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Exchange and sharing of economic data

In-depth review of exchange of economic data and data sharing

Note by Statistics Finland

Summary

The document is a shortened version of the document that provided basis for the in-depth review of exchange and sharing of economic data carried out by the Bureau of the Conference of European Statisticians in October 2016.

The document identifies issues and problems in the exchange of economic data. It provides an overview of existing practices at national and international level. The conclusions and recommendations from the review are presented in section VIII. The outcome of the review is provided in document ECE/CES/2017/10/Add.1.

The full version of the document is available at: www.unece.org/stats/ces/reviews.html.

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I. Introduction

1. The increasingly globalized world has forced official statisticians to look for solutions for national and international exchange of economic data for ensuring quality and developing more efficient ways to produce statistics. The importance of data exchange for dealing with the challenges posed by multinational enterprises (MNEs) have been emphasized at different fora, including the meetings of the Group of Experts on National Accounts, organized jointly by the United Nations Economic Commission for Europe (UNECE), Eurostat and the Organization for Economic Cooperation and Development (OECD), and in the Guide to Measuring Global Production. On this background the Bureau of the Conference of European Statisticians (CES) selected exchange and sharing of economic data for an in-depth review. Statistics Finland with the support of a number of countries and international organizations[1] prepared the detailed document providing overview of current activities and national practices related to exchange and sharing of economic data.

2. The current document summarises the findings of the in-depth review document[2]. It examines national and international reuse, exchange and sharing of economic data on micro and aggregated level. It bases on a survey of country experiences carried out in member countries of the CES. 48 institutions replied to the survey. The document also presents case studies by both countries and international organizations.

3. National data sharing or reuse of existing data can be divided into the use of administrative records and use of data from private data holders. Use of administrative data has long tradition in the production of official statistics. All countries that replied to the survey are using administrative data in statistics production. Data use from private data holders is more recent phenomena.

4. International exchange of economic data can be either bilateral or multilateral. Typically, multilateral data sharing is facilitated by international organizations.

5. Data sharing may include micro-data, aggregated data and meta-data. Typical examples of micro-data sharing are the reuse of administrative data and the exchange of cross border transactions data. The examples of sharing aggregated data are data confrontation, sharing data for publication purposes and acquiring data for statistical production. Sharing meta-data relates usually to data quality and correct interpretation of information.

6. This document uses the following concepts:

- Reuse of data refers to a situation, when data, collected for other purposes, are received for producing official statistics, but not shared forward.

- Sharing of data refers to a situation, when data holder shares aggregated or micro-data to other national or international institutions for producing official statistics. This covers also data provided for dissemination purposes.

- Exchange of data at international level refers to a situation, when data is exchanged (shared and received) bilaterally or multilaterally. In this study exchange of data refers to both micro-data and aggregated data.

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[1] Prepared by Statistics Finland, with contributions by Canada, Ireland, Netherlands, United Kingdom, Eurostat, OECD, IMF and the World Trade Organization (WTO).
[2] ECE/CES/BUR/2016/OCT/3

- Data confrontation refers to a situation, when international cross-border data are confronted to solve bilateral asymmetries (counterparties' data on same phenomenon show a different result).

- Confidential data means data that allow statistical units to be identified, either directly or indirectly, thereby disclosing individual information. To determine whether a statistical unit is identifiable, account shall be taken of all relevant means that might reasonably be used by a third party to identify the statistical unit.[3]

- Profiling is a method of analyzing the legal, operational and accounting structure of an enterprise group at national and world level, in order to establish the statistical units within that group, their links, and the most efficient structures for the collection of statistical data.[4]

II. Overview of international statistical activities in the area

A. World-wide initiatives

1. Statistical Data and Metadata eXchange

7. The Inter-Agency Group on Economic and Financial Statistics (IAG) monitors and coordinates the implementation of the recommendations made in the Report to the G-20 on Data Gaps and the Financial Crisis by the International Monetary Fund (IMF) and the Financial Stability Board (FSB). In addition, the IAG focuses on improving the practical cooperation between international agencies in terms of collecting, validating and disseminating public official statistics from national and international sources.

8. IAG established the Task Force on International Data Cooperation (IDC) in early 2013. The guiding general principles for IDC are to: reduce the reporting burden on national authorities; ensure identical economic and financial data in the databases of international agencies; and improve the dissemination of data. The data cooperation initiative is based on data structure definitions maintained by the Ownership Group for Statistical Data and Metadata eXchange (SDMX) in macro-economic statistics and follows the SDMX standard.

9. A first pilot to exchange aggregates of gross domestic product (GDP) was undertaken up by the European Central Bank (ECB), Eurostat, IMF and OECD. On successful completion the pilot will be extended to other data domains including Balance of Payments (BOP) and Sectoral Accounts.

10. The long term vision of international data cooperation in macro-economic statistics is to have coherent macro-economic data of highest quality from the producer to the user in real time.

2. Second phase of the G20 Data Gaps Initiative

11. The main objective of the second phase of the G20 Data Gaps Initiative (DGI-2) is to implement the regular collection and dissemination of reliable and timely statistics for policy use. To this end, DGI-2 sets more specific objectives with the intention of compiling and disseminating consistent datasets.

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[3] Regulation (EC) No 223/2009 of European Parliament and the Council on European statistics
[4] Business Registers Recommendation Manual 2010, annex 3.1, paragraph 19.9

12. The envisaged increase in data flow with more granular information requires substantial work. In this context, the new recommendation on data sharing (Recommendation II.20) was welcomed by G20.

13. An informal G20 working group, chaired by IMF and Eurostat, in cooperation with the Deutsche Bundesbank, was set-up in 2016 to focus on establishing a common terminology for granular/micro-data, looking at the main barriers preventing sharing of such data at national/regional/international level, including challenges faced by national and international organizations. In this respect, work done by OECD provided key insights, in particular on the role of trust among institutions as enabler of micro-data access[5].

B. Eurostat

1. Exchange of microdata on trade within the European Union

14. In 2015, a wide scale exchange of micro-data took place on trade in goods within the European Union (EU) under the Single Market Statistics (SIMSTAT) project. Twenty member states[6] exchanged data on their exports with the respective partner countries. This was the biggest data exchange ever within the European Statistical System (ESS). Special information technology (IT) system together with secure communication network was put in place. The purpose was to investigate the re-usability and quality of the exchanged data as well as the technical feasibility of exchanging a large volume of data in a secure and timely manner.

15. The overall results showed that the mirror exports data could be used effectively as a full or partial substitution of the nationally collected imports data. The use of mirror data for compiling intra-EU imports statistics could thus reduce the administrative burden on reporters on the intra-EU imports. The pilot exercise also proved the secure exchange of micro-data feasible.

