

2023 AUTUMN WORKSHOP SERIES

LISBON – 29 NOVEMBER



TODAY'S SPEAKERS



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AGENDA

WELCOME AND REGULATORY DEVELOPMENTS

- Marco Angheben, European DataWarehouse

MARKET OVERVIEW & DATA QUALITY UPDATE

- Fernando Lopes, European Datawarehouse

SECURITISATION: HOW REGULATORY DIVERGENCE IS SHAPING THE INDUSTRY

- Joana Fragata , Freshfields

BANCO DE PORTUGAL'S APPROACH ON ABS ELIGIBILITY

- Inês Cunha Cabral , Banco de Portugal

TIGHTER CONDITIONS – CHALLENGES FOR PORTUGUESE MARKET

- Gordon Kerr, KBRA

SUSTAINABLE FINANCE INITIATIVES: ENGAGE FOR ESG AND GAS

- Marco Angheben, European Datawarehouse

POWER OF ANALYTICS: COURT TIMING SENSITIVITY & ML PREDICTIONS

- Fulvio Pelargonio, NPL Markets

REPORTING DIFFERENCES BETWEEN ESMA AND EBA NPL TEMPLATES

- Marco Angheben, European DataWarehouse

COVERED BOND SOLUTIONS

- Marco Angheben, European DataWarehouse

CLOSING REMARKS

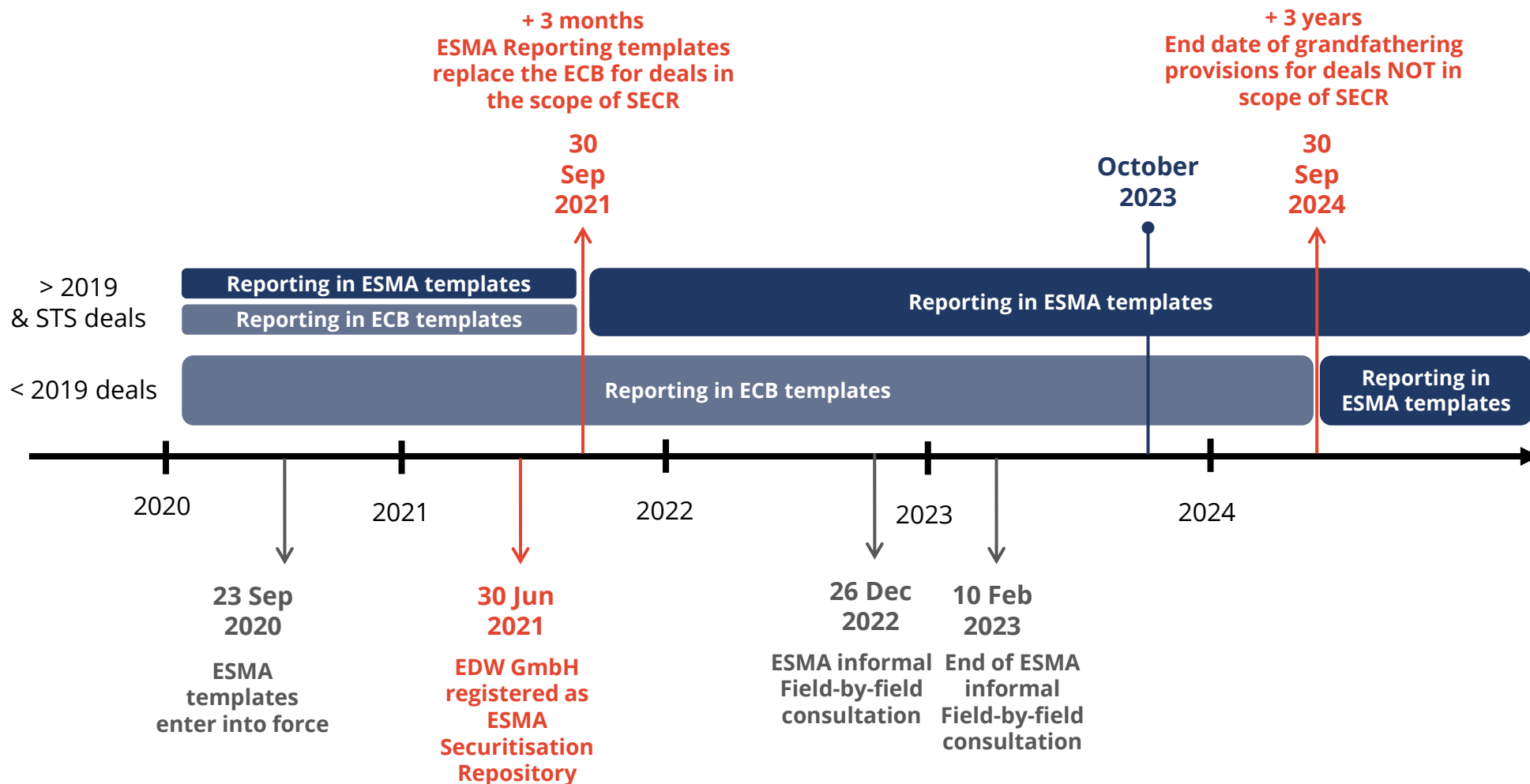
WELCOME AND INTRODUCTION

MARCO ANGHEBEN, EDW

UPCOMING CONSULTATION ON THE REVISION OF THE ESMA TEMPLATES

MARCO ANGHEBEN, EDW

CHANGES TO THE EUROSISTEM'S LOAN-LEVEL DATA REQUIREMENTS

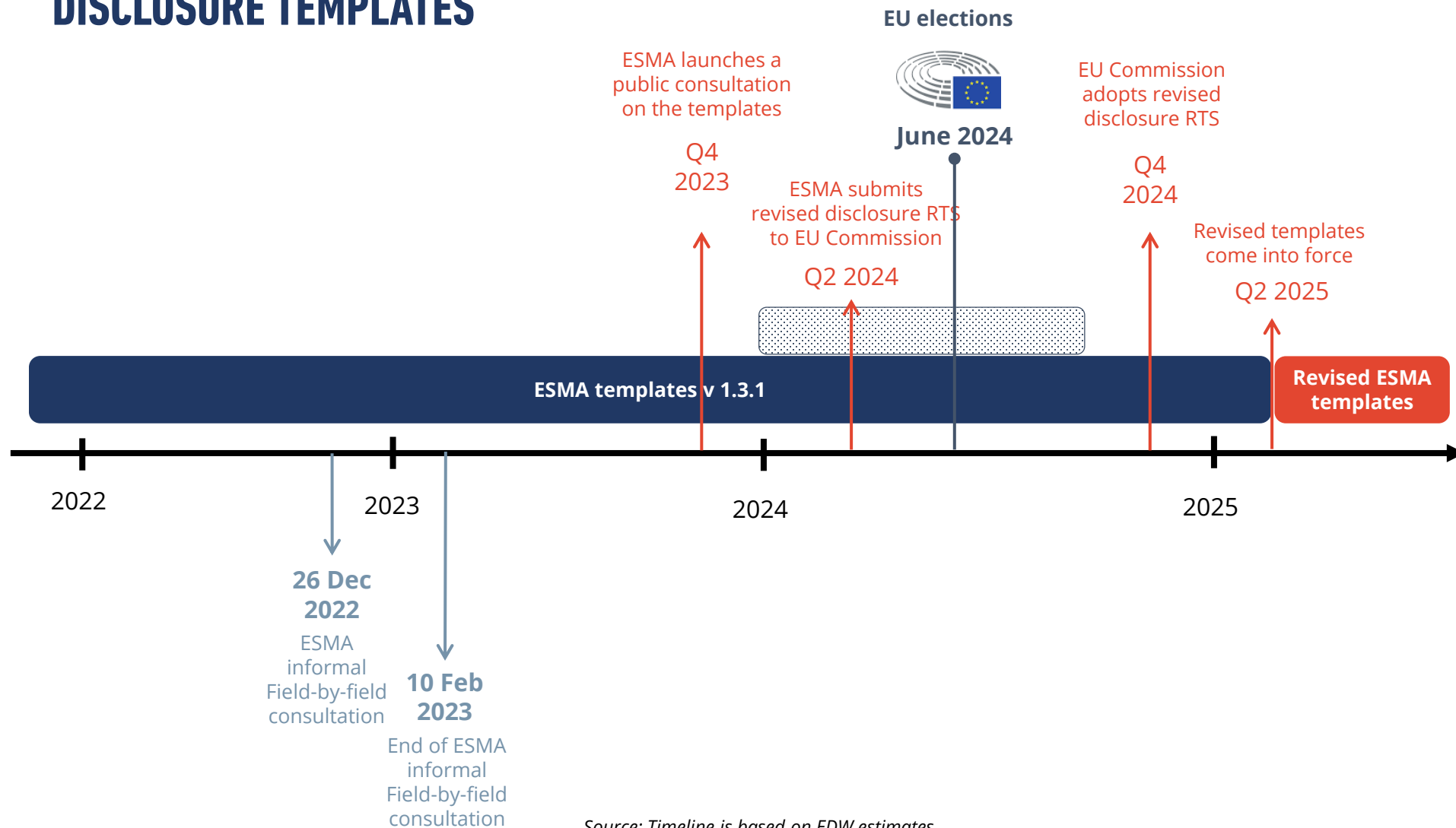


Source: Timeline is based on the information provided in the ECB [press release](#) as of 28 June 2021

EU COMMISSION REPORT ON FUNCTIONING OF SECURITISATION REGULATION

- On 10 October 2022, the European Commission published its long-awaited report on the functioning of the Securitisation Regulation. The Report covers the mandate to the Commission under Article 46 of the Regulation to deliver a general report.
- The report concludes that it would be premature to suggest a re-opening of the STS legislative framework in light of its short application and the number of exogenous factors, e.g., Covid-19 and the favourable liquidity environment, that make it challenging to assess its impact on the market. Instead, the EC proposes a number of level 2 adjustments that could address some shortcomings in the framework, such as the transparency regime, while offering legal interpretation on provisions on the jurisdictional scope of the regime.
- Important for disclosure framework:
 - The Commission has asked ESMA to **review the templates** in the disclosure RTS with a view to addressing possible technical difficulties, removing unnecessary fields and aligning them more closely with investors' needs. It has also asked ESMA to look at whether information on a loan-by-loan basis is useful and proportionate to investors' needs for all types of securitisations.
 - The Commission has asked ESMA to draft a dedicated disclosure **template for private securitisations** that is tailored to supervisors' need for an overview of the market and of the main features of those transactions.
 - While new template could replace the existing templates for all private securitisations, the EC falls short from recommending reporting via a securitisation repository, suggesting this could be a longer-term policy action should the EC decide to reopen the STS Regulation in the future.

TENTATIVE TIMELINE FOR ESMA'S REVIEW OF THE LOAN-LEVEL SECURITISATION DISCLOSURE TEMPLATES



A KANTIAN SHIFT FOR THE CAPITAL MARKETS UNION

Speech by Christine Lagarde, President of the ECB, at the European Banking Congress

- On 17 November, ECB President Christine Lagarde delivered a speech at the European Banking Congress in Frankfurt
- Whilst the assessment of the importance of the Capital Markets Union (CMU) to EU development is not new, it could not have been presented in stronger terms.
- However, the speech was missing a list of measures to facilitate the development of a “sufficiently large” securitisation market in the EU.
- The main tools required to advance an EU CMU are a single rulebook and a single regulator (ESMA), similar to those used to advance the EU banking union. They, however, are not and will not be sufficient to meet all the objectives of the advancement of the securitisation market in the EU.



“A genuine CMU would mean building a sufficiently large securitisation market, allowing banks to transfer some risk to investors, release capital and unlock additional lending.”

