

Improving the quality and flexibility of data collection from financial institutions

Milan Nejman¹, Otakar Cejnar¹, Patrick Slovik²

Abstract: The recent financial crisis has revealed important limitations in economic analysis and market supervision that are in large related to significant data gaps. In an ever changing economic and financial system, the policy makers and financial regulators have to keep up with a priori unforeseen data requirements. After new data requirements emerge, changes in the statistical collection systems prove to be not only time-consuming but also costly both for the public and the private sectors. The underlying study addresses this problem by proposing a collection of highly disaggregated data from financial intermediaries to be used in statistics and clients' protection issues (e.g. collection of individual holdings of securities) with a high data collection frequency. Only a high data disaggregation can provide the necessary detail for the financial industry supervisors and the necessary flexibility in statistical aggregation of the data for the purposes of economic policy. The paper argues that a national financial market supervisory authority and a national central bank should work together to implement a collection system of highly disaggregated data on securities held by custodians on behalf of their clients. Such a data collection system provides market supervisors and statistical compilers with the necessary flexibility to address newly emerging data gaps. It also significantly simplifies the reporting requirements for financial institutions. Concrete examples are drawn from the experience in the Czech Republic where this type of data collection system has been successfully implemented.

Keywords: statistics, financial market supervision, securities data collection system

¹ Monetary and Statistics Department, Czech National Bank. The views expressed in this paper are those of the authors and do not necessarily represent those of the CNB. Corresponding author: milan.nejman@cnb.cz.

² Macroeconomic Policy Division, OECD. The views expressed in this paper are those of the author and do not necessarily represent those of the OECD.

1. Introduction

The study focuses on possible interactions between financial market supervision architecture and securities data collection systems. While numerous studies have focused on these two areas separately, this study has its unique scope in exploring possible synergies between them. The conduct of financial market supervision as well as the compilation of statistics requires a collection system of high quality securities data. Although the two areas can greatly differ in the use of the required market data, they both require similar or same market data from similar or same reporting agents. The main challenge and opportunity for the public authorities is, therefore, to integrate these different aspects into a system that will bring about higher quality of securities data, lower reporting burden on the reporting agents, and saving of public resources. Based on the sample of OECD countries, this study explores the implications of different types of financial supervision architecture and different types of securities data collection systems. It describes the experience, synergies, and challenges of a joint securities data collection system – shared between financial market supervision and statistics – based on the experience of a successful implementation of such a data collection system in the Czech Republic.

2. Statistics and the Financial System Supervision Architecture

The standard role of a statistical department of a central bank is to prepare various statistics (e.g. financial market, external and financial accounts statistics) for a broad group of users comprising internal users at the central bank itself and other domestic users in the private and public sectors, as well as a contribution to the international statistics by providing national data to international organizations. The standard roles of a financial system supervisor that require a substantial use of high quality data (and often high frequency data) are in particular micro-prudential supervision,

macro-prudential supervision, and the supervision of proper market conduct of the financial market participants. The different functions of statistical department and financial market supervisor often require similar or same data from similar or same reporting agents; however, these data requirements are often at different levels of aggregation and different data collection frequency. The main challenge and opportunity for the public authorities is, therefore, to integrate these different data needs into a system that will bring about higher quality of data, lower reporting burden on the reporting agents, and saving of public resources.

A profound change in the supervisory architecture in the Czech Republic, which occurred in 2006, integrated all supervisory functions under a single organization that conducts supervision of the entire national financial system encompassing credit institutions, capital market, insurance companies, and pension funds. The activities of several independent entities in charge of financial market supervision – the Czech Securities Commission, the Office for Supervision of Credit Unions, and the Office of State Supervision of Insurance Companies and Private Pension Schemes – were integrated into Czech National Bank (CNB).³

The integration of supervisory functions reflects the endeavor of public authorities to address contemporary developments in financial markets, in particular rising financial market interconnectedness, changes in financial intermediation channels, and an increase in financial conglomeration. The integration of financial market supervision under a single entity is

³ The incorporation of supervision into the CNB is laid down in Article 1(1) of Act No. 6/1993 Coll., on the Czech National Bank, as amended. The respective provision states that ‘The Czech National Bank shall be the central bank of the Czech Republic and the authority performing financial market supervision’. Further, see Article 2(2d) of Act No. 6/1993 Coll., on the Czech National Bank, as amended: ‘In accordance with its primary objective, the Czech National Bank shall: ... supervise the activities of entities operating on the financial market, analyze the evolution of the financial system, see to the sound operation and development of the financial market in the Czech Republic, and contribute to the stability of its financial system as a whole’.

characteristic of several countries. However, the integration of all supervisory functions under the responsibility of the central bank is specific only for a much smaller group of countries as shown in Figure 1.

