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Multiple usage of the ESCB 'Register of Institutions and Affiliates Database' (RIAD) – features and challenges

Introduction

Business registers in the domain of Statistics Offices or Central Banks are typically created and operated for the purpose of providing a frame of reporting agents that is needed to identify and address business units in the context of National Accounts or related (satellite) statistics.

Similarly, the 'Register of Institutions and Affiliates Database' (RIAD), a business register operated by the European Central Bank (ECB) and jointly managed by all members of the 'European System of Central Banks' (ESCB), serves the purpose of providing the frame for statistical reports on financial institutions in the EU and/or euro area. Due to the increasing demand for high quality reference data in business areas outside statistics, the original purpose of RIAD started to change. Today RIAD is about to function as a pivotal infrastructure that allows multiple groups of clients to jointly access and use commonly agreed reference data considered fit for various business purposes.

The paper starts with a brief overview about some salient features of RIAD. The second section describes the development from a 'pure statistical' to a 'multiple purposes' database. The involvement of several stakeholders requires a joint management of reference data and, specifically, ways of processing multiple sources, which is explained in the third section. As illustrated in the fourth section, all these features require a comprehensive 'governance' concept that sets out the rules on how a database like RIAD could be jointly managed. This is complemented by a section explaining the current operational framework at the European level, which consists of the 'RIAD Hub Network' (RHN) and formal agreements and legal procedures. Some general conclusions are presented at the end of the paper.

[1] The views expressed are those of the authors and do not necessarily reflect those of the ECB.

RIAD in short

The structure of the RIAD data model follows the internationally recommended design of business registers[2] and comprises a comprehensive set of attributes describing organisational units and their relationships.

Due to its original design as a statistical register, the units recorded in RIAD follow the SNA[3] definition of 'institutional units', which may on the one hand represent legal units (e.g. registered credit institutions) and on the other hand unincorporated entities (like non-resident branches or investment funds etc.). Against the standard definition of 'statistical units', entities in the corporate (non-financial) sector thus represent 'enterprises'. (While the latter typically consists of a single legal unit, the data model also allows creating 'enterprises' on basis of more than one legal unit).

RIAD provides full historisation for all recorded attributes and is equipped with an elaborate confidentiality/access mechanism to control its usage in batch and online mode. Currently more than 500 users from all National Central Banks (NCBs) in the EU can access RIAD. Recently also National Supervisory Authorities (National Competent Authorities - NCAs) of countries participating in the 'Single Supervisory Mechanism' (SSM) can connect to the system.

By September 2016 RIAD was hosting reference data for around 380,000 (financial) organisational units (identifying among them 5,600 group structures) that are relevant for ESCB's statistical departments as well as other business areas, predominantly banking supervision and market operations.

From statistical to multiple business purposes

Operated by the ECB the RIAD system started as a pure 'statistical' tool, supporting a specific purpose, namely to maintain and regularly publish

- the list of 'Monetary Financial Institutions'(MFIs)[4] in the euro area (and the entire EU respectively).

This mission was steadily expanded to other euro area (or EU) financial institutions and today also encompasses (the publication of)

- the list of Investments Funds (IFs),
- the list of Financial Vehicle Corporations (FVCs), engaged in securitization,
- the list of Post Offices and Giro Institutions (POGIs)
- the list of Payment Statistics Relevant Institutions (PSRIs) and

[2] 'Business registers – Recommendations manual', Eurostat, 2010.

[3] System of National Accounts

[4] MFIs comprise 'Central banks' (ESA sector S.121), 'credit institutions' and 'other deposit-taking corporations '(S.122) and 'Money market funds' (S.123).

- the list of Insurance Corporations (ICs).

