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**Centralised Securities Database (CSDB)**

**Prepared by the European Central Bank**



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## **CENTRALISED SECURITIES DATABASE (CSDB)**

### **Report on the state-of-play for the information of the IMF Balance of Payments Committee**

*Phase 1 of the Centralised Securities Database (CSDB) project, the development of which was approved by the ECB Governing Council in June 2002, has been completed in early May 2005 with the launch of the database in production, and its initial data loading.*

Securities represent a large class of financial instruments in the euro area financial system. The ECB ensures that the statistics needed for the execution of its tasks, are reliable and accurate; this is a challenging task in the field of securities issues and holdings statistics as business evolves fast.

Experience has shown that an efficient way to ensure a correct statistical treatment of securities is to set-up a reference database of those securities, which euro area residents are issuing or which they are likely to hold or transact in. In 1999 the ECB decided to launch a project to build up the CSDB, holding unique reference data for financial instruments in order to ensure a consistent picture, and cost-effective data reporting and compiling procedures across euro area, or even European Union (EU), member countries.

The CSDB is bound to use commercial sources for efficiency reasons. However, such sources have proven to be of uneven quality, with significant gaps in domains that are important for the statistical classification of holders/transactors, such as the residency, or institutional sectors (banks, insurance companies, government, non-financial corporations, etc.), or the valuation of instruments. Hence, the system needs to assemble data about individual securities from various sources, and to identify the most reliable information to be stored in the centralised database.

As a consequence, the business case for a CSDB is basically twofold: (i) basic data will directly be extracted to compile the euro area aggregate, such as for securities issues statistics; (ii) the CSDB is a pivotal tool to check, compile and value statistical information received from reporting agents on a security-by-security (s-b-s) basis. In addition, such a reference database will also be a valuable tool where respondents report their securities transactions and positions in an aggregate manner. In a nutshell, s-b-s reporting implies a much higher degree of flexibility and a better adaptation to new requirements. Thus, s-b-s systems may provide supplementary statistical breakdowns for analytical or other purposes without increasing the burden on respondents. By way of example, additional statistics may be produced on the basis of variables that are not covered by the current statistical standards, but for which a (high) user requirement exists: remaining maturity, currency breakdown, further splits by instruments (e.g. money market funds) or by sectors, cross-classifications by instruments and sectors, etc. The marginal cost of additional breakdowns is certainly much lower than in the case of aggregate reporting systems.

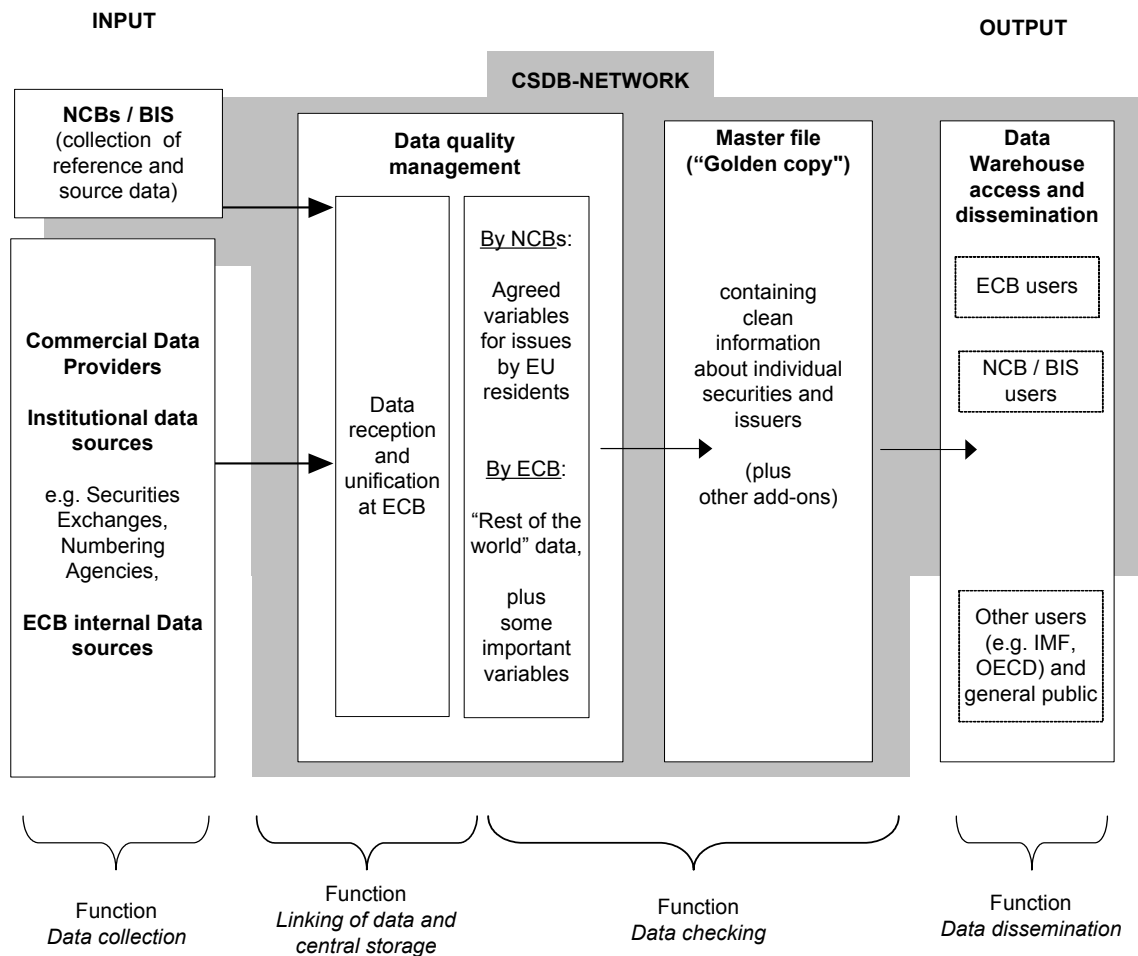
S-b-s reporting means that each national compiler, i.e. in general national central banks (NCBs) receive limited information on transactions and positions in securities at the level of individual securities, identified e.g. by their internationally agreed (ISIN) codes. More precisely, NCBs only receive the relevant volume information (flows and / or stocks) as well as the respective security identifiers (e.g. ISIN code) of the securities involved. The securities master file provides all other necessary attribute-level information of an individual security (e.g. classification, price, income, type of instrument, size, residence of issuer, currency, etc.). The statistics agency can then produce the required statistical output on that basis.

