

Reviving securitisation in the EU: A critical analysis of the reporting requirements

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ABSTRACT

The EU Securitisation Regulation (SECR) came into force in 2018, applying to securitisations issued after 1st January, 2019 and to eligible legacy securitisations. This is a cornerstone of the Capitals Market Union (CMU), which, together with the amendment of the Capital Requirements Regulation (CRR), aims at reviving the European securitisation market. By introducing a robust and harmonised framework, the regulator intends to resolve the following conundrum: how to relaunch the securitisation market, which is essential for financing the economy, while mitigating its vulnerabilities and the stigma associated with it? More specifically, the CRR amendment contains the calibration of capital requirements in accordance with the updated hierarchy of methods while the SECR defines the criteria for securitisations to qualify as ‘simple, transparent and standardised’ (STS). The SECR also sets common rules for the due diligence obligations of institutional investors, regardless of the sector to which they belong. An intrinsic (although not specific) problem with securitisation is the question of asymmetry of information, since investors have access to less information about the loans backing the tranches than lenders involved in their origination. Article 7 of the

SECR addresses this issue by defining high standards to transparency requirements using a very granular reporting method. While market participants recognise the necessity of fostering transparency and due diligence to increase confidence in the market, the current reporting framework, because of the burden it represents, may discourage potential investors and originators. This paper provides a thorough overview of the reporting obligations set on credit institutions in the context of securitisation. It demonstrates how the lack of integration and proportionality combined with technical limitations perpetuates regulatory fragmentation and associated high costs. It proposes potential solutions to integrate requirements from various sources into a unified model and concludes with the necessity to improve the governance of reporting and data requirements at a European level.

Keywords: securitisation, due diligence, regulatory reporting, capital requirements, granular data, data model

INTRODUCTION

Securitisation is said to be ‘traditional’ or ‘true sale’ when loans or other financial assets, generally originated by a credit institution, are sold to a special purpose vehicle (SPV), also called securitisation special purpose entity (SSPE), which in turn issues asset-backed securities or commercial papers (ABS or ABCP) and places them with capital market investors. This is a technique that allows banks to free up capital and clean up their balance sheets, while investors have access to liquid assets that get remunerated directly from the instalments of the loans according to a payment waterfall: the riskier the tranche, the higher the return. The freed-up capital

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can then be used for further lending to the real economy or to meet increased capital requirements following Basel III and EU Green Deal reforms. Banks may however also retain the issued securities and use them as collateral in refinancing operations with the central bank, in which case there is neither derecognition nor risk transfer. In ‘synthetic’ or ‘on-balance sheet’ securitisations, loans remain on the balance sheet: only their risk is transferred to the investor providing a credit protection within a predetermined tranche.

The 2008 devastation resulted in a massive slowdown of the securitisation market due to an ‘originate-to-distribute’ model in the US that suffered from opaque structures, which acted as a trigger for the global financial crisis (GFC). The collapse was followed by what might be called a lingering stigma that the European market has yet to overcome, no matter the excellent track record displayed by securitisation transactions in the EU both pre and post GFC.

In order to reap the benefits of securitisation as a financial tool, to support the financing of small and medium-sized enterprises (SMEs) to boost capital markets, policymakers in Europe intervened from 2015 by launching the Capital Markets Union (CMU) initiative.¹ The Commission established a new framework to promote securitisations that comply with strict criteria of simplicity, transparency and standardisation, with the explicit aim of restoring confidence in the market and thereby significantly increasing the issuance volume. Notably, banks may release capital using either traditional non-retained and synthetic securitisation provided that the deal meets stringent significant risk transfer (SRT) requirements, both at origination and during its lifetime. If the securitisation fails to achieve SRT, due to structural features or retention percentage, capital requirements are calculated using the regular prudential framework on underlying exposures instead of benefitting from the calibration described in the amended Capital Requirements Regulation (CRR).