The frequency of publication of these lists ranges from daily (MFIs) and quarterly (IFs, FVCs and ICs) to annual (POGIs, PSRIs), covering the lion share of institutional units classified in the ESA financial sector.[5]

The main goal for the provision of these lists is to ensure that the statistical reporting population in various financial (sub) sectors is complete and homogeneously defined. According to its original mission, the main users as well as data providers and data quality managers of RIAD are statisticians in the ESCB institutions. This is mirrored by the fact that the legal framework around RIAD consists of ECB Regulations and Guidelines in the area of statistics.[6]

The fact that RIAD provides a full list of statistical reporting agents is also utilized in a special 'non-compliance' module which allows the recording of infringements of reporting obligations laid down in the respective Regulations.

Also in recent times **Statistics** is the main driver for expanding the coverage of RIAD. The demand for integrated statistics across countries and markets has steadily increased and consequently more and more statistical micro data collection systems make use of the reference data from RIAD to describe the counterparties of interest. Prominent examples for this trend are the 'Money Market Survey'[7] and the (forthcoming) data collection on lenders and borrowers behind loans or on the issuer and holders of securities[8].

On the other hand, the concept of data compilation on basis of micro data has during the last years spread over many business areas inside the ECB and the NCBs – beyond the typical production of statistics. Consequently, a strong demand for reference data describing various types of business units can be observed (although for many of these cases a link to classical 'statistical' purposes exists). The landscape of stakeholders and business cases has consequently been steadily enlarging (figure 1).

For example, RIAD is already highly integrated in various work streams of the '**Market Operations**' area, mainly to assist in the unique identification of counterparties in the area of liquidity and collateral management. In this context, a special module has been implemented in RIAD that allows to scan the - partially very comprehensive and complicated – networks of (financial) conglomerates in order to identify specific connections between issuers and holders of assets acknowledged as collateral in monetary policy operations (so-called 'close links'[9]).

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5 In fact, RIAD is for several financial sectors representing the complete register of the euro area. Sections for continuous completion are in particular Holdings/Headquarters (in S.128), Other Financial Institutions (S.125) and Financial Auxiliaries (S.126).

6 A summary of reporting requirements for RIAD can be found in the Guideline ECB/2014/15.

7 Regulation of the ECB concerning statistics on the money markets (ECB/2014/48).

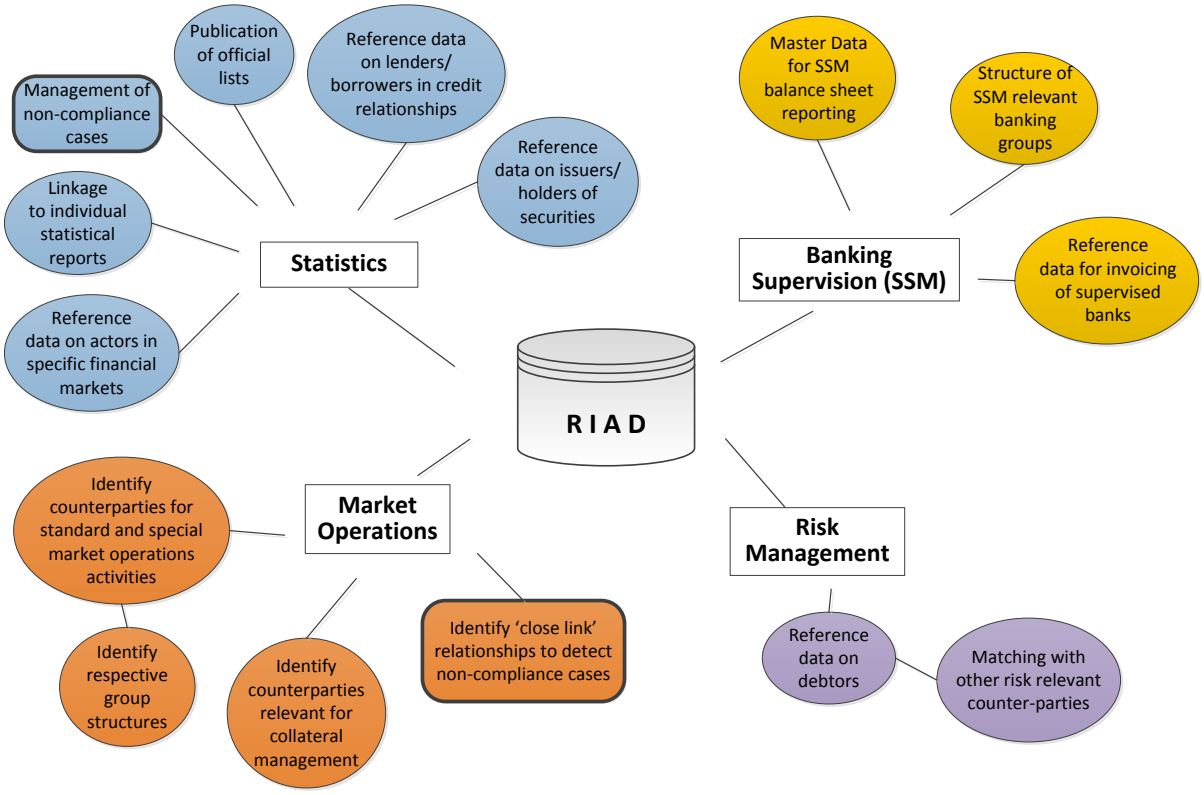
8 Regulation of the ECB on the collection of granular credit and credit risk data (ECB/2016/13) AnaCredit and Regulation (EU) No 1011/2012 of the ECB concerning statistics on holdings of securities.