16. Eurostat is going to launch a new project with the aim of implementing the modernised system for compiling intra-EU trade statistics.

2. Foreign Direct Investments statistics Network

17. In 2009, Eurostat and ECB established a network to address the intra-EU Foreign Direct Investments statistics (FDI) asymmetries. It is a platform for secured exchange of data on enterprise level FDI transactions and positions between national compilers. The technical infrastructure and facilitation for the data exchanges and reconciliation are provided by Eurostat. The FDI transactions are exchanged on an on-going basis as soon as they become available. The exchange of FDI positions takes place annually during a window period. Further discussions on transactions/positions shall take place between the concerned compilers. At the end of the process, the FDI compiler informs the counterpart and Eurostat if the reconciliation was successful.

18. The decision about corrections in the national FDI figures remains at the discretion of each party involved in the exchange. Eurostat may include an adjustment in the EU aggregates if deemed necessary (without modifying published country figures), and communicates that to the concerned compilers.

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[5] The reports of OECD initiatives are available at http://www.oecd.org/std/microdata.htm

[6] Austria, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia and Slovenia

19. After each round, considerable number of reconciliation requests remain not matched or reconciled. Reported failures include non-detection of the indicated FDI entity or its position, differences in valuation methods and divergence in the geographical allocation criteria.

20. Though all EU Member States are part of the network, the exchanges are concentrated only to ten of them. Ideally, the use of the network should be seen as an elementary part of the FDI compilation process.

3. EuroGroup Register

21. The EuroGroup Register (EGR) is part of the network of European business registers created by national statistical offices (NSOs) and Eurostat. Micro-data on legal units, relationships, enterprises and enterprise groups are supplied by all national statistical offices. This register stores the units being part of MNE groups, unit identifiers, relationships within the group and economic characteristics (such as turnover or employment).

22. EGR covers MNE groups at supranational level. The data are distributed to national compilers in all EU and the European Free Trade Association (EFTA) member countries. These coordinated populations can be used as the frame for compiling statistics related to MNE groups at national level. EGR ensures that the national statistics compilers have a harmonised picture on the enterprise groups' structures and characteristics.

23. EGR is regulated by the European Parliament/Council Regulation 177/2008 defining the exchange processes and data to be exchanged (complemented by the Commission Regulations 192/2009 and 1097/2010).

C. United Nations Statistics Division

1. National accounts

24. The United Nations Statistics Division (UNSD) uses pre-filled national accounts questionnaires to collect official annual national accounts data. In order to lighten the reporting burden of countries, UNSD coordinates the collection and receives data from OECD, UNECE and the Caribbean Community. The respective data are further shared with some other international organizations.

2. Handbook by the United Nations Expert Group on International Trade and Economic Globalization

25. The United Nations Expert Group on International Trade and Economic Globalization is developing a Handbook on a system of extended international and global accounts (including global Supply and Use Tables (SUTs)). The Handbook will build on existing work in this area, in particular undertaken under the auspices of UNECE, OECD and Eurostat, and will address issues of linking business micro-data to trade statistics, as well as integrating economic, environmental and social dimensions of trade and globalization.

26. The Handbook outlines a gross value added (GVC) approach with case studies built around a group of countries, which should compare micro level business, trade and investment statistics. The Handbook will build on existing experiences of micro-data exchange programs, such as SIMSTAT and the data exchanges among the Nordic countries.

27. The United Nations Statistical Commission also established an Inter-Secretariat Working Group on International Trade and Economic Globalization Statistics to coordinate work undertaken by the international and regional organizations. Among the priorities are

(a) promoting of a global enterprise group register building on EGR; (b) further developing a classification of business functions; (c) addressing asymmetries in bilateral trade and FDI; and (d) mainstreaming the development of global SUTs to increase the coverage of the OECD-WTO database on trade in value added (TiVA).

D. International Monetary Fund

1. Using IMF Data Dissemination Standards to help reduce reporting burden

28. Recently, IMF has changed its dissemination standards' (SDDS Plus and e-GDDS) requirements and recommendations, encouraging countries to develop dissemination infrastructure to reduce the burden of reporting to IMF and other international organizations. The primary innovation has been an SDMX-based framework to support countries disseminating data in a standardized, machine readable format, using a modernized National Summary Data Page.

29. IMF provides considerable support to countries adopting this new dissemination approach. There are tools to facilitate SDMX dissemination using a simple Excel file upload process. IMF supports these tools with help guides, help-desk support, remote technical assistance and, when required, in-person technical assistance missions.

30. Disseminating data in a standardized machine-readable format helps IMF reduce the reporting burden on countries by consolidating three existing data exchange channels into one and allowing IMF quickly share data with other international organizations.

2. Coordinated data collection and sharing of Consumer Price Index (CPI) statistics between international organizations

31. IMF, jointly with OECD and ILO, enhanced its CPI dataset this year by expanding the data collection to include the CPI breakdown and the weights. To reduce the data reporting burden on countries the three organizations agreed that OECD and IMF collect the CPI data for OECD and non-OECD countries respectively and ILO drops their own collection. Validated data are available for all users through the IMF data portal. This approach optimizes use of resources and improves the consistency of CPI data.

E. Organisation for Economic Co-operation and Development (OECD)

1. OECD Council Recommendations on Good Statistical Practice

32. The Recommendation of the OECD Council on Good Statistical Practice (2015), contains several recommendations related to data sharing for statistical purposes, e.g. on the right to access to administrative sources by the statistical authority, on the dissemination of official statistics, on statistical coordination (including active exchange of statistical information), on international cooperation (including e.g. exploring possibilities to access to micro-data by international organizations) and on innovative alternative data-sources and methods (including big data, and the use of private sector information for official statistics). The Recommendation is currently promoted and actively monitored by OECD, amongst others via an online 'Toolkit'[7].

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[7] The Toolkit will be accessible at http://www.oecd.org/statistics/best-practices-toolkit.

2. OECD Expert Group on Extended Supply and Use Tables

33. The OECD Expert Group on Extended Supply and Use Tables (ESUTs) has been created to share and exchange cross-country practices in developing ESUTs from existing official data sources. The Group will identify the main statistical challenges that are encountered in this process together with suggestions for overcoming these, considering the variability in national practices and resources. Practices that generate satisfactory results without imposing a huge burden on NSOs or respondents are highlighted.