The level 1 legislation (EU Securitisation Regulation (SECR)² and CRR) was amended in 2021 with the extension of the simple, transparent and standardised (STS) qualification to synthetic securitisations and the treatment of non-performing exposures (NPE) securitisations following the Capital Markets Recovery Package. The level 2 legislation is still being finalised with implementing and regulatory technical standards (ITS and RTS) in relation to risk retention and synthetic securitisations underway.

Disappointingly, the new regime has so far failed to encourage the securitisation market in Europe which remains at a historic low since the GFC, while it has entirely recovered in the US.³ In 2008, European securitisation, including the UK, was equivalent to 75 per cent of the American market. The same figure dropped to 6 per cent in 2020, although such comparisons are not fully relevant since the US market is dominated⁴ by agency mortgage-backed securities (MBS), the non-tranched structure of which is closer to pass-through covered bonds. Moreover, statistics on private securitisations suffer from a lack of comparable data. The current tightening monetary policy, which translates into higher interest rates to control inflation, could further complicate the outlook by reducing demand for credit from households and SMEs.

The banking industry has identified several caveats in the current framework and proposed a recalibration of the capital treatment to address its non-neutrality, an adjustment of the SRT process and a review of the disclosure requirements.⁵ The rest of this paper focuses on this last aspect.

A patchwork of reporting obligations that lack integration

Prior to the SECR, the European Central Bank (ECB) introduced loan-level data (LLD) in 2013 in a first attempt to standardise data requirements.⁶ LLD are collected on

a loan-by-loan basis to determine the eligibility of ABS and debt instruments backed by eligible credit claims (DECCs) used as collateral in refinancing operations. The collection, submitted in an Excel format, started with commercial mortgage-backed securities (CMBS) and has been extended to other asset pools (auto loans, consumer finance, residential mortgages, etc) since then.

While the SECR aimed at reducing regulation fragmentation by introducing cross-sectoral common rules, it has not succeeded in streamlining the reporting requirements. On the contrary, these have increased as new regulatory standards have come into effect, with little concern for semantic and technical integration.

The European Securities and Market Authority (ESMA) received the mandate to develop technical standards complying with Articles 5 and 7 of the SECR.⁷ ESMA opted for a similar approach to the ECB LLD and designed ‘templates’ (in fact, granular data sets) gathering detailed information about the securitisation itself, its tranches/bonds, underlying exposures and counterparties including natural persons, collaterals, accounts, cashflows and trigger events. This collection also replaces the former disclosure requirements known as Article 8b of the Credit Rating Agency regulation.⁸ The designated reporting entity (either the originator, SSPE or sponsor of the securitisation) submits public securitisations data to one of the authorised securitisation repositories in extensible markup language (XML) format on a quarterly basis (monthly for ABCP) together with the legal agreements and the prospectus of the securitisation. Private securitisations, for which there is little reporting relief at the time of writing (the ‘inside information’ annexes are not required), do not need to be reported through a repository. The ESMA collection has inherited the semantics from the ECB LLD, using common terms and definitions to some extent. Following a transition period, the ECB LLD

will be phased out in 2024 and replaced by the ESMA securitisation templates (apart from the SME DECCs which fall outside the scope of the SECR). However, a comprehensive field-by-field analysis performed by the securitisation repository European DataWarehouse (EDW) shows that the semantic integration is imperfect.⁹

The other building block of reporting obligations relating to capital requirements calculations comes under the European Banking Authority (EBA). To this end, new common reporting (COREP) templates were published in 2019, with several additions since then covering amendments to the SECR. Notably, NPE securitisations and the STS regime applying to synthetic securitisations are implemented in the latest version of the templates.