9 Please see the definition of closely linked entities in the Guideline ECB/2015/510 (Article 138).

Similarly, the area of **Risk Analyses and Management** is more and more using reference data managed and stored in RIAD to match various counterparties which may, directly or indirectly, generate various types of risks for the Eurosystem (e.g. debtors behind non-marketable instruments).

The most recently identified 'client' of RIAD is the area of **Banking Supervision**, most prominently because of the central role that the ECB has been assigned in the Single Supervisory Mechanism (SSM) since November 2014. The (potential) usage of RIAD here ranges from storing and disseminating reference data on supervised institutions (e.g. the metadata on Supervisory Reporting requirements[10]), their group structures or the information needed for invoicing the supervisory fees to the financial industry. In this context the access to RIAD was broadened beyond the ESCB and today also allows all National Supervisors of countries participating in the SSM to interact with and contribute to the system.

Figure 1: Stakeholders and business cases



[10] See EBA 'Implementing Technical Standards Amending Commission Implementing Regulation (EU) No 680/2014 on Supervisory Reporting of institutions'.

Joint management of reference data

The benefits of a joint harmonized pool of reference data across different areas are quite apparent. Most prominently, such an approach avoids operating parallel infrastructures in different business areas and offers harmonized views on ESCB relevant counterparties for all processes that depend on reference data.

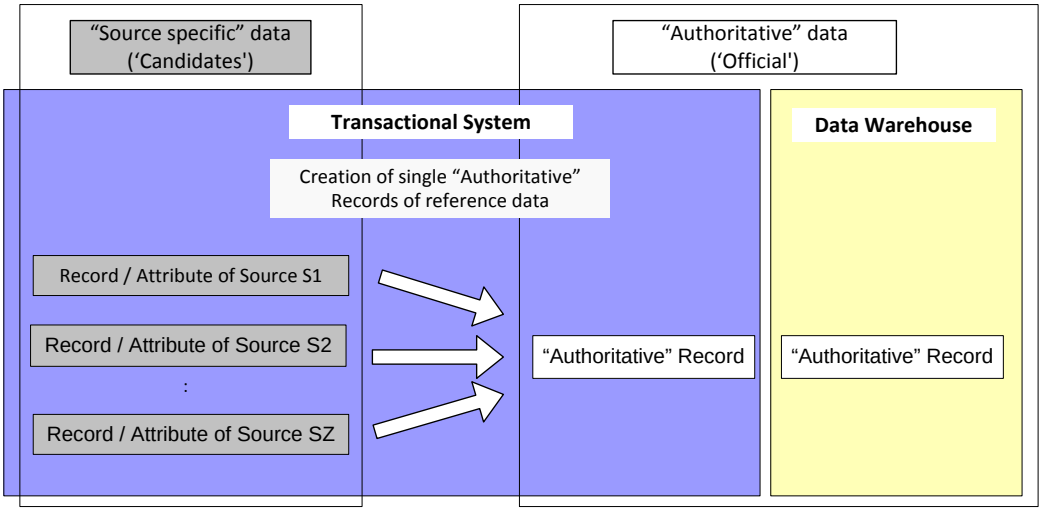
Another positive side effect of the cooperation of different business areas in the field of reference data is that the increase of number of different stakeholders more or less automatically broadens the scope of RIAD:

- More and more counterparties are being registered (thereby closing gaps in the sectoral and geographical coverage).
- More business specific relationships and intrinsic features are recorded and maintained in the register.
- Most noticeable, the number of identifiers (or identifier types respectively) in the database increases, which subsequently further enhances the options to connect to new sources.

The increase in the number and types of stakeholders, their simultaneous role as contributors and users, is on the other hand also the biggest challenge. While from its incept only statisticians were filling these roles, RIAD is now more and more maintained and accessed by actors across business areas.

The basic design principle of RIAD is to construct the optimal 'authoritative' view of reference data out of multiple sources, referred to as 'candidates'. As illustrated in figure 2, the latter are only recorded in the so-called 'Transactional System' which is solely accessible to data quality managers. The end-users only see the clean 'authoritative' data (inside a dedicated data warehouse).

Figure 2: Derivation of 'authoritative reference data



In such a set-up the likelihood of (seemingly) inconsistent or even contradictory views of the same 'real world' phenomenon increases. On the one hand, this may be due to what could be called 'technical' discrepancies, e.g. different sources may not have the same level of information at the same point in time. On the other hand, it could also be caused by the fact that stakeholders apply different definitions (filters) on the same real world phenomenon.

In the current technical set-up the following principles or system functionalities for the management of multiple sources apply:

- Reference data are only obtained from (one or more) ***national*** sources.
- Only the data quality managers of a specific NCB decide on features of entities resident in their country **(**host principle). An exception exists in bilateral cross-border relationships, where both sources (countries) can contribute. In case two values are provided, both NCBs need to agree.
- The decision on which source is determining the final 'authoritative' view can be calibrated by the NCB. This mechanism works on the level of a single attribute.
- The system also allows assigning specific 'application roles' that determine which set of attributes an individual user can access and change. This ensures that the attributes that explicitly fall under the responsibility of a specific business area cannot (erroneously) be changed by other users.

In the future these principles and functionalities will be enhanced:

- Also information from ***non-resident*** sources can be included in the generation of the 'authoritative' view (however always under the control of the 'resident' NCB).
- To avoid the recording (and proliferation) of 'duplicate' records (e.g. provided by a resident and a non-resident source) a special identification/matching functionality will be implemented.
- For conglomerates the country in which the group head is located is expected to add any specific information on the group structure that may (first of all) be available to quality managers in this country (home principle).

Towards a comprehensive "Governance" of a jointly managed RIAD

In order to optimize the final result generated in the 'multi-source' & 'multi-user' set-up described above, all stakeholders of RIAD need to sign-up to a governance framework defining "who-does-what". Only such jointly agreed governance guarantees that the process of the sourcing and data quality management is indeed fit for various business needs.

Box: **Tasks or responsibilities of stakeholders interacting with RIAD**

(i) **Data sourcing**: Identifying and accessing the most relevant sources of information; this may imply the use of more than one data source and thus includes their possible combination so as to get to the most accurate view possible; furthermore, it entails the control of any legal issues concerning access and usage of the data.

(ii) **Selection and authorisation**:

Identifying ***specific (sub-) populations*** of entities (e.g. supervisory relevant institutions) and allocating responsibility to the respective stakeholders in charge.

Selection of ***specific attributes***, which are relevant in the context of a (sub-) population.

Formal ***authorisation,*** i.e. the legally binding confirmation of characteristics of an entity.

(iii) **Data Quality Management**: implies the regular checking and updating of data, including the monitoring of all relevant cross-consistencies inside an entity and/or against other entities (including the automated and timely checking of aspects such as data format, compliance with code lists, etc.)

