

# Cooperation to improve European and national securities statistics

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## Introduction

Worldwide developments, such as globalisation, financial innovation and dynamic changes in the structures and reaction patterns of the markets have led to a higher demand for more detailed, timely, and harmonised securities statistics that make it easier for users and policymakers to respond quickly to, or even anticipate, financial market developments or strains.

These requirements may increasingly be met by moving gradually to innovative statistical compilation systems, involving the collection of highly granular data at individual security or loan level. The underlying idea is that such data can be arranged and aggregated by the statistical compilers themselves in a highly flexible fashion, rather than relying on preclassified and preaggregated “blocks” of reported information that may only be changed once in a while, with high implementation costs and a rather long implementation lag. Modern IT systems and programmes are sufficiently capable of providing the strong technical support needed for handling and processing huge amounts of micro data.

## Security-by-security collection systems

Securities statistics are particularly suited to this approach as (i) the majority of securities have a unique identifier<sup>2</sup> and (ii) as many of the analytically relevant classifications of securities and issuers may be obtained from commercial sources.<sup>3</sup> They can be consolidated, appropriately complemented with additional internal source data, in a reference securities database. As a result, only very basic data are required from the reporting agents, including the identifiers and amounts of each individual security, which are then matched by the compiler with the reference database to produce statistics.

Security-by-security collection systems in combination with a securities reference database offer several advantages, providing a strong business case:

- *Flexibility/more detail:* Input data granularity, in combination with a comprehensive reference database, allows in principle the flexible compilation of very detailed statistics for many different purposes and user groups at rather short notice (“time-to-market”).
- *Higher data quality:* Security and issuer features are usually no longer provided by reporters who are less familiar with statistical concepts, such as SNA93, but are now under close control of statistical experts who are able to regularly monitor the quality of the reference database.

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<sup>2</sup> ISIN, CUSIP, SEDOL codes etc.

<sup>3</sup> Holder information is more difficult to come by and has to be derived largely from institutional and official sources.

- *Consistency (across individual data and statistical domains):* In using the same reference database, the classifications of securities and issuers (and, in future, maybe even holders) are consistent across several individual reports and statistical domains.
- *Reduction of the response burden:* Under the concept of security-by-security reporting, it is no longer necessary, in principle,<sup>4</sup> for data to be classified and aggregated, thus reducing the statistical costs for the reporting agents significantly. The flexibility of security-by-security systems (see above) also leads to a stabilisation of statistical requirements over time. In addition, data may be used for multiple purposes. This reflects well the political commitment at EU level, and also in Germany, to reduce the administrative burden.

It is against this background that the European System of Central Banks (ESCB) has taken the strategic approach to move gradually from aggregated to security-by-security based securities statistics. In doing so, the aggregated securities statistics need to be transformed, in a phased and coordinated fashion in the coming years, into security-by-security compilation systems.<sup>5</sup> This move has already been started. It is strongly supported by the development of a single securities reference database within the ESCB, which is described in the following chapter.

### **The role of the ESCB Centralised Securities Database**

The development of a single reference securities database in the ESCB – the Centralised Securities Database (CSDB) – is the cornerstone of the transition to security-by-security based securities statistics in Europe. Therefore, the project has the highest strategic priority for the ESCB.

The CSDB aims to cover all debt securities (including those with a hybrid structure), shares and mutual fund shares issued or held by euro area residents, as well as all instruments denominated in euro. It currently contains around 4 million individual securities, for which the aim is to store up to around 300 attributes related to the instruments and the issuers; holder information may be added at a later development stage. It is currently sourced by five commercial data providers, 14 EU central banks (NCBs) and internal sources of the European Central Bank (ECB), such as the Financial Markets Database.<sup>6</sup>

Yet the CSDB may not only be seen as the “catalyst” for the euro area wide transition to security-by-security based collection systems but it is also considered superior to local securities reference database solutions once the initial technical and organisational challenges involved with the setup of a system of such complexity have been successfully tackled:

- *Higher coverage and data quality:* The CSDB consolidates micro data from both ESCB-internal and commercial sources for the common use, thus leading to a higher coverage of instruments and attributes, in particular regarding non-resident issues. Furthermore, data quality management work is shared in a network on the basis of comparative advantages.<sup>7</sup>

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<sup>4</sup> To the extent that the relevant information is available in the reference securities database.