3. Balanced international merchandise trade and international services trade statistics

34. OECD, together with WTO, is developing complete, consistent and balanced bilateral trade in services and merchandise trade statistics from 1995 onwards. The resulting matrices are an essential analytical tool and component of the TiVA Inter-Country Input-Output Table, but can also be used for other policy relevant analysis. The structured modular approach taken facilitates transparency in the balancing process. The intention is to encourage collective ownership of the database, amongst countries and other international organizations, creating an international benchmark for balanced trade data. Such an international benchmark data set and transparent balancing process are also essential for ensuring that regional efforts to develop TiVA, such as the Eurostat FIGARO project and Asia-Pacific Economic Cooperation (APEC)-TiVA, can be easily integrated within the global dataset.

4. Handbook on Linking Trade and Business Statistics

35. Many (OECD) countries are currently developing linked Trade and Business micro-datasets, integrating data from a variety of sources. Many new, policy relevant statistics on economic globalization can be derived from such datasets. These linked Trade and Business micro-datasets also form a vital building block for developing ESUTs and Integrated International Economic Accounts. However, linking trade and business statistics also involves important methodological challenges. To help overcome these, OECD is currently developing a Handbook on Linked Trade and Business Statistics that brings together best practices on e.g., different micro-data linking procedures, exchanging data, mitigating incomplete source data, grossing up, dealing with large and complex businesses, and confidentiality issues in data dissemination.

5. Joint Facebook-OECD-World Bank survey on small and medium-sized enterprises (SMEs)

36. OECD, in collaboration with the World Bank and Facebook, has developed an online Facebook survey that is aimed at generating timely and granular statistics on businesses, in particular SMEs. The survey collects monthly information on key topics such as expected job creation. The pilot, conducted in 2016, was successful and proved the value of public-private partnership for the production of timely and relevant data in a cost-effective way.

6. Eurostat-OECD Compilers Guide for Services Trade by Enterprise Characteristics

37. The Eurostat Task Force on Services Trade by Enterprise Characteristics (STEC) has developed, together with OECD, a guide on how to develop statistics on STEC. In many countries, such linking activities require the exchange of data between different organizations. The Compilers Guide pays particular attention on how to address the methodological issues after the data have been exchanged, developing for example detailed, practical guidelines on how to apply primary and secondary confidentiality in a way to ensure a minimum loss of information when the data are disseminated.

7. OECD-Nordic Council project on accounting for firm heterogeneity in Global Value Chains

In collaboration with NSOs of the Nordic Countries and the Nordic Council, OECD is developing a Report on the role of a) dependent and independent SMEs, b) domestic and foreign owned MNEs, and c) trading and non-trading enterprises in Nordic GVCs. The analysis focuses both on the economic impact (i.e., the value added produced) as well as the employment consequences of GVCs. Unique to this project is the use of standardized national linked micro-datasets and a shared Statistical Analysis System (SAS) program that ensures identical calculations are performed on these data across countries, without the micro-data having to leave NSO.

F. World Trade Organization (WTO)

38. WTO, the United Nations Conference on Trade and Development (UNCTAD) and the International Trade Centre (ITC) established a joint data set on trade in commercial services (value) with annual and quarterly frequency. In addition, UNCTAD and WTO produce jointly data sets on merchandise trade (value and volume). The input data are drawn from data-collecting agencies such as United Nations, IMF, OECD or Eurostat. These data are complemented by the involved agencies with estimates and further national statistics. The processes contribute to identifying asymmetries and other issues with nationally reported data. Through the close cooperation, the three agencies provide analytically complete and consistent trade data for their users and maximise the use of nationally reported data.

39. Further, WTO and UNCTAD have developed a project proposal to strengthen the statistical capacity of customs authorities by facilitating the extraction, dissemination and analysis of trade and market access related data using Automated System for Customs Data (ASYCUDA). The project includes the development of a software module that allows extracting trade and customs related data through the standard ASYCUDA software. The extracted data on trade flows, customs duties and preferential trade arrangements, as well as information on non-tariff measures would enhance the statistical capacity and analysis of national authorities. It would also facilitate the notification of data to international organizations, increase the coverage and accuracy of relevant databases (such as WTO Integrated Data Base, UN TRAINS, COMTRADE, etc.). The funding for this project has however not yet been secured.

V. Country practices

A. The CES survey

40. The survey was carried out in April 2016 among the CES member countries to gather information on country practices in the field of national data sharing and international exchange of economic data and recommendations for further international work in the area. Altogether 48 responses were received[8]. For some countries there were multiple responses from the different institutions producing official statistics.

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[8] The questionnaire and summary of responses are available in document ECE/CES/BUR/2016/OCT/3

1. National data sharing

41. All offices indicated having data exchange at the national level. Most commonly aggregated data was shared between producers of statistics (40 out of 48 respondents). For micro-data exchange, the most common forms were to receive data from other producers of statistics (38/48) or from administrative data sources (36/48). The typical counterparts from which administrative data were received were central banks, ministries, customs offices and tax administrations.

42. Half of the respondents indicated receiving micro-data from commercial sources (23 out of 48). Micro-data were provided to other producers of statistics by 27/48 offices and for other purposes (such as research) by 31/48 offices.

2. International exchange of economic data

43. At the international level data exchange was reported by 45 out of the 48 offices. Typically this was data at the aggregated level (39/48) and collected directly for official statistics (37/48). Some of these responses include only data reported to international organization for dissemination. Micro-data exchange was reported by 18/48 offices.

44. Data exchange usually relates to statistics where cross-border transactions are recorded and aims at minimizing bilateral asymmetries between the cross-border flows reported by different countries. International data exchange is sometimes facilitated by international organizations and sometimes based on bilateral or multilateral agreements between countries.

3. MNEs and institutional arrangements

45. Globalization has put emphasis on the treatment of MNEs. The activities of MNEs were examined with other countries by 13 out of 48 offices and within a country with other producers of official statistics by 16 out of 48 offices. Some countries mentioned that they have benefitted from organizing the data collection of MNEs to specific large and complex enterprises unit (LCU). Similar units are foreseen in a few more countries. It was mentioned that personnel working in LCUs is often specially trained. Centralized management of data sharing may also support better documentation of data sharing.

46. Institutional prerequisites for data sharing are similar in the responding countries. National legislation that regulates data sharing exists (43 out of 48 offices) and common business identifier is widely used (37/48). The fact that most of the countries have developed legislation that regulates data sharing implies that the protection of confidential data is well addressed in national laws. In some countries data exchange is agreed and defined in statistical work programs. Data sharing agreements between administrative data providers and producers of official statistics are very common.

4. Benefits and difficulties

47. Based on the survey the main benefits from data sharing were improved consistency (42 out of 48 offices) and better data quality such as accuracy, relevance and timeliness (39/48). Efficiency gains and reduced response burden were pointed out in two thirds of the replies.