(iv) **Access management (publication)**: Management of confidentiality regime, including the conditions under which information is shared with end-users and/or the public.

The tasks or responsibilities of a joint governance structure (the "what") are summarised in the box above. The more sensitive aspect is to assign them to specific stakeholder groups (the "who"). The key element is to discriminate between areas which fall either into *specific* or *joint responsibilities of stakeholders*. While the first can be managed by mapping specific user privileges to specific attributes (see above) the second is less straightforward. In substance it means that each stakeholder always considers if an intervention (e.g. a change in an attribute value) could have an (unwanted) side effect on the business process of another stakeholder.

- *For instance, it needs to be avoided that a new entity created by one business area holds features that are of (critical) relevance to another business area (say, users from Market Operations would create a new entity resident in the euro area and classify it as an MFI, a sector that is per definition under the control of Statistics).*

- *Another example would be that Statisticians are recording the closure of an entity (due to a merger or absorption), which is not officially recognized by the Banking Supervision authorities.*

Another pivotal pre-requisite for formulating such a joint governance framework is the full transparency on two aspects:

1. The ultimate information goals materializing in different definitions and concepts (including their comparability) used by various stakeholders. This can be illustrated by the following examples:
   - *For credit institutions, in principle, a common definition in the EU exists[11]; on this basis, however, different concrete ways for the identification of entities engaged in banking activities exist.[12] Consequently RIAD for instance allows retrieving a list of "Monetary Financial Institutions" (based on the statistical definitions of the European System of Accounts) and in parallel a list of "supervised institutions"[13].*
   - *In order to identify the parent of an entity one straightforward way is to pinpoint all entities that 'own (a specific) share of capital' or 'control' the entity by other means[14]. An alternative supervisory relevant definition restricts the filter on owning/controlling units to supervised entities, leading to a seemingly inconsistent view on a parent of an entity.*
   - *The different interests from a banking supervision and monetary policy perspectives can also be illustrated on mixed conglomerates, e.g. with a non-financial group head and various financial subsidiaries in different countries. For SSM purposes only the (local) truncated group parts with supervised (financial) entities on top are of relevance. From the perspective of collateral management, however, connections between credit institutions via a non-financial head quarter are of significant importance.*
2. The underlying business processes and their constraints (e.g. with respect to frequency or timeliness). Examples would be:
   - *Within a framework of autonomy of data providing sources the update of lists of MFIs is based on the a-jour recording of changes reported by statistical departments of NCBs. This is mirrored by an automated same-day publication of the respective changes. Inversely, as soon as the respective entities are recognized as supervisory relevant, the collection of data via NCAs and the subsequent publication within the SSM is subject to a chain of conformation and approval steps within a centralized SSM structure.*

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[11] See Article 4(1)(1) of Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms.

[12] See, for instance, the EBA Opinion on the perimeter of credit institutions, 27 November 2014.

[13] The list of supervisory relevant 'credit institutions' (and 'financial holdings') is defined in Capital Requirements Regulation (EU) No 575/2013 and Capital Requirements Directive 2013/36/EU.

[14] See, for instance, the definition of 'control' in Article 1 and 2 of the Seventh Council Directive on consolidated accounts (83/349/EEC).

- *For credit institutions any new information needs to be updated in RIAD as soon as it is known (e.g. corporate events or when granting or withdrawing a banking license). For other institutions, the minimum required frequency depends on the related statistics (e.g. quarterly for Insurance Corporations, Investment Funds or Financial Vehicle Corporations).*

The role of the 'RIAD Hub Network' (RHN) and formal agreements

An important step towards the introduction of a joint governance framework was the decision to set-up a network of 'local hubs' complemented by a dedicated RIAD team at the ECB. The first ensures the coordination of updates and overall consistency regarding the sourcing and management of reference data provided by various sources and user groups within a country. The latter functions as 'hub of hubs', in particular as clearing point for methodological and technical questions around RIAD. Furthermore, the team at the ECB is in charge of any data quality aspects related to entities resident outside the EU.