Moreover, s-b-s reporting enables a significant reduction in the reporting burden for the majority of respondents. Detailed information at the level of individual securities is often readily available to the largest reporters, i.e. banks, institutional investors, financial intermediaries, etc. Reporters may implement automated reports from their raw information e.g. on securities in custody. Once established, the systems just need to be run periodically so as to provide the required information to compilers. As mentioned above, any changes in statistical requirements would have no impact on respondents.

This important relief in the burden of reporting agents is to some extent transferred to the compiling agency which faces a higher workload. Since compilers need to classify and value themselves the information according to statistical standards, the s-b-s approach may require some additional and more specialised human and technical resources, e.g. skilled staff able to work with a highly automated IT systems and with an additional expertise in financial instruments and markets.

In the EU, various countries have been collecting and compiling portfolio investment information within the balance of payments and/or international investment position statistics on a s-b-s basis for several years. Results in terms of timeliness, quality and reporting burden overall confirm what has been described above.

As illustrated below, the CSDB combines the information on individual securities from various sources to get a single “golden” copy. To achieve a sufficient level of quality of this information the ECB and NCBs of EU member states are cooperating to perform the data quality management in the “CSDB-Network”. NCBs and other users will also access the CSDB according to different profiles. The CSDB will allow a cost-effective operation of high quality information available on securities in various statistical production processes. The CSDB is expected to hold reference data for more than 1 million securities issued world-wide.



The CSDB data model comprises reference data for fixed income instruments, equities and mutual funds. It also covers the respective structures for information on prices and corporate actions. A separate module covers information on the issuers. Future versions will cater for holding information. More precisely the data model (approximately) comprises the following numbers of attributes:

<i>Instrument class</i>	<i>Content</i>	<i>Nb of attributes</i>
Debt instruments	Generic features plus coupon, redemption, option related variables, etc.	100
Equities (incl. mutual funds' shares / units)	Generic features, plus dividend payments or main characteristics of mutual funds	50
Prices for debt and equity	End-of-period plus period averages	15
Issuers	Characteristics like residence, institutional sector etc.	10

The CSDB project was built up in a stepwise approach as, both in ICT and business areas, such an activity was too comprehensive, complex and risky to be tackled in one go. In agreement with the ESCB Statistics Committee (STC), as system owner, and the Information Technology Committee (ITC), two advisory bodies to the ECB Governing Council, the CSDB implementation was split into three phases, each corresponding to a specific project to be submitted and accepted separately and to take place sequentially.

The main objectives of each of the three project phases were set out as follows:

- Phase 1, comprising (i) the implementation of all functionalities foreseen in the core CSDB system at the ECB, (ii) the initial selection of the (commercial) data sources to be fed into the system, and (iii) the setting up of procedures within the ESCB to jointly maintain the quality of the database (the “CSDB-Network”).
- Phase 2, providing (i) the automated access to the system by NCBs, (ii) some further improvements to the system to better exploit synergies within the ESCB, and (iii) preparation for Phase 3.
- Phase 3, covering the collection and integration of data related to holdings of securities into the system.

The development of Phase 1 of the CSDB project has lasted roughly 2.5 years. The successful establishment of a centralised securities database at the ECB was the core part of the system delivery. After Phase 1 the CSDB represents a global-coverage database of financial securities and issuers relying on both commercial and institutional data sources, to be used primarily for

statistical compilation (e.g. the balance of payments and international investment position) purposes. NCBs will receive data extracts or reports.

The implementation of the CSDB implied the introduction of data warehousing technologies at the ECB, the establishment of a data quality management framework, the automatic processing of comprehensive security-by-security information and the systematic implementation of security valuation methods.

The full benefits of the CSDB for other statistical and for non-statistical (financial and market analysis or more operational) uses are expected to materialise in later phases: After Phase 2, the group of users will be extended to staff in all NCBs. Until the completion of Phase 3 the CSDB will not hold and centralise the information on the portfolio holdings by the different sectors of an economy, or by non-residents (broken down by countries or zones); this information is collected and compiled in many EU NCBs.