48. The main difficulties for data sharing that were indicated by countries include confidentiality (32/48), legal constraints (29/48) and technological readiness (23/48). Decrease in respondents trust is considered as a main risk by 8 out of 48 offices. The other obstacles that were mentioned include:

- the increased dependency from other NSOs or administrative data providers

- problems in linking data in the international data sharing

- lack of resources dedicated to this type of work

- when using administrative data the legal unit is not always same as the statistical unit for compiling statistics

- quality issues especially coverage and

- timeliness and high investment costs.

49. According to the respondents no serious shortcomings were experienced with respect to data collection. Eleven offices reported that data was considered of poor quality and ten reported that data was misinterpreted. Other risks were less common.

50. The respondents assessed the capacity of the office to carry out data exchange very positively. Only a few critical views were expressed. Staff's ability to analyze data received most high ranking (medium or high skill: 41/48). Staff's skills in data mining and linking were not so highly ranked (medium or high skill: 36/48) and might require further training.

51. In general the role of international organizations was seen as key in facilitating the sharing best practices and providing forums for discussions. Guidance and standardization are also important. According to the country responses the international activities that would facilitate data exchange include developing methodologies to ensure confidentiality (31 out of 48 offices), sharing technological solutions and tools for data exchange (30/48) and developing general guidance for data exchange (27/48).

B. Statistics Finland: reuse of data in the production of official statistics

52. Approximately 95 per cent of Statistics Finland data reserves consist of administrative data. The centralised collection for administrative data started in 2013. Currently, 65 per cent of all secondary data comes via the centralized system. For the year 2015 around 150 secondary data sets were received, some of them come monthly. As a result, the centralized system receives up to 450 batches of data per year. There are 50 main data providers, of which 10 are private data holders. The number of private data providers is growing and efforts are put to explore their usefulness for official statistics.

53. Good and close co-operation with data holders is paramount to effective use of their data sources. Statistics Finland has responsible person for each institution and data set. In addition, annual meetings with register authorities on Director General level are arranged to discuss key issues and progress in co-operation.

54. The co-operation has been beneficial and has facilitated proactive work when changes in administrative data sources are anticipated. Major changes in income tax data took place in 2006 and in timeliness of value added tax data in 2011. In both cases the statistics production needed to be adjusted. This involved intensive co-operation with tax administration. No breaks in statistical production occurred when these changes took place. On the other hand, there was a very recent case, when statistical production was interrupted. The production break of 5 months started in January 2015 due to changes in the building register data maintained by the Population Register Centre. Active communication was vital to minimize damages for the users. This implies that increased dependency on administrative data is a challenge.

55. Other challenges relate to the quality of the data used in the statistics production. The quality of secondary data sets is optimized for their primary use and not for statistical purposes. In these cases editing strategies have to be developed to treat these massive data sets. Another challenge is that the timeliness of these sources depends on the data providers and not on NSO. It can vary how well it fits with the statistics production. To overcome the timeliness issues now-casting and imputation methods have to be applied.

56. Major benefits or drivers for using secondary data sets in statistics production are the decreased response burden, improved efficiency, better coverage and expanding borders of data. There is strong political will to increase efficiency in public administration and to decrease the administrative burden on businesses. The willingness of businesses to respond to statistical surveys is also decreasing. One solution for these challenges is expanding the use of secondary data.

57. More information can be found in the Handbook on Use of Registers and Administrative Data Sources for Statistical Purposes[9].

B. Statistics Canada: bilateral data exchange in trade data

58. In 1987, Statistics Canada, the customs arm of the Canada Revenue Agency, the United States Census Bureau (USCB) and the United States Customs Service began discussions on the possibility of entering into an international data sharing agreement by which import statistics between the countries would be exchanged. These import statistics would then be used in the reporting of each country's exports to each other. In that same year, a memorandum of understanding (MOU) was signed by the four parties noted above and by 1990 the data exchange was in effect.

59. The strength of the MOU on the Exchange of Import Data between Canada and the United States lies in its simplicity. It is five pages in length and contains five articles and two annexes.

60. Throughout the 25 year history of the MOU, the partners have faced and overcome a host of challenges. The majority of the challenges pertained to operational matters that were generally outside of the control of the various partners.

61. In both 1996 and 2013, the United States government shut down operations for short periods, with staff from all departments, including the USCB, locked out of their workplace. USCB staff were not able to transmit the import data to Canada, nor were they available to receive transmissions from Canada. In both cases, while the lockout was short-lived, both the USCB and Statistics Canada had to delay their release of the international merchandise trade statistics.

62. Another challenge was the decision by the United States government to increase the timeliness of their international merchandise trade statistics program. Prior to January 1, 2013, these statistics were released with a 45 day lag. As of reference period January 1, 2013, the timeliness of the release was increased from 45 days to 35 days. This was an operational challenge for Statistics Canada, since it had to adjust internal operations, not only with respect to the processing of exports to the U.S. but also the process of exports to non-American destinations and the processing of import transactions. Release schedules needed to be modified and revision policies revised.

63. Each time the agencies have been able to adjust and adapt to the situation. The overriding success factor was a highly collaborative approach, intensive consultations and communication and a common understanding of the challenges.

64. The MOU is entrenched in the programs of both Statistics Canada and the USCB. There are a number of factors that have made this arrangement a success. These include:

- A clearly identified net benefit

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[9] www.stat.fi/tup/julkaisut/kasikirjoja_45_en.html

- A willingness to harmonize concepts and data requirements (transaction review protocols between subject matter experts, regular meetings and near-daily correspondence).

- A willingness to coordinate statistical programs

- A willingness for each partner to adapt

- A willingness to consult

- A willingness to implement quality control measures

- A willingness to incur costs

65. It is also clear that data sharing agreements like this MOU can be a launching pad for the establishment of additional data sharing work, improving the quality and relevance of official statistics. There is also an MOU in place between Statistics Canada, INEGI and the United States concerning transportation statistics.

C. Finnish Customs: experience in exchange of micro-data for intra-EU exports

66. The main purpose in SIMSTAT-project was to create an additional data source by making the exchange of micro-data for intra-EU exports mandatory. During the project methodology specifications were developed and 20 EU member states agreed that Intrastat-collected monthly micro-data would be exchanged. An additional recommendation was to include two new mandatory data elements to Intrastat: "ID of partner trader" and "Country of origin in dispatches".

67. A legal act for mandatory micro-data exchange is not yet in force. The micro-data exchange during the project was a voluntary exercise. Multilateral agreements were signed between the participating MSs and with Eurostat who has responsibility to manage the data HUB.

68. The monthly micro-data exchange via HUB took place from April to September 2015. The test production was time consuming and further automation needs be developed. The micro-data collected by other MS's had a good coverage. Records received from other MSs were more detailed than the same data collected as imports, because EU regulation requires greater coverage on export side. Italy and France were collecting the "Partner ID number", so the match with their data was on a good level. Other MSs were simulating the "Partner ID number", so their data was not matching so well.

