

Practical examples of policy relevant uses of security-by-security data

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Introduction

International requirements placed on securities statistics have increased, among other things for monetary policy reasons and for monitoring financial stability. At the same time, the harmonisation of the requirements on different statistics has been pushed. Apart from the need to provide data for balance of payments, international investment position and financial accounts, other statistics, such as statistics on security issues, government finance, other financial intermediaries or on the international role of the euro, define special demands.

Because of the growing importance of security markets, financial market analysts, economists and supervisors require supplementary statistics and ad hoc information.

The paper gives a brief overview of security statistics collection systems in general and the Austrian security-by-security (sec-by-sec) information system in particular. Sec-by-sec systems have many advantages (eg enhanced possibilities of data quality management, flexibility concerning changing output requirements, and reduction of reporting burden); however, the main focus of this paper is to show how sec-by-sec data can be used to support data quality managers, analysts and policymakers in their work. Finally, the paper discusses the necessary preconditions for meeting the expectations of these stakeholders regarding a sec-by-sec information system.

Security statistics collection systems

Internationally, two different basic collection schemes are applied for collecting information on securities for different statistics:

1. a security-by-security scheme using identifiers (mostly the ISIN²) for securities
2. an aggregated basis scheme under which precompiled data are requested from respondents.

A security-by-security reporting system basically collects data about stocks (and flows) for each single security³ on an investor-by-investor basis or grouped by the economic sector of the investors. The compiler calculates the required output, using primary data about each single security (instrument classification, nominal currency, maturity, issue and redemption price, coupon rate, market price, outstanding amount etc) and its issuer (country, sector and industry). Thus, the work of classification, calculation, valuation and aggregation is transferred from the respondent to the compiler.

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² International Security Identification Number.

³ Some sec-by-sec reporting systems additionally collect primary data from the reporting agencies.

By contrast, a reporting system on an aggregated basis defines one or more reporting forms to be filled in by the respondents, asking for several breakdowns in line with the required output.

In practice often a mixture of both collection systems is applied. A sec-by-sec scheme is used for available ISIN codes and for reporting agencies belonging to the financial sector; aggregated schemes can be used for securities without an ISIN code and in general for reporting agencies belonging to the non-financial sectors.

The Austrian security-by-security system

In Austria, both concepts were discussed intensively with the respondents, and in 1991 a pure sec-by-sec reporting and compilation system⁴ was introduced for balance of payments purposes. Although initially flow and stock data were collected and compiled separately, in 1996 a reconciliation of flow and stock data was implemented and a new data structure introduced that also served the needs of the financial accounts statistics. At the beginning of 2006 the upgraded sec-by-sec system went into production, and by the end of 2008 the compilation of the ECB investment fund statistics based on fund-by-fund and sec-by-sec data will be fully integrated into this system.

The Austrian securities data collection and compilation system is based on a securities database, which is linked to a business register, and a database of security holdings by investors or investor groups. Primary data on securities are primarily bought from the Austrian and German numbering agency and are increasingly taken from the ESCB Centralised Securities Database (CSDB). Issuer information about Austrian issuers is primarily taken from the official business register and about foreign issuers from the German numbering agency and the ECB.⁵ Information on holdings is reported indirectly by custodians or – in special cases – directly by the investors on a sec-by-sec basis. Figure 1 gives an overview of the Austrian sec-by-sec information system.

The monthly reports of the custodians on their own holdings and the holdings of their customers are derived directly from the securities management systems of the custodians. The customers are classified by the respondents (with the support of the Austrian National Bank); this grouping of the investors is based on the ESA 95 sector classification, but is more detailed for some of the sectors. The reports for each group of investors are broken down by ISIN code and include information about stocks (and flows), but no primary data on securities.

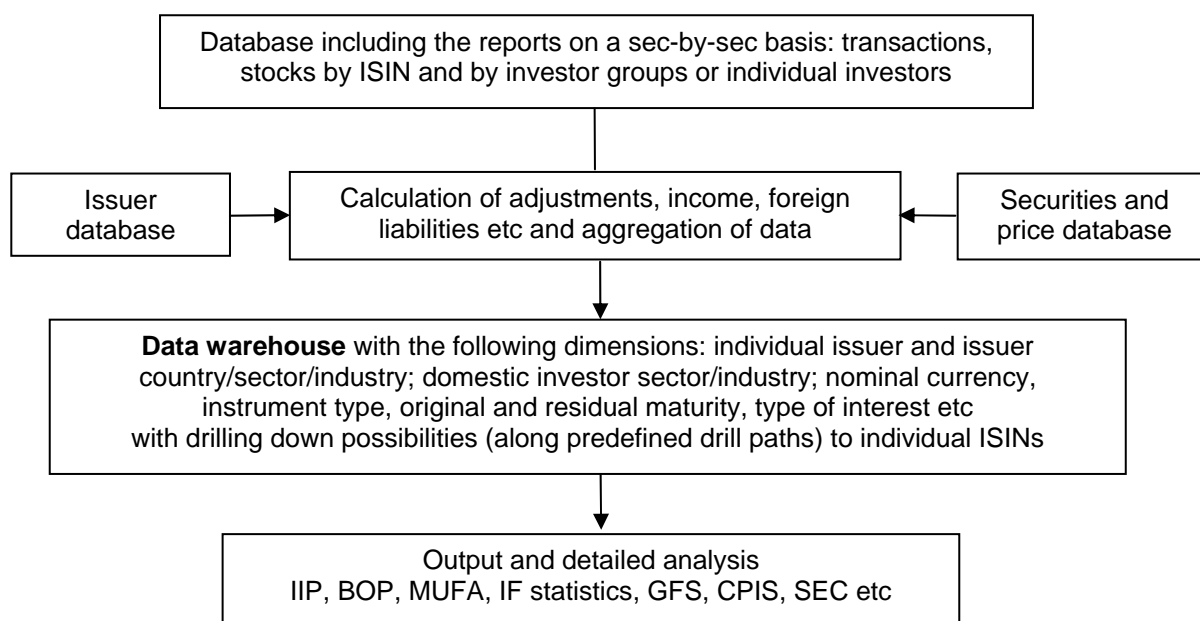
In Austria the sec-by-sec system has become the basis for almost all securities statistics (not only for balance of payments purposes).