- C 14.00 and C 14.01 (‘SEC DETAILS’) collect granular data on securitisation and tranche level — C 14.01 being limited to securitisations achieving SRT, thereby encompassed by the different prudential approaches of the securitisation framework — reported by originators, original lenders, sponsors or investors.
- C 13.01 (‘CR SEC’) is a traditional template consisting of data points defined as intersections of rows and columns, whereby details of risk weight calculations and exposure values are split according to different breakdowns, such as the role taken by the reporting entity in the securitisation (originator, sponsor or investor). Credit risk on securitisations that do not achieve SRT is measured according to the traditional framework in C 07.00 or C 08.00 depending on the approach used by the originator.

Metadata elements of the templates, such as dimensions, domains and definitions and their definitions are documented in the Data Point Model (DPM) dictionary,¹⁰ which is the information model used by the EBA.

The following notification requirements complete the ESMA and the EBA reporting frameworks:

- Originators are due to notify ESMA of securitisations meeting the STS criteria in accordance with the ‘STS notifications templates’. The Excel template is divided into several sections for non-ABCP, ABCP programmes; ABCP transactions further split into private and public and contain information about the securitisation. Around 90 attributes are confirmations or text explanations relative to compliance with the STS criteria as defined in the SECR. The template is not finalised for STS synthetic transactions at the time of writing.
- Significant institutions originating securitisations and applying for SRT are required to notify the Single Supervisory Mechanism (SSM) of their intentions at least three months in advance of the expected closing date of the transaction. The notification includes quantitative and qualitative information about the securitisation, the securitisation positions (or tranches) and the securitised exposures. In particular, it contains the risk weight calculations ante and post-securitisation, as well as other credit risk parameters such as expected and unexpected losses.
- In 2022, the ECB published a non-binding guide on the notifications of securitisation transactions. Significant institutions acting as originators or sponsors are encouraged to populate an Excel template at origination and upon significant events.¹¹ The information required is similar, but not semantically identical, to other frameworks and contains characteristics of the securitisation together with its exposures and positions, including aspects concerning compliance with the risk retention requirements (Article 6 of the SECR).

Pursuant to Articles 22(4) and 26d(4) of the SECR, originators of STS securitisations

are also required to ‘publish information related to the environmental performance of assets’ when these are backed by residential estate or auto loans. In May 2022, the European Supervisory Authorities (ESAs) issued optional draft RTS aligning the requirements with the Sustainable Finance Disclosure Regulation (SFDR),¹² which does not encompass structured products. Originators can opt for either disclosure regime. The main purpose of sustainability requirements is to provide investors with environmental, social and governance (ESG) information and to make the securitisations transactions more appealing.

In a ‘joint statement on disclosure on climate change for structured products’ published in March 2023, the ESAs gave information on the necessity of closing the data gaps related to sustainability by introducing ‘new, proportionate and targeted climate-change related metrics’.¹³ The currently voluntary requirements containing principal adverse impacts indicators will become mandatory and will be extended to other asset classes and types of structured products (such as covered bonds). ESMA is currently analysing the possibility of incorporating such requirements into the securitisation templates. Meanwhile, the reporting institutions are encouraged to get ready by collecting the voluntary requirements before the mandatory framework is finalised.

On the statistical side, credit institutions report securitisations to the ECB through national central banks. Data on traditionally securitised loans is essential to adjust lending growth rates in the Euro area since securitised loans are derecognised from the balance sheet of originating credit institutions in principle, while still forming part of the overall volume.¹⁴

- The Balance Sheet Items (BSI) regulation¹⁵ collects flow and stock information on traditional securitisations originated by

monetary financial institutions in Table 5a and 5b. Amounts are split by different breakdowns such as the maturity of the underlying loans, the residence of the SPV, the balance sheet recognition and whether the institution acts as a servicer of the securitised loans. The format in which the data is submitted varies greatly depending on the national provisions. Note that BSI uses a broader definition of securitisation than the SECR, according to which tranching is not required for a pass-through transaction via an SPV to qualify as a securitisation.