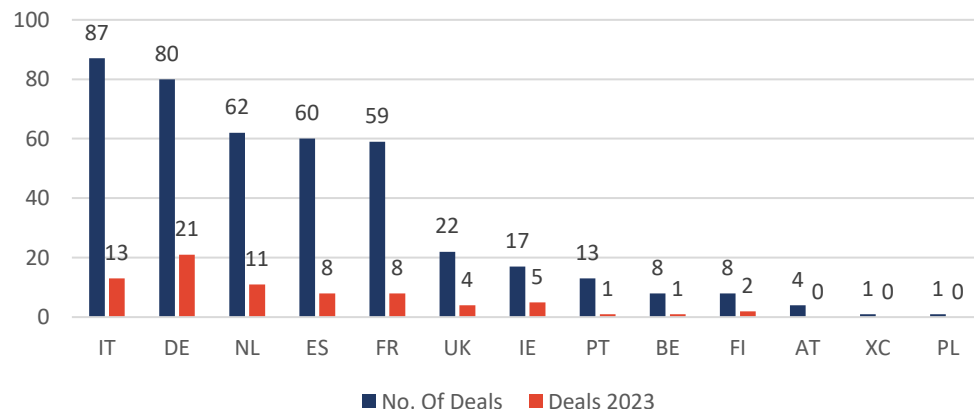
MARKET OVERVIEW & DATA QUALITY UPDATE

FERNANDO LOPES, EDW

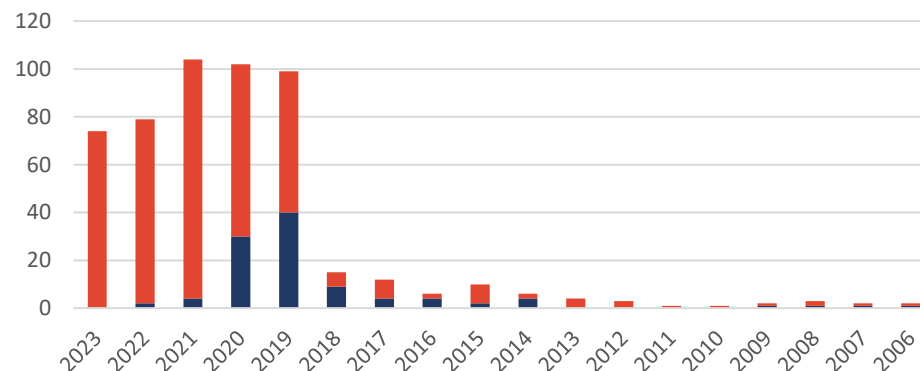
EUROPEAN ABS MARKET – OVERVIEW

525 public ABS transactions across Europe reporting ESMA

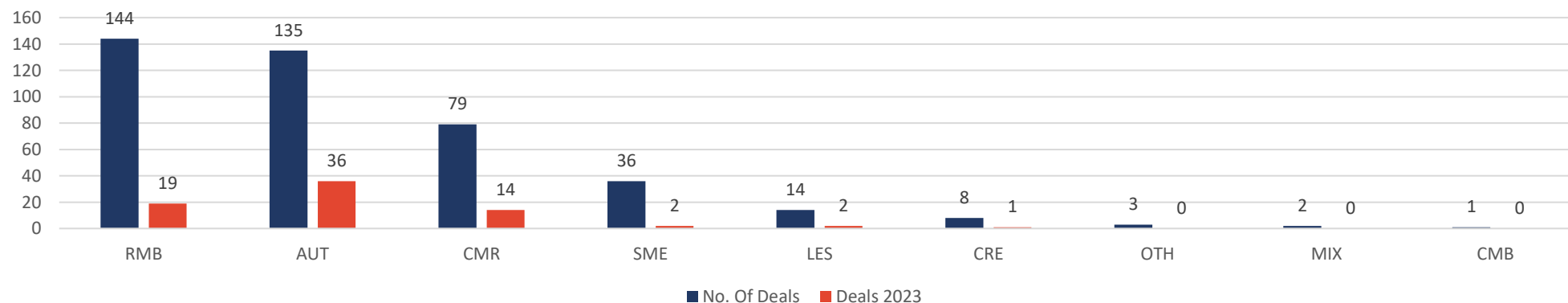
No. of Active ESMA deals by Country



No. of Active (red) and inactive (blue) ESMA deals by vintage and status

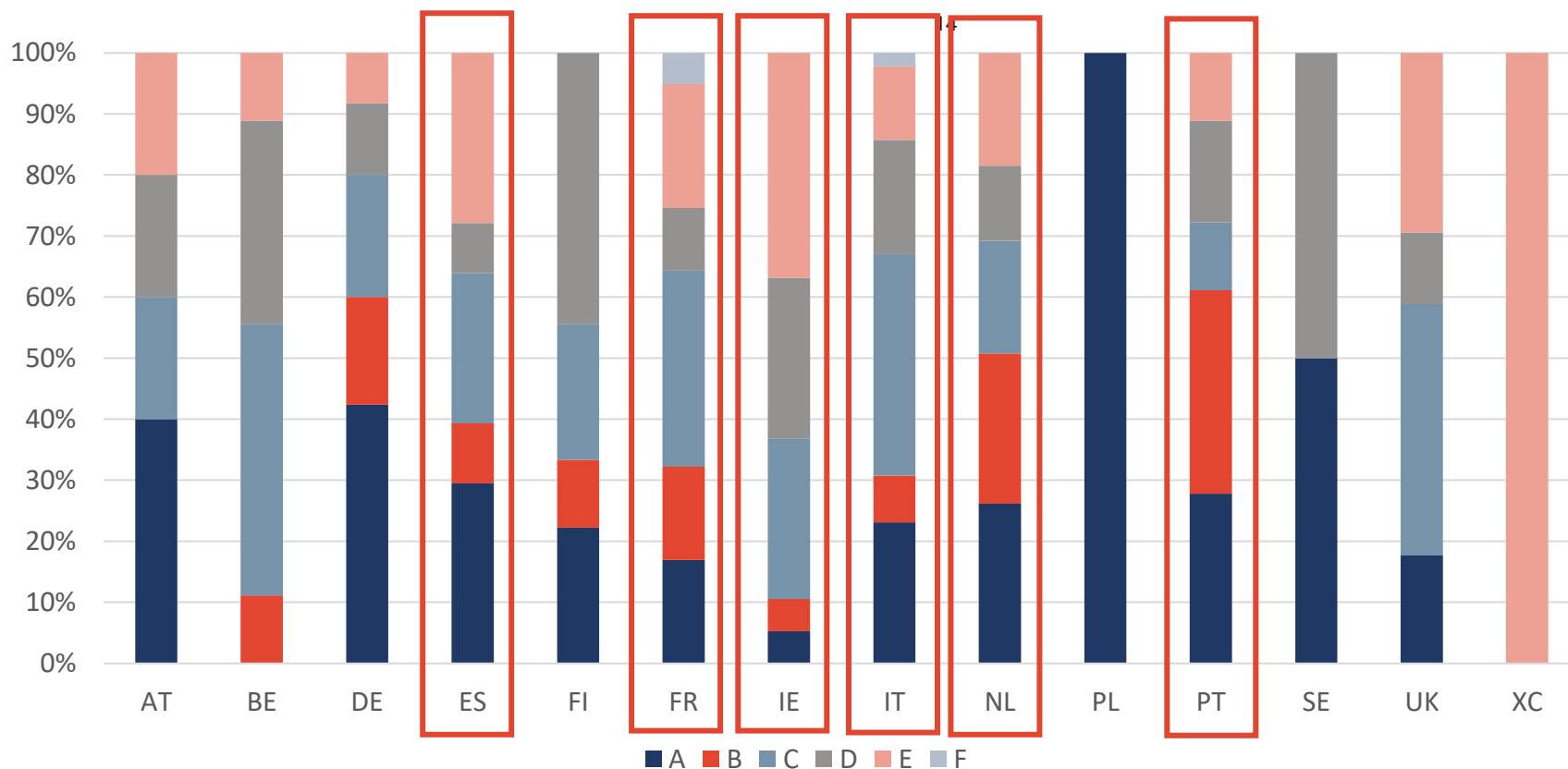


No. of Active ESMA Deals by Asset Class



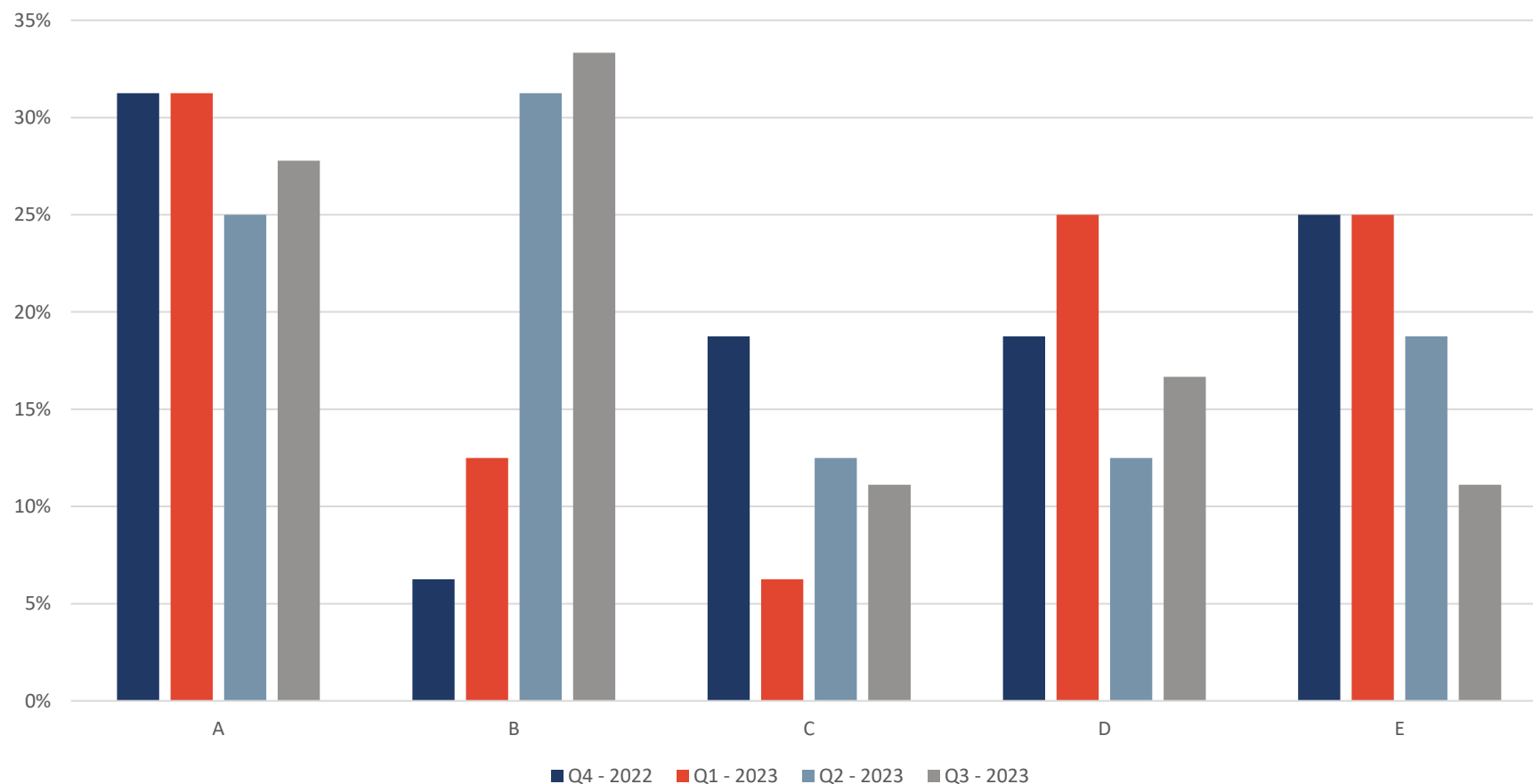
DQS - COUNTRY BREAKDOWN

Different levels of data quality across countries



DQS – DISTRIBUTION FOR PORTUGAL BETWEEN Q4 2022 – Q3 2023

Scores are mainly concentrated in A or B



EDW DEAL REPORT

Valuable transaction relevant information covered in the none- UE templates (Annex 12 & 14)

BOND REPORT

	Class A Notes	Class B Notes	Class C Notes	Class D Notes	Class E Notes	Class F Notes
ISIN	XS2473716210	XS2473716723	XS2473717028	XS2473717457	XS2473717614	XS2473718000
Type	Other	Other	Other	Other	Other	Other
Cur	EUR	EUR	EUR	EUR	EUR	EUR
Original Balance	119,200,000	38,300,000	23,600,000	13,500,000	12,400,000	4,000,000
Current Balance	80,784,973.70	25,956,916.88	15,994,340.43	9,149,304.91	8,403,805.99	2,710,905.16
Issue Date	2022-05-25	2022-05-25	2022-05-25	2022-05-25	2022-05-25	2022-05-25
Maturity Date	2031-07-18	2031-07-18	2031-07-18	2031-07-18	2031-07-18	2031-07-18
IPD	2022-12-19	2022-12-19	2022-12-19	2022-12-19	2022-12-19	2022-12-19
Paym.Freq	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly
Current Coupon (%)	0.02	0.03	0.04	0.05	0.06	0.08
Cur. Int.Rate Mrgn/Sprd (%)	0.01	0.02	0.02	0.03	0.05	0.07
Step Up/Dn Coupon	-	-	-	-	-	-
Step Up/Dn Date	-	-	-	-	-	-
Coupon Floor (%)	-	-	-	-	-	-
Coupon Cap (%)	-	-	-	-	-	-
Current Int. Rate Index	Euribor	Euribor	Euribor	Euribor	Euribor	Euribor
Next Call Date	-	-	-	-	-	-
Next Put Date	-	-	-	-	-	-
Curr.Atch Point (%)	47.39	30.48				
Orgl.Atch Point (%)	45.26	27.67				
Curr. Cred Enhcmnt (%)	47.16	30.19				
Orig. Cred Enhcmnt (%)	48.15	31.49				
Protection Type	-	-				
Unpaid P.Dfcy Ldgr Bal	0	0				

BOND REPORT

SWAP INFORMATION

	Notional	Benchmark	Maturity
Interest Rate SWAP	289,927,011.90	EURi	2033-07-20

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

ACCOUNT INFORMATION

Account Type	Amortising?	Ccy	Target Balance	Actual Balance
Cash Reserve Account	No	EUR	2,800,000	2,800,000
Other Account	No	EUR	0	0

COUNTERPARTY INFORMATION

COLLECTIONS & RECOVERIES

Principal Collections	7,711,201.93
Interest Collections	1,297,410.37
Principal Recoveries	420,063.19
Interest Recoveries	13,194.01
Repurchased Exposures	0
Restructured Exposures	0
Defaulted Exposures	3,912,390.03
Defaulted Exposures CRR	3,912,390.03
Annualised CPR (%)	97.94
Annualised CDR (%)	0.25



RISK

Dilutions	0
Gross Charge-offs In The Period	0
Internal LGD Estimate (%)	-
Excess Spread	0
Is Excess Spread Trapped?	No
Current Overcollateralisation (%)	1.03
Risk Retention Method	First Loss Tranche
Risk Retention Holder	Seller
Risk Transfer Method - True Sale?	Yes
Risk Weight Approach	Standardised Approach
Revolving/ Ramp-Up Period End-Date	-



Type	Rating
Verification agent	-
Trustee	-
Issuer	-
Account Bank	-
Calculation Agent	Aa2 (Moody's), NR (DBRS), P-1 (Moody's)
Paying Agent	-
Manager	-
Other	-
Interest Rate Swap Provider	Aa (low) (DBRS), Aa3 (Moody's), P-1

EDW DEAL REPORT - UPDATE

Implementation of an Executive Summary in the Deal Report

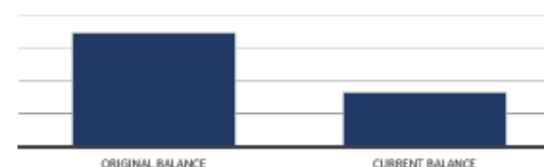
Executive summary

Disbursement date	2023-10-27		
Pool Cut-Off Date	2023-09-30		
Revolving period end date	2026-10-27		
STS	No		
Current waterfall type of amortisation	Sequential		
Triggers in the period	ok		
Consequences of the breach	Change in the priority of payments		
WA term to maturity	105.54	WA seasoning	37.23
WA floating rate	7.55	WA fixed rate	6.57
Amount reinvested in the period	5,837,233.49		
Principal Collections	5,482,548.25	Interest collections	1,325,756.78
Prepayments	2,547,856.54	Recoveries	118,205.48
Principal deficiency ledger	354,685.24		
Unpaid principal deficiency ledger	0.00		
Excess spread of the period	447,154.32		

Is the Securitisation Private?	No
Reporting Entity Name	BANCO 123 S.A.
Report Entity Contact	xxx xxx
Phone	911111111
Email	João.Costa@banco123.pt

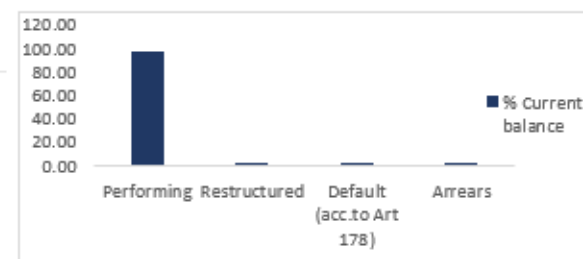
Pool at the origination vs Pool now

Underlying assets progress



Days in arrears % of the current balance

Performing, Restructured, Delinquency, Defaults



ABS STRUCTURING: EDW SUPPORT THROUGHOUT THE LIFE OF A TRANSACTION

Streamlining information flow in financial markets





- EDW offers various services and activities to facilitate the efficient handling of the ABS securitisation structuring process, including ongoing administrative processes throughout the transaction's life.
- EDW support encompasses:
 - Streamlining the information flow to the market,
 - Ensuring regulatory compliance
 - Enhancing transparency for the benefit of issuers, investors, and regulatory authorities alike.