⁴ A pure sec-by-sec system in this context means that no aggregated reports are allowed. Securities without an official ISIN code have to be reported with an internal ISIN code.

⁵ CSDB and MFI list.

Figure 1

Overview of the Austrian security-by-security information system



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Sec-by-sec data allow a detailed and flexible analysis of specific instruments (bonds and notes as well as equities), specific issuers and domestic investors or investor groups. Data quality managers and data analysts can both benefit from this feature. For data quality managers the correct treatment of borderline cases and specific instrument categories, such as strips, bonds with a pool factor or index-linked bonds, can be monitored. Plausibility checks can be carried out by drilling down to the sec-by-sec level, supported by an adequate design of the data warehouse. Errors can thus be easily identified. For data analysts this flexibility of drilling down to more detailed levels or even to a sec-by-sec level allows very specific questions to be answered. This shows that both user groups can also benefit greatly from each other. Data quality managers learn much about the financial market, and data analysts/researchers can support the data quality assessment by using more detailed data.

The following examples show how some of the requests addressed to the External Statistics Division of the Austrian National Bank over recent years were easily answered.

In crisis situations, the main focus often lies on specific instruments, countries, industries or companies. This often raises the question of the extent to which Austrian investors, and which sectors are affected by such a crisis.

For example, when Parmalat, a large European food production company, encountered difficulties in 2003, the possible consequences for Austrian investors was (at least partially) estimated by drilling down to the securities issued by the Parmalat group. This also happened during the crisis in Argentina at the beginning of this century, resulting in significantly falling prices of government bonds; and in 2007 when the trading of some European ABS funds was stopped because of the illiquidity of the market. In such cases, the necessary breakdown for analysis cannot be defined in advance, but a security-by-security database makes it possible to extract the necessary information quickly.

Another recent example relates to the Austrian stock market, where in 2007 shares of listed real estate companies (and related share-bonds) showed a much more negative trend than

the rest of the market. It was shown that domestic private households in particular had invested greatly in these shares⁶ during the previous years. From 2000 to 2006 the percentage of real estate shares in the stock portfolio of Austrian private households increased from about 5% to almost 30% in terms of market value. Due to this high concentration of household equity investments in a specific market, the price loss of private households caused by shares was significantly higher in 2007 than for other sectors. In January 2008 the development of the whole stock market was very negative, and the shares of listed real estate companies was not able to escape this trend.

A sec-by-sec information system also supports the analysis of significant changes of specific subcategories (eg investments in or issues of money market papers of a specific sector) and – to some extent – unexpected developments. For instance, in 2007 there was a special request from the Financial Market Analysis Division about Austrian direct and portfolio investments in the CEEC region. The analysis was motivated, among other things, by the significant increase of Austrian investments in debt securities of the new EU member states and some other eastern and southeastern European countries, which have already reached a higher level than the investments in the United States. The analysis delivered further insight into this development, in particular by investors (individual and groups) and issuers (individual or sector, country). Another example is a recent request by the users of the financial stability area related to exceptionally high net issues of bonds by Austrian banks in the first half of 2007. Further breakdowns by residual maturity (and other attributes) were required to analyse possible maturity mismatches.

In recent years corporate bonds have become increasingly important in Austria. An analysis focusing on issuer details, the currency of the issue, the interest rates offered and the liquidity of the market can easily be carried out with the help of a security-by-security system (for the past as well). Similarly, the importance of covered bonds and asset-backed securities can be analysed, eg to support the analysis of liquidity risks aspects.

From a risk perspective, a sec-by-sec information system allows several aspects to be analysed. The assets of specific investors or investor groups or, with some limitations, the liabilities can be analysed, for example, by

- Individual countries and country groups (regional risk and geographical diversification)
- Residual maturity (reinvestment/refinancing risk)
- Type of interest (interest rate risk)
- Nominal currency (exchange rate risk)
- Rating and/or sector of issuers (credit risk)
- Type of instrument (market risk)
- Stress testing (interest rate and exchange rate risk)

⁶ In fact, there are five relevant shares of listed real estate companies in the Austrian stock market.

Conclusions

It is expected that a well designed security-by-security information system, which integrates issuer, holder, instrument and business information, will

- meet all official requirements of security statistics,
- reduce the responding burden,
- improve the output quality, and
- offer the needed flexibility
 - in the case of changing requirements caused by rapidly changing financial markets,
 - for analysis, and
 - ad hoc data requests.

However, the flexibility to support a more detailed policy relevant analysis depends on specific aspects of a sec-by-sec system; in particular the

- quality of the available issuer and instrument data, also at a very detailed level of classification, which would probably not be so important from a pure output perspective,⁷
- availability and granularity of information (eg rating, type of instrument/interest etc),
- quality and level of detail of holder information (individual holders, holder groups),
- the technical design of the data warehouse, which should allow user-friendly navigation through the huge volume of data.

Thus, the developer of such a system must find the right degree of complexity and information; which is finally a trade-off between costs and benefits.

References

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⁷ This depends very much on the quality of the data provided by commercial data vendors and on data source management.