<sup>5</sup> See also the last chapter “Current situation and outlook”.

<sup>6</sup> More information regarding the CSDB is shown in the contribution to this IFC Workshop “The CSDB project of the ESCB” by Frank Mayerlen, ECB.

<sup>7</sup> Table 1 shows the division of labour.

- *Efficiency*: The common sourcing and quality monitoring provides also for efficiency gains. In addition, the CSDB may obviate the need to update similar databases at national level unless they are needed as a source or for data quality monitoring.
- *Consistency (cross-border)*: The CSDB will ensure a consistent classification of the security and issuer features throughout the euro area,<sup>8</sup> thereby further increasing the degree of harmonisation of euro area statistics.

The CSDB is a pioneer project in many respects. It is unique in terms of its technical setup, in particular the flexible data model in the new (“Phase 2”) system, the large volume of data stored and processed as well as its complex algorithms for the selection of the best<sup>9</sup> out of several “candidate sources”. It is also new in the world of statistics. The CSDB project is the first cooperative project within and even beyond the ESCB statistical function, involving the need to establish, and further develop on an ongoing basis, sound operational business procedures.<sup>10</sup>

### **Governance structure and operational framework**

A certain minimum governance structure is needed in running a supranational securities database of such ambition and complexity. Common agreements are needed on the scope and financial budget of the project; the technical framework, its maintenance and development; as well as on methodological issues. Furthermore, arrangements have to be put in place for the development and regular review of the operational framework and the business procedures (including the tasks, processes and quality benchmarks for the database and the statistics produced on this basis) as well as for the sharing of financial, human and IT resources. In addition, legal clarity is needed as to the possibility of exchanging confidential data and the terms of usage of commercial source data. The former aspect is addressed in Europe by supranational statutes and guidelines. The same goes for many of the arrangements set out above, in particular the mutual financing of the CSDB project by the ECB and the 15 central banks of the euro area.

Table 1 shows that while the application is technically maintained and developed by the ECB, the CSDB has been an ESCB project from its inception, reflecting the participation of NCBs in the definition of the timetable, budget, organisational framework, shared tasks, processes and quality benchmarks of the database, as well as in its financing, sourcing and quality monitoring. The latter two tasks are also supported by the Bank for International Settlements (BIS), which has been actively involved in the development of the CSDB from the beginning. This requires a close coordination at different levels: within the CSDB Network;<sup>11</sup> between the ECB and external counterparts, such as system developer and commercial data providers; between statistical and IT experts; between different statistical domains and between experts and managers.

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<sup>8</sup> The EU countries outside the euro area may also use the CSDB.

<sup>9</sup> The so-called “golden copy”.

<sup>10</sup> These procedures need to be adapted as and when new statistics, which may require different data as well as specific methodological, technical and operational solutions, are produced with the support of the CSDB.

<sup>11</sup> The CSDB Network consists of the European System of Central Banks and the BIS. In addition, two statistical offices are associated. For the responsibilities of the different network members, see Table 1.

Table 1  
**Stylised roles of CSDB Network members**

CSDB-related task	Owner				
	ECB	Euro area NCBs	Remain- ing EU NCBs	BIS	Two statistical offices <sup>1</sup>
Definition & decision of/on scope, timetable, budget, organisational framework, shared tasks, processes and benchmarks					
Project ownership <sup>2</sup>					
Financing of the CSDB project					
Technical development and maintenance <sup>3</sup>					
Gradual transition to security-by-security systems and compilation of statistics with the CSDB <sup>4</sup>					
Business coordination <sup>5</sup>					
IT coordination <sup>6</sup>					
Sourcing <sup>7</sup>					
Data quality management <sup>8</sup>					