Figure 1: Financial System Supervisory Architecture in OECD Countries (2010)

	Unified Supervision	Unified Financial System Supervisor	Date of Implementation
Australia	No	-	-
Austria	No	-	-
Belgium	Yes	Supervisory Authority	2004
Canada	No	-	-
Chile	No	-	-
Czech Republic	Yes	Central Bank	2006
Denmark	Yes	Supervisory Authority	1990
Estonia	Yes	Supervisory Authority	2002
Finland	Yes	Supervisory Authority	2009
France	No	-	-
Germany	No	-	-
Greece	No	-	-
Hungary	Yes	Supervisory Authority	2000
Iceland	Yes	Supervisory Authority	1998
Ireland	Yes	Supervisory Authority	2003
Israel	No	-	-
Italy	No	-	-
Japan	Yes	Supervisory Authority	2000
South Korea	Yes	Supervisory Authority	1998
Luxembourg	No	-	-
Mexico	No	-	-
Netherlands	No	-	-
New Zealand	No	-	-
Norway	Yes	Supervisory Authority	1986
Poland	Yes	Supervisory Authority	2008
Portugal	No	-	-
Slovakia	Yes	Central Bank	2006
Slovenia	No	-	-
Spain	No	-	-
Sweden	Yes	Supervisory Authority	1991
Switzerland	Yes	Supervisory Authority	2007
Turkey	No	-	-
United Kingdom	Yes	Supervisory Authority	1997
United States	No	-	-

Source: Various sources (e.g. website of national supervisors and central banks)

The rationales for unified or separate supervisory functions have been thoroughly addressed in numerous studies.⁴ It is not within the scope of this paper to discuss all the arguments for or against a specific supervisory architecture. The main scope of this paper is to focus specifically on the merits and challenges arising from the coexistence of financial market supervision and various statistics under the responsibility of a central bank. The main merits of such a structure are as follows:

- joint statistical-supervisory data collection initiatives can lead to considerable synergies and significantly lower burden on the reporting agents,
- easier access to local and international data and reporting sources with implications for a higher data reliability and timeliness,
- better flow of data and metadata within a single unified institution than between separate entities,
- accelerated transfer of knowledge and better understanding of complex financial and statistical issues stemming from improved interactions between experts in statistics and financial market supervision,
- substantial improvement in the conceptual and technical capabilities of national authorities to address financial market data gaps that arise from the conduct of supervision and monetary policy.

⁴ See for example Herring and Carmassi (2008), De Luna Martinez and Rose (2003), Lumpkin (2002), Briault (2002), Abrams, and Taylor (2000).

3. Securities Data Collection Systems

Data collection systems vary by data collection channel and level of aggregation of the collected data. The main data collection channels are a data collection based on the settlement system, a data collection based on reports from individual investors, and an indirect data collection channel based on reports from financial intermediaries (custodians). The securities data collection systems in the European Union, including the Czech Republic, are predominantly based on the indirect data collection channel from financial intermediaries who report on behalf of their customers. Based on the level of aggregation securities data collection systems can be subdivided into three categories (i) aggregated securities data collection systems, (ii) partially disaggregated securities data collection systems, (iii) fully disaggregated securities data collection systems.

Aggregated Securities Data Collection Systems

The role of the compiler of statistics is to prepare national aggregates of financial data for use by public authorities in charge of economic policy and market participants who can base their decisions on the analysis of these aggregates. Because the deliverables of the compilation process are in an aggregated form, the securities data collection systems did not historically put a strong emphasis on data disaggregation. In the simplest form, the statistical data are collected from the reporting agents in an aggregated form; i.e. each reporting agent, such as a bank, aggregates all financial securities in its custody and reports the aggregated figures to the compiler of national statistics, e.g. national central bank. These aggregates are usually broken down by the reporting agents for instance into geographical regions. The role of the compiler is, then, to combine these aggregated data into statistics describing the national economy.

Although an aggregated securities data collection system is conceptually relatively straightforward (for the compilers and the reporting agents) it is connected with several disadvantages. For example, it is very cumbersome in its ability to address new data gaps flexibly. Since the reporting agents already report the data in aggregated form, the system is not flexible in compilation of statistics in different than already predefined breakdowns; it might take several months or years to address new data gaps. An aggregated data collection system also does not allow in-depth quality checks of the securities data, because the data received by the compiler are already aggregated. For this reasons several countries, predominantly in the European Union, have moved to partially disaggregated data collection systems.