- The analytical credit data sets (AnaCredit)¹⁶ contain granular information about individual loans to non-households, indicating whether they form part of a traditional or synthetic securitisation. Loans transferred to an SPV continue to be reported by the originating institution if it acts as servicer. AnaCredit is modelled according to an entity-relationship model (ERM) consisting of around 90 variables, with the loan data set at the centre. The model does not contain any entity representing the securitisation itself. Data is submitted mostly in XML format, subject to national requirements. There is very little semantic alignment between AnaCredit and ESMA templates, despite numerous overlapping concepts used in the description of the loans and their collateral.
- The securities holding statistics¹⁷ capture ABS asset positions as part of debt securities holdings, without any indication as to whether these stem from a self-securitisation, a retained tranche or a securitisation originated by an external institution.

It is obvious that the reporting obligations set on credit institutions translate into a patchwork of data requirements that lack both technical and semantic integration, involving high costs and interfering with the quality of the data. Brexit has worsened the fragmentation and the legal uncertainty,

since originators, sponsors or SSPEs established in the UK must use the UK reporting framework as of 2022. This consists of the ECB LLD format on the one hand for reporting to the Bank of England and of the ESMA securitisation templates on the other hand for reporting to the Financial Conduct Authority. To this day, no decision has been taken to phase out the ECB LLD format, as is the case for EU reporting.¹⁸

The industry is questioning the fitness for purpose of the disclosure requirements

The European Commission published a report ‘on the functioning of the securitisation regulation’ in October 2022.¹⁹ Section 5, about ‘Due diligence and transparency’, details the consultation feedback received by the banking industry and the institutional investors as regards to proportionality. The information required is described as ‘excessive’ by most respondents. In general, loan-level data is considered useful on non-granular pools and for some asset classes, but less valuable for other types of pools. In a nuanced way, the need for granular data also depends on the approach used to calculate capital requirements and on the seniority of the tranche held; the use of an internal-ratings based approach would typically imply a high level of detail. More importantly, the data requested is not necessarily aligned to the investors’ needs. In many cases, investors continue to rely on previous due diligence arrangements that were in place before the SECR, which adds to the reporting burden.

Likewise, rating agencies require regular securitisation data from the originators and issuers which only partially overlaps with regulatory data. This has led EDW to develop extended templates combining requirements stemming from ESMA and rating agencies.²⁰ The unique file is submitted in comma separated values (CSV) format by the reporting entities, after which the information required by ESMA is stripped

out and converted to XML by the software. The non-ESMA fields are available in CSV format for rating agencies.

PGGM, a Dutch pension provider investing in synthetic securitisations, has expressed concerns that the ESMA templates would impede the development of such transactions.²¹ The level of detail of borrower information required implies that confidentiality is not preserved. Consequently, banks are unable to deliver crucial risk information needed by the investor to make a decision, such as internal rating and loss given default. PGGM provided a very detailed assessment of the templates, whereby relevant fields are categorised as ‘essential’ or ‘nice to have’ for specific asset classes and suggested a draft template for ‘blind pool’ transactions. Non-relevant fields should be dropped and replaced by a smaller number of risk parameters.

Similar concerns have been expressed about the draft RTS on sustainability disclosures for STS securitisations.²² The usefulness of some indicators going beyond the SFDR requirements is questioned, as is the availability of social matters data related to car manufacturers from the originator’s perspective. If disclosure requirements were to become mandatory, they would place a heavy burden on new and small originators which could discourage STS securitisations.

Proportionality is also affected by the legal uncertainty surrounding third country securitisations. Indeed, a strict interpretation of Article 5 of the SECR implies that an investor residing in the EU is required to carry out its due diligence according to the transparency modalities of Article 7 and the ESMA templates, regardless of the residence of the originator, sponsor or issuer. The additional burden put on non-EU (eg located in the US) sell-side parties could put an end to closing deals with EU investors. The same issue exists with UK investors, who are expected to comply with their due diligence obligations in accordance with

UK disclosure procedures, notwithstanding the residence of the originator, sponsor or issuer. In Europe, the ESAs have published an ‘Opinion to the European commission on the jurisdictional scope’.²³ The Joint Committee proposes to set up an ‘equivalence regime’ by which disclosure requirements in the third country would be considered equivalent to the EU requirements under the condition that predefined criteria are met. The industry, however, rejected this idea and called for a flexible approach by which adequate and sufficient information would be shared.

