX



# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
6	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
8	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
6	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
8	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX

# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
8	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 0E	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
8	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX

# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
3	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
3	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX



# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
3	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
3	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX

# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXM D A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
3	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
3	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX

# DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

	EDCODE	data_origin	AUTL2	AUTL12	AUTL14	AUTL16	AUTL24	AUTL25	AUTL26	AUTL27	AUTL28	AUTL29	AUTL30	AUTL32	AUTL36	AUTL37	AUTL39	AUTL53	AUTL54	AUTL55	AUTL56
3	AUTMFR000101100320122	ECB	15283717C	EMUK	INDV	24,000	2015-10	2021-10	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
9	AUTMFR000101100320122	ESMA	15283717C	EMRS	INDV	24,000	2015-10-17	2021-10-15	73	ADLR	EUR	11,200	367	FIXE	CDTX	184.73	-	DACIA	52LLAU 12	2015	NEWX
0	AUTMFR000101100320122	ECB	15285506C	PNNR	INDV	40,944	2015-09	2021-09	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
1	AUTMFR000101100320122	ESMA	15285506C	PNNR	INDV	40,944	2015-09-19	2021-09-20	73	ADLR	EUR	27,892	458	FIXE	CDTX	460.03	-	RENAULT	FEHXMD A	2015	NEWX
2	AUTMFR000101100320122	ECB	15285749C	EMUK	INDV	17,760	2016-01	2022-02	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
3	AUTMFR000101100320122	ESMA	15285749C	EMRS	INDV	17,760	2016-01-23	2022-02-10	74	ADLR	EUR	18,636	1,817	FIXE	CDTX	307.37	-	DACIA	79HE0PI X	2016	NEWX
4	AUTMFR000101100320122	ECB	15285855C	EMUK	INDV	21,600	2015-09	2021-09	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ESMA	15285855C	EMRS	INDV	21,600	2015-09-08	2021-09-10	73	ADLR	EUR	13,988	230	FIXE	CDTX	230.71	1,100	RENAULT	M3BPEPIT	2015	NEWX
5	AUTMFR000101100320122	ECB	15285973C	PNNR	INDV	33,240	2015-07	2023-08	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
7	AUTMFR000101100320122	ESMA	15285973C	PNNR	INDV	33,240	2015-07-15	2023-08-10	98	ADLR	EUR	8,831	2,626	FIXE	CDTX	114.9	300	RENAULT	CL3B5CL1	2012	USED
3	AUTMFR000101100320122	ECB	15288843C	EMUK	INDV	25,356	2015-07	2021-07	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
9	AUTMFR000101100320122	ESMA	15288843C	EMRS	INDV	25,356	2015-07-27	2021-07-25	73	ADLR	EUR	25,000	412	FIXE	CDTX	412.34	-	RENAULT	LC3INT 20I	2014	USED
0	AUTMFR000101100320122	ECB	15290425C	PNNR	INDV	20,532	2015-09	2021-09	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
1	AUTMFR000101100320122	ESMA	15290425C	PNNR	INDV	20,532	2015-09-04	2021-09-05	73	ADLR	EUR	10,732	176	FIXE	CDTX	177	-	DACIA	52LAMB 05	2015	NEWX
2	AUTMFR000101100320122	ECB	15295238C	EMUK	INDV	22,800	2015-10	2021-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
3	AUTMFR000101100320122	ESMA	15295238C	EMRS	INDV	22,800	2015-10-09	2021-10-10	73	ADLR	EUR	9,960	326	FIXE	CDTX	164.27	-	DACIA	52BAMB 1'	2015	NEWX
4	AUTMFR000101100320122	ECB	15303810C	EMUK	INDV	34,560	2015-12	2021-12	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ESMA	15303810C	EMRS	INDV	34,560	2015-12-23	2021-12-25	73	ADLR	EUR	5,000	326	FIXE	CDTX	82.46	13,700	RENAULT	KP2K LT21	2015	NEWX
5	AUTMFR000101100320122	ECB	15309010C	PNNR	INDV	19,200	2015-09	2021-09	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
7	AUTMFR000101100320122	ESMA	15309010C	PNNR	INDV	19,200	2015-09-25	2021-09-25	73	ADLR	EUR	8,600	141	FIXE	CDTX	141.85	5,500	RENAULT	CL4TRD 09	2015	NEWX
3	AUTMFR000101100320122	ECB	15318858C	EMUK	INDV	35,340	2015-10	2021-10	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
9	AUTMFR000101100320122	ESMA	15318858C	EMRS	INDV	35,340	2015-10-29	2021-10-30	73	ADLR	EUR	9,000	295	FIXE	CDTX	148.44	3,700	RENAULT	TW3BR2 9'	2015	NEWX
0	AUTMFR000101100320122	ECB	15321960C	EMUK	INDV	32,400	2015-10	2021-10	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
1	AUTMFR000101100320122	ESMA	15321960C	EMRS	INDV	32,400	2015-10-20	2021-10-20	73	ADLR	EUR	14,962	385	FIXE	CDTX	193.76	-	DACIA	52BSAU 15	2015	NEWX
2	AUTMFR000101100320122	ECB	15326319C	SFEM	INDV	10,074	2015-08	2021-09	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
3	AUTMFR000101100320122	ESMA	15326319C	SFEM	INDV	10,074	2015-08-21	2021-09-05	74	ADLR	EUR	12,158	200	FIXE	CDTX	200.94	-	RENAULT	CL4CEP 15	2014	USED
4	AUTMFR000101100320122	ECB	15327077C	EMUK	INDV	18,000	2016-01	2022-01	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX
5	AUTMFR000101100320122	ESMA	15327077C	EMRS	INDV	18,000	2016-01-13	2022-01-15	73	ADLR	EUR	14,555	1,185	FIXE	CDTX	240.06	-	DACIA	92JASL5 12	2016	NEWX