<sup>1</sup> Ireland's Central Statistics Office (CSO) and the UK's Office for National Statistics (ONS). <sup>2</sup> System owner of the CSDB is the ESCB Statistics Committee. <sup>3</sup> The development work has been largely outsourced to an external system provider. <sup>4</sup> While the EU NCBs outside the euro area are not yet required to move to security-by-security systems, many of them have already initiated this process. <sup>5</sup> This is the task of the CSDB Business Coordination Group (CSDB BCG). More specifically, it develops proposals for the definition and regular adaptation of the organisational framework and the related business procedures, including the shared tasks, processes and quality benchmarks to ensure the necessary data quality for statistical production. It is currently chaired by the Deutsche Bundesbank. <sup>6</sup> While the external system provider and the ECB are responsible for the IT-related development and maintenance work of the CSDB, some ESCB-wide coordination takes place at IT level (eg regarding the connection of NCBs to the CSDB, the data model of the CSDB system and the data transmission within the ESCB). <sup>7</sup> Commercial data are procured by the ECB who keeps the contact to the data vendors. Additional internal data are provided by the ECB, NCBs and the BIS. <sup>8</sup> NCBs: Issues by resident entities. ECB, BIS: Issues by entities located outside the EU.

## Current situation and outlook

### ***Gradual change to security-by-security based securities statistics:***

The first statistics to be produced euro area widely on the basis of security-by-security systems and the CSDB will be external statistics and statistics on investment funds. The current work by the CSDB Network is strictly prioritised to achieve this goal in early 2009. More and more statistics are expected to follow later in order to reap the benefits of security-by-security systems in combination with the CSDB over time. However, no clear indicative timetable has been defined so far. The tentative order of priorities is: (i) external statistics, (ii) statistics on investment funds, (iii) statistics on financial vehicle corporations, (iv) securities issues statistics, (v) financial accounts, (vi) government finance statistics, and (vii) MFI balance sheet statistics and other statistics.

### ***The situation at the Deutsche Bundesbank:***

Given the strategic benefits involved with security-by-security based systems and the CSDB, the Bundesbank is strongly committed to supporting this process. It is, as some other euro area NCBs, somewhat ahead of these developments and already uses the CSDB. Three different types of statistics are collected on security-by-security based systems: external transactions in securities (since 2002), securities issues statistics (since its inception) and securities deposits statistics (since 2006). The ***securities deposits statistics*** are of particular strategic relevance as they involve a security-by-security compilation of holder information for debt securities and (mutual fund) shares. While the MFI holdings are directly reported, holder data related to the non-MFI sectors are based on information provided by German custodians. The latter data are reported in partial aggregates by non-MFI holder sector and country.<sup>12</sup> The processing of around 300,000 securities involves a first grouping by ISIN number before further aggregations are made on the basis of CSDB extracts, which are used for the instrument and issuer information. The securities deposits statistics are legally based on two ECB Guidelines relating to external statistics and financial sector accounts and national implementation law<sup>13</sup>. Monetary, economic and financial stability analyses and the compilation of a broad range of statistics is supported, including the international investment position, the financial accounts, the Coordination Portfolio Investment Survey of the IMF and government finance statistics. While the classification of ***security-by-security data on external transactions in securities*** is currently been made with a local reference database, it is planned to use the CSDB quite soon. The ***securities issues statistics*** are based, as far as debt securities are concerned, on direct data collection involving MFIs in their capacity as issuer or underwriter; these statistics are an important source for the CSDB. A harmonised euro area concept for ***investment funds statistics is being implemented***. It will involve the collection of security-by-security data on securities holdings and mutual fund shares issued, which are expected to facilitate very detailed analysis on the portfolios of different fund categories, including hedge funds. It will become available from early 2009 and will be produced on the basis of the CSDB.