TIMELINE	Weeks to Settlement																		Ongoing life of Transaction
Workstream	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	
Transaction termsheet																			
Historical performance & proxy data																			
Marketing phase																			
Closing & maintenance procedures																			

 Weeks where the stage is performed
  Other weeks
  Areas where EDW can provide support

STRUCTURING PROCESS SUPPORT

Stages where EDW can support

-  **Transaction term sheet :**
EDW empowers issuers by translating complex data into strategic decisions, ensuring clarity, efficiency, and well-informed choices throughout the entire term sheet creation process.
-  **Historical performance and proxy data:**
EDW collected loan data from 15 regions, covering seven asset types in 1700+ transactions over the past 10+ years. This helps issuers, originators, and SSPEs meet performance data standards for the STS Label on new transactions.
-  **Marketing phase**
In the marketing phase, EDW's platform acts as a key data room, giving investors access to vital information. Our global connections enhance deal visibility and conditions.
-  **Closing and Maintenance procedures**
EDW can provide alert system for issuers and periodic deal reports with overviews after each submission

SECURITISATION: HOW REGULATORY DIVERGENCE IS SHAPING THE INDUSTRY

JOANA FRAGATA, FRESHFIELDS

Securitisation: how regulatory divergence is shaping the industry

European DataWarehouse 2023 Autumn Securitisation Workshop Series

Banco de Portugal, Lisbon

29 November 2023

Joana Fragata



Freshfields Bruckhaus Deringer

Agenda

| The regulatory framework for securitisation in the EU and the UK

- Key instruments pre-Brexit and post-Brexit
- Snapshot of key recent developments in the EU
- Snapshot of key recent developments in the UK
- Are the EU and the UK drifting apart?

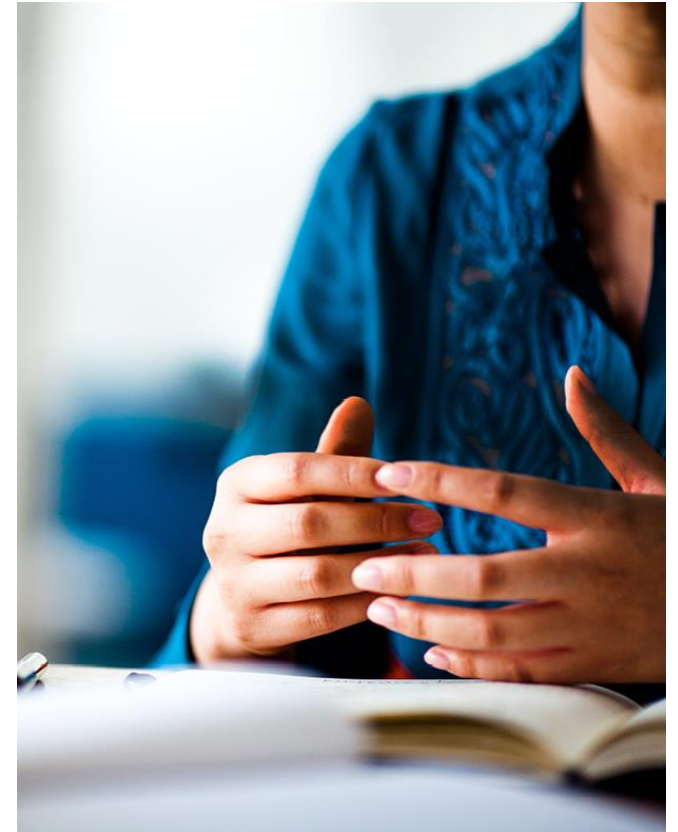
| Regulatory divergence

- Who is affected and why does it matter?
- Is anything being done about it?

| How is regulatory divergence shaping the industry?

| Q&A

NB: we will not cover in detail prudential matters / green securitisation / NPE securitisation



The regulatory framework for securitisation in the EU and the UK

Key instruments pre-Brexit and post-Brexit

Pre-Brexit

- **EU (including UK):** EU SECR/ CRR / Solvency II + all RTS/ITS (Level 2) and guidance (Level 3)

Post-Brexit

- **EU:** EU SECR / CRR / Solvency II RTS/ITS (Level 2) and guidance (Level 3)
- **UK:** "onshored" EU SECR / CRR / Solvency II + "onshored" RTS/ITS (Level 2) and recognition of EU guidance (Level 3)



The regulatory framework for securitisation in the EU and the UK

Snapshot of key recent developments in the EU

2021	<ul style="list-style-type: none">• CMRP<ul style="list-style-type: none">– STS for synthetics + RTS (homogeneity/SES/pro-rata amortisation triggers/notification/sustainability indicators)– Securitisation of NPEs (including risk retention by servicer)– Restrictions to where SSPEs can be located (anti-tax avoidance)• ESAs Joint Opinion on jurisdictional scope under the EU SECR• ECB Guide on the notification of securitisation transactions (published 2022)
2022	<ul style="list-style-type: none">• Report from the European Commission to the European Parliament and the Council on the functioning of the EU SECR• RTS on risk retention (adopted in 2023)• ESAs joint advice to the EU Commission on the review of the securitisation prudential framework
2023	<ul style="list-style-type: none">• CRR banking package Trilogue negotiations• ESMA's informal pre-consultation on the disclosure templates revision
Forthcoming	<ul style="list-style-type: none">• EBA STS guidelines for synthetics (consultation closed in 2023)• ESMA guidance on Article 5• Revision of disclosure templates



The regulatory framework for securitisation in the EU and the UK

Snapshot of key recent developments in the UK

2021	<ul style="list-style-type: none">• “Onshoring” process• HM Treasury Report and Responses to the Call of Evidence on the Review of the UK SECR
2022	<ul style="list-style-type: none">• HMT introduces the Financial Services and Markets Bill to Parliament• Consultation on a draft Securitisation Statutory Instrument• Consultation on Solvency II (outcomes published)• Consultation on implementation of Basel 3.1 standards
2023	<ul style="list-style-type: none">• FCA and PRA consultations on new rules for securitisation
Forthcoming	<ul style="list-style-type: none">• Revision of disclosure templates and of the definition of public and private securitisation



The regulatory framework for securitisation

Are the EU and the UK drifting apart?

Topic	EU	UK	
		Pre-reforms	Post-reforms (expected)
Synthetic STS	Yes	No	No
Risk retention by NPE servicer	Yes	No	No
Investor DD in third country transactions (disclosure)	Strict approach	More flexible approach	Even more flexible approach
Recognition of STS	No recognition of UK STS	Recognition of EU STS (until 2025)	Recognition of EU STS (and potentially of other third countries)
Simplified template for private securitisations	No (although in the future potentially)	No	Yes
Pace of regulatory process	Lengthy	Lengthy	More agile
Distinction between private and public securitisations	Not likely to change	-	Likely to change



Regulatory divergence

Who is affected and why does it matter?

Regulatory compliance is often not a one-way street – even for “domestic” transactions

- Buy-side parties – need to ensure compliance with investor due-diligence requirements applicable to them
- Sell-side parties – need to ensure marketability of transactions and adapt to target investors
- Other parties / service providers – need to adapt scope of services provided to participant requirements



Regulatory divergence

Is anything being done about it?



Industry participation is often leading the way in identifying potential areas of regulatory divergence



Discussions about ongoing reforms often include discussions of what can be addressed to prevent market distortions; however, there is no evidence of an express intention of aligning regimes



The regulatory process is dynamic and timelines/ processes are not aligned between UK and EU



There is no expectation that the two regimes will align or remain aligned in the future, including due to fundamentally different legislative / regulatory processes



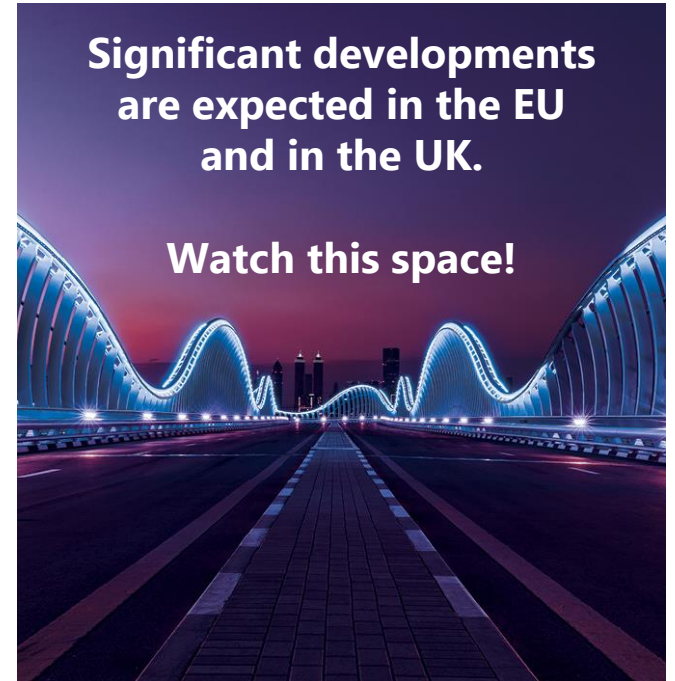
How is regulatory divergence shaping the industry?

Trends and Outlook

- Dual compliance
- Increasing number of private transactions with limited number of investors
- Polarisation of the investor base (and exacerbation of competitiveness issues vis-à-vis third country investors)
- Moving to alternative structures

**Significant developments
are expected in the EU
and in the UK.**

Watch this space!



Thank you!

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BDP'S APPROACH ON ABS ELIGIBILITY

INÊS CUNHA CABRAL, BANCO DE PORTUGAL

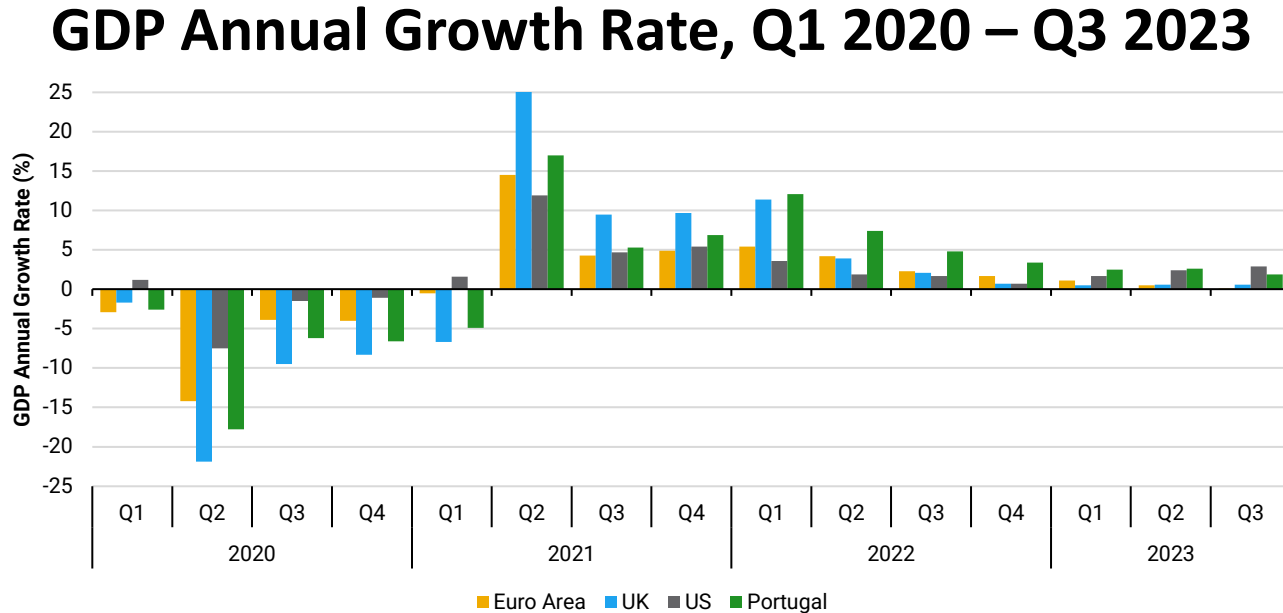
TIGHTER CONDITIONS – CHALLENGES FOR PORTUGUESE MARKET

GORDON KERR, KBRA

Tighter Conditions - Challenges for Portuguese Market

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Growth Slows

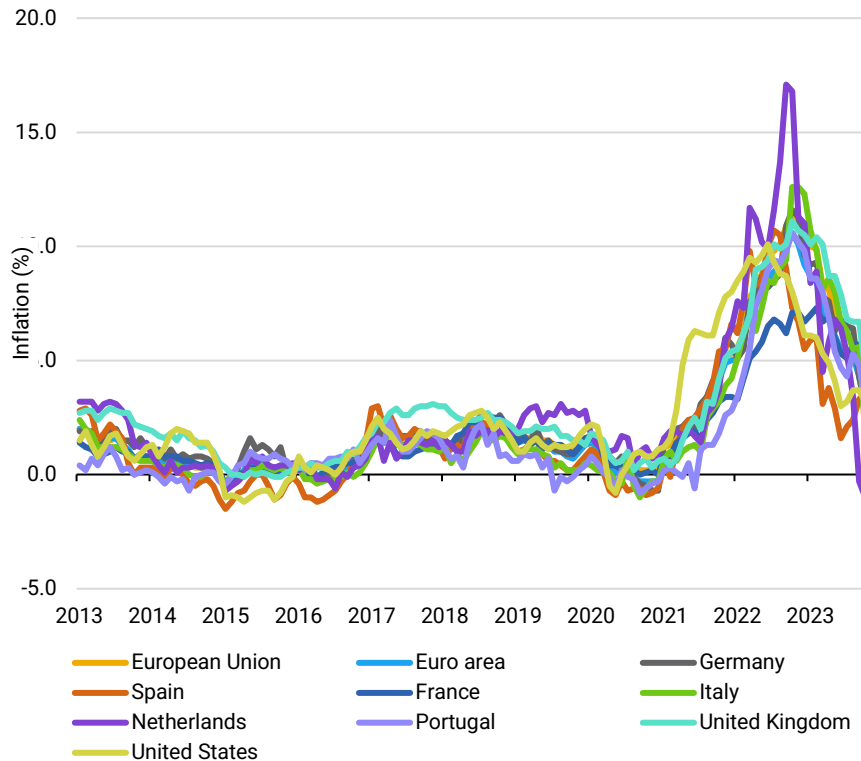


Source: Bloomberg

- COVID – Major Impact and Bounce Back
- Post Pandemic Growth Slows
 - Russia/Ukraine Conflict and Energy Price / Inflation Burden
- UK More Heavily Impacted
- Portugal has Outperformed in Post-Pandemic Period

Inflation Easing, but Last Bit to be a Challenge

Inflation Rate, 2013 - 2023



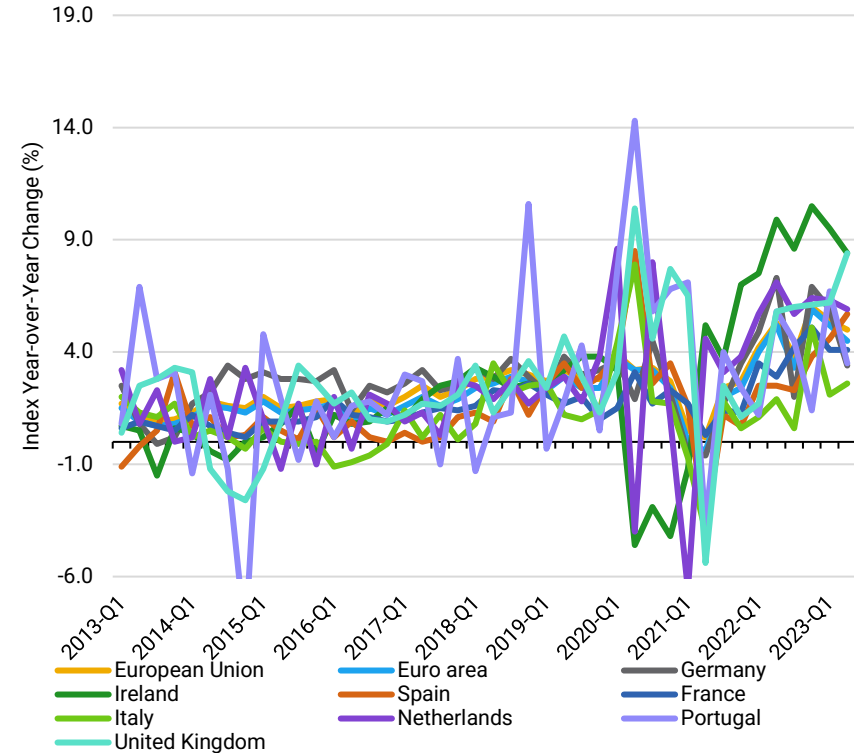
Source: Eurostat, UK Office for National Statistics, and KBRA