## DATA SAMPLE FROM AIO: SPANISH AND FRENCH AUTO LOANS

AUTL54	AUTL55	AUTL56	AUTL59	AUTL60	AUTL70	data_orig	EDCODE	PCD	GEO_1	GEO_2	GEO_3	Manufacturer	Model	Car_Segment
52LLAU 12	2015	NEWX	100	11,200	PERF	ECB	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Seine-et-M	DACIA	NULL	NULL
52LLAU 12	2015	NEWX	100	11,200	PERF	ESMA	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Seine-et-M	DACIA	NULL	NULL
FEHXMD A	2015	NEWX	100	27,892	PERF	ECB	AUTMFR0	2021-08-31	Nouvelle-	Aquitaine	Landes	RENAULT	KADJAR	J (SUV)
FEHXMD A	2015	NEWX	100	27,892	PERF	ESMA	AUTMFR0	2021-08-31	Nouvelle-	Aquitaine	Landes	RENAULT	KADJAR	J (SUV)
79HE0PIX	2016	NEWX	100	18,636	PERF	ECB	AUTMFR0	2021-08-31	Centre - V	Centre	Loir-et-Ch	DACIA	NULL	NULL
79HE0PIX	2016	NEWX	100	18,636	PERF	ESMA	AUTMFR0	2021-08-31	Centre - V	Centre	Loir-et-Ch	DACIA	NULL	NULL
M3BPEPIT	2015	NEWX	93	15,088	PERF	ECB	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Val-de-M	RENAULT	MASTER E-TEC	Light Commercial Vehicle
M3BPEPIT	2015	NEWX	93	15,088	PERF	ESMA	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Val-de-M	RENAULT	MASTER E-TEC	Light Commercial Vehicle
CL3B5CL1	2012	USED	97	9,131	DTCR	ECB	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	RENAULT	NULL	NULL
CL3B5CL1	2012	USED	97	9,131	DADB	ESMA	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	RENAULT	NULL	NULL
LC3INT 20I	2014	USED	100	25,000	ARRE	ECB	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Essonne	RENAULT	LAGUNA	D (Large cars)
LC3INT 20I	2014	USED	100	25,000	ARRE	ESMA	AUTMFR0	2021-08-31	Ile-de-Fr	Ile-de-Fr	Essonne	RENAULT	LAGUNA	D (Large cars)
52LAMB 05	2015	NEWX	100	10,732	PERF	ECB	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	DACIA	NULL	NULL
52LAMB 05	2015	NEWX	100	10,732	PERF	ESMA	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	DACIA	NULL	NULL
52BAMB 1:	2015	NEWX	100	9,960	PERF	ECB	AUTMFR0	2021-08-31	Auvergne	Rhone-Al	Ain	DACIA	SANDERO	B (Small cars)
52BAMB 1:	2015	NEWX	100	9,960	PERF	ESMA	AUTMFR0	2021-08-31	Auvergne	Rhone-Al	Ain	DACIA	SANDERO	B (Small cars)
KP2K LT21	2015	NEWX	27	18,700	PERF	ECB	AUTMFR0	2021-08-31	Bourgogr	Bourgogr	Cote-d'Or	RENAULT	KANGOO	Light Commercial Vehicle
KP2K LT21	2015	NEWX	27	18,700	PERF	ESMA	AUTMFR0	2021-08-31	Bourgogr	Bourgogr	Cote-d'Or	RENAULT	KANGOO	Light Commercial Vehicle
CL4TRD 09	2015	NEWX	61	14,100	PERF	ECB	AUTMFR0	2021-08-31	Normanc	Basse-Nc	Calvados	RENAULT	CLIO	B (Small cars)
CL4TRD 09	2015	NEWX	61	14,100	PERF	ESMA	AUTMFR0	2021-08-31	Normanc	Basse-Nc	Calvados	RENAULT	CLIO	B (Small cars)
TW3BR2 9'	2015	NEWX	71	12,700	PERF	ECB	AUTMFR0	2021-08-31	Grand Est	Champag	Marne	RENAULT	TWINGO	A (City Cars)
TW3BR2 9'	2015	NEWX	71	12,700	PERF	ESMA	AUTMFR0	2021-08-31	Grand Est	Champag	Marne	RENAULT	TWINGO	A (City Cars)
52BSAU 15	2015	NEWX	100	14,962	PERF	ECB	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	DACIA	SANDERO	B (Small cars)
52BSAU 15	2015	NEWX	100	14,962	PERF	ESMA	AUTMFR0	2021-08-31	Hauts-de	Nord-Pas	Nord	DACIA	SANDERO	B (Small cars)
CL4CEP 15	2014	USED	100	12,158	PERF	ECB	AUTMFR0	2021-08-31	Occitanie	Languedc	Herault	RENAULT	CLIO	B (Small cars)
CL4CEP 15	2014	USED	100	12,158	PERF	ESMA	AUTMFR0	2021-08-31	Occitanie	Languedc	Herault	RENAULT	CLIO	B (Small cars)
92JASL5 12	2016	NEWX	100	14,555	PERF	ECB	AUTMFR0	2021-08-31	Occitanie	Languedc	Herault	DACIA	LODGY	M (MPV)
92JASL5 12	2016	NEWX	100	14,555	PERF	ESMA	AUTMFR0	2021-08-31	Occitanie	Languedc	Herault	DACIA	LODGY	M (MPV)