It was the responsibility of each ESCB (and SSM) institution to nominate for each hub staff members in charge that ensure coordination with other internal stakeholders and with all other concerned institutions (within and outside the ESCB and SSM). This list is shared among all interested parties across the ESCB/SSM so that the relevant information can efficiently circulate and allows, where appropriate, liaising among experts to check or update relevant data.

While the data provision, management and access within RIAD is designed along the needs of individual business areas (or related IT systems respectively), the community of stakeholders is represented by different ESCB/SSM committees, working groups or other organisational structures. The governance framework therefore requires a structured cooperation among those constructions.

- This can be laid down in formal agreements between stakeholders. These are bilateral operational level agreements between an ESCB committee and the Statistics Committee, which, in the case of RIAD, represents the 'system owner' (i.e. the stakeholder that is ultimately in charge of the operation and development of the RIAD system).

  In substance, such an agreement defines the field of sole responsibility of a business area (e.g. a set of specific attributes or entities only related to that stakeholder) and the rules for managing attributes for which joint DQM activities are envisaged (e.g. ownership relations).[15]

- More prominent or significant is if the obligations and privileges of stakeholders materialise in legal acts, such as Regulations or Guidelines. The first type of instruments is directly addressed to specific economic actors in the euro area, while the second is at least binding for the members of the Eurosystem. Any changes of the roles and tasks of stakeholders may therefore require the update or even creation of new legal acts.

[15] This is in turn mirrored in the parametrisation for compounding the 'authoritative' view of reference data (see above).

An ECB Guideline[16] typically defines mandatory input requirements and DQM standards. This includes a classification of attributes as ‘mandatory’, ‘important’ or ‘encouraged’, the frequency and timeliness of data provision and (minimum) quality standards.

DG Statistics, the ECB business area in charge of operating RIAD, is currently working on an update of existing and definition of new bilateral agreements. Furthermore, a new RIAD Guideline is in preparation, which aims at combining (or at least content-wise aligning) any existing legal acts in the ESCB that deal with the collection and managing of reference data on business units. Most likely this will need to be accompanied by a parallel Guideline addressed to members of the SSM.

Conclusion

The management of a register for multiple purposes is characterised by the fact that stakeholders from different business areas simultaneously act as source, quality managers and end-users. As described this has many advantages but also challenges.

This is, however, only sustainable if all parties agree on a clear ‘governance framework’. A pivotal pre-requisite for that is, firstly, a full transparency on the information goals of a stakeholder group, which materialises in definitions and concepts applied. Secondly, the underlying business processes and their constraints (e.g. with respect to frequency or timeliness) need to be known.

While the positive experiences around the steady changes of the business purpose of RIAD only relate to processes inside and among the National Central Banks, this should also encourage strengthening the cooperation between National Central Banks, National Supervisory Authorities and National Statistical Offices.

In this context it is worth noting that also on the EU level new demands are emerging that call for synchronising the compilation and usage of reference data[17]. Furthermore, high quality and jointly accessible reference data are inevitable for the success of political initiatives in the EU such as the ´Single Supervisory Mechanism´ (SSM), the ‘European Systemic Risk Board’ (ESRB), the ‘Single Resolution Board’ (SRB) or the plan for a ’Capital Markets Union’ as well as the Commission’s support of the ‘Single Market Integration‘ etc.

To pick one detail: The multiple usages of register data clearly illustrate that the approach to classify reference data as ‘statistical’ and subsequently hamper its usage in so-called ‘non-statistical’ processes does not appear sustainable in the future. Instead, the European project requires that attributes like the industry classification (NACE code) or size class will be managed jointly among competent stakeholders and treated as freely accessible data in the “open domain”. Only a multipurpose usage of this type of reference data will ensure the cost effective provision of consistent statistics.

16 See for instance footnote 4.

17 See initiatives such as the ‘EU Transparency for Listed Companies’, the ‘Business Registers Interconnection System’ (BRIS) or the ‘European System of Business Register’ (ESRB) project.