Partially Disaggregated Securities Data Collection System

A partially disaggregated data collection system is based on collection of disaggregated data at the level of individual securities. The reporting agents report to the statistical compiler the holdings of concrete individual securities; for this reason the system is also referred to as security-by-security data collection system. The statistical compiler, however, does not receive data on individual holders of securities but only on the sector of a holder. Therefore the system is referred to as ‘partially disaggregated’. The main advantages of a partially disaggregated security-by-security data collection system are as follows:

- More in-depth quality checks at the level of individual securities
- Improvement of data standardization and consistency due to the possibility of cross-checking the data with a securities reference database (e.g. Reuters, Bloomberg, or CSDB⁵)
- Flexibility to adapt to new requests and address new data gaps

⁵ Centralized Securities Database (CSDB) is a supranational database of securities of the European System of Central Banks (ESCB).

- Improved flexibility and consistency of regular revisions of statistics

A partially disaggregated data collection system is much more flexible in addressing new data gaps. The aggregation of the security-by-security data falls usually under the responsibility of the statistical department. The compiler of statistics is, therefore, better positioned to address new data gaps by aggregating individual security-by-security data subject to specific attributes of the financial securities. These attributes are either collected from reporting agents or in most of the cases sourced from an instrument reference database⁶ (e.g. Reuters, Bloomberg, CSDB).

Fully Disaggregated Securities Data Collection System

Although a partially disaggregated data collection system offers obvious advantages for the compilation of statistics, it might not be fully sufficient for the use by financial market supervisors. In order to oversee proper market conduct of financial market participants, the supervisors might need fully disaggregated securities data. The reporting agents, therefore, might have to report data not only disaggregated at the level of individual securities and the sector of a holder (partially disaggregated / security-by-security), but also disaggregated at the level of individual holders of individual securities (fully disaggregated / holder-by-holder). In practise this often necessitates two different data collection systems: one for the purposes of statistics, and another for the purposes of financial market supervision. The existence of two different data collection systems can create extra reporting burden on the reporting agents, higher cost for the public authorities, and risk of inconsistencies between supervisory and statistical outputs. A financial market architecture that integrates financial market supervisory functions under the responsibility of the central bank enables the public authorities to address these disadvantages.

⁶ A security identification number, such as ISIN, is utilized to link the data from reporting agents with the reference database.

The co-existence of both under the responsibility of the national central bank gives an opportunity to create a joint data collection system shared for the purposes of financial market supervision and statistics. Such a data collection architecture can contribute to a lower reporting burden on financial market participants, more efficient use of public resources, and higher consistency of data used by supervision and policy makers. It also offers significant improvement of securities data, because data quality control is conducted by supervisors as well as statisticians at a different levels of aggregation and with a focus on different sets of attributes. Figure 2 summarizes the securities data collection systems in the OECD countries for the use of portfolio investment statistics.

Figure 2: Securities Data Collection Systems in OECD Countries (2010)

	Aggregated Data Collection System	Partially Disaggregated Data Collection System	Fully Disaggregated Data Collection System
Australia	-	Yes	-
Austria	-	Yes	-
Belgium	-	Yes	-
Canada	-	Yes	-
Chile	-	Yes	-
Czech Republic	-	-	Yes
Denmark	-	-	Yes
Estonia	-	Yes	-
Finland	-	Yes	-
France	-	Yes	-
Germany	-	Yes	-
Greece	-	Yes	-
Hungary	-	Yes	-
Iceland	-	Yes	-
Ireland	-	Yes	-
Israel	Yes	-	-
Italy	-	Yes	-
Japan	Yes	-	-
South Korea	Yes	-	-
Luxembourg	-	Yes	-
Mexico	-	-	Yes
Netherlands	-	Yes	-

New Zealand	-	Yes	-
Norway	-	Yes	-
Poland	-	Yes	-
Portugal	-	Yes	-
Slovakia	-	Yes	-
Slovenia	-	Yes	-
Spain	-	Yes	-
Sweden	Yes	-	-
Switzerland	Yes	-	-
Turkey	-	Yes	-
United Kingdom	Yes	-	-
United States	-	Yes	-

Source: Various sources (e.g. website of national supervisors and central banks)

4. Implementation of a Fully Disaggregated Data Collection System in the Czech Republic

The integration of financial market supervision under the responsibility of the Czech National Bank, which occurred in 2006, created a new opportunity to explore any possible synergies between different areas of the central bank. Shortly after the integration, the Czech National Bank decided to investigate the possibility to create a new data collection system on securities held in custody by banks that would jointly serve for use by financial market supervision and statistics. To identify synergies and to avoid any duplication in requirements on reporting agents, a working group comprising experts from all the concerned areas in the Czech National Bank was set up.