■ Extreme Levels of Inflation Easing

- UK Remains Elevated, Netherlands Leads Lower

■ Wage Inflation Risk of Keeping Inflation High, Particularly UK (and Ireland)

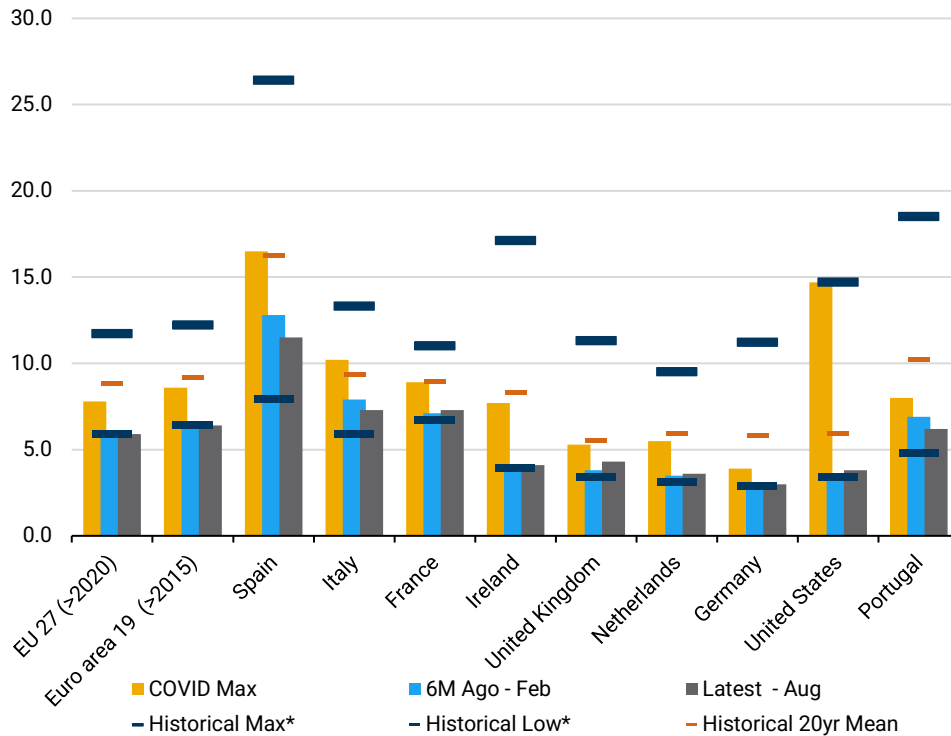
Labour Cost, 2013 - 2023



Source: Eurostat, UK Office for National Statistics, and KBRA

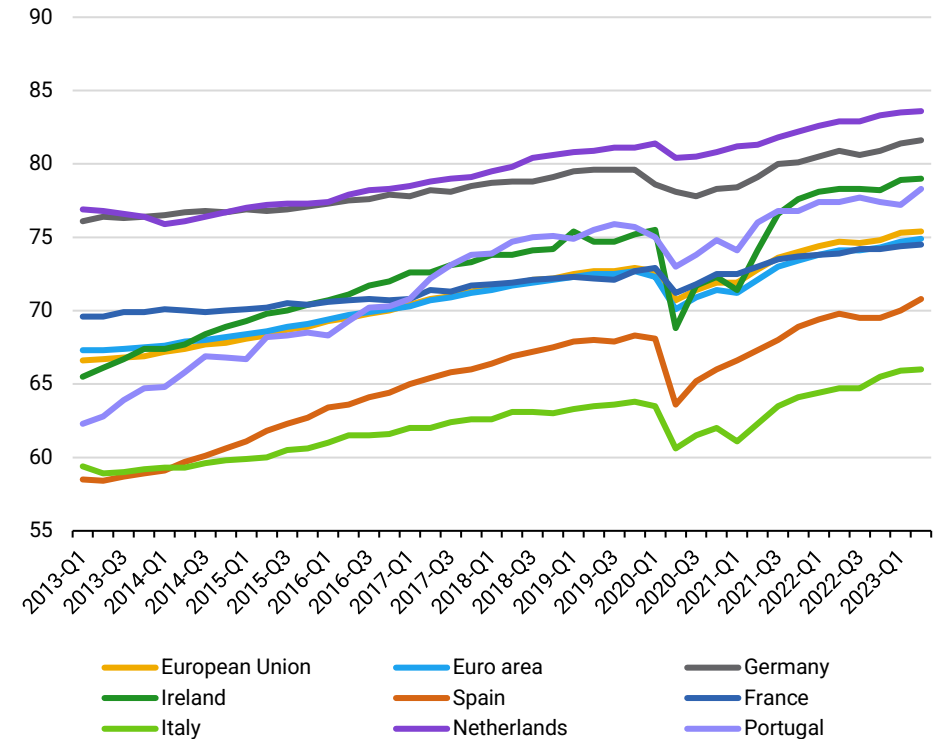
Support Remains in Employment Picture

European Unemployment



Source: Eurostat, KBRA

European Employment (% 16-65 Employed)

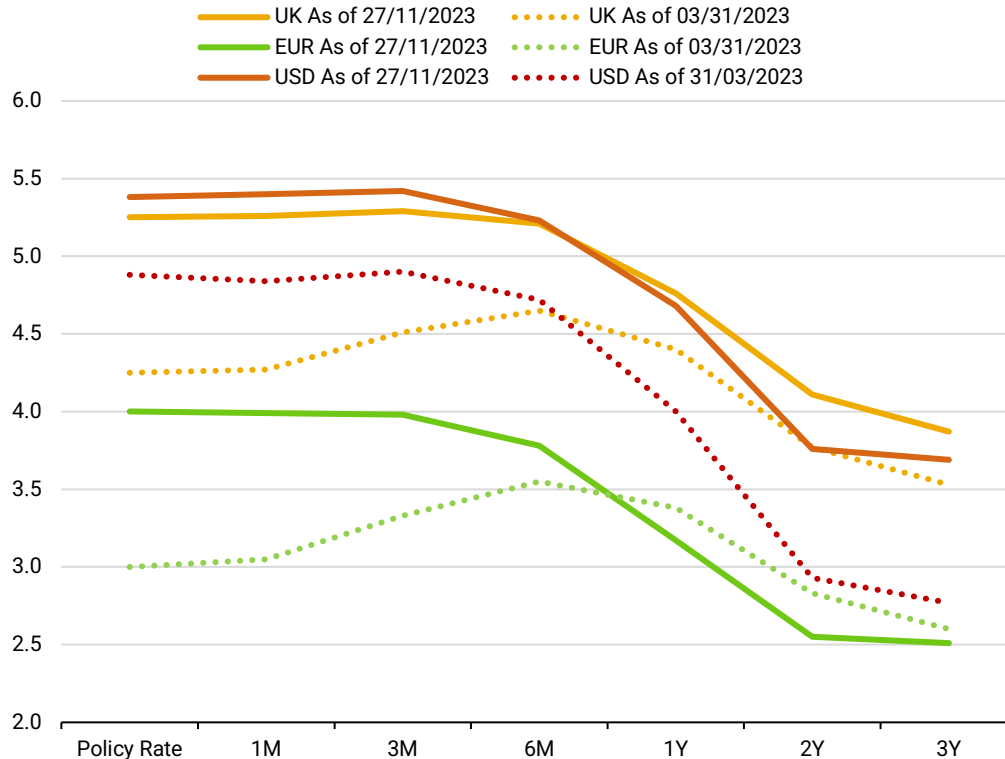


Source: Eurostat

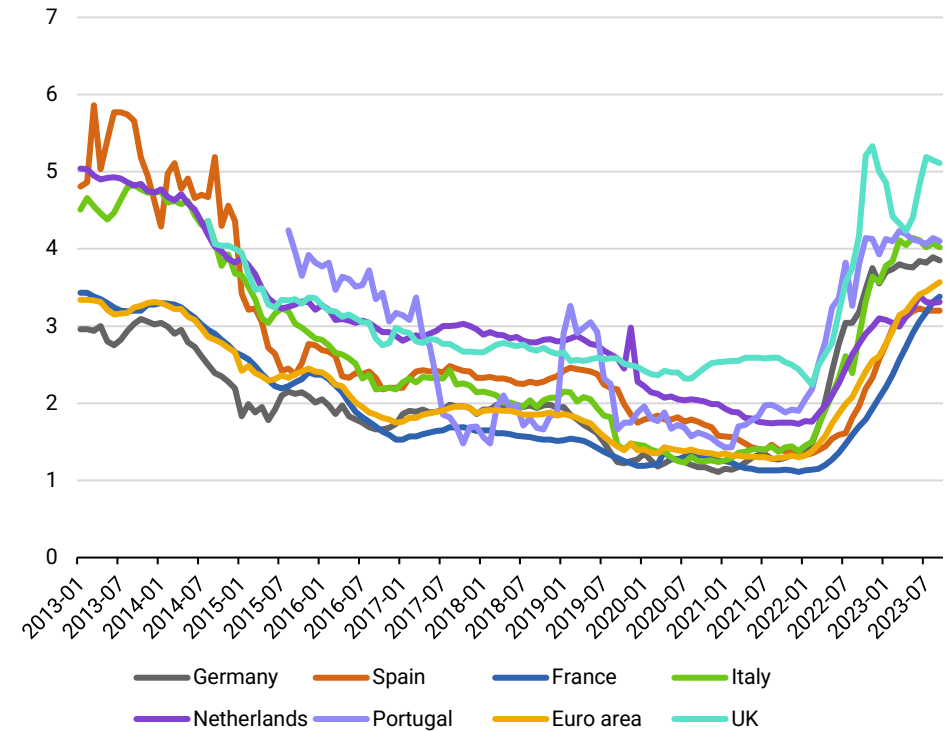
- Unemployment Remains at or Near Lows
- Participation Rate Recovery from COVID

Rate Rises and Impact Upon Borrowers

Policy Rate and Expectations



European Mortgage Rates

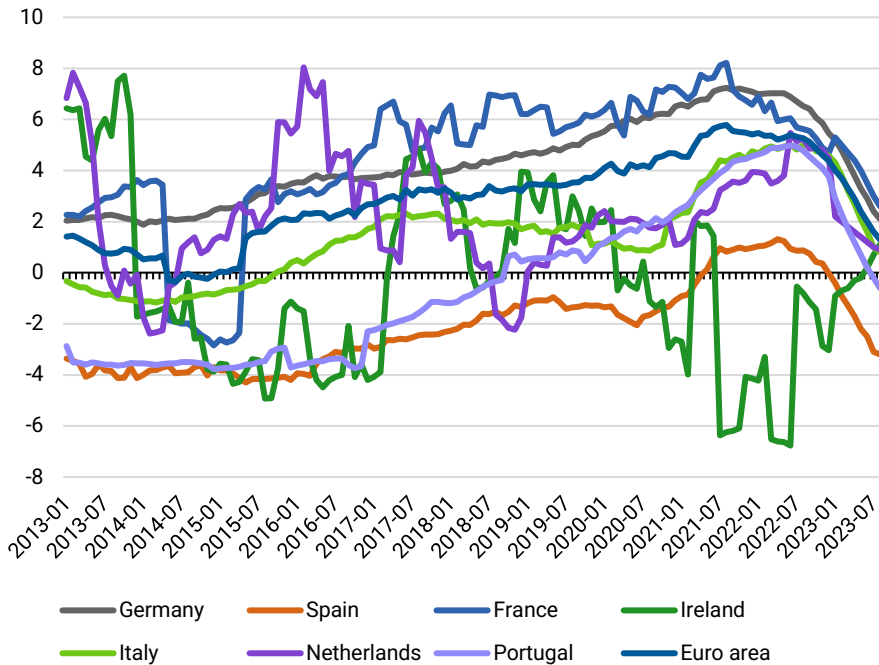


Source: European Central Bank and Bank of England

- Rate Rises Flattening, but Not Turning Down Yet
- Rise in Mortgage Rates, Heavy Impact on Floating and Refinancing
- UK Stands Out (Again), Portugal Towards High End

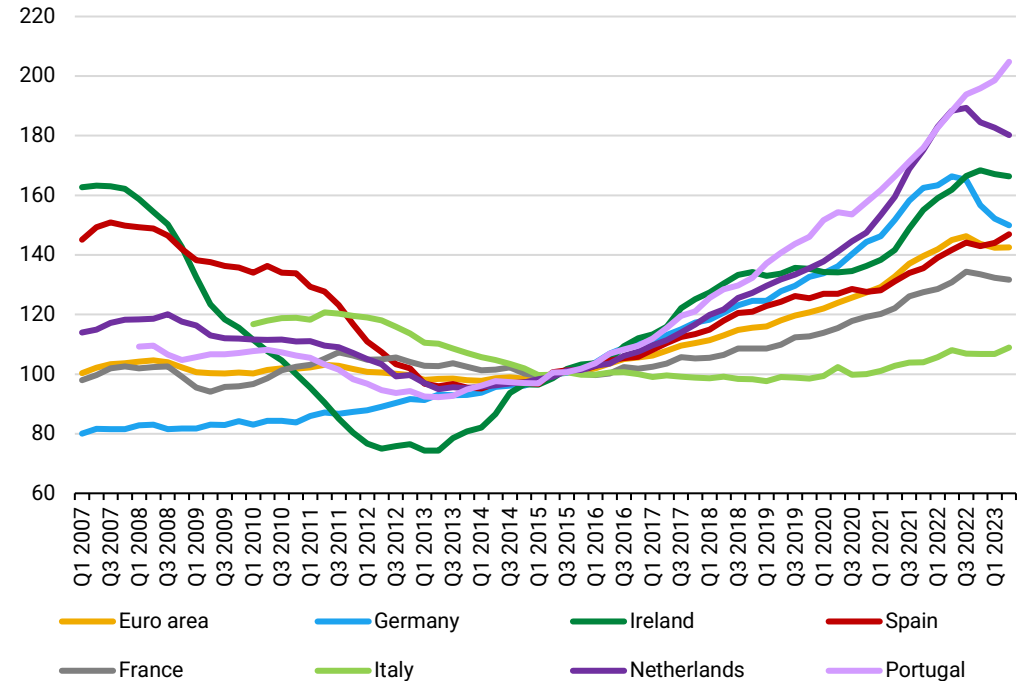
Impact Beginning to Take Hold

Mortgage Lending, YoY Change



Source: Eurostat

European House Price Index



Source: Eurostat

- Household Mortgage Lending Declines
- Some Housing Markets Cooling
- Portugal Remains Resilient

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ENGAGE FOR ESG & GAS

MARCO ANGHEBEN, EDW



ENGAGE: A Solution for EU Taxonomy Compliance

21 November 2023



Co-funded by the
European Union





ENGAGE description

- Name: Engage for ESG activation investments (ENGAGE)
- Co-funded by the European Union with a LIFE grant
- Duration: 1 November 2022 – 31 October 2025
- Six consortium partners from across Europe
- Scope: ENGAGE aims to provide a solution based on a data disclosure format for mortgage funding and home renovations encompassing the key European ESG regulations.