### ***Current situation of the CSDB and immediate next steps:***

The CSDB has been in production since 2005 and is already used by some NCBs. It is expected to start supporting the statistical production processes euro area broadly from early 2009 (see above). The current CSDB system is being enhanced (new Phase 2 A system) with a view to connecting all ESCB NCBs to the system, introducing an enhanced online data quality management interface and implementing a new flexible data model that is capable of coping with financial innovation. It is expected that the tasks by the CSDB Network, above all data quality management work, will be further defined after the successful completion of this phase, which is scheduled to be concluded by around mid-2008. Also, a new procurement round will be launched to further optimise the mix of commercial sources and enhance the data quality ("Data Source Management"). Further development steps, including the integration of holder attributes, may be considered in the medium to longer term.

### ***The future: International collaboration on security-by-security databases?***

After the successful completion of Phase 2 and a subsequent evaluation and stabilisation period, in which the technical infrastructure and data quality of the CSDB have stabilised, as well as the business processes in the CSDB Network, it should be technically feasible to link

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<sup>12</sup> Holdings with foreign custodians are not covered for the non-MFI sectors.

<sup>13</sup> National implementation law is the general term for section 18 of the Bundesbank Act (being the national legal basis for the compilation of statistics) in combination with specific rulings ("Anordnungen") for each single statistics.

or connect additional partners to the network. In technical terms, this may be done by either linking/connecting regional/local security-by-security databases and the CSDB or by simply exchanging database extracts between the different owners of regional and local SDBs. The members of such a global network may also work under a joint data quality management framework to maximise the quality of data in areas that are currently not so much in the business focus of the different SDBs.<sup>14</sup> The sharing of data, expertise and costs would result in positive network externalities on a retrospective basis (a “win-win situation”). The cost efficiency of a global SDB or a network of regional SDBs is understood to increase with the number of connected partners.

However, several technical, legal and financial issues would first need to be addressed. Sound operational procedures and the terms of cooperation would also need to be defined, eg possible sharing arrangements in IT, human and financial resources. After an initial period in which the CSDB system and the business procedures in the CSDB Network have stabilised and been adapted to accommodate additional data and network members (as a precondition for further cooperation), the technical and operational implications of the relevant cooperation option, which are expected to be rather complex, would have to be addressed in detail first. As far as legal issues are concerned, some of the data stored in the CSDB are not publicly available and therefore subject to protective confidentiality provisions. While such data may be exchanged by statistical experts within the ESCB,<sup>15</sup> the use of this information by other institutions may not be permitted by law. The proportion of confidential data in the CSDB is rather small, though. And the IT-related implications might not be significant as technical procedures are already in place that manage the access to confidential data according to the assigned CSDB user profiles. However, similar confidentiality restrictions may also apply to data owned by the new network members. In financial terms, the overall costs of the global cooperation would need to be established and weighted against the merits mentioned in the previous paragraph. Apart from the IT-related expenses and coordination costs, the extension of the CSDB users would require an adaptation of the contracts with the commercial data providers and additional licences for the use of the CSDB portal and its different software packages. Similar considerations may apply to other SDBs sourced by commercial data.

The Working Group on Securities Databases (WGSD),<sup>16</sup> which was reconvened by the IMF in response to CSDB developments and recommendations by G8 and the CGFS, may discuss further the options for a creation of a global (network on) securities database(s) once the preconditions summarised above have been met, above all the stabilisation of the CSDB and the related business procedures. As a first step, the Group will develop best practices and guidelines for securities databases and statistics. The envisaged Compilation Guide for Securities Statistics will address the key methodological issues identified at this IFC workshop. The Guide will be consistent with international statistical standards but more operational. Some parts will be devoted to security-by-security reporting. The participation of (some) Central Banks in the WGSD is seen as very useful in this respect to take practical compilation issues into account.

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<sup>14</sup> Each network member is considered to have best knowledge on the respective domestic market.

<sup>15</sup> This is enshrined in supranational EU legislation, which is intended to be even more aligned to this purpose.

<sup>16</sup> Senior statisticians from the BIS, ECB, IMF, World Bank and some Central Banks participate in the Group.