69. SIMSTAT-project left some issues more or less open e.g. passive confidentiality[10] in dissemination. SIMSTAT will bring a strong dependency from partner countries. It will take some years to switch off own micro-data collection. Secondary production process would also be needed, because MSs are responsible for their own statistics.

70. In Finland Intrastat represents over 50 per cent of all statistical administrative burden to enterprises, of which Intra-EU exports represent only 19 per cent, but imports over 81 per cent. Replacing own imports data collection by new SIMSTAT micro-data source is a great possibility. SIMSTAT could reduce Intrastat response burden in Finland by 60 per cent.

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[10] For foreign trade statistics, EU countries generally apply the principle of "passive confidentiality", that is they take appropriate measures only at the request of importers or exporters who feel that their interests would be harmed by the dissemination of data.

D. Central Statistics Office of Ireland: Data confrontation in trade and foreign direct investment data

71. The growth of FDI is an important element of cross-border phenomena resulting from increased globalization. The Central Statistical Office (CSO) of Ireland recently carried out a mirror data exercise on US FDI flows into Ireland, using 2014 data from the US Bureau of Economic Analysis (BEA). The BEA measures outward FDI positions with Ireland as €252bn, while the CSO calculates inward FDI positions with the US as €33bn, an asymmetry of €219bn. Legal and confidentially constraints precluded an exchange of micro-data or detailed sectoral level data.

72. Much of the FDI asymmetry can be resolved by examining how the source and destination of FDI is measured. The BEA looks through 'intermediate' FDI locations in determining the destination of US-owned FDI, while the CSO measures FDI as originating from the immediate country of investment. Differences in the measurement of the debt component of FDI, as well as different valuation methodologies, were also found to contribute to the asymmetry.

Inward FDI positions (€ bn)	
BEA measure of outward FDI to Ireland	252.3
CSO direct measure of inward FDI from the US (immediate counterpart country)	33.4
Initial asymmetry	*218.9*
CSO indirect measure of inward FDI from the US (ultimate controlling parent)	173.6
Inward FDI to Ireland from US corporate inversions	21.5
Residual asymmetry	*23.8*

1. Risk factors management

73. The rewards associated with the successful implementation of a process to exchange confidential micro-data are clear, but any potential benefits must be weighted alongside the very real risks to our ability to compile key economic indicators for Ireland, due to legal and confidentiality constraints. From an Irish perspective, the business case for improving the quality or efficiency of our national statistics also remains unproven.

74. The European Statistical System (ESS) committee acknowledges that national circumstances need to be taken into account. While we fully appreciate that the environment in which others operate is different, the structure of the Irish economy places respondent confidence in the CSO at the heart of our ability to compile robust, high quality and trusted official statistics. Any loss of engagement or trust among the relatively small number of large enterprises dominating our economy would be hugely detrimental to our ability to compile key economic indicators for Ireland. To proceed without the informed consent of our respondents, particularly the large enterprises, would be irresponsible in the context of our national statistical system. The initiation of a process to achieve informed consent is itself seen as a risky strategy. While we will continue to engage positively and constructively at all levels, the challenges we face are significant.

E. Measurement challenge posed by MNEs: Profiling in the United Kingdom

75. In recent years, the United Kingdom's (UK) statistical office has been undertaking an increasing amount of detailed profiling of MNEs and visiting MNEs. These efforts have involved staff from the Business Register and National Accounts generating:

- changes to the structure and coverage of the enterprise as well as classification of some the legal units held on the Business Register;

- changes to the estimates in the business surveys, and in turn, the National Accounts and Balance of Payments;

- much better understanding of the activity of the enterprise.

1. Business Profiling

76. The Business Profiling Team of the Office for National Statistics is within the Business Registers Division and has a portfolio of over 2,500 complex enterprise groups. The primary aim of the 12 profilers is to ensure the correct legal and operational structure of these groups on the Inter-Departmental Business Register (IDBR).

77. Profiling can take different forms – from manual "intensive" profiling with visiting the enterprise through manual "light" (or "desk") profiling using all publicly available information to automatic profiling based on business registers and EGR data.

78. The largest groups on the IDBR continuously change and evolve, therefore their continuous maintenance is needed. The Office of National Statistics in the United Kingdom (ONS) have defined the profiling population of candidates to be manually profiled using criteria on employment and activity. Profiling uses information from ONS Surveys, Companies House, Dun and Bradstreet and other administrative sources. The majority of profiling is undertaken via desk work but for the very largest of profiles, profiling encourages visits to meet the Global Enterprise Group (GEG) on a face to face basis.

79. Over the last years, the ONS Business Profiling Team has been heavily involved in several ESSnets focused on profiling at a global level and has made a significant contribution to the deliverables and the success of the projects.

80. Communication with statistical users, other NSOs and GEGs is a vital part of the process required to succeed in carrying out a European profile.

81. European profiling is not the sole activity of one NSO, as the results can affect the statistics of all countries in which the GEG operates. For this reason the profiling process requires agreement between all involved parties as this will form the basis of the national statistics, which will then be consistent on a European basis.

82. There are various differences between the steps taken for the National UK method and International Profiling Process. IDBR currently only holds information about the relationships between domestic legal units and those between domestic and foreign legal units. International profiling aims to collect all the legal units that operate as part of a global group and therefore coverage is much improved.

2. United Kingdom's experience to date - is profiling worthwhile?

83. The profiling has led to a number of improvements to the economic data collected by ONS. For example, analysing data at a global level using annual accounts and data shared by other NSOs resulted in the identification of significant missing UK turnover. It has also

led to better understanding of the overall structure and correct recording of the transactions of small and large complex businesses, including MNEs.

84. The recruitment of enterprises to take part in the profiling was a challenging exercise – the success rate was about 25 per cent. As a result some of the key European groups could not have been profiled yet. This highlights the need of a legal framework that has to be in place in order to ensure the successful collection of global or European data across NSOs.

85. Positive feedback from the GEGs acknowledges the potential benefits that European profiling could bring to them. For some GEGs, there would be a decrease in burden, as the proposed structure aligns with their own financial accounts. This means faster survey completion times and fewer survey questionnaires to complete.

86. Some GEGs welcome the idea of a central contact point within NSO and some like the possibility of reporting all data to just one NSO. A few have even invited ONS to tap into their own internal accounting systems to pick the required data directly (e.g. via an XBRL taxonomy).