**EUROPEAN
DATAWAREHOUSE**

ESMA-designated Securitisation Repository and Eurosystem repository for ABS & pools of additional credit claims



IT company, developers of software solutions for the financial sector



Università
Ca'Foscari
Venezia

Pioneer university in sustainable finance programmes and research

UCI

Specialist entity in sustainable financing for mortgages and loans in the Spanish market. Leader of the Spanish pilot

woonnu

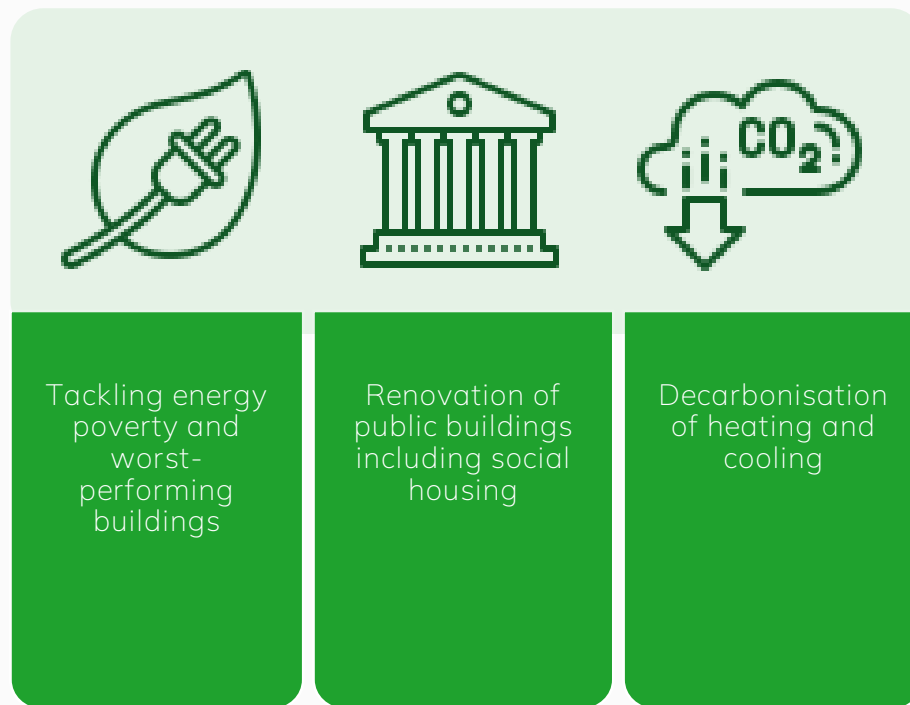
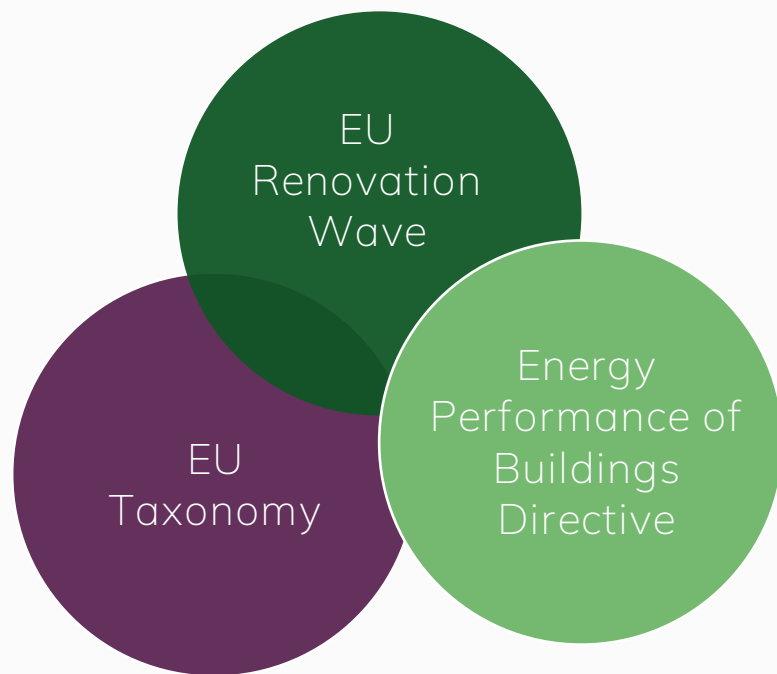
Innovative sustainable mortgage loan originator in the Dutch market. Leader of the Dutch pilot



Experts in ensuring compliance of new technologies with legal and ethical standards

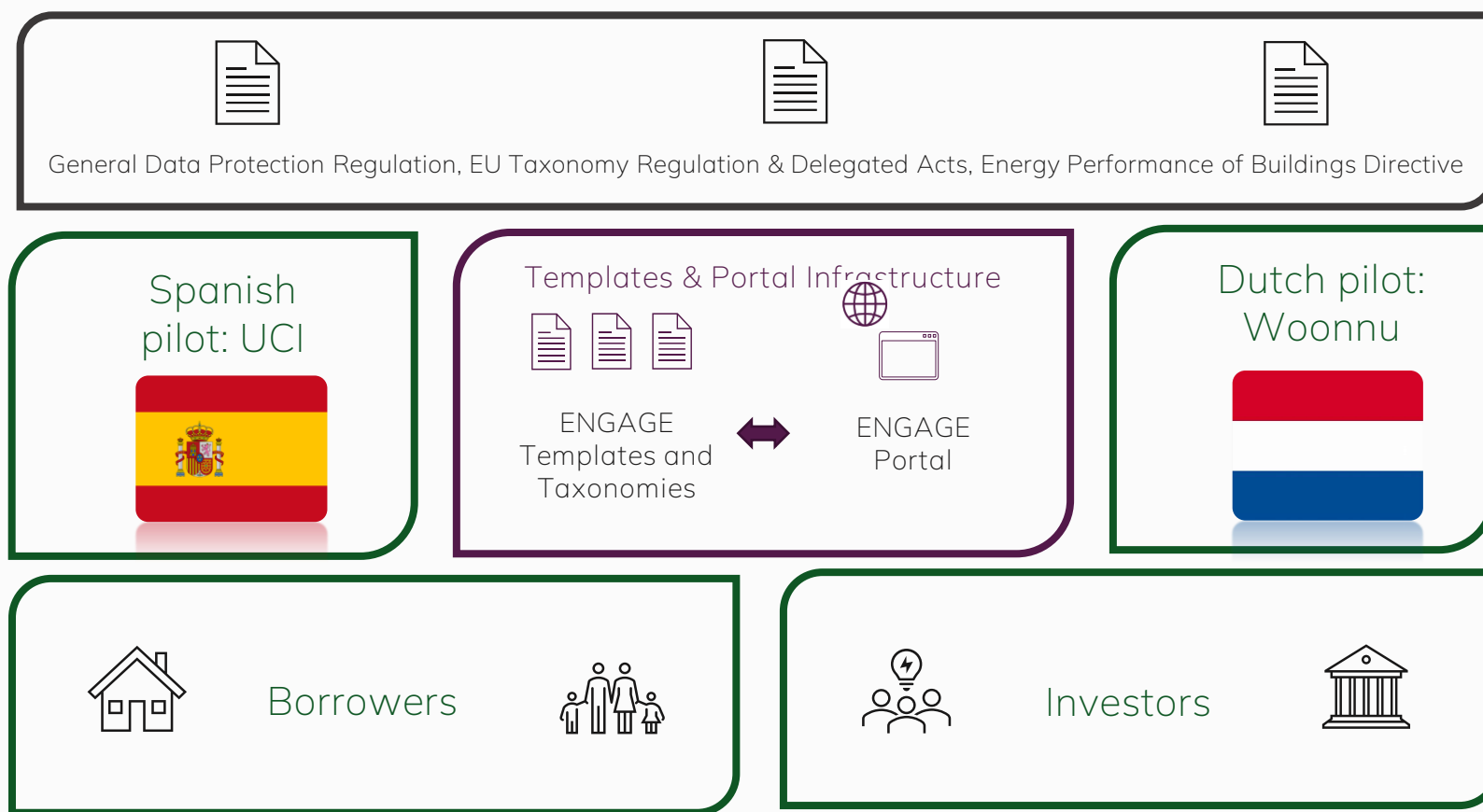


Energy Efficiency Regulations



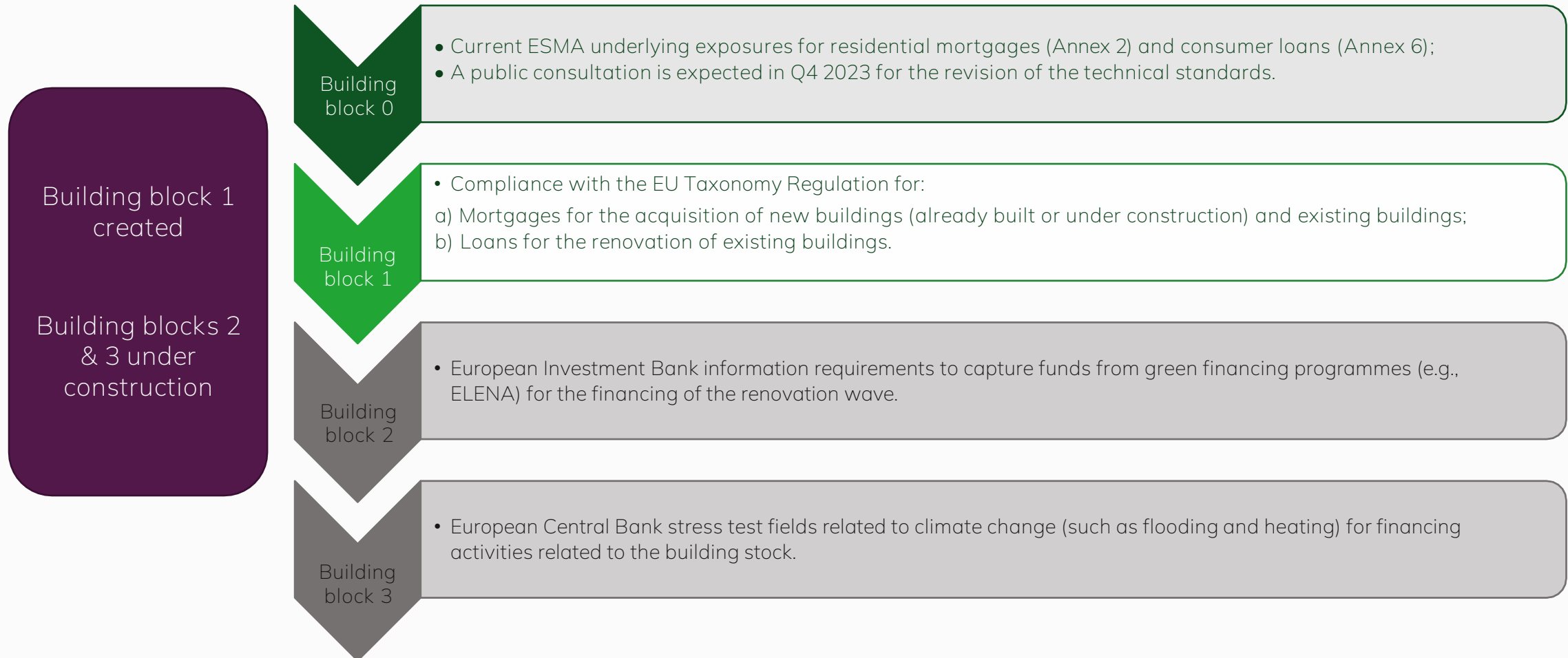


ENGAGE: The High-Level Concept





ENGAGE Templates Structure





EU Taxonomy challenges for buildings

- The ENGAGE Templates translate the EU Taxonomy Regulation based on the Climate Delegated Act and the draft Commission Notice of 19 December 2022 on the interpretation and implementation of the following three Sections of Annex I of the Climate Delegated Act:
 - 7.1 Construction of new buildings
 - 7.2 Renovation of existing buildings
 - 7.7 Acquisition and ownership of buildings



ENGAGE Building Blocks

- The ENGAGE Templates currently consist of two building blocks:
 - Building block 0, which covers information about the underlying exposures (fields RREL1 to RREL84 of Annex 2 of the ESMA templates) and the collateral (fields RREC1 to RREC23 of Annex 2 of the ESMA templates).
 - Building block 1, which covers information about the Technical Screening Criteria (TSC) for determining the conditions under which the granting of a mortgage and a home renovation loan qualifies as contributing substantially to Climate Change Mitigation (CCM), as well as about the Minimum Safeguards (Article 18 of the EU Taxonomy Regulation).



How to get ENGAGED?





1. Access the ENGAGE templates

- The ENGAGE templates are now available to lending institutions.
- To get access to the ENGAGE templates, lending institutions are required to complete a simple access request form.
- Once the request is processed, the ENGAGE templates will be sent through email to the applicant along with the supporting guiding documentation that will help lending institutions understand the templates.

The screenshot shows a web form titled "Request for Access to the ENGAGE Templates for Lending Institutions". The form is set against a light green background with a subtle diamond pattern. It contains four required fields, each marked with an asterisk and a "Required" label. The fields are: 1. "Name, surname" with a text input box containing the placeholder "Enter your answer". 2. "Lending institution legal name" with a text input box containing the placeholder "Enter your answer". 3. "Business email address" with a text input box containing the placeholder "Enter your answer". 4. A confirmation statement: "I hereby confirm that I have read and agree to the Terms and Conditions to access the ENGAGE Templates" followed by a blue hyperlink to the terms and conditions. Below this statement is a radio button labeled "I confirm". At the bottom of the form is a green "Next" button. A footer note at the very bottom says "Never give out your password. [Report abuse](#)".



2. Register for the Webinar

Preliminary agenda:

- Welcome & Intro | Dr. Christian Thun, European DataWarehouse
- Keynote - Compliance with the EU Taxonomy: Why and how Lending Institutions can become Aligned | Lucia Alessi, European Commission
- Fireside chat – The ENGAGE Templates as a Solution for EU Taxonomy Compliance: Template Overview and Logic | Vincent Mahieu, Hypoport & Marco Angheben, European DataWarehouse
- Roadmap & Closing Remarks - Next steps on getting involved with ENGAGE | Marco Angheben, European DataWarehouse



Register for the event [here](#)



3. Test ENGAGE Templates

- Once the ENGAGE Portal is available, UCI and Wonnu, the two pilots of the ENGAGE initiative, will be the first lending institutions testing the ENGAGE Templates.
- All lending institutions across the European Union are invited to test the ENGAGE Templates.
- The ENGAGE Templates and Portal will help lending institutions to assess the alignment of their mortgages and home renovation loans with the EU Taxonomy Regulation.