Finally, the consultation showed that Article 7 disclosure requirements applying to private securitisations are neither proportionate nor suitable for their purpose. The main difference with requirements applying to public transactions is that data does not need to be submitted through a securitisation repository but is made available to investors directly. While some of the respondents, on both the industry and authority side, praised the standardisation of the information achieved by a common framework, others insisted on its lack of relevance for private securitisations. The Commission has therefore mandated ESMA to develop a specific template recognising the bespoke nature of private arrangements. Even though such a template is expected to be considerably lighter than the original, it will also add to the current fragmentation and represent an additional burden for originators of both public and private securitisations. Moreover, regulators insist on the need to ensure full transparency for private securitisations and are concerned by non-accessibility to granular data.²⁴ This concern is all the more valid as the distinction between ‘public’ and ‘private’ securitisation in the SECR, depending on whether a prospectus has been drawn up, is debatable. Private transactions represented two thirds of the securitisation market at the end of 2021, therefore the question of how to apply Article 7 to these is central.²⁵

Industry stakeholders rightly point out the asymmetry of reporting obligations between securitisations on the one hand and covered bond programmes on the other. Similar to the STS qualification, covered bonds meeting criteria regulated by the amended Covered Bonds Directive²⁶ receive the ‘Covered bond label’ issued by the European Covered Bond Council. Disclosure requirements materialise in an Excel workbook called ‘Harmonised Transparency Template’,²⁷ published on the issuing institution’s website on a quarterly basis. The template consists of around 50 attributes only describing the characteristics of the cover pool and the issued bonds. There is no semantic integration with the attributes required by ESMA, despite common concepts such as the description of the real estate or the type of asset classes.

ESMA collects granular data through an entity-relationship model

In the ESMA securitisation templates, the data is organised according to an ERM, recalling the AnaCredit model, whereby the securitisation (or ABCP programme) is at the centre of the model and connects with the other entities (or tables) through identifiers. Article 11 of the Disclosure RTS determines the syntax of the ‘unique identifier’ which identifies the securitisation. The model is partially normalised, using subtypes containing the mandatory attributes for the diverse kinds of underlying exposures (auto loans, residential real estate, commercial real estate) and securitisations (traditional non-ABCP, synthetic, ABCP transaction, ABCP programme, collateralised loan obligations). In total, around 700 attributes are collected on a loan-by-loan (except for ABCP transactions) and securitisation-by-securitisation basis.

From a modelling perspective, the collection suffers from a number of caveats, including the following:

- There is a lack of metadata to facilitate understanding of the model, in particular the absence of a logical data model (LDM) describing the underlying business logic through entities and their relationships, including their cardinality. Data requirements are available in Excel format, which is not an ideal form to visualise an ERM.
- The primary key of each table is not clearly identified. The securitisation unique identifier always forms part of the compound key, together with identifiers which are specific for the entity. Whether identifiers form part of the primary key or represent a foreign key is not well documented, which can lead to different interpretations as to how to populate the tables. If understood correctly, the obligor identifier is a component of the key for the underlying exposure table, which means that one underlying exposure will be reported in several records (rows) in case of joint or several liability. This in turn creates aggregation issues if amounts reported are not properly allocated to individual counterparties.
- The underlying exposures entity is non-normalised and contains information about obligors, originators, collaterals and swaps (for some asset pools). This design can involve consistency and cardinality issues: reference data (demographics, etc) reported for a same counterparty may diverge for different underlying exposures, and it is not possible to report more than one swap hedging a loan.
- Underlying exposures of ABCP transactions are not collected on a granular basis but modelled in a single row using an artificial identifier to fit into the entity-relationship model. This is not ideal considering the data governance principles that banks need to comply with according to the Basel Committee on Banking Supervision (BCBS 239).²⁸ Moreover, the table contains many additional monetary

variables representing the amounts according to different breakdowns such as currency and geographical location. A better solution would have been to define one record as a unique combination of categorical variables to use the same table structure as for the granular collection.