The main objective of the working group was to evaluate the benefits and risks associated with a change to a new data collection system. The working group – which comprised representatives of financial market supervisors, statistics, and specialist on data processing – also engaged in regular consultations with the concerned reporting institutions represented by the Czech Banking Association. The working group based its efforts on a clear principle that all requests raised by

different data users within the central bank should be reflected in the new securities data collection system. The integration of all reporting requirements of the central bank into a single report was also one of the main requests of the Czech Banking Association.

The representatives of statistics agreed that to ensure high quality of compiled statistics it would be necessary and at the same time sufficient to collect data based on a partially disaggregated security-by-security data collection model.⁷ The representatives of financial market supervision welcomed a security-by-security data collection model, but in addition required fully disaggregated data that would include detailed information on the individual holders of securities. These data on individual holders were necessary for the supervision of proper market conduct by market participants. The working group, therefore, recommended implementing a fully disaggregated data collection system that included details on individual financial market securities and individual holders of these securities.⁸ The Czech National Bank successfully implemented the fully disaggregated data collection system on securities held by banks on behalf of its clients as of January 2009, about 2 years after the working group had been set up.⁹

⁷ A subset of the data would be needed for statistics since data needs regarding some holders are accommodated by direct reporting from individual investors.

⁸ An obvious challenge for this kind of data collection system is the huge amount of data to be processed as it covers each individual financial market security as well as each individual holder of the security. In the case of a partially disaggregated data collection system the amount of data to be processed and stored is much lower due to the aggregation of holders into sectors.

⁹ As of January 2011, the obligation to report the fully disaggregated securities data will be extended to all investment firms (banks and non-banks).

5. Conclusions

The existence of various types of institutional frameworks in the areas of statistics and financial market supervision across countries sets grounds for different approaches to securities data collection systems. Given the architecture of national institutional frameworks, the main objective of the public authorities is to optimize data collections systems in ways that maximize the quality of data, minimize the reporting burden on reporting agents, and maximizes saving of public resources. This study shares the experience of the optimization process of the securities data collection system in the Czech Republic that resulted from a new financial market supervisory architecture. The new securities data collection system, implemented by the Czech National Bank, represents a substantial improvement in the quality of financial market data for the purposes of financial market supervision as well as for the purposes of statistics. Other synergies resulting from the joint-data collection system, described in the paper, comprise lower reporting burden, more cost efficient use of public resources, and higher capacity of national authorities to flexibly address new data gaps in a timely manner.

References:

Abrams, R.K., and Taylor, M.W. (2000). Issues in the Unification of Financial Sector Supervision, IMF Working Paper no. 213, December 2000.

Bank for International Settlements (2009), Issue in the Governance of Central Banks, May, Basel.

Briault, C. (2002). Revisiting the rationale for a single national financial services regulator, FSA Occasional Paper Series No. 16, London.

De Luna Martinez, J., Rose, T.A. (2003). International Survey of Integrated Financial Sector Supervision. World Bank working paper No.3096.

European Central Bank (2007). European Union Balance of Payments/International Investment Position Statistical Methods. Frankfurt am Main.

European Central Bank (2002). Task Force on Portfolio Investment Collection Systems, Final report. Frankfurt am Main.

European Central Bank (2010). The “Centralised Securities Database” in Brief. Frankfurt am Main.

European Central Bank (2006). Recent developments in supervisory structures in EU and acceding countries. Frankfurt am Main.

Herring, R. J., Carmassi, J., (2008). The Structure of Cross-Sector Financial Supervision. Financial Markets, Institutions & Instruments, Vol.17, No. 1. New York University Salomon Center.

International Monetary Fund (2007). *The Special Data Dissemination System: Guide for subscribers and users*. Washington, D.C.

Lumpking, S., (2002). *Supervision of Financial Services in OECD Area*. OECD, Paris.

Masciandaro, D., 2004, “Unification in financial sector supervision: The trade off between central bank and single authority,” *Journal of Financial Regulation and Compliance*, Vol. 12, No. 2, 2004, pp. 151–169.

Masciandaro, D., Quintyn, M., 2009, *Regulating the regulators: The changing face of financial supervision architectures before and after crisis*.