ENGAGE Portal - Test Results						
Test ID	Test Name	Test Date	Test Result	Test Description	Test Status	Test Comments
1	Test 1	2023-01-01	Pass	Test 1 Description	Pass	Test 1 Comments
2	Test 2	2023-01-02	Pass	Test 2 Description	Pass	Test 2 Comments
3	Test 3	2023-01-03	Pass	Test 3 Description	Pass	Test 3 Comments
4	Test 4	2023-01-04	Pass	Test 4 Description	Pass	Test 4 Comments
5	Test 5	2023-01-05	Pass	Test 5 Description	Pass	Test 5 Comments



Website:

engage4esg.eurodw.eu/

Social Media:

<https://www.linkedin.com/company/engage-for-esg-activation-investments/>



Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

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ENGAGE General Contact:

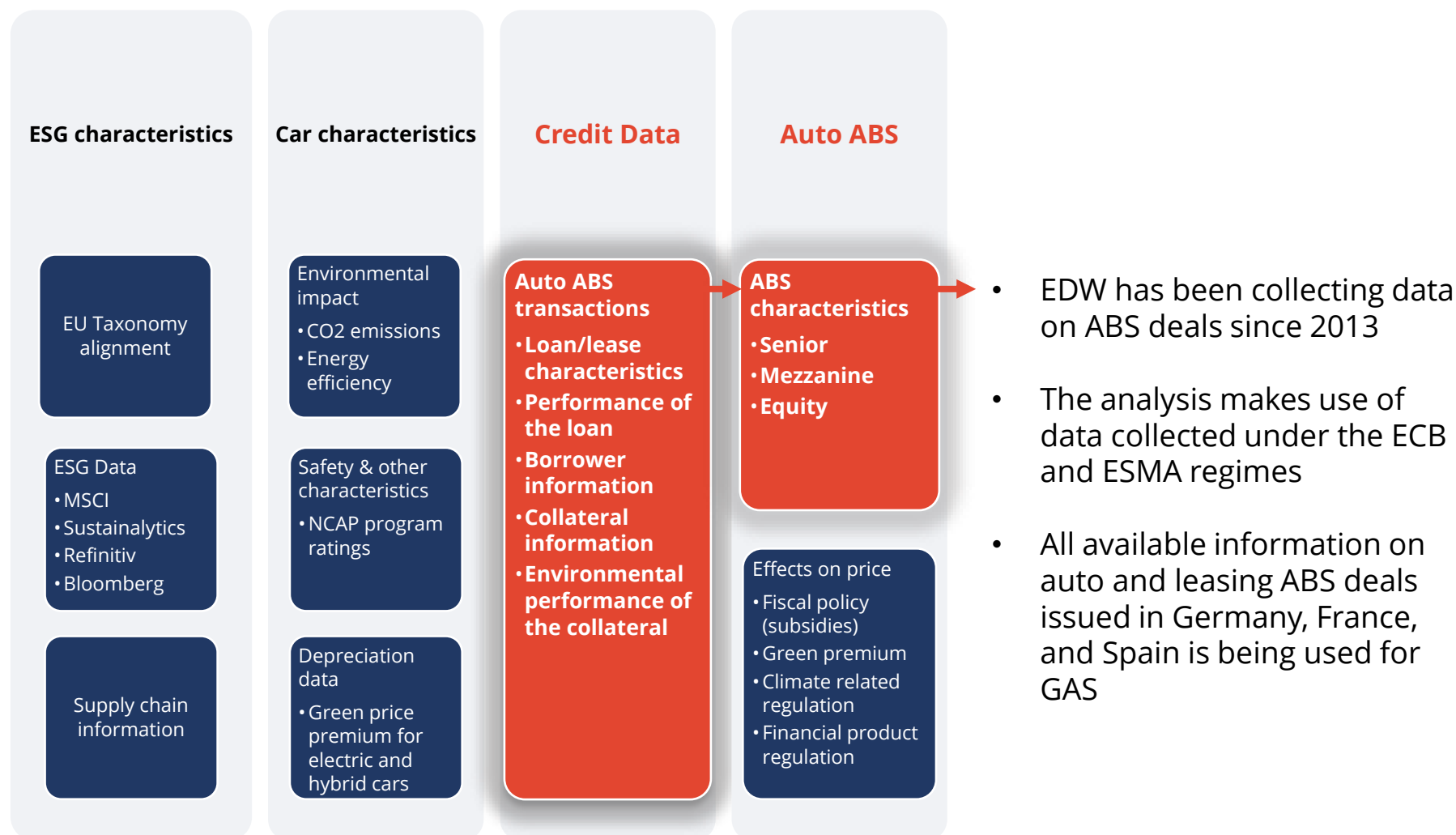
engage4esg@eurodw.eu

Communications

Carla Scarsella
carla.scarsella@eurodw.eu

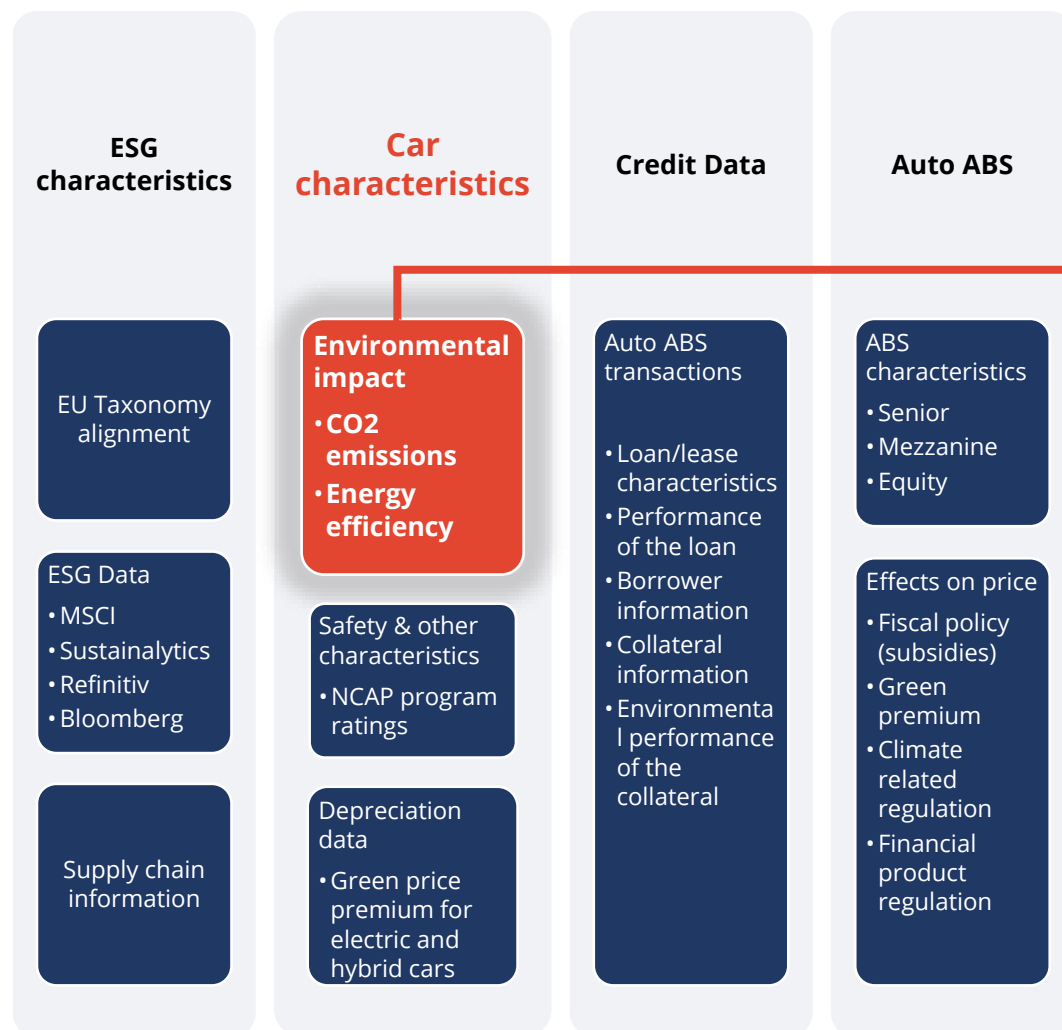
GAS FOUR-PILLARS SUSTAINABILITY DATABASE

Credit and Auto ABS Data



GAS FOUR-PILLARS SUSTAINABILITY DATABASE

Sustainability Data

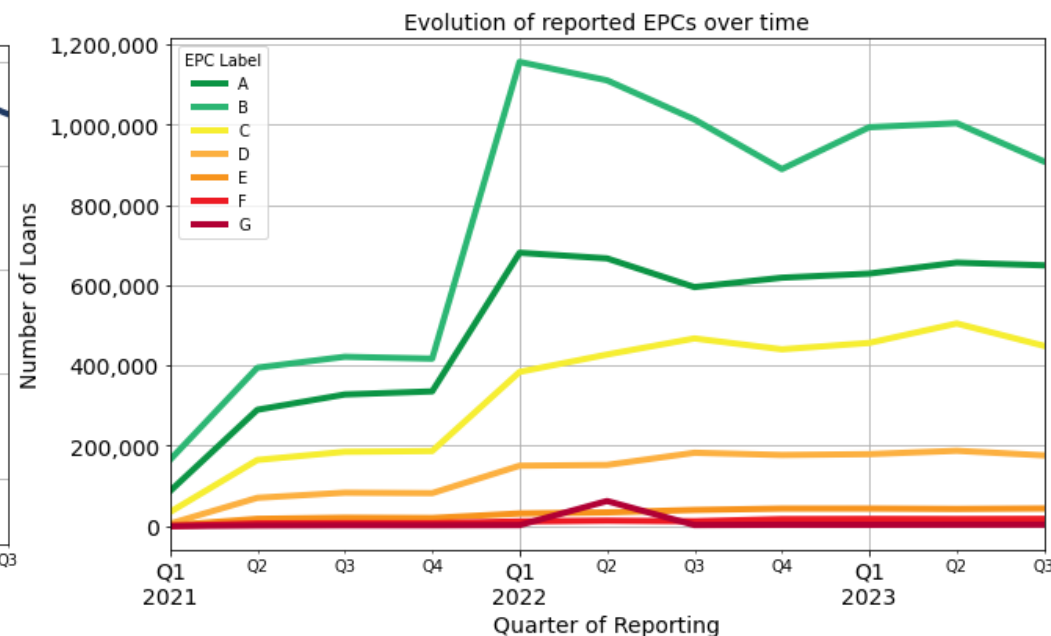
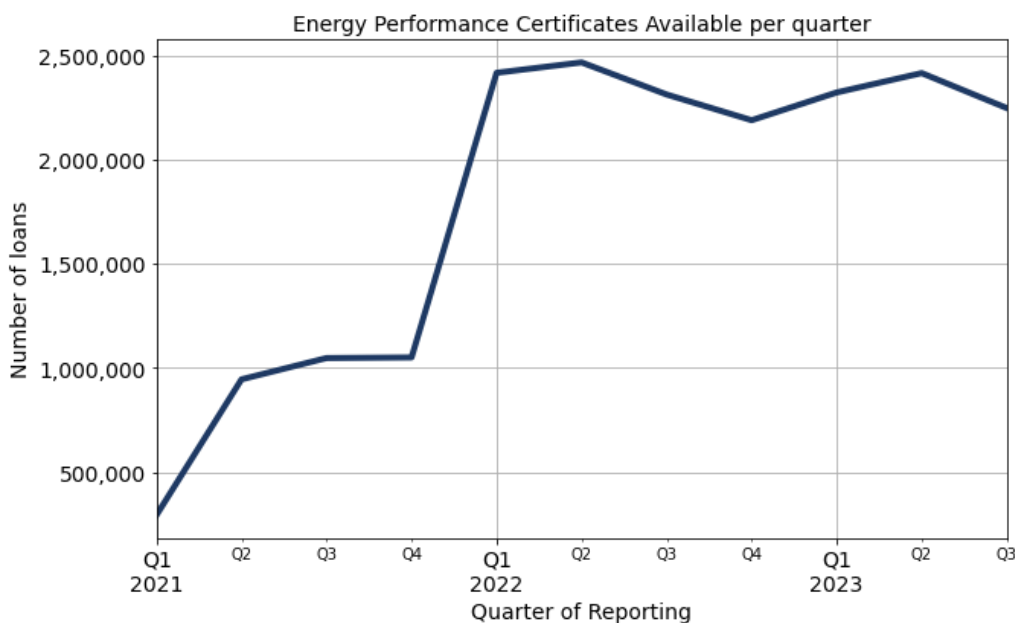


- Via ESMA templates, issuers can disclose information of cars' Energy Performance Certificates (EPCs).
- EPCs are not standardised across countries. Therefore we integrate the car level information with the EEA database.
- We retrieve information on the CO2 emissions for each specific car model.

AVAILABLE ENERGY PERFORMANCE CERTIFICATES IN EDW

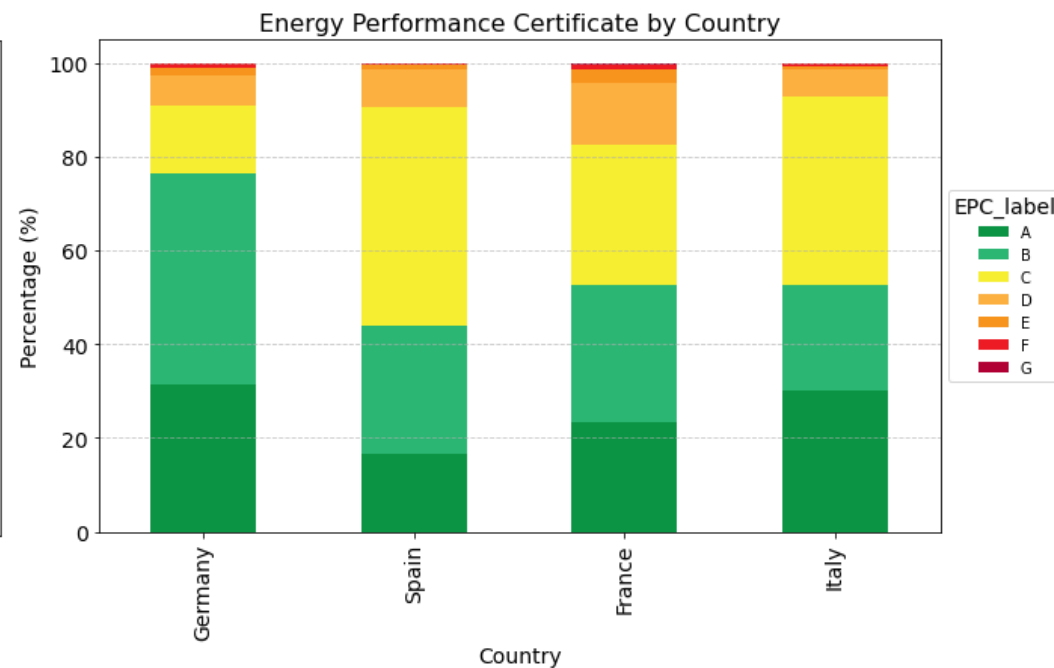
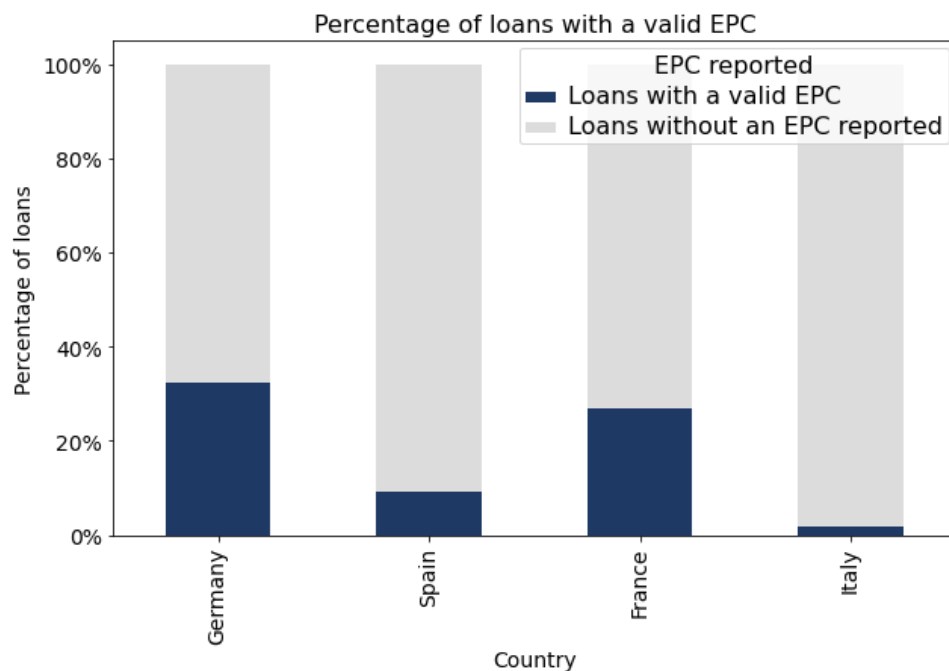
The percentage of auto loans and leases with a valid EPC is increasing