- The model contains redundancies: for instance, originator and sponsor information is collected both at underlying exposure level and in the dedicated counterparty section.
- As a simplification, tranches are not modelled as a specific entity. For traditional securitisations, the tranche information is merged with the debt securities issues whereas it is contained in the securitisation section for synthetic securitisations.
- The ABCP programme entity is connected to tranches, although this is not correct from a business perspective, since ABCP are not tranching.
- Rating information forms part of the securitisation counterparty section but no rating is connected to the tranche itself.
- Code lists associated with categorical variables are not always disjoint. A typical example is the ‘account status’ attribute which mixes partially overlapping concepts such as ‘performing status’, ‘default’ (according to the CRR and other definition), ‘forbearance/restructuring’, as well as redemption information. Non-disjoint code lists potentially undermine the quality of aggregations done using these breakdowns since more than one value could be applied to a record.
- Data quality checks are performed based on so-called ‘no data’ scores and thresholds. These measures relate to completeness and allow for a certain percentage of missing information under specific conditions. However, the framework lacks consistency and referential integrity validations which would compensate for the insufficient normalisation and the absence of LDM.

The solution to the reporting burden is to integrate the different frameworks into a unique model and dictionary

In response to the criticisms revealed by the consultation with the industry, the European Commission has mandated ESMA to undertake a general review of the securitisation templates. The simplification effort may nonetheless be accompanied by the introduction of compulsory sustainability-related requirements and by a specific template for private securitisations, as previously mentioned. The previous review was performed in 2019 and led to a significant increase of the so-called ‘no data’ options, indicating the non-availability or non-applicability of data. As an example, 17 fields of the CMBS underlying exposure template are mandatory in all cases, whereas 174 can be declared as non-applicable (158 in the previous version) and 75 non-available (formerly 65).²⁹ Wrongfully or intentionally, reporting entities often consider ‘no data’ fields to be optional rather than mandatory, subject to applicability or availability. Failure to report the requested information not only compromises the possibilities of aggregating the data and giving a correct overview of the market, but also obliges investors to maintain separate collections.

While any relief would be welcomed by the industry, a more fundamental change of approach is desirable. The question of integrated reporting and streamlined data flows has been on the table for many years;³⁰ various initiatives are eventually emerging in the European regulatory sphere in response to the call from the European Banking Federation to build an efficient reporting based on the principles: ‘define once’, ‘report once’.³¹ Thus, statistical regulatory requirements stemming from the ECB will be merged into a unique framework by 2027: the ‘Integrated Reporting Framework’;³² on the due diligence side, ESMA is setting up a ‘European Single Access Point’³³ which will act as a single location where all data relative

to capital markets or sustainable finance products will be available to investors by 2024; earlier, pursuant to Article 430c of the CRR, the EBA was mandated to analyse the feasibility of developing an ‘integrated system for collecting statistical data, resolution data and prudential data’. The feasibility study,³⁴ delivered in 2021, covered aspects such as the setting up of a common dictionary, granularity of the information, data governance and centralisation. It concluded with the feasibility and the necessity of implementing a common dictionary to achieve both syntactic and semantic integration, using a single metamodel and identical (or at least mapped) terms to define reporting requirements. The governance aspect will be addressed by the ‘Joint Banking Reporting Committee’ which will be established in 2024 and provide non-binding advice on incoming data requests.