87. A summary of the benefits and challenges of profiling international businesses is presented below.

88. In terms of the benefits, these include:

- Improved quality of recording structures of businesses

- Better understanding of businesses' activity and changes to businesses

- Reconciliation of Top-Down and Bottom-Up approaches

- Avoid missing activity and remove any double-counting

- Improved data feeding into National Accounts and Balance of Payments

- Central contact point and reduction in burden on MNEs

89. In terms of the challenges, these include:

- International profiling can be time consuming and resource intensive

- Staff needed with wide-ranging skill sets covering company accounts, registers, legal units, statistical units, etc.

- Agreement with respondent may not be achieved as there is no legal obligation beyond national levels

- Micro-data sharing is essential for reconciliation and reducing respondent burden on MNEs

- Need to widen the data collection to cover other variables beyond employment and turnover

VI.   Issues and challenges

A.   Issues related to data sharing, reuse and exchange of data

90. The first attempts to reuse administrative data sources date back about 40 years. The CES survey revealed that today all respondents (48) are engaged in national data sharing, often (43) regulated by law.

91. Data sharing for statistical purposes at the national level may happen between NSO and administrative bodies or between NSO and private data holders. Data sharing at the

national level is well-established activity. Yet, countries are at different levels as the share of reused data in the statistical databases of separate countries varies from 5% to 95% of all data.

92.   There are clear benefits of data reuse such as efficiency gains, improved coverage and access to more exhaustive information. NSOs need guidance on the organization of data exchange (including technical solutions) and a forum to exchange information on the best practices.

93.   The use of secondary data sources includes risks and challenges, such as increased dependency on data providers, timeliness of source data, insufficient coherence with statistical concepts and classifications and issues with the quality of data.

94.   Accessing data of the private sector is a recent phenomenon, and the modalities of collaboration in data sharing are not yet well defined. These relationships can be divided into two groups: Firstly, NSOs may purchase statistical products from businesses that develop them as part of their core business. Secondly, NSOs may approach private firms to 'share data', for example scanner data.

95.   While national data sharing has evolved during the past years into a mainstream activity, international exchange of economic data takes place less often. There is a clear need for NSOs and international organizations to enhance exchange of economic data at the international level to improve data quality and to gain in efficiency. The options should be carefully considered and the efforts should have a clear purpose.

96.   The exchange of economic data at international level focuses on cross border activities. Data exchange can be done multilaterally and bilaterally. Multilateral data exchange typically involves international organizations. A good example of bilateral data exchange takes place since 1990 between Statistics Canada and BEA (US) and concerns import data.

97.   Exchange of data at the level of statistical units would require a safe environment for ensuring confidentiality. It should also be guaranteed that the exchanged data is used only for statistical purposes. Currently, the global statistical system is not defined firmly enough to enable sharing of confidential data. Successful steps have been taken in the ESS, but enterprises do not limit their activities to EU.

98.   It is possible to find solutions for handling the risks and challenges of the reuse and sharing of data for statistical purposes. Countries have developed good practices on effective planning and management of data exchange, collaboration methods, identifying new data sources etc. However, countries are developing these methods quite often in isolation which prevents them from fully exploiting the benefits and slows down the progress. The following part discusses these benefits and challenges identified in the review.

B.   Benefits

1.   Addressing data asymmetries

99.   Addressing asymmetries in data and statistics is a major driver for international exchange of data or data confrontation. For instance, Eurostat and ECB established a network to address large asymmetries in FDI. Same driver was behind the Irish case on Data confrontation in trade and FDI data.

100. Furthermore, Handbook by the United Nations Expert Group on International Trade and Economic Globalization statistics addresses sharing of micro-data between bilateral

partners to facilitate the development of internationally coherent international and global accounts.

2. Reduced response burden

101. Decreasing response burden may be an important benefit of data sharing. Ideally one data item would only be collected once. According to Eurostat's experience from the SIMSTAT-project, *"the overall results showed that mirror exports data could be used effectively as full or partial substitution of the nationally collected imports data. The use of mirror data for compiling intra-EU imports statistics could thus reduce the administrative burden on reporters on the intra-EU imports side."*

3. Efficient production system

102. To maximize efficiency of statistical production data needs to be exchanged between compilers. This will require initial investments but they will pay back when overlapping work is reduced. This is also true for data flows from national to the international level. For example, sharing data internationally for dissemination purposes between NSOs and Eurostat and between UNSD, OECD, UNECE and CARICOM maximize efficiency and quality. The same statistics, if produced internationally by using direct data collection, would be extremely costly and would not achieve the same coverage and quality.

4. Coverage and precision

103. Administrative sources often give a more complete coverage of target population, although typically requiring adjustments to concepts and classifications. This may reduce survey and non-response errors. Accuracy of statistics could also increase via better data coverage. According to Statistics Finland's experience *"Major benefits or drivers for using secondary data sets in statistical production are the decreased response burden, improved efficiency, better coverage and expanding borders of data."*

5. Promotion of the use of common business identifiers and common classifications

104. Common business identifiers and classifications are a prerequisite for exchanging micro-data. Active collaboration in data exchange may help promote their use. Identifying the trade-partners is important, when exchanging micro-data as shows Customs Finland's experience on SIMSTAT: *"Italy and France were collecting the "Partner ID number", so the match with their data was on a good level. Other MSs were simulating the "Partner ID number", so their data was not matching so well."*

105. In 2011, G20 asked the Financial Stability Board (FSB) to provide recommendations for a global Legal Entity Identifier (LEI). *"This led to the development of the Global LEI System which, through the issuance of LEIs, now provides unique identification of legal entities participating in financial transactions across the globe."*[11]

6. Improved understanding of the activities of MNEs

106. The activities of MNEs are so complex and challenging for the statistical offices, that the exchange of data on their structures and activities is a prerequisite for compiling high-quality statistics. Capturing MNE's activities is a major challenge but also a possibility for modernizing statistical production and improving the quality and coherence of data.

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[11] See: https://www.gleif.org/en/lei-system/gleif-management-of-the-global-lei-system

107. In 2008, the business registers regulation introduced the exchange of data on MNEs and their units for statistical purposes within the ESS. This has led to the development of EGR.

108. Quite a few countries have organized their work on MNEs to an LCU. LCUs have proved to be very efficient in integrated data collection, data confrontation and consistency analysis[12]. This is also highlighted in the ONS case on profiling MNEs.

C. Challenges of data sharing, reuse and exchange

1. Legal constraints

109. Legal constraints can inhibit statisticians from sharing data. The primary purpose of the legislation is to protect the data of individual respondents. Within EU this challenge is solved and micro-data can be exchanged (see SIMSTAT-case). If legal constraints for exchanging micro-data exist, then aggregated data confrontation should be considered to improve the quality of cross border data.

110. According to the country survey legal constraints are an issue for 29 (out of 48) respondents. Confidentiality constraints were mentioned by 32 and technological readiness by 23 respondents.