- The percentage of Auto loans and leases with a valid EPC is steadily increasing over time reaching 2.3 million in Q3 2023.
- The increasing trend is driven by cars with better EPC.
- We noticed an increasing trend from issuers to disclose EPC information and from investors to ask for sustainability related data.



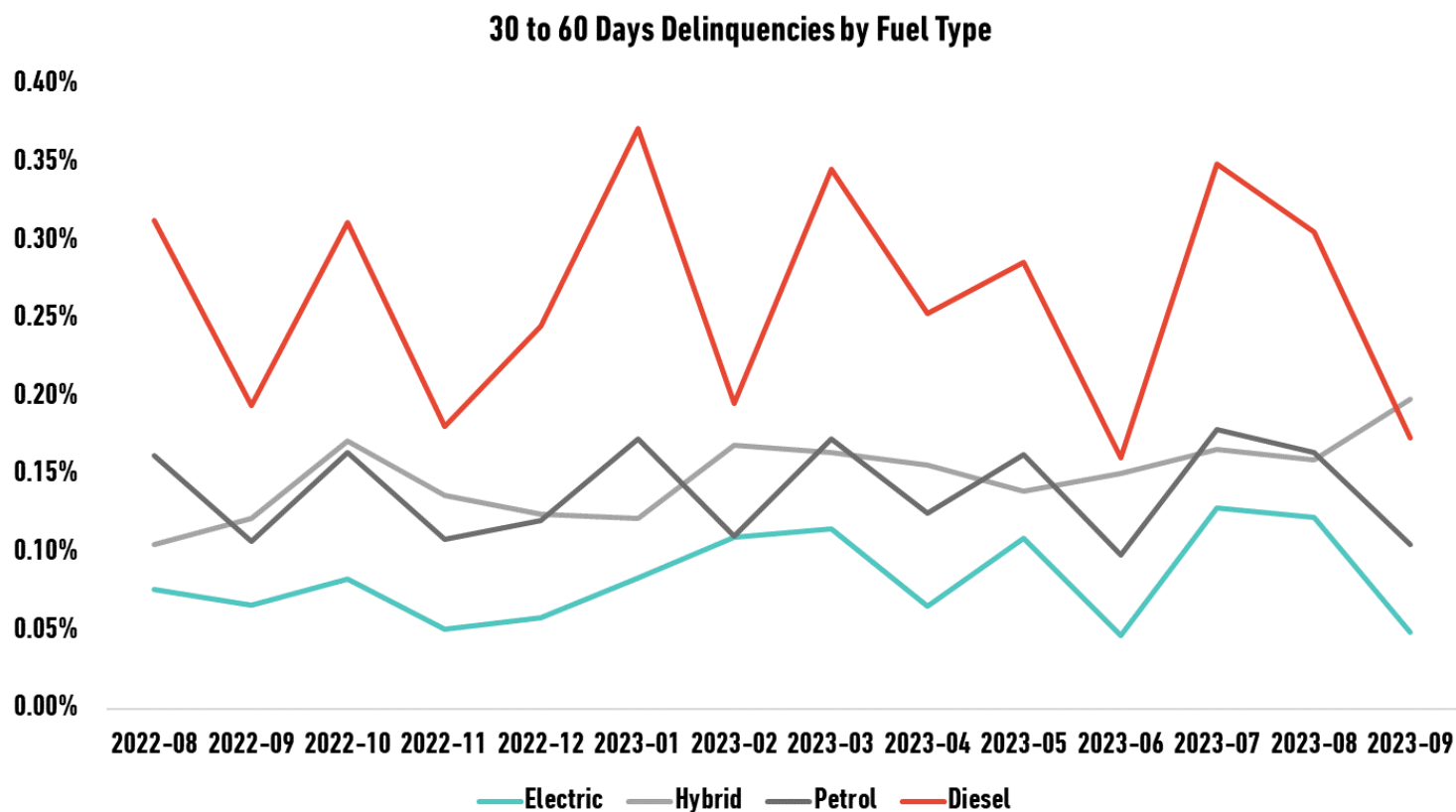
ENERGY PERFORMANCE CERTIFICATES ACROSS COUNTRIES

Germany has the highest amount of Energy Performance Certificates outstanding as of Q3 2023



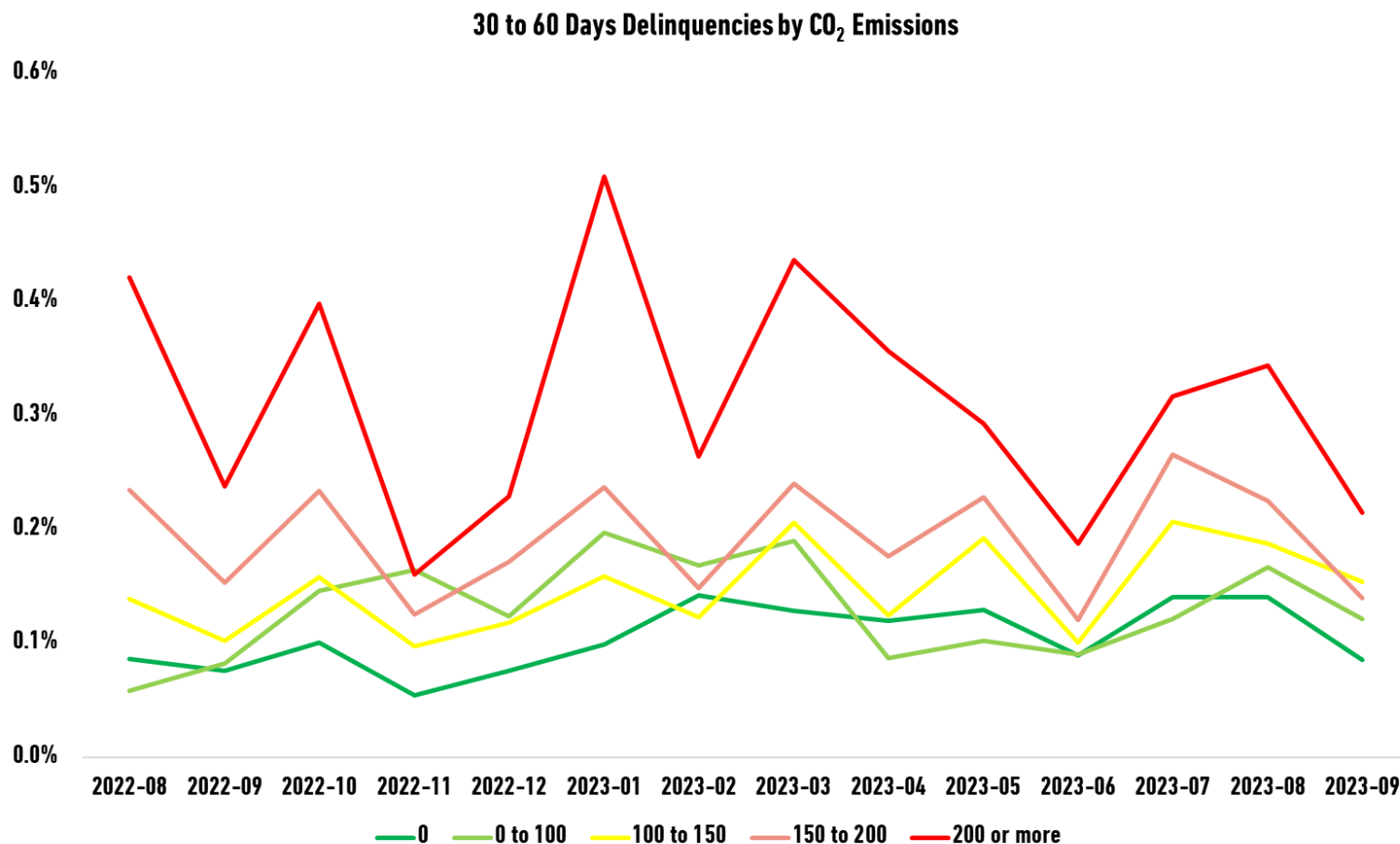
GERMAN AUTO ABS - 30 TO 60 DAY DELINQUENCIES (% OF BALANCE)

Electric cars seem to have the lowest delinquency levels when compared with cars of other fuel types



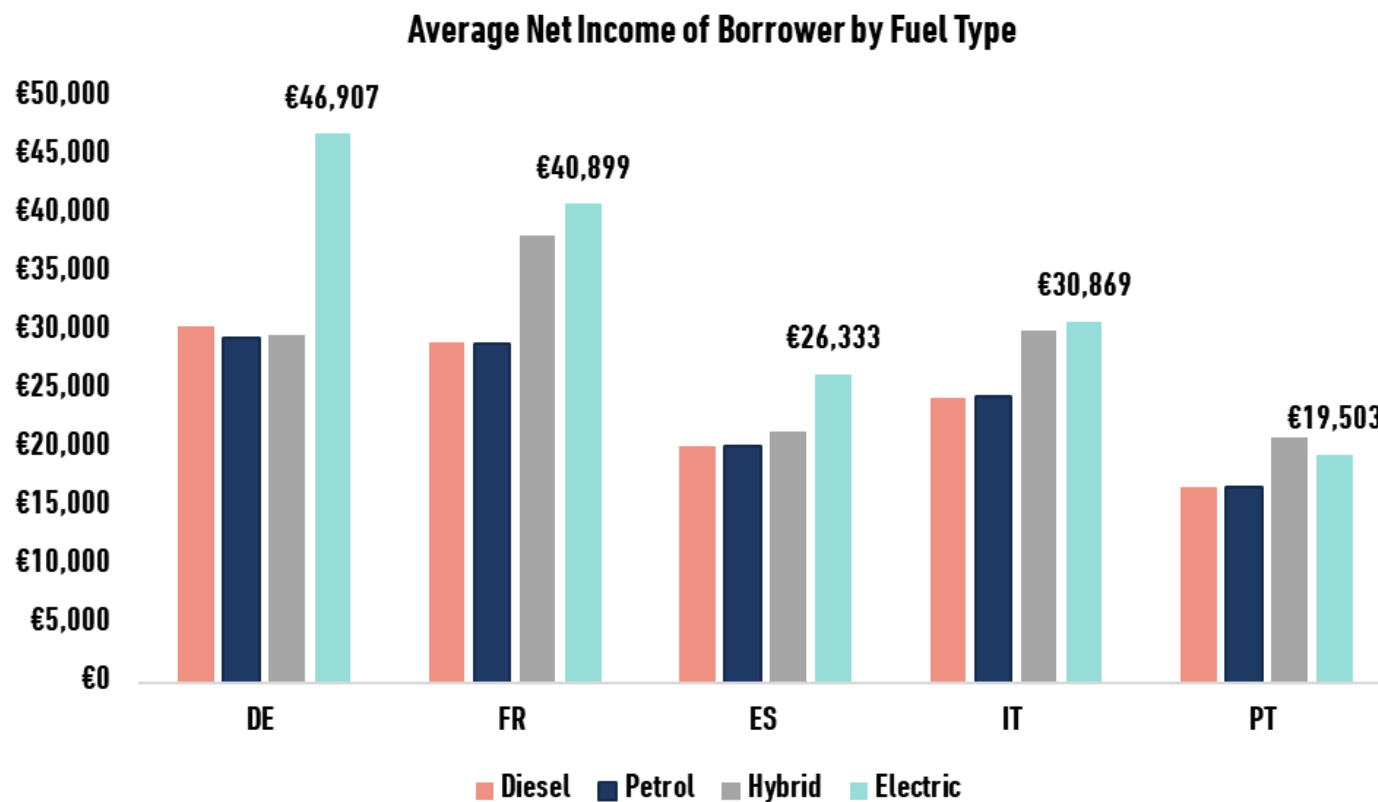
GERMAN AUTO ABS - 30 TO 60 DAY DELINQUENCIES (% OF BALANCE)