While waiting for a truly integrated reporting framework, the ECB’s publicly available Banks’ Integrated Reporting Dictionary (BIRD)³⁵ could be used as a platform to describe securitisation requirements in a unique model and help banks reduce their burden. The BIRD consists of a redundancy-free input layer in which the data requirements necessary to generate the regulated output, be it in the form of traditional templates or granular information, are modelled in an ERM. It benefits from the know-how of the European System of Central Banks’ experts in terms of data and information modelling: entities (or tables) are logically organised in a normalised LDM in which relationships and business rules (cardinalities, etc) are graphically illustrated. Ontologies are defined in collaboration with market practitioners from the banking industry. Sound modelling principles, such as separation of concerns, use of explicit business language, clear legal references, definition of roles in relationships, apply. The semantic content is stored in a metadata model, the Single Data Dictionary (SDD).³⁶

Altogether, the securitisation requirements stemming from the different frameworks amount to a staggering number of around 4,800 data requests on ‘member’ level (ie allowed value for a given attribute). The first step is to represent the ‘boxes’ (the entities) and the ‘arrows’ (the relationships) of the securitisation ontology. Typically, entities would include, but not limited to, the following objects: the securitisation itself, the asset pool, the tranche, the loan, the debt security issue, the rating, the party, the collateral, the liquidity facility. Relationships between entities specify their nature and the cardinality of the source and target. For example, one loan belongs to zero, one or many asset pools, whereas one asset pool consists of many loans. Next, requirements are divided between ‘non-derivable’ and ‘derivable’. Thus, the attachment point of a tranche, essential to calculate the COREP risk weights, is derivable since it can be calculated from the amount and seniority level of the securitisation positions. In turn, the amount of a tranche in a simple traditional securitisation can be obtained from the corresponding ABS amount issued. The attachment point could therefore be obtained from the following input: a tranche entity containing the seniority level of the tranche and a debt security issue entity containing the issue amount and connecting to the tranche entity. In some cases, calculations require master data mapping; in particular, credit quality steps used in the risk weight calculations according to the external ratings-based approach are a function of the rating agency, the rating scale and grade, and the short-term assessment indicator. This step requires a deep understanding of the regulatory texts and of the underlying business cases.

Then comes the semantic integration across frameworks, that is, the merging of variables and members representing identical concepts, albeit under different terms and possibly different definitions but with identical meanings. An example is the ‘current

principal balance' in the ESMA underlying exposure templates, which has the same meaning as the 'transferred amount' in Ana-Credit. Whenever one-to-one mapping is not directly possible, it may be achieved through 'semantic decomposition'. For instance, the concept of delinquency defined in Article 260 of the CRR is broader than the concept of 'default' according to Article 178, since it also includes 'default in accordance with the securitisation documentation'. A redundancy-free model could therefore include 'Default status as per Article 178' and 'Default status according to the securitisation documentation' to derive the delinquency status. The semantic analysis of every single variable and member of a domain is a strenuous task, especially when definitions are unclear, incomplete or lack legal references. No doubt artificial intelligence and natural language processing are of great help to reduce the time normally required for human semantic analysis. Best practices of semantic integration are publicly available in the SDD used by the ECB statistics, in which EBA taxonomies, among others, are imported as 'non-reference' and translated into 'reference frameworks', using a set of common terms and codes. The dictionary is expanded to new data sets on a continuous basis and will contain the main securitisation frameworks by the end of 2023.

Once this step is completed, attributes are assigned to entities depending on the level on which the information is required. If attributes or relationships are not mandatory or relevant depending on the business case, it is an indication that further normalisation by subtyping entities is desirable. For example, synthetic securitisations behave differently from traditional securitisation: the balance sheet recognition to report in COREP will always be 'entirely derecognised' and the tranches relate to a credit protection instead of debt security issues. Likewise, re-securitisations (ie securitisations where the underlying

exposures are ABS), normally banned by the SECR except in limited circumstances, must follow the standardised approach of the securitisation framework and cannot qualify for preferential treatment or STS. Therefore, it may be judicious to create subtype entities representing 'synthetic securitisations', 'traditional securitisations' and 're-securitisations'.