2. Safeguarding confidentiality

111. Nationally, NSOs need to ensure that micro-data are exchanged exclusively for statistical purposes and only within the system of official statistics and respondents' data are protected by data confidentiality rules regulated in statistical legislation. The sending party needs to ensure that the receiving party has the infrastructure in place for ensuring strict confidentiality and use of these data for statistical purposes only. These issues need to be clearly communicated to respondents to maintain their trust. Similar requirements should apply for international data exchange.

112. Internationally, exchange of data may happen between the statistical systems of different countries (NSO-NSO) or within the international statistical system (NSO-international organizations). Principles and international guidelines on confidentiality already exist[13]. There is need to review and adapt them from the view point of economic statistics related to international transactions and MNEs.

3. Dependency on external data providers

113. Data sharing increases NSOs' dependency on external data providers. The challenge was highlighted by some country experiences, such as the Canada-US exchange of import data, SIMSTAT experience of Customs Finland and Statistics Finland's experience in using administrative data.

114. This entails that the production process has to be well planned and organized together with the data providers. NSOs should be consulted if changes are planned in administrative or other essential data source. Data sharing also requires good knowledge of each data source. This implies networking with data providers to better anticipate all changes that can take place in the source data. In addition, statistical production should be flexible enough to

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[12] See Chapter 6 of the Guide to Measuring Global Production: www.unece.org:8080/ fileadmin/DAM/stats/publications/2015/Guide_to_Measuring_Global_Production__2015_.pdf

[13] Principles and Guidelines on Confidentiality Aspects of Data Integration (UNECE) www.unece.org/fileadmin/DAM/stats/publications/Confidentiality_aspects_data_integration.pdf

digest changes coming from data providers. These might include updated timetables, changes in samples and variables and breaks in data deliveries.

4. Timeliness of external data sources

115. The examples of national and international data sharing brought up several challenges related to timeliness of external data sources. The Canada-US-import case shows that when statistical production is more interrelated issues with timeliness may become more prominent. *United States government decided to increase the timeliness of their international merchandise trade statistic from 45 days to 35 days from the reference period. This was an operational challenge for Statistics Canada, since it had to adjust internal operations. Release schedules needed to be modified and revision policies revised.* Improving timeliness of statistics using external data would require influencing data providers' processes.

116. Furthermore, the experience of Statistics Finland in using value added tax data shows that when the data provider changes its timetable, NSOs need to be ready to develop new estimation and now casting methods. In addition, direct surveying may need to be reintroduced for the most important businesses.

117. To overcome challenges with timeliness, the same strategies considered under the dependency could be applied. In addition, timetables of data exchange should be included in agreements between NSO and data providers.

5. Differences in concepts and classifications

118. Typically the concepts and classifications used in administrative data sources do not match exactly with the target variables of statistical production. Administrative data sets may need to be adjusted using partial direct surveys and other correction measures, imputation and estimation to get more accurate results. *The importance of willingness to harmonize concepts and data requirements is well illustrated in Canada-US case.*

119. Closer collaboration with data providers may help promote the use of statistical concepts and classifications, where possible. This may benefit data providers through better possibilities to link and benchmark their data with other sources.

6. Quality issues of source data

120. The quality of administrative data is optimized for the administrative or regulatory purpose they serve and may not be optimal for statistical purposes. As a result they require adjustments to be suitable for statistical production. Furthermore, these data sets may be too large for the statistical system to digest with traditional methods used for data derived from statistical surveys. In these cases new compilation and editing strategies have to be investigated.

121. Examples show NSOs that have worked together with data providers to help them improve their data through sharing best practises on quality assurance and sharing tools that promote a more harmonized approach.

7. Maintaining respondents' trust

122. Increased data exchange nationally or internationally may sound alarming for the respondents. Maintaining respondents' trust is vital for official statisticians, and losing it would heavily impact on the accuracy of the data NSOs get. If trust diminishes response rates of statistics surveys will also deteriorate.

123. This challenge was highlighted by the Irish example on data confrontation. The case suggested that the quality of data on globalization could be improved without risking

confidentiality and respondents' trust. However, aggregated data confrontation alone cannot ensure all efficiency gains and benefits from reduced response burden.

8. Technical capacity to handle data sets

124. Exchanging large data sets requires enormous technical capacity from both the sending and receiving party. IT systems may differ and require adjustments for interoperability. In regular national data reuse from administrative sources these issues are mostly resolved, but for other data sources new technical issues keep arising. Some data sets are also poorly structured which not only requires technical, but also expert resources.

125. Technical capacity is also linked to the previous issues of ensuring confidentiality and maintaining trust. Parties that engage in data exchange need to ensure that the other party has the technical capacity to guarantee data security. SIMSTAT exercise illustrates *"that from an IT point of view the secure exchange of micro-data was feasible."*

9. Willingness to exchange data

126. The statistical community needs a fundamental discussion regarding the limits of data exchange. Traditionally NSOs are the end-stop for all data that enters their systems. NSOs can reuse, but not share data forward to fully protect data confidentiality and prevent other than statistical uses of data. The survey showed that each country has a specific legislation regulating confidentiality; however often NSO is responsible for implementing it in practice and providing additional guidance.

127. Data could be more widely reused among producers of official statistics within properly defined statistical system with a secure infrastructure for data exchange. Currently, some countries take more liberal and others more conservative approach. More consistent approach with common tools and principles for data sharing across countries could possibly release resources and notably reduced response burden.

128. The report[14] of the OECD Expert Group on Micro-data Access contains useful insights on this matter. The report focuses on the re-use of micro-data for scientific purposes, but the ideas can be explored in the context of sharing economic data. The key idea is to improve cross border collaboration by building trust in partners.

VIII. Conclusions and recommendations

A. Conclusions

129. There are important benefits from data sharing and emerging challenges that should be addressed. According to the country survey the role of international organizations was seen vital. They should act as facilitators for sharing best practices in data exchange and providing the necessary forums for discussion. Guidance and standardization of current practices need to be developed. The international activities that would facilitate data exchange include:

- developing methodologies to ensure confidentiality (mentioned in 31 replies),
- sharing technological solutions and tools for data exchange (30) and
- developing general guidance for data exchange (27).

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[14] http://www.oecd.org/std/microdata-access-final-report-OECD-2014.pdf

1. National data sharing

130. The exchange of data at the national level has developed into a well-established practise. However, it still varies across countries and offices how much they reuse data in their statistical production. The difficulties to reuse data are often due to the various technological and conceptual differences between statistics or datasets. Data reuse may also be hampered by the lack of instructions, policies and willingness that would enable data sharing in a way that ensures confidentiality. The countries have developed different solutions, often working in isolation, which prevents them from benefiting fully from data exchange and slows down the process. The good practices and accumulated knowledge have to be more efficiently shared.