Low emission vehicles seem to have lower delinquency levels



AUTO ABS – BORROWER INCOME BY FUEL TYPE

Borrowers that get a loan/lease for electric cars have the highest incomes



POWER OF ANALYTICS: COURT TIMING SENSITIVITY & ML PREDICTIONS

FULVIO PELARGONIO, NPL MARKETS

Power of analytics

Court timing sensitivity & ML predictions

Nov 2023



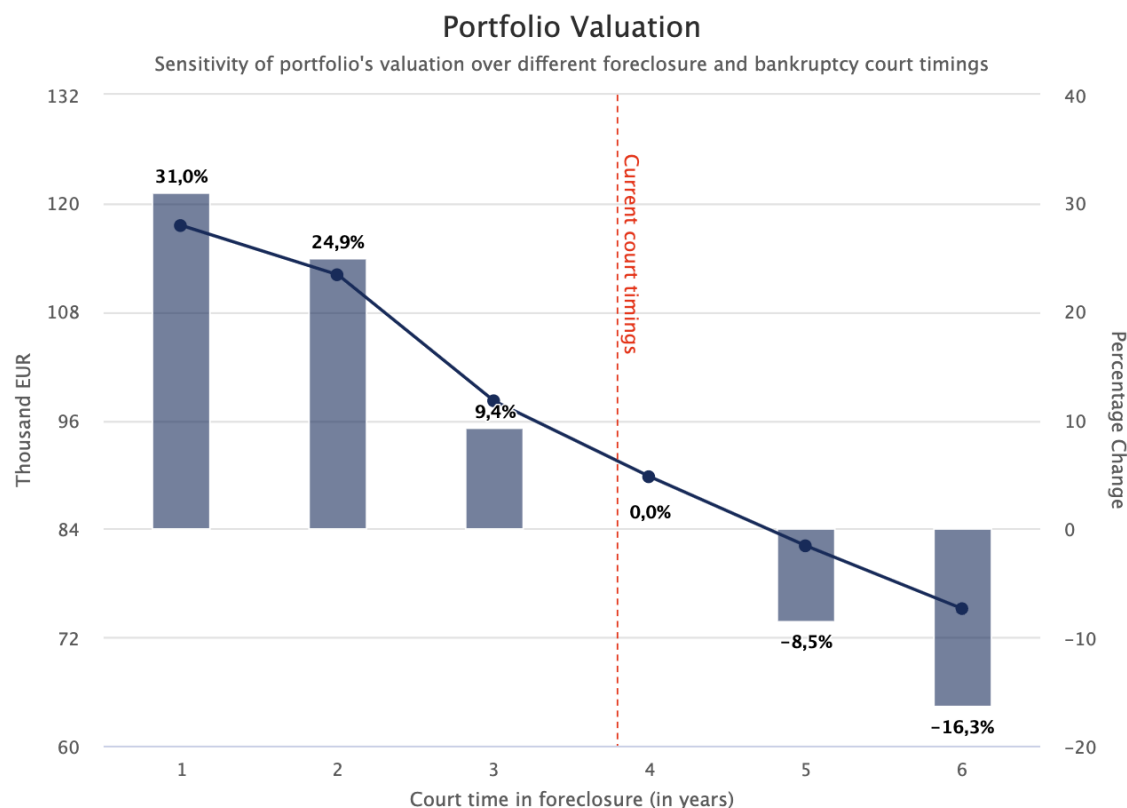
NPL Portfolio Valuation Sensitivity to Court Timing Changes



Sensitivity to Forclosure Court Timings

- Currently Greek courts last on average 3.8 years.
- Currently Greece ranks second to last in the EU.
- Considering only foreclosure court timings!
- One-year decrease in court timings increases valuations by **5-7%**.
- If Greece matched EU's top judicial efficiency, then valuations would increase by **17-23%**.

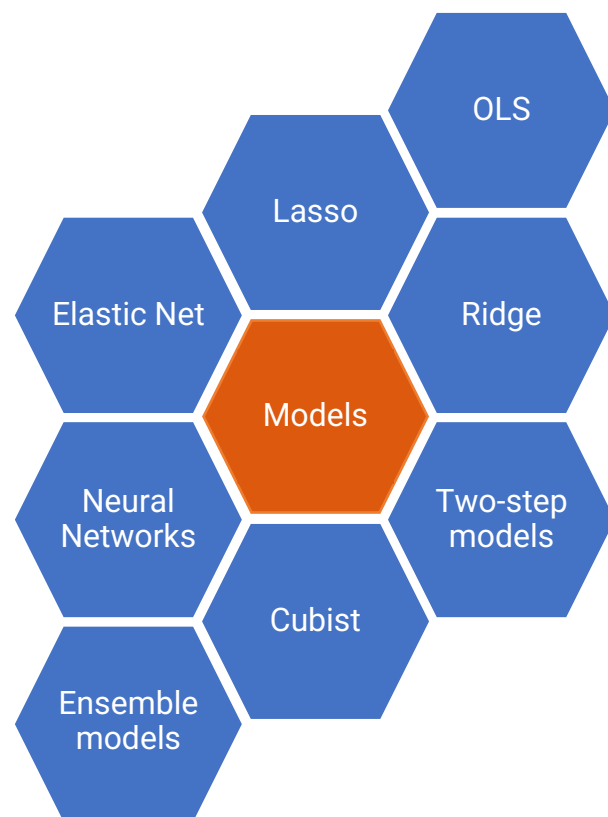
NPL Portfolio Valuation Sensitivity to Court Timing Changes



Sensitivity to Forclosure and Bankruptcy Court Timings

- Reducing court timings directly enhance NPL portfolio valuations.
- One-year decrease in court timings increases valuations by **10%**.
- If Greece matched EU's top judicial efficiency, then valuations would increase by **30%**.
- Greece's shift towards judicial efficiency is expected and so are considerable NPL portfolio gains.

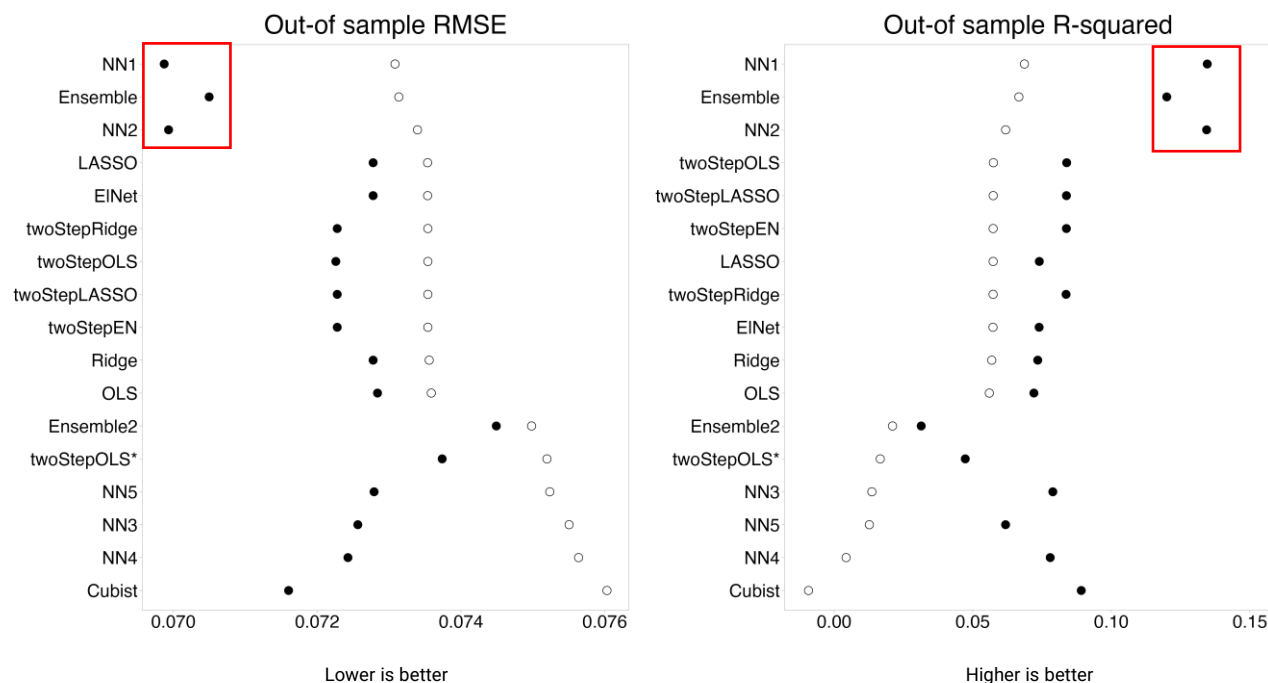
Looking to machine learning to improve recovery rate forecasts



Why use ML?

- Minimize Manual Assumptions
- Performance at Scale
- Complex Relationship Modeling
- Robust Outlier Management
- Scalable and Adaptable Frameworks
- Empirical Superiority

Looking to machine learning to improve recovery rate forecasts



What we learned from building 17 models?

- Neural Networks and Ensemble Models worked the best
- Lower complexity ML models performed better
- ML models work best when using both historical and original expectation recoveries
- ML models improved mean prediction errors by 4% compared to original recovery expectations



REPORTING DIFFERENCES BETWEEN ESMA AND EBA NPL TEMPLATES

MARCO ANGHEBEN, EDW

PRELIMINARY RESULTS OF THE EDW NPL GAP ANALYSIS (1/3)

- EDW conducted a GAP Analysis highlighting the key differences between the EBA NPL transaction data templates and the ESMA technical standards as of 23 September 2020
- The EBA NPL templates have been streamlined and new fields added:
 - The “No data option” has been simplified (ND1, ND2 etc. into one ND only)
 - The € 25,000 threshold has been eliminated
- Among the 129 fields plus 5 identifiers proposed by EBA, EDW found a potential correspondence with the ESMA fields in 71 cases
- Scope of application for the EBA templates, as according to the proposed Regulation Article 2, is for the sale or transfers of portfolios of non-performing loans held in the banking book of credit institutions that meet the criteria set out in Article 16 (7) of Directive (EU) 2021/2167 on credit servicers and purchasers. Out of scope, among others:
 - Securitised NPL loans where Regulation (EU) 2017/2402 applies;
 - Loans held in the trading book of credit institutions
- NPL data quality is key to improve investor confidence and boost secondary market liquidity

PRELIMINARY RESULTS ON THE EDW GAP ANALYSIS (2/3)

Template	Number of Fields	Number of fields with potential correspondence
1 - Counterparty	33 	14
2 - Relationship	4	3
3 - Loan	44 	21
4 - Collateral guarantee and enforcement	43	28
4.2 Mortgage Guarantee	5	4
5 - Historical collection of repayments	5	1
Total number of fields	134	71

REPORTING FRAMEWORKS UNDER THE SECREG & UPCOMING EBA NPL SECONDARY MARKET DIRECTIVE

Type of Assets	Reporting Framework for Securitisation	Reporting Framework for Straight Sale
Performing Loans	ESMA Templates	-
Non-performing loans (NPL)	ESMA Templates with Add-on Annex 10	EBA Templates
Homogeneous NPL pool	One ESMA Annex with Add-on Annex 10	EBA Templates
Non-Homogeneous NPL pool	Multiple ESMA Annexes with Add-on Annex 10	EBA Templates

COVERED BOND SOLUTIONS

MARCO ANGHEBEN, EDW

2.2 COVERED BOND CREATION PROCESS

Create Deal

Basic Information

Deal Type [?]
Covered Bond Programme

Country of Assets [?]
Germany

Deal Name [?]
European Covered Bond

Vintage [?]
2023

Ownership

Data Owner [?]
European DataWarehouse GmbH

Data Provider [?]
European DataWarehouse GmbH

Access

Terms & Conditions:
Choose File No file chosen Upload

Private Deal - Invite User(s) [?]
Enter email address ADD

User Remove

Private Deal - Invite Organisation(s) [?]
Org Name as registered with EDW ADD Remove

Please read through and confirm the information you have provided is correct before selecting 'Create'

Cancel Create

Please be aware

- Fill in all fields unless otherwise indicated
- If you have any questions, please do not hesitate to contact us at: enquiries@eurordw.eu

Data Templates that you can use

No structured template available

Any public or private documentation (e.g. Excel, PDF, Word, etc.). These will not be subject to schema / content format checks.

Who can see your data:

Only users and organisations to whom you have granted access.

A few simple steps are needed for a covered bond creation:

1. An issuer can create a new covered bond by clicking on the deal creation button and selecting "Covered Bond Programme" as the deal type. The relevant fields to be populated will be automatically displayed.
2. The issuer can invite users to access the covered bond area. This field can be edited at a later stage

Please note:

- The covered bond is created by default in EDW private area with controlled access.

2.3 COVERED BOND DOCUMENT UPLOAD PROCESS

Deals / CBPSDE87LI37505720236

European Covered Bond

Information Data & Documents

Here you can upload and/or delete submitted documents for this Entity.

5 Document(s) Uploaded

Upload New Document(s)

Upload Type

Document Link

Document Type *

201 - Prospectuses

Document File *

Click or drop file here

Signature File

Click or drop signature file here

Is Provisional ?

Yes No

Is Private ?

Yes No

Document Visible To User(s)

enquiries@eurodw.eu

Disclaimer Text

Reset Upload

Share Edit Delete

Documents

Code - Category Name	Display Name	Submitted On	Attributes	Action
201 - Prospectuses	Prospectus.pdf	2023-09-04T15:49:03		
202 - Program Documentation	Program Documentation.pdf	2023-09-04T15:52:53		
204 - Investor Reports	Investor Report.pdf	2023-09-04T15:53:23		
205 - Transparency Templates	Transparency Template.xlsx	2023-09-04T15:55:03		
206 - Underlying Exposures Data				

1. An issuer can upload documents by clicking on "Documents" and selecting the relevant document types:

Covered Bond Programme Documents

- 201 - Prospectuses
- 202 - Program Documentation
- 203 - Series Documentation
- 204 - Investor Reports
- 205 - Transparency Templates
- 206 - Underlying Exposures Data
- 207 - Financial Information
- 208 - Other

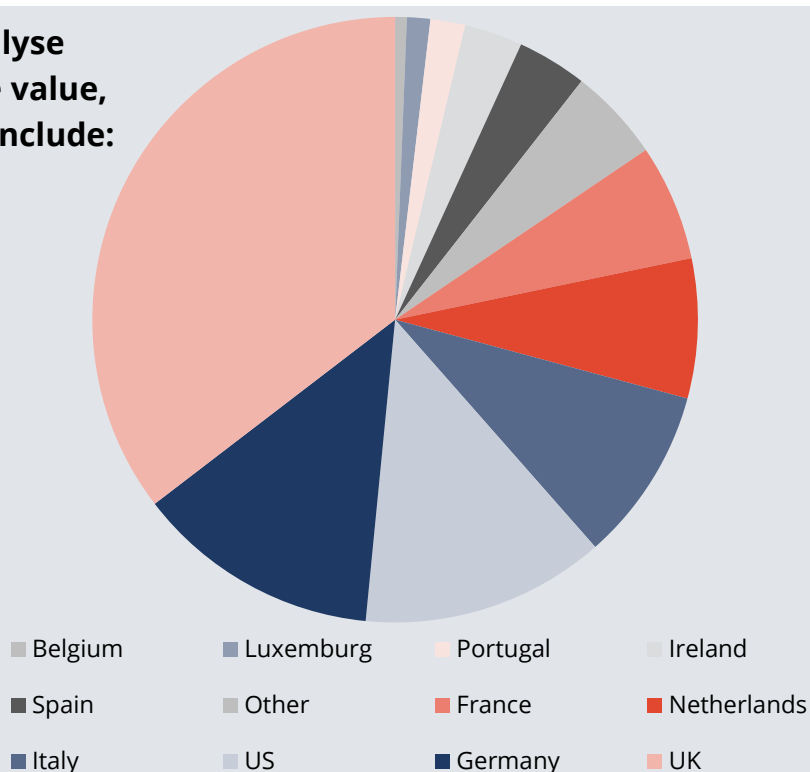
2. An issuer can upload private documents related to a specific covered bond and define user access.

2.4 EDW DATA USER TYPES

EDW currently has more than 300 data user institutions including more than 170 institutional investors

Market participants that access and analyse the data and documentation for relative value, due diligence and monitoring purposes include:

- Institutional Investors
- Rating agencies
- National Central Banks
- Regulators, National competent authorities
- Accounting firms
- Trustees, servicers and calculation agents
- Investment banks
- Data vendors and analytical providers
- Academic institutions and researchers



CLOSING REMARKS

THANK YOU//CONTACT US

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