The difficulty in modelling securitisation lies in the fact that, as previously stated, the information remains asymmetric depending on the role of the market participant. As an originator, risk parameters will normally be available on underlying exposure level, whereas investors will mostly have access to pool-level information. Therefore, some redundancy is inevitable in the model, but not in the information being fed: investors typically do not consider loan-level information in their decision making or capital requirements calculations. Another complication is that securitisation reporting implies to model exposures and positions which are outside the balance sheet. Indeed, underlying exposures in a placed traditional securitisation are in most cases derecognised, and in any case, capital requirement calculations are based on their risk weight, as if they had not been securitised. Full details of the transaction structure need to be made available to all market participants and modelled accordingly, such as credit protection provided by a third party on the securitisation, or bank accounts, including their purpose, held by the SSPE. The composition of each tranche of the securitisation, no matter whether it is held by the reporting entity or by another participant, needs to be represented in the model for capital requirements calculations and disclosure.

An analysis (performed by the author of this paper) of the requirements stemming from the ESMA and COREP templates shows that a total of 113 unique variables for COREP and 519 for ESMA, split into the following entities would be required

Table 1: Indicative number of attributes required in the COREP and ESMA securitisation frameworks, organised by entity

	<i>COREP</i>	<i>ESMA</i>
Account		5
Auto		10
Cashflow		6
Debt security	11	26
Liquidity facility	4	6
Underlying exposure	15	172
Party	4	61
Asset pool	7	
Protection	12	61
Rating	5	4
Real estate		42
Swap	3	11
Tranche	19	9
Securitisation	27	86
Trigger event		17
Total	113	519

in a common model. To integrate the requirements further with AnaCredit and EBA templates for non-performing loans transfers³⁷ which both collect loan-by-loan information according to an ERM, the new model would develop around the underlying instrument at the centre in lieu of the securitisation (Table 1).

The development of a common taxonomy could then be completed by innovative and interactive solutions, embedding analytical tools. Ideally, market participants and regulators would be able to extract the relevant data in the format suitable for their purpose, directly from a single access point.

CONCLUSION

The securitisation reporting framework is very symptomatic of regulatory reporting as

a whole: despite authorities repeatedly stating that they will streamline reporting, in line with the EU data strategy which claims to create a ‘single market of data’ in all areas of society, requirements continue to pile up on top of each other and to overlap. Changes are frequent but not always well thought out or coordinated, leading to additional consultations and more instability.

Compared to other areas, the fragmentation issues affecting securitisation reporting are exacerbated by the fact that structured finance is complex to understand and model. Requirements are still recent and suffer from inevitable ‘childhood diseases’. Moreover, the securitisation transactions carried out by market participants are by nature limited in number and highly specialised. Therefore, standard IT solutions available on the market often choose to exclude securitisation

frameworks from what they offer. The corresponding data is in turn poorly integrated to the main data flows and require additional manual interventions. However, banks have massively invested in data warehousing and reporting solutions, be it off-the-shelf or in-house, over the past decade. The knowledge gained from their implementation and the data sourcing to a common semantic layer will undoubtedly benefit newer and more complex frameworks such as securitisation.

Market implications are not only limited to high costs related to originators' data infrastructure. In general, the 'assessment premium' paid by the investors exerting their due diligence is considered too high to enter the market. From the authorities' point of view, the lack of integration and standardisation alters the comparability and overall quality of the data.

It may be tempting for the banking industry to associate granular data reporting with increased burden and to advocate for aggregated disclosures. In fact, granular data, when properly modelled, is key to reducing overhead and *ad hoc* demands, since it can serve multiple purposes in an unlimited number of permutations. It is therefore essential to put in place cross-sectoral governance, encompassing the different legs of regulatory reporting: capital markets, prudential and statistical. Only a joint structure given a broad mandate going beyond an advisory role would ensure the use of a common language and the elimination of overlaps, while data flows would be reduced by promoting data sharing.

AUTHOR'S NOTE

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