131. Work on reviewing ways to access and use data from private data holders would be increasingly useful for NSOs. The problem usually is related to the fact that there is no legislation granting access to these data. The solution could be in negotiating and raising the awareness of private data holders on the usefulness of data sharing with official statisticians.

2. International data confrontation at aggregated level

132. Data confrontation at aggregated level helps address some asymmetries or at least identify them more effectively. Sharing of aggregated data, compiled according to confidentiality rules, is a light version of data sharing and more easily doable as data confidentiality does not need to be considered.

133. A top down approach is recommendable when aggregated data confrontation is used to detect areas that need to be closely looked into. As a next step, exchange of more carefully defined aggregates, so called meso-data level, may take place and help better understand the type of international transactions involved or get better common view of the activities of large and complex companies. It is important to consider case by case on which level data sharing is needed.

3. International exchange of trade data at micro level for producing statistics

134. Bilateral asymmetries do not necessarily require exchange of micro-data. Still, micro-data exchange may be the only way to better understand MNEs and would have a huge influence on reducing response burden and increasing efficiency.

135. It would be useful to share tools and learn from the well-established bilateral data exchange system, such as those between Canada and the United States. Common templates would help NSOs overcome the related challenges on dependency, timeliness, concepts and classifications, data quality and respondents' trust. The challenges have to be confronted in small achievable steps.

136. Eurostat's SIMSTAT-project on multilateral micro-data sharing has now ended. The project lasted for four years and many results were achieved. Data quality and IT facilities provide a feasible framework for the exchange of micro-data. The decision of the ESS Committee to make data exchange on export compulsory will also activate practical work. The coming years will show the benefits that will be achieved. The lessons learned from this process should be shared via relevant channels also beyond the EU level.

137. The Eurostat FDI Network was established to reduce bilateral asymmetries. Still many countries are not using the network. One major challenge seems to be the willingness to engage in data exchange and the related legal constraints. International work would be needed to agree on the common principles and limits of data exchange.

4. Submissions of statistical data to international organizations

138. Currently many international organizations request statistical data, sometimes even survey or micro-data. These data flows are not well regulated, other than within the ESS, and it is unclear whether an international statistical system exists and has well-defined borders within which data could be securely exchanged. Common procedures need to be agreed upon.

139. Transmission of data subject to statistical confidentiality to international organizations is a problematic area. The provisions on access to individual data for research purposes may apply to international organizations in case of scientific research projects, otherwise the party sending data needs to ensure that the receiving organizations can fully ensure data confidentiality and that it is only used for statistical purposes.

B. Recommendations for future work

140. To overcome the challenges and achieve benefits from data sharing many actions remain to be taken, especially to better define the scope and possibilities of international exchange of data. Engaging in more active data exchange requires a profound cultural change in the statistical society and would need to be well planned and fostered. The world is more globalized and statistical production has to take that into account to produce relevant statistics. Work should be organized more efficiently, reducing response burden and improving data quality by reducing asymmetries and improving coherence. NSOs would benefit from training, sharing experience and developing guidelines to increase the awareness on issues, challenges and solutions related to data exchange, in particular internationally.

1. Develop guidance and recommend best practices in data exchange

141. The CES survey pointed among the top priorities the development of international methodology for ensuring confidentiality and general guidance facilitating data exchange. Work in this respect is already under way e.g. the OECD Handbook on Linking Trade and Business Statistics and Eurostat-OECD Compilers Guide for Services Trade by Enterprise Characteristics would address some aspects of data linking and dealing with large and complex businesses. The countries would, however, benefit from further guidance in a number of areas. For this reason the CES Bureau decided to establish a task force on exchange and sharing of economic data. The aim of the task force is to analyse concrete examples of data exchange implemented by NSOs and develop guidance, tools and principles and highlight innovative ways to exchange economic data to better analyse the activities of MNEs.

2. Workshops and seminars

142. Workshops and seminars should be linked to the work on developing the above mentioned guidance. They could be targeted to certain statistical areas and should preferably focus on concrete cases of improving the global consistency of statistics by utilising macro- and micro-data exchange. The seminars and workshops would also share experience, create awareness and stimulate cooperation in a practical way, for example by establishing a network of LCUs.

143. The role of international organizations to facilitate the exchange of knowledge and the creation of networks is important. A number of events are already foreseen. Eurostat will organize annual workshops for EGR coordinators aiming at sharing experiences and planning next activities. Eurostat also organizes EGR webinars on specific issues and a seminar addressing measurement challenges related to MNE groups within the framework

of the project "Integrated Global Accounts and Global production". An informal group under G-20 was also created to facilitate the implementation of data gaps initiative's recommendation on data sharing.

3. Towards a Global Groups Register

144. The cooperation on a global register of enterprise groups and on global profiling would provide more and better information on the non-resident parts of multi-national groups and would allow in better understanding of the globalization and its impact. The Global Groups Register (GGR) could build on the existing content and processes of EGR. The information for the global register should be complemented by better information on groups, collected through global profiling.

145. The Global Legal Entity Identifier System (GLEIS) initiative could be used to establish unique identifiers in GGR. GLEIS will go beyond[15] the simple identification of entities by including data on direct and ultimate parents of legal entities (as of end 2017). All the information collected in the framework of GLEIS is expected to be global and public.

146. Once new GLEIS data becomes available, a test will need to be conducted to reproduce some relevant groups already recorded by using the EGR procedures and the GLEIS relationships instead of the relationships provided to EGR. The differences should be analysed and may indicate a way forward on the construction of EGR.

4. Statistical and technical training

147. The training efforts should be coordinated to avoid overlapping and to create synergies through the international statistical system. Eurostat organizes training on EGR targeted to National Statistical Business Register staff and statisticians working in Foreign Affiliate Statistics (FATS) and other globalization statistics in NSOs and Central Banks. In addition training in the following areas would be beneficial:

- Data security related to data sharing and storage of micro-data

- Data linking and mining

- Confidentiality, communication with respondents, measuring and managing response burden

- Now-casting, imputation, editing routines and combining survey and secondary data

5. Reuse of data among international organizations

148. International organizations should further streamline the reuse of data collected among them. There are possibilities to reduce reporting burden of countries. Technical solutions, like SDMX, should facilitate this approach.

6. New and emerging topics: Micro-data for research purposes and big data

149. The topics of micro-data exchange for research purposes and big data are also related to data sharing. Having a significant importance on official statistics production these emerging topics should be further examining. The topic of public-private partnership for data production could also be reviewed.

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[15] http://www.leiroc.org/publications/gls/lou_20150907-1.pdf